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The Importance of Religious Displays for Belief Acquisition and Secularization

JONATHAN A. LANMAN

ABSTRACT *Both the sociology and the cognitive science of religion seek to explain the acquisition of religious beliefs. In this article, I offer an account of the acquisition and distribution of religious beliefs using the findings of both fields. In the process, I seek to illustrate the potential of interdisciplinary dialogue for improving our understanding of religion and its absence. More specifically, I present a prima facie case—based on existing work in the social and cognitive sciences, exploratory online surveys, and participant observation—that witnessing actions attesting to religious claims is one of the most crucial variables determining whether or not an individual will explicitly believe such claims. Further, I argue that the connection between action and belief can help produce an improved account of secularization and non-theism, defined here as the lack of explicit belief in the existence of non-physical agents.*

Introduction

There had never been a time when John had not sat watching the saints rejoice with terror in his heart, and wonder. Their singing caused him to believe in the presence of the Lord; indeed, it was no longer a question of belief, because they made that presence real. . . . Something happened to their faces and their voices, the rhythm of their bodies, and to the air they breathed; it was as though wherever they might be became the upper room, and the Holy Ghost were riding on the air. (Baldwin 14–15)

Both the cognitive science and the sociology of religion address the acquisition of explicit religious beliefs. Cognitive scholars of religion such as Pascal Boyer, Justin Barrett (*Why*), Scott Atran (*In Gods*), and Jesse Bering (*God*) have focused on the role of pan-human cognitive pre-dispositions in making explicit beliefs in non-physical agents compelling. Sociologists of religion such as Pippa Norris and Ronald Inglehart, Darren Sherkat, Steve Bruce, and Phil Zuckerman (*Society*), by contrast, have focused on the impact of environmental variables on religious affiliations and beliefs and offered arguments concerning why religious beliefs have declined in particular environments.

Below, I will outline a theory of the acquisition and distribution of religious beliefs based on the theories and findings of both these fields as well as my own anthropological research. In the process, I hope to illustrate the potential of interdisciplinary dialogue for improving our understanding of religion and its absence. The cognitive science of religion can be enriched by examining how different environments affect pan-human cognitive mechanisms in the

production of religious beliefs and the sociology of religion can be enriched by critically examining the psychological assumptions underlying theories of religion and secularization.

More specifically, I will present a *prima facie* case—based on existing work in the social and cognitive sciences, exploratory online surveys, and participant observation—that witnessing actions attesting to religious claims is one of the most crucial variables determining whether an individual will explicitly believe such claims. Further, I will argue that the connection between action and belief can help produce a psychologically and ethnographically responsible account of secularization and non-theism, defined here as the lack of explicit belief in the existence of non-physical agents. I argue that this evidence provides strong initial support for my hypothesis and justifies further research.

Cognition, Environment, and the Acquisition of ‘Religion’

My hypothesis concerns the question how human beings acquire what have traditionally been called ‘religious beliefs’ and can, I argue, help us understand the presence and distribution of non-theism in the world. Given critiques of both ‘religion’ (Smith; Asad) and ‘belief’ (Needham; Pouillon; Ruel) as useful categories about which to theorize,¹ however, I will state upfront that I am specifically concerned with explicit beliefs in the existence of non-physical agents.² While I recognize the legitimacy of numerous other phenomena that might be relevant in the acquisition of ‘religion’ and that beliefs are not central to identity in most religious traditions and while I am not attempting to reduce religion to non-physical agent beliefs, my focus remains. Whatever the linguistic and ideational histories of our terminologies, the empirical pattern of non-physical agent belief is real and deserves an explanation.

According to the biologist and atheist Richard Dawkins, children acquire religious beliefs from their parents through the combined influence of indoctrination and an evolved tendency to believe the statements of authority figures (Dawkins 174–6). Children are not born believers, only born gullible. Conversely, numerous philosophers and theologians, such as St. Paul and John Calvin, have claimed that human beings possess an innate belief in the existence of God.

Recent cognitive approaches have partially supported each of these views and produced more nuanced accounts of the bases of non-physical agent beliefs. Cognitive psychologist Jesse Bering, for instance, offers a theory reminiscent of Calvin’s *Sensus Divinitatis* by arguing that we all possess an innate, though implicit, belief in the existence of a social contract between the self and some vague non-physical agency, such that misfortune is intuitively viewed as punishment and good fortune as a reward or sign of favour (“Folk Psychology”; “Cognitive Psychology”). This intuitive belief makes explicit discourse about non-physical agents believable. Pascal Boyer, Justin Barrett, and others, however, argue that human beings do not automatically produce intuitive beliefs in the existence of non-physical agents. Rather, they naturally develop a set of intuitive ontologies early in life that influence what concepts they find easy to learn and remember (Boyer and Ramble) as well as a hyper-sensitive agency detection device (Guthrie; Barrett, *Why Would* 31–44) and a tendency to

see purpose in the natural world (Kelemen; Barrett, *Why Would* 84–5). All these individual intuitions together, through what Boyer calls “aggregate relevance”, work to make explicit discourse about non-physical agents believable (298–9).

The mechanisms identified by cognitive scientists of religion may well be working to make explicit religious discourse memorable and believable, but they are not sufficient to produce explicit beliefs in non-physical agents; if they were, we would all be explicit believers (Gervais and Henrich). It should be noted that cognitive scientists of religion are not arguing that these mechanisms automatically produce explicit religious beliefs in all individual minds. Consequently, the existence of non-theists is not in and of itself a significant problem for these accounts (Geertz and Markússon; Barrett “Relative”). However, if these universal cognitive mechanisms were the primary factors responsible for explicit religious beliefs, we should see a relatively even dispersal of theism and non-theism around the world. This is not, however, what we find.

What we find are particular nations, such as Sweden and Denmark, with high proportions of non-theists and other nations, such as the United States and India, with very low proportions of non-theists (Zuckerman, “Atheism” 56–7; Norris and Inglehart; Gill and Lundsgaarde). These data imply that environmental variables are quite important in the production of explicit religious beliefs. One of the most important environmental variables emerging from this work is ‘existential security’—the degree to which individuals feel that their survival and well-being can be taken for granted.³ The more existentially secure an environment is, the less likely individuals within it will acquire religious beliefs.

Among cognitive scientists of religion, Barrett stands out in his recognition that some environments, such as urban environments, may inhibit explicit religious beliefs (*Why* 115–18). While this hypothesis has the advantage of tying environmental variables to particular cognitive mechanisms, such as hyper-sensitive agency detection devices, urbanization appears to be less important than welfare spending and existential security in explaining cross-national differences in religiosity (Gill and Lundsgaarde).

An opportunity exists then to connect the work in the cognitive science of religion, which demonstrates the importance of universal cognitive mechanisms in making particular types of explicit beliefs compelling, with the work in the sociology of religion, which demonstrates the importance of existential security. Below, I outline a hypothesis which connects the two fields of study in order better to account for the presence and absence of explicit beliefs in non-physical agents. If correct, my account would help explain why particular nations, such as Denmark and Sweden,⁴ have such low levels of theism, while other nations, such as the United States, have such high levels of theism, and it would do so in a way consistent with the findings of the cognitive sciences.

Credibility Enhancing Displays (CREDS)

I hypothesize that one of the most important variables determining whether an individual explicitly believes in non-physical agents is his/her degree of exposure to religious action, that is behavior that indexically signals to others

that one actually believes in non-physical agents. Following Durkheim's theory on the effect of collective ritual performance on belief (220), anthropologists William Irons ("Religion") as well as Richard Sosis and Candice Alcorta and religion scholar Joseph Bulbulia ("Religious Costs") have argued that hard-to-fake expressions of religious commitment signal commitment to particular groups and a disposition to cooperate with in-group members. Such expressions of commitment include not only ritual participation and ascetic practice, but also, in a manner similar to signalling romantic commitment, facial expressions and vocal inflections (Irons, "Why"; Bulbulia, "Free Love"; Schloss).

While these scholars focus on the effects that such displays have on cooperation, they have been less concerned with their effects on the acquisition of beliefs. Recently, however, evolutionary anthropologist Joseph Henrich has formulated a version of signalling theory which focuses specifically on the effects of such actions, which he labels "credibility-enhancing displays" or "CREDS", on the beliefs of observers. Contra Dawkins, Henrich presents evidence from both developmental and social psychology suggesting that human beings are not simply prepared to believe what authority figures tell them about the world and non-physical agents, but instead possess a bias towards believing the propositions of others to the extent that they 'walk the walk' and not just 'talk the talk' in relation to those propositions.

Research in developmental psychology indicates that children will not eat substances offered to them by strangers until those strangers eat the food themselves (Harper and Sanders) and that they more readily believe in intangible but behaviorally salient entities such as germs, which produce the CRED of hand washing, than similarly intangible but less behaviorally salient concepts, such as the Tooth Fairy (Harris; Harris and Koenig; Harris et al.). Further, evidence from social psychology demonstrates that adults are more convinced by an argument if the person offering it stands to lose something if the argument is accepted (Walster, Aronson and Abrahams).⁵ In this case, the CRED is stating an opinion that goes against one's own self-interest, as it is difficult to explain why an individual would argue against his/her own interests unless s/he is committed to the opinion professed.

As individuals mature, they receive a degree of exposure to CREDS concerning people's commitment to concepts of non-physical agents. Do parents,⁶ religious leaders, members of religious groups, and others in the individual's environment 'walk the walk' by sacrificing time and resources? Do they abide by the religion's rules? Do they express commitment to their beliefs through facial and vocal expressions? Or do they believe but not belong, believe but not practise? The implication of work on signalling and CREDS is that individuals who are exposed to fewer CREDS of non-physical agent beliefs will be less inclined to adopt those beliefs.

The Relevance of CREDS in Explaining Non-theism

There exists a small but growing body of evidence which suggests that whether an individual comes to explicitly believe in the existence of non-physical agents depends on the extent to which that individual is exposed to relevant CREDS.

Rather than mere professions of belief and 'indoctrination', evidence indicates that actions are needed to encourage explicit beliefs in the existence of non-physical agents.

In his study of adolescent members of the Seventh-day Adventist Church in the United States, Roger Dudley ("Alienation") found that alienation from religion was positively correlated with perceived insincerity and lack of compliance with church standards among religious teachers. In his longitudinal study ("Youth"), Dudley sent surveys to the same individuals to investigate how the answers they gave as teenagers might predict their apostasy as adults. He found that the best predictors of who would remain a member of the Seventh-day Adventist Church (besides a direct question of whether or not they planned to become apostates) were the church attendance of the individual's mother and father and the frequency of their worshipping together as a family.

Social psychologist Bruce Hunsberger ("Reexamination", "Apostasy") examined a university student sample of various denominations in order to investigate the differences between apostates and religious believers. He found strong differences in the degree to which religious beliefs and behaviors were emphasized in their homes and that the degree of emphasis was one of the best predictors of apostasy. This finding suggests that such CREs as frequent church attendance and following religious rules drive retention and apostasy.

The work of Dudley and Hunsberger is suggestive, but it focuses on disaffiliation from a particular religious tradition, not on belief in non-physical agents. Hunsberger's later work, which he carried out with his colleague Robert Altemeyer, partially addresses this issue by surveying self-identified atheists, who scored quite low on measures of religious emphasis.

In 2008, in an attempt to develop a better descriptive and explanatory account of 'atheism' in the West, I engaged in multi-sited, multi-method anthropological research. I used participant observation with atheist, humanist, and rationalist groups in the US, the UK, and Denmark (countries which lie on a continuum in terms of their proportional populations of non-theists) and with the largest discussion groups for atheists, agnostics, and non-theists on the social networking sites Facebook and MySpace, in addition to following the most visited and subscribed atheist web sites, including richardawkins.net, friendlyatheist.com, and scienceblogs.com/pharyngula/. I also conducted an online survey for both theists and non-theists, for which I recruited over 2,000 participants from both the face-to-face and online groups of which I was a member and from several additional online forums. Further, I conducted structured interviews with 41 non-theists, using the survey questions. Given that my survey involved a self-selected sample and given that I employed convenience and snowball sampling for my interviews, as most anthropologists do, my results may not accurately reflect non-theists in general. However, my findings and experiences provide supporting evidence for the claim that exposure to CREs for non-physical agent beliefs is a crucial factor in determining whether an individual will acquire such explicit beliefs.

Perhaps the strongest evidence I found was the significant and substantial difference between theists and non-theists in the amount of exposure to CREs of non-physical agent beliefs they had witnessed while they were growing up. In the online survey, I created a specific measure for exposure to CREs of belief

in non-physical agents (such as God, gods, and supernatural forces). I asked both non-theists and theists a set of questions regarding such actions on the part of their parents or guardians and another set of questions regarding such actions on the part of leaders and members of any religious congregations, groups or camps in which they had participated.⁷ The difference between non-theists and theists on CRED exposure was both significant and substantial (non-theist mean score = 10.43, SD = 11.56; theist mean score = 20.21, SD = 12.95, $t = -4.36$, $df = 672$, $p < .001$). This significant difference was observed even after limiting the analysis to individuals whose parents believed in God, gods or some supernatural agency (non-theist $M = 11.80$, $SD = 11.62$; theist $M = 21.00$, $SD = 12.57$, $t = -4.00$, $df = 596$, $p < .001$), which suggests that children of believing parents who witness higher levels of CREDs are more likely to acquire explicit beliefs in supernatural agents. While this finding cannot on its own establish causality and relies on non-representative samples of theists and non-theists, it provides preliminary support for the claim that observing CREDs is of critical importance in the acquisition of explicit beliefs in non-physical agents.

In addition to the quantitative data, the importance of CREDs manifested itself frequently in the discourse of both non-theists and theists. When asked about the religious beliefs of their parents, many non-theists described not only their parents' beliefs, but also the extent to which these beliefs were evident in their actions. For these non-theists, a discrepancy between the stated beliefs and actions of their parents was relevant enough to be mentioned, despite the question not asking for that information.

A 21-year-old female atheist from Washington, for instance, responded:

My mother has said she is a Christian and doesn't seem to like my Atheism, but to my knowledge, she doesn't pray, and she doesn't go to any kind of services or talk about her religion. It's hard for me to believe that she actually believes it, but she has no reason to deny it, as I suspect she's the only Christian in my immediate family.

Similarly, a 37-year-old male humanist from Denmark wrote that his parents were "everyday, non-practicing Lutherans", a 20-year-old male atheist from Australia said that his parents were "non-practicing Christians, in that they believe in a Christian god but do not attend church or having [sic] any involvement with any particular denomination", and a 27-year-old female atheist from North Carolina described her mother as a "Christmas and Easter Christian".

Moreover, many non-theists name hypocrisy as an important element in their rejection of religion. Here, it is not merely a matter of a lack of exposure to CREDs, but a noticeable disconnection between word and deed that affected these future non-theists and in several cases instigated their more critical appraisal of religious beliefs.

In response to the question of how he came to be a non-theist, a 54-year-old British man replied: "A build-up of dissatisfaction with religious hypocrisy, followed by a considered decision of non-belief once the scientific alternative was available to me." Similarly, a 44-year-old atheist from New York responded that she was "brought up a religious Jew and found the leaders to be hypocritical in every way, which led to thinking about religion and how

it is organized and why it is bullshit". A 31-year-old male secular Humanist from Germany quipped, "I've always been allergic to hypocrisy", while a 34-year-old male non-theist from the UK stated, "The hypocrisy of theists when my mother died caused me to question the founding assumptions of my belief, whereupon I realized that they were flawed."

Finally, the experiences of some theists, and my own experiences in the field, convinced me of the power of CREDs. While anecdotal evidence is of limited value in rigorous social science, field experiences are an important foundation of anthropological insight. Consequently, while the following cannot constitute conclusive evidence for the CREDs hypothesis, it can provide an insider perspective of the power of CREDs on our beliefs and experiences.

Suzanne, a 42-year-old Christian from Missouri, attended a Pentecostal church as a child. When asked whether she had ever doubted the existence of God, she responded that, if she had such doubts, they would be eliminated during every Sunday service when she saw her family and many others looking up with expressions of pain and joy, weeping and calling out 'Hallelujah' and 'Thank you, Jesus'.

While my research mainly involved attending atheist and humanist meetings and reading atheist and humanist publications, I also sought out groups of theists to ask questions, for comparison and to investigate their opinions of atheists. This led me to attend a conservative Bible study group in the St. Louis metro-east, where I had my own experience of the power of CREDs.

At this women's Bible study, I heard numerous stories from the 20 attendees of the suffering of others, including a local child with drug-addicted parents and no permanent home. Discussing the plight of this child in a halting voice, one woman said how happy she was that she would share the 'good news' with this young girl, to let her know that, in the midst of all of the pain and uncertainty she was going through, Jesus loved and cared about her.

I could see in her face and in those around me a sincere conviction that the best way to help this child was to 'bring her to Jesus'; the facial expressions, the cracking voices, and the squeezed hands as we gathered in a circle to pray for the young girl all worked to convince me of the participants' sincerity. I was then amazed to find that in the midst of the groups' prayer, standing in a circle, holding hands, praying for a better life for this young girl—and several months before I read Henrich's article on credibility enhancing displays—I suddenly believed in the existence of God. For a few short minutes, I felt the reality not just of the power of this group of people united in the face of suffering, but of some non-physical agent who could work in the universe in such a way as to relieve the girl's suffering directly. After the prayer circle and study session had ended, I went outside and the belief faded, leaving me to wonder about the nature of my beliefs and experiences.

While there are a variety of potential explanations for my momentary explicit belief in the existence of some non-physical agency, I distinctly noted at the time how much attention I had paid to the women's facial and verbal expressions. If my experience was indeed a product of their CREDs, it suggests that such displays have the potential to produce immediate notable effects.

Specifically designed experimental studies, as well as more rigorous, representative surveys, need to be conducted to test this hypothesis. Even in the absence of such rigorous studies, the case for the importance of CREDs

appears strong, suggesting that without sufficient exposure to the necessary actions, non-physical agent concepts such as gods, ghosts, and ancestors are no more believable than Mickey Mouse or Superman.

Of course, exposure to CREDs of non-physical agent beliefs is not the only factor to consider in explaining non-theism. A substantial minority of non-theists, throughout history and today, have rejected religious beliefs and practices as a result of moral judgement, finding some or even all religious beliefs to be immoral and harmful to society (Taylor; Turner). The CREDs hypothesis is not meant to discredit this account but to supplement it, as it cannot be explained why the United States remains so theistic, while Scandinavia has become so non-theistic, by referring to the moral and social rejection of religion. Most Danes and Swedes, for instance, do not wish to be identified as 'atheists' and do not have a moral objection to religion (Zuckerman, *Society*).

Implications for Secularization

I hope to have demonstrated the benefits that an examination of the sociology of religion can bring to the cognitive study of religion. Considering the effects of particular types of stimuli (CREDs concerning non-physical agents) on universal features of our cognitive systems can improve the ability of cognitive accounts of religion to account for non-theism. Below, I hope to demonstrate the benefits that an examination of the cognitive sciences can bring to the sociology of religion.

I will offer a theory of religion and secularization, which is based on the connections between CREDs and belief. This theory—which I call the *Threat and Action* theory of religion—holds that the connections documented by sociologists between existential security and the diminishment of religion are not the result of a lessening need for the comforts of religion, as Norris and Inglehart hold, but rather the result of the effects that 'Threats' have on 'Actions' and the effects that 'Actions' have on beliefs.

Many Western countries have seen the proportion of their populations professing religious beliefs and/or attending religious services sharply decline since the Second World War (Bruce; Norris and Inglehart). Further, according to Norris and Inglehart (62–3) and Gill and Lundsgaarde, a clear pattern emerges which helps to explain this trend: 'existential security'. The freer a nation is from threats, such as constant warfare, rampant disease, unemployment, infant mortality, and economic inequality (and the more resources a nation puts into social welfare policy), the lower the proportion of theists and religious participants that a nation will have. All the individual methodologies used can be questioned, but the overall picture is quite stable: existential security accounts for the variance in degree of non-theism in a country above and beyond the influence of education, urbanization, and religious plurality.

Unfortunately, while this account of secularization makes a compelling sociological case for the particular environmental conditions responsible for producing widespread non-theism, it does not make a similarly compelling psychological case as to why this should so. Instead, Norris and Inglehart employ a familiar and problematic psychological theory of religious belief: the

'Comfort' theory. According to this theory, people acquire and maintain religious beliefs because these beliefs alleviate anxiety and suffering and assure those holding them that "everything will turn out well, in this world or the next" (19). People supposedly find these comforting religious ideas more convincing when placed in environments where there are more social, economic, and personal threats. Conversely, when modernity and strong social welfare states provide more comfort and security, people have less need for the comforts of religion.

The problems with the 'Comfort' theory are both anthropological and psychological. Anthropologically, non-physical agent beliefs in places we might view as most in need of comfort, such as sub-Saharan Africa and Melanesia, are far from comforting. Instead of benevolent deities assuring people that 'everything will work out' we find capricious and vengeful ancestor and forest spirits as well as the constant threat of witchcraft (Boyer 19–21; Keesing; Middleton). Surely these entities are not believed in because they provide comfort and assurance. Further, we find the most comforting religious beliefs in the affluent West, where many Christian denominations have set aside notions of hell fire and supernatural punishment and where New Age discourses of personal importance, empowerment, and universal unity proliferate (Heelas). There is thus no positive correlation between insecurity and comforting religious beliefs.

Psychologically, while there is evidence for 'motivated reasoning',⁸ this evidence is limited to self-evaluations, such as attractiveness and ability, and to seeking and noticing information in line with already held views (Kunda; Miller; Bar-Hillel and Budescu). The evidence does not in any way suggest that we believe in the existence of an entity simply because we would find it comforting if it existed. Consequently, while Norris and Inglehart, together with others who subscribe to the 'Comfort' theory of religion, may be correct in arguing that many religious beliefs provide comfort to those holding them, they are unjustified in claiming that comfort constitutes an explanation of why those beliefs are acquired in the first place or why the number of people holding such beliefs declines over time, but not immediately, when threats are reduced.

Given the inadequacies of the 'Comfort' theory in explaining the link between existential security and non-theism, I propose the 'Threat and Action' theory of religion as an alternative. This theory holds that threats increase religious actions and that these actions, as CREDS, instill religious beliefs in each new generation. Conversely, when threats are reduced, so, too, are religious actions and, subsequently, levels of belief in subsequent generations.

Threatening stimuli result in more religious action in a variety of ways: 1) increased commitment to in-group ideologies (including religions), 2) increased motivation for extrinsic religious participation, and 3) increased 'superstitious' behavior. I shall explain each further in turn.

Increased Commitment

Many scholars have noted that the importance people attach to in-group identities and the extent to which they commit to them is positively correlated with the degree of perceived threat to those identities, such as the presence of other ethnic groups and competition with them over resources (Barth; Comaroff;

Wallerstein; Eriksen; Eriksen, Bal and Saleminck). These claims are supported by quantitative studies in political, social, and evolutionary psychology, where threats to social identity, personal safety, and sense of control have been demonstrated to increase commitment to in-group ideologies.

For instance, Jeff Greenberg et al. have demonstrated that considering one's death increases commitment to one's in-groups, including religious in-groups. Evolutionary anthropologists Carlos Navarrete and Daniel Fessler have argued that these effects are the result of an evolved cognitive system which is more strongly committed to coalitions in the face of threats, in order to receive coalitionist support. Navarrete and Fessler support their argument with a series of studies in the United States and in Costa Rica, which show that it is not only thoughts of death that produce these effects, but thoughts of a variety of threats, including theft and social isolation (Navarrete et al.).⁹ Further, political scientist Karen Stenner's work on authoritarianism and threat demonstrates, in line with the claims made by Thomas Eriksen and others, that it is not only threats to an individual that can cause this effect, but also 'normative' threats to the integrity and future prospects of the group itself.

The implication of this body of evidence is that the reduction of personal, economic, and normative threats results in the decline of commitment to in-group ideologies, such as nationalism, ethnic identities, and religions. Naturally, when people are less committed to their beliefs, this decline manifests itself in fewer displays of such commitment, such as less frequent attendance of religious services, not following rules as closely, and mentioning religious ideas less frequently in conversation.

Increased Extrinsic Participation

Threatening stimuli can also lead people to participate in religious groups and rituals to obtain social insurance. While it is difficult to discern the personal motivations of individuals joining and participating in religious groups, research by Daniel Chen on the financial crisis in Indonesia in the late 1990s suggests that extrinsic motivations are frequently at work. Chen shows that individuals who were more strongly affected by economic scarcity were much more likely to join the local Islamic community, attend more communal Koran meetings, and send their children to more expensive Islamic schools. Crucially, Chen shows that this difference in religious action did not occur in communities where low-cost credit was available, which strongly suggests that many people were motivated to perform the CREDs of affiliation, participation, and sacrifice in order to obtain socio-economic benefit.

Increased 'Superstition'

Evidence from both anthropology and psychology indicates that individuals are more likely to perform 'superstitious' behaviors, some of which could be classified as religious by virtue of their use of religious artefacts or explicit basis in beliefs in non-physical agents, in response to threatening stimuli.

Malinowski famously linked superstitious ritual to conditions of uncertainty and potential threat, when he reported that fishing in peaceful and plentiful lagoons in the Trobriand Islands required little or no ritual performance,

whereas fishing in the dangerous and inconsistent ocean did. This work has been extended by several researchers who examined the role of superstition in baseball (Gmelch; Burger and Lynn), leading to the formulation of the ‘uncertainty hypothesis’, which holds that the more people attribute outcomes to uncontrollable forces, the more likely they are to turn to superstitious actions in an effort to gain control and obtain a desirable outcome (Burger and Lynn 71). Further, in focusing specifically on the role of threat and danger in generating superstitious responses, anthropologist Richard Sosis (“Psalms”) has provided evidence that the threats engendered by the Second Palestinian Intifada caused both religious and secular Israeli women in Tzfat to increase their frequency of psalm recitation.¹⁰ All these actions count as CREDs for the supernatural ideas underlying them and, in the cases of prayer and psalm recitation, for some non-physical agency.¹¹

The ‘Threat and Action’ theory of religion—according to which threats increase commitment to in-group ideologies (including religions), extrinsic religious participation, and superstitious behavior and all of the resulting CREDs make religious discourse convincing for subsequent generations—can better account for the data which link existential security and religiosity than the ‘Comfort’ theory. Below I provide evidence of its utility in explaining the relationship between threat, action, and belief in different parts of the world, including Scandinavia and the US.

Over the course of the twentieth century, Denmark and Sweden instituted and supported extensive social welfare policies that greatly reduced personal and economic threats. Moreover, Danes and Swedes were already living in nations with extraordinarily low levels of normative threat, due to their high degree of ethnic and religious homogeneity (Jespersen 213; Kent 238). With all these threats diminished, commitment to religious beliefs and practices, nationalism, and other ideologies diminished, too.¹² Further, Scandinavians have had little need to participate in religious groups for the purpose of socio-economic insurance. When I asked what they would do in the event of losing all their money and their jobs, most Scandinavians dismissed the concern, saying they were not worried and that the government would provide.

Without sufficiently high levels of religious commitment and without extrinsic reasons for participation, the number of credibility-enhancing actions performed by Scandinavians declined in the second half of the twentieth century. Numerous individuals who may have still held religious beliefs no longer had the commitment to keep up their practices. Consequently, many became ‘everyday, non-practising Lutherans’. The children of these non-practising Lutherans were, consequently, born into a world where religious beliefs were present but not embodied. This resulted in the percentage of theists dropping, between 1947 and 2001, from 80% to 46% in Sweden and from 80% to 62% in Denmark (Norris and Inglehart 90).

By contrast, nearly the entire history of the United States, including the period 1947–2001, has been characterized by economic inequality, a lack of strong social welfare policy, and extensive normative threat, as immigrants from numerous nations, forced and unforced, have sought to carve out secure lives for themselves, whether on the dangerous frontier or in multi-ethnic, highly unequal, and often equally dangerous cities. Consequently, ideological commitment—whether to political philosophy, ethnicity or the White Protestant

identity which became synonymous with 'American' identity early in the nation's history (Albanese)—has consistently remained high. Further, numerous individuals, throughout history and today, have had to rely on religious participation or religious charity organizations for socio-economic support in difficult times.

With the continued high level of commitment to religious and nationalist ideologies and with continued extrinsic reason for participating in religious groups for the purpose of socio-economic insurance, the number of credibility-enhancing actions performed by Americans has remained high. That is, the lack of a strong social welfare policy and the high level of ethnic and religious diversity in the United States have ensured that religious Americans continue to 'walk the walk' of their beliefs. Consequently, the proportion of the American population holding beliefs in non-physical agency has remained high, as shown in a variety of polls and surveys. Over 90% of Americans remained theists in the period 1947–2001 (Norris and Inglehart 90).

This explanation of the differences between the US and Scandinavia fits both the socio-historical data provided by Norris and Inglehart and our understanding of psychology. Findings from a variety of sub-disciplines in psychology document that religion can and sometimes does provide comfort, but they do not demonstrate that the *need* for comfort causes religious belief. Rather, these findings support the idea that threatening stimuli increase a variety of religious actions and the idea that religious actions make religious concepts more believable to others.

Conclusion

Interdisciplinarity is now fashionable in the academy and with good reason, as the world is not neatly divided up into anthropological, psychological, and biological domains. Interdisciplinarity, however, should not be an end in itself but a means to increased understanding of particular phenomena and the enrichment of each discipline.

In this article, I have attempted to demonstrate the potential benefits of interdisciplinary research of religion and non-theism. I have argued not only that the cognitive study of religion can be enriched by considering the effects of particular environments on universal cognitive mechanisms, but also that the sociological study of religion can be enriched by critically examining the psychological assumptions it employs in connecting particular environments to patterns of belief and practice. Specifically, I have presented a *prima facie* theoretical and empirical case for the importance of CREDs in the acquisition and international distribution of non-physical agent beliefs. While this account requires further research in several respects, I hope to have made a case for such research and for the potential of interdisciplinary investigation to improve our understanding of religion and its absence.

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NOTES

1. See Jonathan Lanman for a defence of the scientific legitimacy of the concept of belief.
2. Both 'religion' and 'supernatural' have been criticized as betraying a strong Western bias. Pascal Boyer has introduced the term 'non-physical agent' to be more precise about the type of agency under discussion and potentially escape the terminological criticism (Boyer and Bergstrom). Such agents include gods, ancestor spirits, ghosts, and the variety of other non-physical agents populating the religious traditions of the world.
3. Norris and Inglehart measure existential security according to various scales of societal health, including the United Nation's Human Development Index, the GINI coefficient for income inequality, per capita GDP, adult illiteracy rate, AIDS cases per 100,000 people, infant mortality and child mortality rates, doctors per 100,000 people, and life expectancy at birth (62).
4. According to available data, the Scandinavian nations are the least religious nations on earth (Zuckerman, "Atheism", *Society*).
5. In the well-known study by Walster, Aronson and Abrahams, researchers found that, after exposing participants to testimonies by felons and prosecutors about whether the courts should (or should not) have more or less power to punish criminals, felons who argued that courts should have more power were more effective in persuading participants of their point of view than either felons who argued that the courts should have less power or prosecutors who argued that courts should have more power.
6. Numerous studies in the sociology of religion in the West point to the importance of parental socialization for religious belief and affiliation (Sherkat; Ozorak; Francis and Gibson) contra Judith Harris, who argues that peers have much more influence on an individual's thought and behavior. It is an open and interesting question whether the special importance of parents discussed by sociologists of religion would hold in hunter-gatherer societies, where children spend less time in the exclusive company of their immediate genetic kin.
7. Questions concerning parents or guardians included, among others: How frequently did your parent(s) attend religious services? Did your parent(s) fast or make other sacrifices for religious reasons? If yes, did they follow through with their fasting/sacrifices? To what extent did your parent(s) display emotion (e.g. elation, sadness) in response to religious ideas or in religious services? Questions concerning groups included: Did the leaders of this organization/congregation/camp make sacrifices such as celibacy, fasting, funding activities with their own money? To what extent did group members engage in charitable work together? To what extent did group members show emotion (e.g. elation, sadness) in services/meetings? (Readers interested in having a complete list of the questions and further details about the methodology may contact the author.)
8. Social psychologist Ziva Kunda has described motivated reasoning as the process by which motivation and desire affect reasoning through "reliance on a biased set of cognitive processes—that is strategies for accessing, constructing, and evaluating beliefs". When motivation is to arrive at accurate beliefs, these biases are minimized. When motivation is to defend existing beliefs, cognitive processes are biased to deliver conclusions which are in line with these beliefs.
9. Different teams of experimental psychologists have come to similar results about the nature of threat and in-group commitment, whether the threat is conceived of as loss of personal control (Kay et al.) or an increase in uncertainty (Hogg, "Subjective", "Self-categorization", "Uncertainty"; van den Bos; van den Bos, Amejide and van Gorp).
10. Many Israeli women regularly recite Psalms as part of their religious practices, although it is not mandated by Jewish law. According to Sosis's interview data, Israeli women view psalm

- recitation as one of the most important actions to take in order to improve *matzav* or 'situation' and, specifically, to protect themselves from a terrorist attack ("Pigeons").
11. Some of the phenomena classified as 'superstitious' and as products of uncertainty mentioned here, including prayer and psalm recitation, might also be conceived of as 'attachment' behaviors. Lee Kirkpatrick and Peer Granqvist, Mario Mikulincer and Phillip Shaver have argued that individuals' relationships with non-physical agents frequently constitute attachment relationships (Bowlby) and that, when threatened, individuals attempt to become close to the attachment figures through prayer and ritual.
 12. Even commitment to secularism and atheism is relatively weak in Sweden and Denmark in comparison to the United States and the United Kingdom: while the majority are non-theistic, very few self-identify as 'atheist' or join specifically atheist organizations, seeing membership in such group as indicating an unattractively strong stance against religious beliefs and values.

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