FEAR and FITRA

FEAR AND FITRA: COGNITIVE SCIENCE OF RELIGION AND GHAZALI'S ULTIMATE AGENT

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Lay Abstract

The growing field of Cognitive Science of Religion (CSR) and its interaction with Islamic Studies is a fruitful and underdeveloped area of research. This thesis aims to contribute to this convergence. The Islamic notion of *fitra* suggests that belief in God is an innate and natural disposition. CSR similarly posits belief in God as an innate easily reinforced belief due to the kinds of minds we have. I suggest that both conceptions are compatible with one another vis a vis the perspective of medieval theologian Abu Hamid Al-Ghazali. Secondly, I argue that fear elicits belief in God.

Abstract

The field of Cognitive Science of Religion (CSR) is a growing field that has made interesting inroads in analyzing various religious traditions. There has been reticence within Islamic Studies in engaging with CSR, for reasons of reductionism. However, there is a fruitful discussion to be had between these two disciplines. I extend Aria Nakissa's work analyzing Al-Ghazali and make my own assertions regarding the Islamic notion of *fitra.* I assert that fitra, the inherent disposition for belief in God can be compared with CSR's claims about the innateness of belief in God. I argue fitra is an epistemic notion whose subcomponent, the *wahm* (estimative faculty) produces judgments akin to those judgments made by cognitive modules like the hyperactive agency detection device (HADD). This module is subject to sensitivity regarding the detection of agents. I claim that supernatural agents can be inferred from a more local agent when the *wahm* goes beyond its domain of sensory perceptions, informed by Ghazali's thought. Lastly, I argue that fear can elicit belief in God and Ghazali demonstrates this observation when he advises fear as a therapeutic device to remediate doubt or apostasy.

To my mother

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I would like to acknowledge and thank Doreen Drew for her perpetual support, as well as everyone else who helped me get to the finish line.

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Declaration of Academic Achievement

This thesis is a contribution to the small but growing field of research between the Cognitive Science of Religion and Islamic Studies, and more specifically the thought of Al-Ghazali.

Chapter 1

Introduction

Picture yourself meandering through the brush. There is a noise. There is movement There is a slithering form. You ask yourself, "Is it a person like me; perhaps it is an animal, or maybe it is nothing? This would be a natural line of reasoning. Why is it that people often try to look for agents to find the causes of things? Why do we presume that supposed entities are agents like a snake rather than just a harmless branch? Inevitably this tendency to posit agency in the environment leads to many errors. In doing so, attributing agents where there may not be any. Firstly, what relationship does seeking agency around us have to do with the human relationship with God/s? Is there any relationship at all?

Secondly, what is the role of fear and distress caused by threats in eliciting god-beliefs? Recently, ordinary interactions with nature like getting stuck outside in intense

lightning and thunder have evoked feelings of god-like terror in me. This has me continually pondering the connection of feeling afraid and why it *should* and often time *does* evoke the feeling of god in a person. We have all heard the well-known aphorism, "There are no atheists in a foxhole." It is meant to describe that in moments of intense fear, one does not hear the sermonized creeds of atheism; rather individuals call upon a higher power. What is this phenomenon of looking for agents and why does fear/threat seem to at times evoke our tendency to attribute agency to events?

It is not uncommon to hear conversations at cafés and libraries every day, including the sentiment that individuals cling to God in times of fear out of the necessity for comfort and/or as a crutch. This sentiment is so often repeated that it has developed the status of a truism or platitude. The connection has become so apparent that it begs the question, "Why does fear or distress elicit individuals to believe in god/gods?" Why *should* this be an obvious and natural connection; and if there is a relationship between fear and God, what is the nature of it These two themes are well described in the Old Testament, the New Testament, and the Quran. I would like to complicate what seems like an obvious and uninteresting question with fresh eyes. More specifically, I would like to examine this relationship from the angle of the Cognitive Science of Religion (CSR), as well as its possible connection with Islamic Studies.

More specifically, I would like to examine the application of CSR to Islamic accounts of faith. The Islamic notion of *fitra* is a belief that humans are born with an inherent disposition for belief in God, as well as certain moral dispositions regarding the

knowledge of good and evil.[1]CSR similarly posits that religious belief is not an interjection to the normal state of human beings but rather is the norm, with atheism being historically an anomaly and the exception, as well as a fairly recent and modern development. A review of various studies shows that children are what is referred to as "intuitive theists" such that they reason teleologically about natural objects and reason that they are caused by nonhuman agents.[2]

There hasn't been widespread interest in engaging with CSR among Islamic Studies scholars.[3] This is based presumably on legitimate fears of reductionist accounts of religion and more specifically Islam, and in the process 'explaining away' religion. However, it is not self-evident that the research within CSR confers an atheistic conclusion or 'explains away' religious belief.[4] There are variable interpretations of CSR. For instance, Justin Barrett whose work *Why would anyone believe in God,* which will be a focal point of this thesis, is a self-professed Christian and one of the leading figures of CSR. He holds both his Christianity as well as his CSR theories as compatible with one another. I argue Islamic Studies would benefit from engaging with evidence from CSR,

[1]Yasien Mohamed, *Fitrah: The Islamic Concept of Human Nature* (London, England: Ta-Ha, 1996), 13.

[2]Justin L. Barrett, "Exploring the Natural Foundations of Religion," *Trends in Cognitive Sciences* 4, no. 1 (2000): 29–34. See also Deborah Kelemen (2004), "'Are Children "Intuitive Theists"? Reasoning about Purpose and Design in Nature," Psychological Science, 15, Pp. 295-301.," *Intelligent Design and Religion as a Natural Phenomenon*, 2017, 247–54, https://doi.org/10.4324/9781315252124-22.

[3]Aria Nakissa, "The Cognitive Science of Religion and Islamic Theology: An Analysis Based on the Works of Al-Ghazali," *Journal of the American Academy of Religion* 88, no. 4 (2020): 1087–1120.

[4]Justin L Barrett, *Why Would Anyone Believe in God?* (Walnut Creek, CA: AltaMira Press, 2004).

without viewing theistic and scientific explanations as being mutually exclusive. Explicating mechanisms or reductionism as a process of analysis does not have to mean 'explaining away.' Nor is this to say that Muslims should employ scientific theories as the foundation or justification for their faith. Despite these challenges, there are a handful of scholars within Islamic Studies engaging with CSR as a research perspective.[5] Aria Nakissa's recent papers begin to tackle this convergence of fields and I would like to add to this conversation.

The Cognitive Science of Religion (CSR) is a flourishing field of study and goes roughly back in time to the 1990s.[6] Psychologist and CSR scholar Justin L. Barrett argues that the field arose out of the desire to "science up" the field of religious studies.[7] Stewart Guthrie (1980) and Dan Sperber (1975) laid the early antecedents and groundwork of CSR. However, the field in its more elaborated approach came about with books by Lawson and McCauley (1990), Guthrie (1993), Pascal Boyer (1994), and Whitehouse (1995).[8] In 1996 there was an event called "Cognition, Culture, and Religion" at Western

[5]Nakissa, " The Cognitive Science of Religion and Islamic Theology," 2020. See Aria Nakissa, "Cognitive Science of Religion and the Study of Islam: Rethinking Islamic Theology, Law, Education, and Mysticism Using the Works of Al-Ghazali," *Method & Theory in the Study of Religion* 32, no. 3 (2020): 205–32. See also Aria, Nakissa. "Rethinking Religious Cognition and Myth: A New Perspective on how Religions Balance Intuitiveness and Interest-provokingness/Memorability." Journal of Cognition and Culture 21:112-137.

[6]Claire White, *An Introduction to the Cognitive Science of Religion: Connecting Evolution, Brain, Cognition, and Culture* (Abingdon, Oxon, UK: Routledge, 2021), 1.

[7]Justin L. Barrett, "Cognitive Science of Religion: Looking Back, Looking Forward," Journal for the Scientific Study of Religion 50, no. 2 (2011): 229–39, https://doi.org/10.1111/j.1468-5906.2011.01564.x

[8] White, *An Introduction*, 18-19; see also Pascal, Boyer. Religion Explained: The Human Instincts that Fashion Gods, Spirits, and Ancestors (New York: Vintage, 2002); Harvey Whitehouse, Modes of Religiosity: A Cognitive Theory of Religious Transmission. Lanham, MD, Rowman Altamira, 2004);

Michigan University where the key players of what would become CSR spoke. They included Justin Barrett, Robert McCauley, Brian Malley, Pascal Boyer, and Harvey Whitehouse. This mutual collaboration between psychology, philosophy, religious studies, and anthropology respectively[9] reflects the interdisciplinary orientation of the Cognitive Science of Religion.

One can trace this cognitive turn in Religious Studies to the broader Cognitive Revolution in the 1950s which sought to re-emphasize the role of the mind. This was a response to the predominance of behaviorism within scientific psychology. Behaviorism posited that human behavior was explainable vis a vis various forms of learned conditioning and was effectively a reflexive response to environmental stimuli which could be understood with reference to environmental inputs.[10] Behaviorism sought to negate the role of mental processes in human behavior and ultimately conceived the human as a "blank slate." This is best exemplified by John Watson's famous quote, "Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take anyone at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and

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Stewart Guthrie, *Faces in the Clouds a New Theory of Religion* (Oxford: Oxford University Press, 1995); E. Thomas Lawson and Robert N. McCauley, *Rethinking Religion: Connecting Cognition and Culture* (Cambridge, MA: Cambridge University Press, 1990). Dan Sperber, *Rethinking Symbolism* (Cambridge, UK: Cambridge University press, 1975).

[9]Justin L. Barrett, "Cognitive Science of Religion: Looking Back, Looking Forward," *Journal for the Scientific Study of Religion* 50, no. 2 (2011): 229–39, 229-230. https://doi.org/10.1111/j.1468-5906.2011.01564.x

[10]Claire White, *An introduction*, 3.

thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. I am going beyond my facts, and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years."[11] This reflects Watson's and more broadly Behaviorism's belief in the malleability of the human such that with the right environmental inputs, one could produce a specified kind of person at will. A broad range of disciplines came together to contest behaviorism's conception of the person as a "blank slate."[12] Rather these broad disciplines like computer science, psychology, linguistics, and anthropology posited that there were inbuilt mental systems like a computer. These systems shape behavior.

Akin to the cognitive response to behaviorism, there was an analogous response by the field of Cognitive Science of Religion (CSR) in the 1990s in response to cultural studies.[13] Early pioneers of CSR were pushing back against the extremes of postmodernism, cultural relativism, and cultural determinism**.** Postmodernist approaches to the study of religion emphasized the socially constructed nature of culture; that cultures were the product of competing narratives. People could not be objective. Along with this approach, cultural relativism also intensified in the 1990s. Its tenets entailed that said competing cultural narratives should be understood with reference to themselves, not in

[11]John B. Watson, Behaviorism, revised edition (Chicago: University of Chicago Press, 1930).

[12]Claire White, 3.

[13]Melford E. Spiro, "Postmodernist Anthropology, Subjectivity, and Science: A Modernist Critique," *Comparative Studies in Society and History* 38, no. 4 (1996): 759–80 as cited in Claire White, *An Introduction to the Cognitive Science of Religion: Connecting Evolution, Brain, Cognition, and Culture* (Abingdon, Oxon, UK: Routledge, 2021), 5.

comparison to one another. CSR adopts a moderate configuration of this approach wherein another culture should not be analyzed with the tenets of one's own culture.[14] Similarly, cultural determinism was an intensified form of cultural relativism. There was a strong emphasis on behavior being culturally determined. Cultural determinism focuses on the particulars of culture rather than general accounts of culture.[15] The tendency was not to compare cultures but rather to see cultures on their own terms. These trends in cultural studies focused on interpretive accounts of culture, with a move away from explanatory accounts.[16] CSR aims for explanatory accounts that view degrees of commonality between different cultural and religious phenomena. The Cognitive Science of Religion perspective stipulates that the mind has mental biases and proclivities; this is less apparent in cultural studies.[17]

Early development of the Cognitive Science of Religion involved scholars being inspired by French Anthropologist Dan Sperber.[18] Sperber critiqued the methods by which social anthropology studied culture. He put forth "the epidemiology of representations" which analogized the manner in which epidemiology studied disease and its prevalence. Studying disease involves a study of the "host organism's body." Sperber

[14]White, 5.

[15]White, 5.

[16]White, 7.

[17]White, 6.

[18]White, 6. See Dan Sperber, *Explaining Culture: A Naturalistic Approach* (Oxford, UK: Blackwell Publishers Ltd, 2002).

posited that in order to understand culture and the ideas within it, one had to have a thorough comprehension of the mind (the host), and how it interacts with certain ideas over others. The mind actively shapes information, and this extends to the religious realm of ideas. Thus, the early development of CSR drew upon Sperber's ideas, and CSR founders Thomas Lawson (religious studies) and Robert McCauley (philosopher) drew upon these ideas in critiquing the field of religious studies. In the year 2000, McCauley and Lawson, formally established and began to refer to the field as "Cognitive Science of Religion."[19]

Early CSR work focused on the evolutionary psychological paradigm which was established by Jerome Barkow, and husband and wife John Tooby and Leda Cosmides in their 1992 book, *The Adapted Mind*. The effective founders of evolutionary psychology argued that the "Standard Social Science Model (SSM)" was antiquated as it included ideas like cultural determinism. They posited an alternative model referred to as an "Integrated Causal Model" (ICM). In this model, the mind developed cognitive tendencies in interaction with the "Environment of Evolutionary Adaptedness" (EEA), roughly the Stone Age. The field of CSR posits that our mind is like a "Swiss army knife" that has various tools (ie. intuitive responses) to resolve problems in the EEA.[20] Many CSR scholars adopted this ICM model which is thought to influence and put parameters

[19]Claire White, 6, 1. E. Thomas Lawson and Robert N. McCauley, *Rethinking Religion: Connecting Cognition and Culture* (Cambridge, MA: Cambridge University Press, 1990).

[20] White, 18; also see Jerome H. Barkow., Leda Cosmides, and John Tooby, eds., The Adapted Mind: Evolutionary Psychology and the Generation of Culture (USA: Oxford University Press, 1995).

on the scope of religious phenomena.[21] It is the functioning of our mind that Lawson and McCauley assert allows for commonality between seemingly varied religious phenomena and therefore allows for explanatory accounts of religion in addition to interpretive accounts. Some of the basic tenets of the ICM are that the mind is less like a general processing computer and more like a set of mini-computers, and is a result of innate "emotional, motivational, and cognitive tendencies."[22] Thus, the mind is not a blank slate wherein any idea could be impressed upon.[23] These cognitive structures may be difficult to conceptualize, as they are hypothetical modules or devices that do not correlate to any one localized brain region.[24] [25]Nonetheless, the Swiss army knife of cognitive tendencies comes about as adaptions to our environment.

To illustrate, the American linguist and scholar Noam Chomsky proposed the language acquisition device (LAD), acting as on of these so-called tools, which readily allows us to acquire language because of its survival advantages. Thus, it is thought, "that language may have evolved simply because of how the physical structure of the brain evolved, or because cognitive structures that were used for things like tool making and learning rules were also good for complex communication."[26] CSR scholars embrace

[21] White, 19-20.

[22] White, 18.

[23] White, 18.

[24] White, 19.

[25]White, 18.

[26] Claire White, 18.

these principles, then apply them to religion as part of culture, and assert that our religious ideas and behaviors are a product of both our mental dispositions in interaction with "cultural and environmental influences."[27] The inevitable constraints and parameters on religious phenomena due to the kind of minds we have are reflected in the reoccurring patterns of religious outputs across different cultures.[28]

Yet, as within any academic field, there isn't a unanimous consensus about religious behavior and thought necessarily being a function of mental modules and devices. There are key theoretical disagreements within the field of CSR. One of the main disagreements is between whether the mind is even modular in nature. The *byproduct* camp thinks that religious phenomena are incidental and a function of the modular nature of the mind, and the *adaptationist* camp thinks that it is a function of adaptations within human history. It is important to keep in mind that both of these evolutionary accounts, the byproduct and adaptationist accounts are not equivalent to genetic determinism.[29] Environmental input "during ontogeny is critical for the expression and adaptive functioning of many traits, including religious belief."[30] Critically, this genetic material will be latent without environmental inputs. Furthermore, both adaptationist/selectionist

[27] Claire White, 20.

[28] Claire White, 20.

[29]Richard Sosis, "The Adaptationist-Byproduct Debate on the Evolution of Religion: Five Misunderstandings of the Adaptationist Program," *Journal of Cognition and Culture* 9, no. 3–4 (2009): 315–32, 326. https://doi.org/10.1163/156770909x12518536414411.

[30]Sosis, "The Adaptationist-Byproduct," 326. See David S Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (Chicago, IL: University of Chicago Press, 2002).

and byproduct explanations are evolutionary. Yet they seek to account for the mechanisms of morphological similarity or convergence in religious phenomena across seemingly disparate cultural groups differently.[31] The byproduct theorists include thinkers like Scott Atran, Justin L Barrett, Pascal Boyer, Robert N. McCauley, Thomas E. Lawson, and Harvey Whitehouse**.**[32] The adaptationist camp includes thinkers like Joseph Bulbulia, Richard Sosis, David Sloan Wilson, Robert Irons, Candace S. Alcorta, Dominic D.P Johnson, Jesse M. Bering, James Dow, Peter J. Richerson, Lesley Newson, and Stephen K. Sanderson.[33]

The Standard Model (SM) within the Cognitive Science of Religion, coined by Pascal Boyer,[34] entails the incidental or "non-functional account of the evolution of religion,"[35] and typically tends to eschew adaptationist/selectionist accounts of religion. The non-functional account views religious thought and action as incidental and as a byproduct of the structure of our minds. Despite the tenuous evidentiary nature of its claims and disadvantages.[36] However, most of those in the field of the Cognitive Science

[31]Russell Powell and Steve Clarke, "Religion as an Evolutionary Byproduct: A Critique of the Standard Model," *The British Journal for the Philosophy of Science* 63, no. 3 (2012): 457–86, https://doi.org/10.1093/bjps/axr035, 458.

[32]Sosis, "The Adaptationist-Byproduct, 316.

[33]Sosis, 316.

[34]Pascal Boyer, "A Reductionistic Model Of Distinct Modes Of Religious Transmission," essay, in *Mind and Religion: Psychological and Cognitive Foundations of Religiosity*, ed. Harvey Whitehouse and Robert N. MacCauley (Walnut Creek, CA: AltaMira Press, 2005), 3–30.

[35] Powell and Clarke, "Religion," 459.

[36] Powell and Clarke, "Religion," 459.

of Religion do take the position of the byproduct or structural-constraint viewpoint in understanding religious phenomena. To summarize concisely the position of many of those who work in CSR, religion is "the incidental byproduct of domain-specific cognitive adaptions that underwrite and constrain the universe of religious representations and their associated behaviors."[37] The byproduct theory, despite the shortage of evidence, is preferred on the grounds of its methodological advantages over evidential reasons.[38] Scholars like Scott Atran and UBC's Ara Norenzayan do so based on methodological advantages combined with the pervasiveness of recurrent structures within the religious landscape.[39] However, Richard Sosis has argued that one of the main reasons why the byproduct perspective took hold is because of the manner in which the field has developed as well as the early contributors being cognitive scientists who focused on the cognitive and the evolutionary. [40] As a result, this stance became axiomatic.

The adaptationists arrived at this discourse much later, and it wasn't until D.S Wilson's work *Darwin's Cathedral* that there was a serious pushback against the byproduct perspective. He argued for religion vis a vis an adaptationist perspective through the mechanism of group selection based on its utility as a secular cultural model. However, he did not discuss the psychological underpinnings of religious phenomena and

[37] Powell and Clarke, 459.

[38] Powell and Clarke, 459.

[39] Powell and Clarke, 460; See Scott Atran and Ara Norenzayan, "Religion's Evolutionary Landscape: Counterintuition, Commitment, Compassion, Communion," *Behavioral and Brain Sciences* 27, no. 6 (2004): 713–30, https://doi.org/10.1017/s0140525x04000172

[40] Sosis, 318.

therefore did not make a big impact on the byproduct camp.[41] Furthermore, he addressed the byproduct perspective of the sociologists rather than the cognitivist approach to it.[42] Since then there have been major attempts to expand on the adaptationist theory of religion.

To give historical context for the byproduct perspective, I will flesh out an infamous paper by Paleontologist Stephen Jay Gould and Geneticist Richard Lewontin. In the year 1979, Gould and Lewontin wrote a paper called "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme."[43] They explicated what a Spandrel or a byproduct is, as well as put forth a critique of the adaptationist program. The terminology spandrel came about from the architectural space. Spandrels refer to the space between arches that is non-functional in and of itself but rather comes about as a *byproduct* of the arches.

Thus, the Standard Model (SM) within the Cognitive Science of Religion describes religion as an evolutionary side effect, byproduct, or Spandrel, and incidental in its appearance rather than as an adaptive apparatus. The Standard Model of CSR also eschews the notion that this religious apparatus is operating intentionally with the purpose

[41] Sosis, 318.

[42] Wilson addresses the byproduct perspective of sociologists like Rodney Starke, William Bainbridge, as well as Roger Finke.

[43] Stephen Jay Gould and Richard Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme," *Proceedings of the Royal Society of London. Series B. Biological Sciences* 205, no. 1161 (1979): 581–98, https://doi.org/10.1098/rspb.1979.0086.

of producing religious phenomena[44] but rather is a spandrel. Thus, religion co-opts other mental apparatuses which are rooted in cognitive adaptations. For instance, these include cognitive adaptation that is involved in "agency-detection, theory of mind, folk ontology, and other domain-specific conceptual architectures that have well-understood functions outside of the religious domain;" some of which I will elaborate on later in the discussion.

One of the underlying premises of the mind that the byproduct also referred to as the structural-developmental constraint perspective holds, is that the mind is modular in its architecture. There is a well-established 19th-century intellectual tradition that sought to observe a correspondence of various physical regions of the brain to various mental faculties. This tradition goes back to individuals like physiologist Franz Joseph Gall but who was eventually debunked by Pierre Flourens.[45] In more recent history, Jerry Fodor wrote a landmark text entitled *The Modularity of Mind*.[46] He was influenced by the research in linguistics, philosophy of mind, and the work of scholar Noam Chomsky. In this text, he argued that the mind's functioning is comprised of various units or dimensions. [47]To illuminate what this may mean practically, objects are not perceived as having independent features. For instance, a blue cup would not be perceived as having

[44] Powell and Clarke, 460.

[45]B. R. Hergenhahn, *An Introduction to the History of Psychology*, 6th ed. (Belmont, CA: Wadsworth Cengage Learning, 2009).

[46]Stephen Jay Gould and Richard Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme," *Proceedings of the Royal Society of London. Series B. Biological Sciences* 205, no. 1161 (1979): 581–98, https://doi.org/10.1098/rspb.1979.0086

[47]Jerry A Fodor, "The Modularity of Mind: An Essay on Faculty Psychology," essay, in *Reasoning: Studies of Human Inference and Its Foundations*, ed. Jonathan E Adler and Lance J Rips (Cambridge, UK: Cambridge University Press, 2012), 878–914.

independent components like blue, ceramic, and cylindrical. Rather it would be perceived as an integrated object. This is referred to as *binding*. It is thought that this is an indication of modularity as the perception involved draws from a variety of various cognitive processes.[48] This modularity functions like a tool. The modularity of the mind is a vast subject, but I will as a non-expert discuss a few of the main ideas undergirding it insofar as they relate to the byproduct model and its relationship to the cognitive science of religion.[49] I will draw from Prinz's interpretation of Jerry Fodors work and discuss only a few of the thematic characteristics of the mind as modular.[50]

There are nine features that render cognitive systems modular, according to Jerry Fodor. I will begin with *domain specificity* as a feature of the Modularity of Mind. What makes something domain-specific is the degree to which the subject it pertains to is restricted. In other words, the range of questions that the mental module aims to answer is narrow to some degree and is a function of the domain specificity of the module. Mental modules have greater specificity than sensory systems like vision; rather they include things like "face and voice recognition, color perception", or "visual shape analysis.[51]

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[48]E. Bruce Goldstein, Cognitive Psychology (Belmont, CA: Wadsworth Cengage Learning, 2014), 109.

[49] Jerry A. Fodor, *The Modularity of Mind* (Cambridge, MA: MIT Press, 1983) as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

[50] J. J. Prinz, "Is the mind really modular?" in R. Stainton (ed.), Contemporary Debates in Cognitive Science (Oxford: Blackwell, 2006), 22–36 as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

[51]Fodor, *Modularity of Mind*, pp 147 as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

Another relevant characteristic of modules that is meaningful is *innateness.* What this means is that the module is a function of internal factors that develop in relation to environmental catalysts.[52] Thus, the modular system comes about through the aforementioned process rather than a process such as learning, which might be thought of as intentional. The most well-known instance of this is in language acquisition wherein most individuals typically cross-culturally develop on a similar timeline. Usually, by 12 months, infants say single words, "telegraphic speech at 18 months, complex grammar at 24 months, and so on."[53]

The next posited features of modularity are *encapsulation and inaccessibility* which refer to the manner in which information flows, with the former restricting "the flow into a mechanism," and the latter involving "restriction on the flow of information out of the mechanism"[54] They are the inverse of one another. In simple terms, with regard to perception, informational encapsulation would mean something like the data or inputs that determine someone engaging in "perceptual hypotheses" is in some sense greater

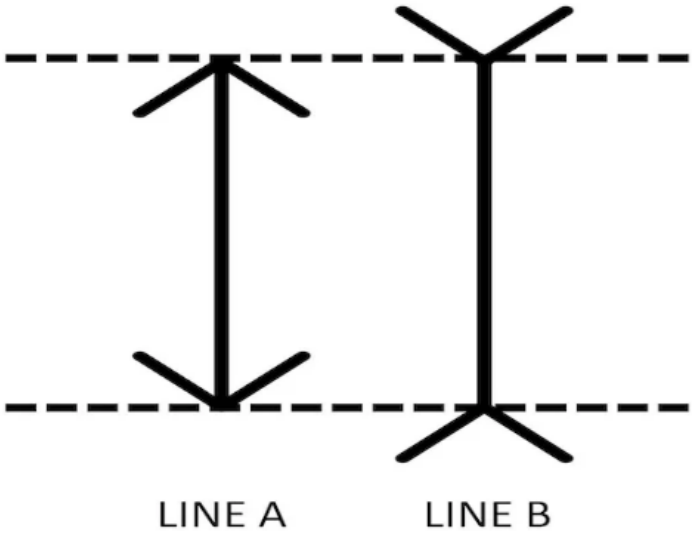
[52] Fodor, *Modularity of Mind*, pp 100 as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

[53]K. Stromswold, "Cognitive and neural aspects of language acquisition," in What Is Cognitive Science? eds. E. Lepore and Z. Pylyshyn (Oxford: Blackwell, 1999), 356–400 as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

[54] Philip Robbins, "Modularity of Mind," in Stanford Encyclopedia of Philosophy, s.v. "Modularity of Mind," ed. Edward N. Zalta (Winter 2017 Edition), accessed September 24, 2023, https://plato.stanford.edu/archives/win2017/entries/modularity-mind/

than what an organism may be aware of. This is often exemplified vis a vis that the Muller-Lyer illusion test.[55]

Figure 1.1 The Muller-Lyer Illusion



Initially, when observing both lines, it is typical to conclude that line B is longer. Even upon being told that both lines are of the same length, the visual processing of line B as being longer is not subject to amendment. In other words, what makes the mental module encapsulated is the degree to which it is immune from cognitive influence and access.[56]

[55] Z. Pylyshyn, Computation and Cognition (Cambridge, MA: MIT Press, 1984), as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/; See Adam Alter, "Are these walls the same size? Your answer depends on where you're from," Popular Science, March 3, 2013, https://www.popsci.com/science/article/2013-03/are-these-walls-the-same-size-your-answer-depends-on-where-youre-from/

[56] Pylyshyn, 1984, as cited in Robbins, 2017.

The next set of features that characterize a mental module, is "*mandatoriness, speed, and superficiality.*"[57] Mandatory refers to the notion that the cognitive system is switched on only in response to the stimuli and it goes to completion.[58] So the example that is often given is that English-speaking individuals hear English spoken as English and cannot un-hear it and perceive the speech as purely random noises. *Speed* is another feature of a cognitive module. Since it is difficult to stipulate what counts as fast, Fodors' guideline is that it has to occur in 0.5 seconds or less.[59] Another feature of a cognitive module is that it has to be both informationally and computationally shallow. This refers to the fact that its cognitive outputs are fairly general and computationally cheap. Fodor argues that concepts like DOG or CHAIR are basic concepts that are outputs of a modular cognitive system such as what is referred to as *visual object recognition*. This is in contrast to other concepts that are too specific such as PROTON or ELECTRON.[60] Furthermore, all three traits of mandatoriness, speed, and superficiality are related to information encapsulation. Speed is related to processing speed and that is a function of

[57]Philip Robbins, 2017.

[58] J. A. Bargh and T. L. Chartrand, "The unbearable automaticity of being," American Psychologist 54 (1999): 462–479, as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

[59] Fodor, *Modularity of Mind*, 63, as cited in Robin Philips, "Modularity of Mind."

[60]E. Rosch, C. Mervis, W. Gray, D. Johnson, and P. Boyes-Braem, "Basic Objects in Natural Categories," Cognitive Psychology 8 (1976): 382–439, as cited in Philip Robbins, "Modularity of Mind," Stanford Encyclopedia of Philosophy, August 21, 2017, https://plato.stanford.edu/entries/modularity-mind/

encapsulation. Similarly, superficiality/shallowness is negatively correlated to encapsulation.[61]

The last two features as articulated by Philip Robbins, are *dissociability* and *localizability.* What these features refer to is the ability for the cognitive system to become impaired whilst not bearing a loss on any other systems. So, for instance, conditions like prosopagnosia wherein an individual cannot recognize faces do not seem to produce any other impairments in an individual. So, the system undergirding it is *dissociable*. In turn, this is related to localizability, insofar as a localized system is delimited functionally ie. it solely serves that system. In his later work, Fodor narrowed the essential aspects of modularity; that of information encapsulation as well as domain specificity.[62]

As I articulated in the criteria for modularity of mind, the empirical evidence for domain specificity is present yet the same cannot be said of domain-general thinking.[63] One such argument for domain-specific adaptions is the speed at which certain behaviors occur, which indicates modularity as opposed to there being a rational and logical computation of responses. Another good reason for modularity of mind is that there are innate responses in instances where individuals have not deliberately acquired

[61] Philip Robbins, "Modularity of Mind", no page number.

[62] W. E. Frankenhuis and A. Ploeger, "Evolutionary Psychology Versus Fodor: Arguments for and Against the Massive Modularity Hypothesis," Philosophical Psychology 20, no. 6 (2007): 687.

[63]J. C. Confer, J. A. Easton, D. S. Fleischman, C. D. Goetz, D. M. G. Lewis, C. Perilloux, and D. M. Buss, "Evolutionary Psychology: Controversies, Questions, Prospects, and Limitations," American Psychologist 65, no. 2 (2010): 110–126: doi:10.1037/a0018413, PMID 20141266

information. So, for instance, Clune et al. argue that it is improbable that males in the ancestral environment intentionally learned that cheating is related to children that aren't theirs, based on infants that appear phenotypically different to them, given how long children are born after the act of coitus and then from drawing a statistical deduction. Rather they argue that certain types of knowledge like the connection between cheating and children that are not genetically theirs, are not intentionally learned.

There is a robust debate between evolutionary psychologists and Fodorian modularity. Many within the evolutionary psychology framework posit *massive modularity* which goes further in their conclusions about the modularity of the mind. Massive modularity involves central processing in addition to low-level processing. The effective founders of evolutionary psychology John Tooby and Leda Cosmides argue that our cognition is predominantly domain-specific and a function of adaptions to our environment and selection pressures during our past human evolution. They saw the mind as akin to a computer that processed specific aspects of our environment. Barkow, Cosmides, and Tooby have argued that domain-general processing ie. a lack of mental modules is unfeasible because of the "frame problem," which consists of the problem of modules determining what information is relevant in a changing environment.[64] Tooby and Cosmides, as well as Plotkin, Dan Sperber, and Steven Pinker all put forth an

[64] Leda Cosmides and John Tooby, "Cognitive Adaptations for Social Exchange," in The Adapted Mind: Evolutionary Psychology and the Generation of Culture, ed. Jerome H. Barkow, Leda Cosmides, and John Tooby (New York: Oxford University Press, 1992), 163-228.

evolutionary take on modularity regarding psychological components.[65] Dan Sperber as a proponent of massive modularity posited that "domain-specific abilities were subserved by genuine micromodules, that modules come in all formats and sizes, including micromodules the size of a concept, and that the mind was modular through and through."[66] This was an extremist take on modularity. Fodor who effectively initiated the discussion of mental modularity was both in favor of the modularity of input systems on the basis of empirical evidence, and conversely against it with regard to the higher cognitive processes on the basis of philosophical arguments.[67] Clune argues that "computer simulations of the evolution of neural nets suggest that modularity evolves because, compared to non-modular networks, connection costs are lower."[68]

As I discussed, there are scholars who take the stance of varying degrees of modularity: many specialized modules or a few more general modules. Some argue that theories of mind like massive modularity which are computational in nature are no more superior than those that view the mind as being a function of environmental inputs; or that evolutionary psychologists' conception of mind is undergirded by information processing

[65] Sperber, 50. See Sperber, D. (2001). In Defense of Massive Modularity. In E. Dupoux (Ed.), *Language, brain, and cognitive development: Essays in honor of Jacques Mehler* (pp. 47–57). The MIT Press.

[66] Dan Sperber, "In Defense of Massive Modularity," in Language, Brain, and Cognitive Development: Essays in Honor of Jacques Mehler, ed. Emmanuel Dupoux (The MIT Press, 2001), 47–57.

[67] Sperber, 49.

[68] Jeff Clune, Jean-Baptiste Mouret, and Hod Lipson, "The Evolutionary Origins of Modularity," Proceedings of the Royal Society 280, no. 1755 (2013): doi:10.1098/rspb.2012.2863

models and these are contentiously debated topics amongst experts.[69] A middle approach is taken by scholars like Jaak Panksepp who argues that the modularity of our mind and the abilities that it entails can be a product of the interaction between both our ancient, specialized mechanisms and newer generalized mechanisms.[70] Philosopher David Buller is on board with the modularity of mind argument, but he diverges insofar as he thinks that empirical evidence doesn't support countless modules specified for different behaviors. Moreover, modules are a function of the responses to local circumstances not to that of our ancestral environment and they are made possible due to the plasticity of the human brain.[71]. In contradistinction, scholars like William Uttal argue in stark contrast to the modularity of the mind and say that the workings of the mind are distributed across many areas and that they cannot be broken down into units even at the abstract level.[72] The debate continues.

The Standard Model as we discussed, asserts that religion's propagation is due to biases that enact themselves like 'canalizing agents' on the "cultural evolutionary landscape."[73] In contrast to this perspective is the *adaptationist* perspective that I referred to earlier. Those who support the adaptationist perspective are Irons, Wilson, Bulbulia,

[69]Jaak Panksepp and Jules Panksepp, "The Seven Sins of Evolutionary Psychology," Evolution and Cognition 6, no. 2 (2000): 108-131.

[70] Panksepp and Panksepp, "The Seven Sins," 108-131.

[71] David J. Buller, "Evolutionary Psychology: The Emperor's New Paradigm," Trends in Cognitive Sciences 9, no. 6 (2005): 277–283.

[72] William R. Uttal, The New Phrenology: The Limits of Localizing Cognitive Processes in the Brain (Cambridge, Massachusetts: MIT Press, 2003).

[73]Scott and Powell 461; Atran 2022, pp 248.

Sosis and Alcorta, Johnson and Bering, Dow, Richerson, Newson, and Sanderson. Unlike the byproduct model which views religion as incidental, adaptationist accounts view the evolution of religion as being related to core bio-psychological needs like food and reproduction. Those who support the byproduct camp view religious phenomena as evolving incidentally, and being as the name suggests a byproduct of other mental modules/mechanisms. Thus, according to the byproduct model, religion co-opts other mental mechanisms. On the other hand, the adaptationist paradigm, which was first given currency by A.R Wallace and A. Weismann, in the latter part of the nineteenth century, views religion as a result of "the process of phenotypic modification by natural selection as well as the products of that process."[74] It is important to note the distinction between the term's adaptation and the term adaptive. Alternatively, the term adaptive refers to traits that produce a reproductive benefit to the individual in that specific environment. They are not the same thing and can easily be confused. Core features or criteria for adaptations are "cross-cultural universality, being easy to acquire, and being supported by biological equipment."[75]Thus, religious phenomena seem to be suitable candidates for such a definition.

Adaptationist explanations view the convergence of religious phenomena cross-culturally as the result of the human species having similar bio-psychological necessities

[74] Richard Sosis, "The Adaptationist-Byproduct Debate on the Evolution of Religion: Five Misunderstandings of the Adaptationist Program," Journal of Cognition and Culture 9, no. 3–4 (2009): 315–332, 321.

[75]Konrad Szocik, "Critical Remarks on the Cognitive Science of Religion," *Zygon*® 55, no. 1 (2020): 157–84, 171: https://doi.org/10.1111/zygo.12571

despite different ecological environments. Szocik argues that according to "niche construction theory," the human species tends to alter their environment in such a way, as to align their needs with it.[76] Therefore, Szocik argues that similar selection pressures will lead to similar traits. Convergent evolution occurs in different species across the natural world. Thus, by analogy, the same *could* be said of the convergence of seemingly different religious adaptations across seemingly disparate cultural and religious phenomena.

Religion is oftentimes perplexing for the adaptationist paradigm as it can come at a significant cost for individuals. These costs and commitments include amongst other things, a commitment to engaging in ongoing rituals or subscribing to a set of creeds, costly signaling, CREDs, and moral norms. For instance, costly signaling and a broader concept referred to as credibility-enhancing displays (CREDS) are important for this discussion. In evolutionary biology, costly signals are considered to be reliable signals of honest communication.[77] For instance, the theory posits that animals and even humans can exhibit certain behaviors that indicate to others their commitment and trustworthiness. The action has to come at a significant cost of some kind for the organism exhibiting it. This willingness to incur a cost communicates to other parties that the signal is a reliable signal of commitment to such a cause, as it would be difficult to feign. It can elicit

[76]Szocik, "Critical Remarks," 171-172.

[77] Mohammad Salahshour, "Evolution of Costly Signaling and Partial Cooperation," Scientific Reports 9 (2019): 8792, https://doi.org/10.1038/s41598-019-45272-2. See Amotz Zahavi, "Mate Selection: A Selection for a Handicap," Journal of Theoretical Biology 53, no. 1 (1975): 205-214, 205, doi:10.1016/0022-5193(75)90111-3

cooperation. A famous example is that of the peacock which incurs a metabolic cost due to its ornamental tail and being potentially more noticeable to predators. However, this cost communicates to others the peacock's quality as a mate. CREDs are a type of costly signal that is often discussed within the study of religion. They are extravagant behaviors that "cultural models display, conveying underlying beliefs to cultural learners." They are meant to assuage hypocrisy and prevent religious imposters. [78] It is these kinds of incurred costs that pose a challenge for adaptationists as to the evolutionary advantage there would be in adopting religious belief and behavior, thereby offsetting the expenditure of a multitude of resources. Thus, the adaptationist paradigm poses some difficulties with regard to its explanatory power.

Yet, Adaptationists argue for many functions of religion and returns on incurred costs like the psychological and psychotherapeutic functions of religion, including stress relief, as well as the role of providing hope, and overcoming the fear of death."[79] Other theories under the banner of this paradigm include the prosocial religions hypothesis supported by those like UBC's Ara Norenzayan. It posits that "moralizing supernatural agents" have been critical in the development of large-scale civilizations and the cooperation needed to develop.[80] If it is the case that religious beliefs helped some

[78]Ara Norenzayan, "Theodiversity," *Annual Review of Psychology* 67, no. 1 (2016): 465–88, 472, https://doi.org/10.1146/annurev-psych-122414-033426.

[79]Szocik, 172.

[80]Ara Norenzayan, *Big Gods: How Religion Transformed Cooperation and Conflict* (Princeton, NJ: Princeton University Press, 2015).

individuals differentially reproduce and therefore religious beliefs were "selected" for, one could perhaps make a claim about the adaptationism of religion.

Other proposals for how this adaptiveness of religion could have been functioning is as an indicator of in-group status.[81] However, it would seem that the reality is more complicated. For instance, religion's role in social cohesion is marked but there are also other forces that could be as effective in doing this. It's unclear if religious systems do this more effectively or not. However, what it does allow for is bringing genetically unrelated individuals together and therefore scaling up the size of groups more efficiently. Yet, there are other markers that can do as well, such as through "clans, tribes, and nations"[82] Religious beliefs are so diverse that it would be hard to even define what could have been considered adaptive. Szocik argues that we can have some faith in the prosocial effects and adaptationist benefits of religiosity, by way of comparison with the concept of family. If we can assume that "human reproduction must take care for the family, which is the basic unit of reproduction,"[83] and since family and reproduction are central to many religious frameworks, it would not be a bold claim to argue for religiosity in the adaptationist frame. [84]

[81]Szocik, 173.

[82]Szocik, 173.

[83]Szocik,164. See Stephen Rothman, The Paradox of Evolution: The Strange Relationship between Natural Selection and Reproduction (Amherst, NY: Prometheus Books, 2015).

[84]Szocik, 164.

The adaptationist framework posits that at minimum some religious phenomena are directly evolved as adaptive. The cognitive component functions secondarily.[85] In contradistinction, the byproduct perspective posits that religious representations are a result of cognitive by-products and that some became adaptive through cultural evolution.[86] Each perspective gives inverse primary importance to cognition and adaptiveness, respectively.

There are many critiques of the adaptationist paradigm; both in the broad sense as well as more specifically in terms of the development of religion. I will begin the adaptationist critique as outlined in the Gould and Lewontin paper we referenced earlier, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme."[87] Gould and Lewontin critique the adaptationist paradigm on a number of different levels, one of which is reflected in the title of their paper which refers to Voltaire's *Candide.* Voltaire expresses through his character Dr. Pangloss a misaligned logic wherein his analysis is teleologically inverted. For instance, the absurdity of concluding that noses are *for* spectacles or legs are *for* breeches. Gould and Lewontin reference this to highlight the belief in the Adaptationist paradigm's inverted approach. They argue that evolutionists zoom in on the immediate adaptation yet fail to look at the constraints and therefore are misled in their mode of analysis by failing to

[85]Szocik, 174.

[86]Szocik, 175.

[87] Stephen Jay Gould and Richard Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme," *Proceedings of the Royal Society of London. Series B. Biological Sciences* 205, no. 1161 (1979): 581–98, https://doi.org/10.1098/rspb.1979.0086

recognize the broader holistic picture.[88] Secondly, they posit that adaptationists after being unable to posit the optimality of how each trait might be adaptive, posit the notion of "trade-offs" to explain why organisms make "compromises among competing demands."[89] Whenever a trait is concluded as possessing suboptimality, it is seen as being part of a larger explanation of such compromises. Thus, as Dr. Pangloss believes, everything is the "very best we could have." Thirdly, they argue that although other nonadaptive mechanisms of evolution such as genetic drift are admitted by adaptationists;[90] this admission is mostly in theory and given next to no practical importance in actuality. There are numerous other critiques of the adaptationist program which include the arguments that,

1) Adaptationists posit a weaker form of the initial argument, admitting ignorance of the organism's environment.[91]
2) Adaptationists fail to differentiate between a trait's current utility and what its initial utility was.[92] One of the major critiques of religion is its current utility. Szocik articulates similarly that the utility of past adaptations may not hold true for the present or for a new ecological environment.[93]

[88] Gould and Lewontin, "The Spandrels," 4.

[89] Gould and Lewontin, 4.

[90] Gould and Lewontin, 4.

[91] Gould and Lewontin, 5.

[92] Gould and Lewontin, 1.

[93] Szocik, 163.

3) Given the resources and costs that are involved with the commitment of religious affiliation in the modern world, what would possibly make something an adaptation?[94]
4) The reluctance to entertain alternative explanations.[95]
5) Using plausibility as the sole criterion for an adaptation and conveniently accepting their theories.[96]
6) One critique of the adaptationist perspective is that if it were truly the case, everyone would be religious. Since not everybody is religious, how can it be an adaptation? Tremlin, for instance, although keeping within the CSR paradigm, advances the view that religious beliefs are too costly and counterintuitive (yet this claim itself is contentious) and therefore are merely by-products of cognition. It is only the nonreligious traits that are adaptive tools.[97]
7) Relying on telling "just-so stories."[98] Sosis argues that one of the big critiques is that of adaptationists proposing just-so stories. Yet this isn't necessarily a

[94] Szocik, 175.

[95] Gould and Lewontin, 5, 7.

[96] Sosis, 326.

[97] Szocik, 177

[98] Gould and Lewontin 6, 7.

robust enough critique against adaptationist theories, but rather a call for improved scientific standards.[99]

8) The complexity of religion makes it "a bad candidate for an adaptive trait."[100]
9) Religion is not focused on reproduction. [101]However, this critique fails when one explicates the emphasis on sexual ethics and practices that some religions have like the Catholic Church. [102]
10) The adaptationist paradigm holds that Darwinian models that aim to explain culture fail to account for the relationship between genes but also the environment and behavioral variables,[103] and even models that aim to delineate the pathways of cultural transmission, fail to take the genetics into account.

Furthermore, the adaptationist perspective's speculative-ness is difficult to understand insofar as the putative "function" of religion is unclear. Does adaptation refer

[99]Sosis, 324-325.

[100]Sosis, 325.

[101]Lee A. Kirkpatrick, "Religion Is Not an Adaptation," in Where God and Science Meet, ed. Patrick McNamara, vol. 1 (London, UK: Praeger, 2006), 159-179, as cited in Szocik, 176.

[102]Szocik, 176.

[103]Kevin Laland and Gillian R. Brown, *Sense and Nonsense: Evolutionary Perspectives of Human Behavior* (Oxford, UK: Oxford University Press, 2011), as cited in Szocik, 176.

to the structure[104] or function[105] design features? Does adaptation happen at the individual or group level?[106] Natural selection purports to function at the level of the gene, and people like Jay Feierman[107] assume that cognition cannot be understood by adaptation. However, "the product of genes, including cognition, deserves at least equal consideration."[108] Thus, many questions are open to debate and have yet to be settled.

One of the basic premises of the cognitive model perspective is that the mental modules they refer to come about in response to survival like food acquisition or reproduction. Szocik argues that the standard modular theory on religion does not hold because god concepts do not necessarily function in relation to basic survival needs such as food acquisition and mating.[109] However, this view is misguided insofar as it is undergirded by Western conceptions of religion. In many other cultures around the globe, religion does take on issues like marriage and survival needs and does involve cognitive components relating to survival. Therefore, they can be construed as adaptations. It is only when these survival activities are not seen as central to religious activities and

[104]Szocik, 162. See Jay R. Feierman, "How Some Major Components of Religion Could Have Evolved by Natural Selection," in The Biological Evolution of Religious Mind and Behavior, ed. Eckart Voland and Wulf Schiefenhovel (Berlin, Germany: Springer, 2009), 51-66.

[105]Szocik, 162. See also George Williams, *Adaptation and Natural Selection: A Critique of Some Current Evolutionary Thought* (Princeton, NJ: Princeton University Press, 1966), 211-212.

[106]Szocik, 163. See also V. C. Wynne-Edwards, *Animal Dispersion in Relation to Social Behavior* (Edinburgh, UK: Oliver & Boyd, 1962).

[107]Szocik, 163.

[108]Szocik, 163.

[109]Szocik, 176.

cognitions that they are deemed as being incidental and not integral to evolutionary fitness. Cognitive explanations also tend to miss features of religiosity that are adaptive such as its prosocial functions, its pro-morality functions, its psychotherapeutic role as well as its general inclination in supporting reproductive rates.[110] Thus, the pluralistic perspective on religion becomes a possible approach.

Furthermore, given that cognitive byproducts are also often thought of in terms of adaptationist thinking, it becomes difficult to accept this seeming disjunction between them. Gould and Lewontin argue that relying on a pluralist and holistic approach is more akin to Darwin's own intended paradigm. They state that an organism's traits and their potential optimization have to be seen not in terms of their discrete and separate "traits" but rather with respect to their integration within the individual. According to Gould and Lewontin, whose discussion was situated within the 1980s, the typical approach that adaptationists proceed with is to treat the traits of an organism in an atomized manner. They argue that even the conceptual discussion of what a trait is, is not a secondary issue, but one of primary importance. What constitutes a 'trait,' is debated, due to the fact that their genes typically are pleiotropic. This means that genes have multiple phenotypic expressions and thus there is no one-to-one connection of genes to traits. Therefore, understanding what the "unit" of analysis is not insignificant. They instead argue organisms should be analyzed as an integrated system. This aligns with what Gould and Lewontin posited which is that the adaptationist point of view is inverted, and rather the

[110]Szocik 163. It's not clear what the causal role of religion is on reproduction if there can be one claimed at all. This issue is complicated.

analysis must begin with the materials and constraints. So, there is an emphasis on the byproduct model but can also be an advocate for a more integrated approach such as not looking at "traits" as discrete phenomena distinct from the integrated whole.

It is important to keep in mind that both the cognitive modules and adaptationist perspectives are speculative. For instance, Szocik argues that the existence of the posited "cognitive modules" is a philosophical assertion rather than a biological one, in the manner that philosophically one can speculate on nonmaterial entities like concepts and ideas. [111]

Furthermore, the pluralist approach allows for the cognitive and the adaptationist perspectives, as well as making room for the role of culture. One such critique comes from theologians and philosophers of religion who assert that the cognitive model needs to be extended insofar as it takes "cognitive naturalness" as a logical precursor to "cross-cultural naturalness."[112]This separation of content and context is misleading as individuals can have cognitive biases supported by cultural naturalness (social learning).[113] Darwinian adaptation may be operating alongside cognitive biases, therefore it is not useful to present these mechanisms disjunctively. The merely cognitive byproduct model is limiting and admitting the role of cultural evolution as well as

[111] Szocik, 161.

[112] Szocik, 159. See also Aku Visala and Justin L. Barrett, "In What Senses Might Religion Be Natural?" In The Naturalness of Belief: New Essays on Theism's Rationality, edited by Paul Copan and Charles Taliaferro, 67-84 (London, England: Lexington Books, 2019), 71.

[113] Szocik, 159

historical and cultural factors are needed as additions to the modular and computational paradigms.[114] Powell and Clarke also argue that in order for evolutionary accounts to be viable, they must include cultural evolution as a variable. This is due to the fact that religious phenotypes are not transmitted necessarily via genetics, as we discussed.**[115]** In relation to the role of cultural transmission in religious behavior and thought, Liane Gabora argues that the Darwinian account is not sufficiently explanatory for explaining the evolution of cultural traits because they are "acquired, not inherited."[116] She argues that although these traits are adaptations, they are not so in the Darwinian sense having been inherited. In other words, religious components aim to maximize fitness[117] but do not do so through genetic inheritance although some processes are akin to genetic evolution. It is important to note that since genetic and cultural evolution are not equivalent, one must not conflate them. Genetics are inherited whilst culture is learned through various processes such as imitation and trial and error.[118] Furthermore, many

[114]Szocik, 159. See Lluís Oviedo, "Explanatory Limits in the Cognitive Science of Religion: Theoretical Matrix and Evidence Levels," in New Developments in the Cognitive Science of Religion: The Rationality of Religious Belief, ed. Hans Van Eyghen, Rik Peels, and Gijsbert van den Brink (Cham, Switzerland: Springer, 2018), 15-34.

[115] Russell Powell and Steve Clarke, "Religion as an Evolutionary Byproduct: A Critique of the Standard Model," The British Journal for the Philosophy of Science 63, no. 3 (2012): 457–86,457-458,460: https://doi.org/10.1093/bjps/axr035

[116]Liane Gabora, "The Creative Process of Cultural Evolution," in Handbook of Culture and Creativity: Basic Processes and Applied Innovations, ed. Angela Leung, Letty Kwan, and Shyhnan Liou (Oxford, UK: Oxford University Press, 2018), 33-60, as cited in Szocik 178.

[118] Imitation would be a cultural evolutionary correlate of natural selection while the trial-and-error mechanism would be the correlate of genetic mutation. Szocik, 178. See Nicolas Claidière, Thomas C. Scott-Phillips, and Dan Sperber, "How Darwinian Is Cultural Evolution?" Philosophical Transactions of the Royal Society B 369, 2014, https://doi.org/10.1098/rstb.2013.0368

within the Standard Model perspective also employ Dan Sperber's epidemiological approach to the propagation of cultural ideas.[119] This can account for the differences in which cultural ideas propagate across different time periods and cultures**.** Thus, allowing for the role of cultural evolution. The differential propagation of some repeated ideas over others could be a function of the ideas themselves, in interaction with the kinds of minds we possess.

Given the landscape of CSR that I have delineated which includes the byproduct perspective and the adaptationist perspective and their respective shortcomings individually, I will instead subscribe to the pluralist perspective. The pluralist approach considers the byproduct model and the adaptationist perspective non-disjunctively; as well as extends it to include the cultural and context components integral to the development of religious belief and behavior. Due to the complexity of religious systems, there is no reason to preclude them from multivariable causes. These causes might include group and individual-level adaptation, the cultural parasitism of ideas as posited by Dan Sperber, ancient adaptation in small groups, by-products, more recent adaptation, and neural traits.[120]" What follows from this multi-component view of religion is a multivariate process for interpreting religious phenomena. One of the reasons this approach is helpful is that religion is not a *sui generis* category of thing and therefore can be considered a complex of different component parts with some aspects like ritual being

[119] Powell and Clarke, 461.

[120] Szocik, 170.

evolutionarily older than beliefs. Thus, it is difficult to view it as a cohesive whole. Critical perspectives in Religious Studies also view religion in this manner. It is more useful to speak of the different components of religion distinctly. Thus, the pluralistic approach in describing the formation of religious phenomena is preferable as it does not seem accurate to reduce the complexity of religious phenomena to an univariable mechanism.

Kanazawa's pluralist approach understands religion as a tertiary adaptation based on evolutionary problems and rooted in domain-specific traits.[121] This model allows for both the domain-specificity of the modules associated with survival via the byproduct model, as well as the undeniable adaptations of religion. In the first hand, Kanazawa argues that adaptation is primary and that it must be domain-specific by virtue of how it functions because it is meant to solve very specific adaptive challenges.[122] On the other hand, Kanazawa argues that religion should be considered a tertiary and domain-general adaptation." [123] Szocik posits that this is unnecessary and would like to eliminate the domain-specific model completely and that such contention amongst scholars is merely due to a lack of clarity and conceptual confusion rather than anything ontological. He argues that cognitive explanations instead may be useful for the most basic religious phenomena and in mechanistic terms but cannot account for the complexity of religious

[121]Satoshi Kanazawa, "Where Do Gods Come From?" Psychology of Religion and Spirituality 7(4) (2015): 306–13, as cited in Szocik 169.

[122]Kanazawa, 309 as cited in Szocik, 169.

[123] Szocik, 170.

phenomena. Religion is highly contextual. Yet, cultural evolutionists subscribe to the notion of domain generality as a criterion for religion as an evolutionary adaptive trait. Therefore, one could argue that byproduct theories give rise to domain-general cultural products with the aid of cultural evolution. Furthermore, since Kanazawa posits that aspects of religious phenomena can only amount to tertiary domain-general adaptations,[124] this, in turn, allows for the domain specificity of cognitive byproducts, and the domain generality of cultural and religious products. Thus, making this conjunction both feasible and coherent. Szocik's objection to domain-specificity is not strong enough of a criticism.

It is within this pluralist vein that I would like to place mental modules as primary akin to the arches of the St. Mark's Cathedral that Gould and Lewontin describe. I will thus employ this pluralist approach that both Kanagawa and Powell and Clarke take on, over the standard CSR approach. The pluralist perspective entails both the cognitive structure of our mind as a proximate etiology for religion as well as some adaptive function of religion as a secondary manifestation,[125] whilst factoring in the role of cultural transmission.

Now that I have laid a cursory theoretical groundwork for the Cognitive Science of Religion, I can delve into an exploration of its possible relationship with Islamic Studies, if there can be one at all. First, I would like to assert that there is a connection

[124]Szocik, 170.

between the mechanisms of the mind in their modularity and their potential coherence with Islamic conceptions of human nature pertaining to belief in God, specifically the Islamic conception of *fitra.* I will explicate a wide range of perspectives on what fitra even is, as well as some historical context on the concept before delving into the particularities of Abu Hamid al-Ghazali's specific perspective.

Chapter 2

Fitra

The notion of *fitra,* otherwise known as one's "original disposition" is understood from the primary Muslim text, the Quran, as well as the Hadith*,* which are the sayings and actions of the Prophet Mohammed. Etymologically, the term is related to *Fatara*, which connotes the meaning "to create," or "to constitute."[126] There is one key Quranic passage and one key Hadith which is important to the concept. It is considered to be one's innate tendency for *tawhid* and is the belief in One God and God's unicity, [127]as well as to varying degrees an internal sense of good and evil, depending on which scholarly interpretation one sides with.

[126]Jon Hoover, "Fitra," in Encyclopaedia of Islam, 3rd ed., s.v. "Fitra," 104-106. *Fatara* comes up in the Quran roughly eight times, connoting 'to create" or "to constitute." The Active participle form of *Fatir* which connotes "creator" shows up six times.

[127]Yasien Mohamed, *Fitrah: The Islamic Concept of Human Nature* (London, UK: Ta-Ha, 1996), 16.

The relevant sacred text includes the Quranic verses "And turn your face to the true religion (*li-l-dīn ḥanīfan*) – God's fitra, upon which He has created humankind (*fiṭrat Allah allatī faṭara al-nās ʿalayhā*). There is no altering God's creation. That is the correct religion (*al-dīn al-qayyim*), but most people do not know (Quran 30:30)."[128] There is also an implication of being a *hanif* within this verse. Hanifs are those who lived before the emergence of Islam and were thought to have followed something akin to an original monotheism. So, for instance, the Quran articulates how the Prophet Mohammed despite being raised by polytheists was naturally a hanif or a monotheist of his own doing. The Quranic verse 3:65 indicates that he was a Muslim hanif. In other words, one identity of his implicates the other.[129]

This in turn is related to the hadith of the prophet wherein he says "Every baby is born with Fitra. Then his parents make him a Jew, Christian, or Zoroastrian. Just as an animal gives birth to another animal which is perfect [in form]. Do you see any part of it mutilated?"[130] This hadith more specifically points out that Islam is the universal religion within which one is born.

[128] Ibn Majah. Hanif, Sahih Muslim bisharh al-Nawaw1, Book of Qadr, Vol. 16 (al-Matba'at al-Misriyyah bi al-Azhari, 1930), 207, as cited in Yasien Mohamed, Fitrah: The Islamic Concept of Human Nature (London, UK: Ta-Ha, 1996).

[129] Frank Griffel, "Al-Ghazali's Use of 'Original Human Disposition' (Fitra) and Its Background in the Teachings of Al-Farabi and Avicenna," The Muslim World 102, no. 1 (2011): 1–32, 3.

[130] Sahih Muslim, Book 33, Hadith 6426. Also see Livnat Holtzman, "Human Choice, Divine Guidance and the Fitra Tradition: The Use of Hadith in Theological Treatises by Ibn Taymiyya and Ibn Qayyim al-Jawziyya," in Ibn Taymiyya and His Times, edited by Y. Rapoport and S. Ahmed (Karachi: Oxford University Press, 2010), 163–188, 166.

Furthermore, the hadith is linked to the Quranic verses, "and (mention) when your Lord took from the children of Adam – from their loins – their descendants and made them testify of themselves, (saying to them): "Am I, not your Lord?" They said: "Yes, we have testified." (This) lest you should say on the Day of Resurrection, "Indeed, we were of this unaware."'[131] Yasien Mohamed posits that one's conscious faculty is able to discern the actions that bring one to either a state of purity or rather to move toward his evil drive. External influences can equally push or pull one from the good and only correspond to innate tendencies.[132]

The key Quranic verse along with the hadith that I've already identified was responsible for the widely held belief that unless there are external impingements on one's *fitra,* the natural course of action will be that the individual's *fitra* will lead that individual to become a Muslim.[133] Thus any secondary text mainly takes on this perspective that *fitra* can be identified with Islam. This had several legal implications for children and non-Muslims and their fates. However, in doing so, it relegates revelation as being unnecessary and thus would have not been unaccepted for instance by theologians Ibn Taymiyyah and al-Ghazali.[134]

Historically, at times fitra was equated with Islam because of legal cases wherein during battle it was argued that children who were descendants of non-Muslims should

[131] Quran 7:172.

[132] Mohamed, *Fitrah*, 132.

[133] Griffel, "Al -Ghazali's use," 3.

[134] Griffel, 4.

not be killed. One early group of Muslims, the Azraqis believed these children should be killed. Others who opposed this perspective cited these *fitra* reports in order to argue that children would have a place in heaven as they were innocent, having not reached a state of maturity.[135] Thus, the interpretation of fitra as entailing not only the disposition for belief in God but also being equated with the particulars of Islam came about in a very practical context. Since children were considered Muslims as a function of their innate *fitra,* they would have been spared. However, this status differed when that matter pertained to inheritance, For instance, a child within a specific age of responsibility could inherit from parents who were non-Muslims, as their status might be thought of as Muslims, otherwise non-Muslims and Muslims could not inherit from one another.[136]

The early theological group called the Qadaris as well as their successors the Mutazilites emphasized "human responsibility and divine justice," and in doing so they also posited that children come into the world as Muslims. This narrower criterion of fitra being equated with Islam must be the case if God is to be just**.** Children of other religions become so through their parents.[137] Other interpretations of *fitra* involved a greater degree of individual accountability for monotheism by interpreting *fitra* as being akin to

[135]Camilla Adang, "Islam as the Inborn Religion of Mankind: The Concept of Fitrah in the Works of Ibn Hazm," Al-Qanṭara 21 (2000): 391–410, 393–8 as cited in Jon Hoover, "Fitra," in Encyclopaedia of Islam, 3rd ed., s.v. "Fitra," 104-106.

[136]Geneviève Gobillot, *La Fitra: La Conception Originelle, Ses Interprétations et Fonctions Chez Les Penseurs Musulmans* (Damascus, 2000), 18-31 as cited in Hoover, "Fitra, "104-106.

[137] Gobillot "*La Fitra*," 32-35 as cited in Hoover, 104-105.

the covenant that God had made with humanity according to sura 7 verse 172 of the Quran which I mentioned earlier.

Yasien Mohammed's comprehensive work on fitra, suggests that there is no one agreed-upon definition of fitra and there is much variability amongst scholars. He explicates the concept of *fitra* and categorizes scholarly opinions into three categories with the aim of narrowing down a preferred view. Along with the innate disposition belief in God, it also involves varying perspectives on the internality or externality of good and evil in relation to human beings, which he classifies into "the *dual,* the *neutral*, [and] the *positive*"[138] view. They span both the classical and modern periods. The dual perspective views individuals as having equal capacity for good and evil. This view is held by scholars Sayyid Qutb as well as Ali Shariati. The neutral perspective views the individual as not having an internal tendency towards good or evil and that they are both external forces. This perspective is held Ibn Abd-al Barr. Lastly, the positive view takes the perspective that evil is an external force, and the essential innate tendency of individuals is that of good. Those who hold the positive view include "Ibn Taymiyyah, Ibn Qayyim, Imam Nawawi, Qurtubi, Sabuni, Faruqi, Al-Attas, Jawhari, Asad, Shah Wali Allah, and Mufti Muhamad Shafi."[139]Yasien Mohamed posits that views on *fitra* effectively fall into these three categories, although this isn't exhaustive.

[138]Yasien Mohamed, "The Interpretations of Fitrah," Islamic Studies 34, no. 2 (Summer 1995): 129-151, 129.

[139] Mohamed, "The interpretations," 130.

Starting with the relatively modern period, the dual view was held by Sayyid Qutb (1966) and Ali Shariati. Qutb was associated with the Egyptian movement called *Ikhwan Al-Safa* which wanted to socially and morally reform Islam against the dictatorial government of the time. He wanted to transform Islam from a transcendental and abstract Islam to one that is active and aimed at fixing modern social problems. He viewed society as belonging to one of two camps: "the true Islamic order" (*Nizami Islami*) and "the rule of pre-Islamic ignorance (*Nizami Jahili*). "Socialism, capitalism, and communism"[140] were seen as evil outcomes of this realm of ignorance. Instead, the ideal would be the manifestation of *Nizami Islami.* He viewed the individual as made up of part earthly clay and partly the "spirit of God."[141] In his Quranic commentary, Qutb posits his understanding of fitra as that of duality. This clay and spirit bring about an equal capacity for good and evil. The external guidance is that of revelation and prophethood and those of external misguidance are also out there always ready to tempt. These correspond to the internal dual nature that Qutb posits. Qutb posited that this dual nature was rooted in the Quranic commentary like "And we have shown him two paths."[142]

The other thinker that held the dual nature of *fitra* was that of Ali Shariati, an Iranian sociologist who had studied "history and philosophy in Mashhad and Iran." [143] His ideas have inspired revolutionary movements in the Islamic world. He understood

[140]Mohamed, 131.

[141]Mohamed, 131.

[142]Quran 90:10.

[143]Mohamed, 132.

history to be a battle between opposing forces- "truth and falsehood, monotheism and polytheism, oppressed and oppressor, etc."[144] In his worldview *tawhid* (monotheism) and *shirk* (polytheism) were seen as *the* thesis and anthesis. According to Shariati, man is between two poles, that of his earthly and clay component and that of spirit. He thought that man was always ascending and descending between this earthly sedimentary self and that of an exalted self. There is a major emphasis on the free will to choose between these opposing poles and a trust that he is endowed with in his vicegerency on this earth.[145] Man is a dialectical being that is in a perpetual state of struggle in himself, and this is his ontological reality. This dialectic is also applied to his analysis of history. For instance, he uses the Old Testament story of Cain and Abel to analogize these two opposing forces throughout history. There are evidential influences of Marxism as well as Humanism in these interpretations.

The neutral view of *fitra* which asserts there is no innate tendency for either good or evil and that individuals come into the world as a *blank slate* is espoused by early Islamic scholars like Abd al Barr.[146] He was reacting to scholars like ibn Mubarak who had predestinarian views such that there was an emphasis on divine power and God's choosing who would be in a state of *iman* or faith, versus *kufr* or non-belief. Scholars with a libertarian persuasion emphasized God's justice and therefore took issue with the predestinarian view based on its impractical implications. Ibn Abd al-Barr saw children as

[144]Mohamed, 132.

[145]Mohamed, 133.

[146]Mohamed, 134.

coming into the world in a wholesome state of innocence wherein there is no tilt toward belief or unbelief, and this only becomes apparent at the age of maturity (*taklif*). He supported his belief with the verse, "And God brought you forth from the wombs of your mothers, knowing nothing……"[147] Knowledge of good and evil is only brought about by the external environment, according to Ibn Abd-al Barr, and is imbued on a being in a state of innocence.

The third view that Yasien Mohamed believes is broadly explanatory is that of the predominant view in Islamic intellectual history on this matter. As there are many that fall into this camp, I will outline a few of them for the purposes of understanding it. One of the main proponents of this positive view of fitra is that of the classical scholar Ibn Taymiyyah, who had had a significant amount to say about the topic. He was a jurist within the Hanbali school of jurisprudence.[148] His interpretive stance tends to be literal, and he is politically controversial for the influence he has had on modern extremist movements within Islam. His view of *f*itra is that one is born into a state of goodness and that evil is an external factor that imposes misguidance on the individual. He equates fitra and the religion of Islam such that the individual has a natural inclination for the *din* of Islam, not just God generally speaking. Thus, fitra is not viewed as this potential that must be evoked but as the instrument of awakening. [149]Thus, in relation to the main hadith regarding fitra, it is the parents that turn an individual from a state of Islam to one

[147]Quran 16:78. See Mohamed 135.

[148]Mohamed, 136.

[149]Mohamed, 136.

of Judaism, Christianity, or Magianism. For Ibn Taymiyyah, if there are no sources to misguide the individual the fitra is sufficient for actualizing the inherent good. For him, the fitra involves a love for Islam as well as "the will to practice the din sincerely and righteously as a true hanif (monotheist). [150]

Ibn Taymiyyah's student Ibn Qayyim (d. 1350) also had a positive view of fitra insofar as he equated the fitra as including the knowledge of God and monotheism (tawhid) and Islam.[151] He posited that Quran 16:78 wherein God says that we came forth from our mother's wombs without knowledge of anything, in fact refers to the knowledge of religious particulars.

Ibn Nawawi (d. 1277) also falls under this third positive category. He was of the Shafi school of jurisprudence and was the individual to write "the principal commentary on the sahih of Muslim."[152] He asserts Fitra as being one's faith (Iman) before it can become fulfilled at the time that one can affirm this consciously. Therefore, if a child passes away at an age before they have had the opportunity to do so, they may be considered bound for heaven even if their parents were not necessarily Muslims.

Qurtubi (d. 1273) is another belonging to this positive view of fitra such that the unblemished animal can be corrupted with misguidance.[153] In the manner that the animal can be blemished, so too can the *fitra* be opened to corruption. Therefore, Ibn Qayyim

[150]Mohamed, 136.

[151]Mohamed, 137.

[152]Mohamed, 137.

[153]Mohamed, 137.

differentiated between an unfulfilled *fitra* and an innate predisposition to not opening the *fitra* to being mutable.

In the modern period, the positive view is held by contemporary thinkers like Al-Sabuni who believes in innate goodness but admits to evil being incidental.[154] External social environments, including parents, can corrupt a child's *fitra* as well as their self (*nafs*), and intellect (*aql*). Society and a child's parents subject them to unbelief and error. He cites the main Quranic verse as a counterclaim to Marxists.

Ismail al-Faruqi (d. 1986) is another scholar in the positive *fitra* camp and posits a unique *sensus numinous*, which encompasses a belief in God and ethics.[155] Whilst knowledge of God is natural, disobeying him is not. He views the *fitra*, man's "natural mechanism" as open to corruption.

Al-Attas (b. 1931) conceives the *fitra* as that inclination to submit to God and pay the debt of "man's submission in pre-existence (7:172)." He equates this with Quran 30:30 and therefore the *din* (religion). Submission amounts to harmony whilst defiance leads to chaos.

Shaykh Tantawi Jawhari (d.1940) thinks that the individual is born into faith (*iman*) and that one is more disposed to good but that one's mind is a blank slate that can receive both good and evil.[156] If the latter is absent, man's goodness is what is the chief tendency.

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[154]Mohamed, 137.

[155]Mohamed, 138.

[156]Mohamed, 138.

Muhammad Asad (d.1992) posits that *fitra* is that of an instinctive cognition and it includes knowledge of "right and wrong, true and false, and thus to sense God's existence and oneness."[157]

Shak Wali Allah (d. 1702) and his positive conception of fitra involves a holistic take which includes the spiritual and physical propensities that seek wholesomeness.[158] His perspective is important as it includes a biological aspect.

Mufti Muhammad Shafi discerns between fitra as the capacity and readiness to accept Islam, and to "recognize, acknowledge and obey God,"[159] rather than explicitly equating Islam with fitra. Yet, he also views fitra as being unchanging whilst conduct and faith can be subject to change.

The positive interpretation spans across the classical and modern periods and although there are differences in their perspectives on fitra and what it entails, there is the commonality of this take, which is that of intrinsic goodness. This explication for my purposes is sufficient. Now I have given a broad overview of what Islamic scholars variously claim about *fitra* and what it may entail.

The relevance of CSR and Islamic Studies, specifically Ghazali and fitra has been initiated by Aria Nakissa. He makes a number of arguments regarding Ghazali's understanding of God vis a vis CSR. Nakissa explicates Ghazali's reasoning about God as a single ultimate cause (*sabab*) based on Ghazali's understanding of causation. This

[157]Mohamed, 138.

[158]Mohamed, 138.

[159]Mohamed, 139.

cosmological argument has been espoused by many Islamic thinkers as well as other medieval Western philosophers. Nakissa posits that there are CSR explanations that accord with this view, such as the view that children have an affinity to posit God as the "ultimate cause,"[160] as well as the preference for parsimonious explanations.[161] Nakissa also examines Ghazali's theological beliefs regarding anthropomorphism, and its relation to the tendency for the mind to anthropomorphize[162] as well as the opposite data which exemplifies young children's tendency to see God in very unhuman terms, possessing qualities like "omniscience, omnipotence, and bodilessness."[163] He also opens a discussion between Ghazali's notion of fitra such that Ghazali sees reason as being part of the fitra, and how this accords with CSR.[164] He argues that whilst some Muslim theologians see belief in God as being solely an intuitive domain of fitra, others see some level of reason involved in this process. Nakissa argues that Ghazali uses fitra and reason as a sub-aspect of it to come to an understanding of God vis a vis the "argument from design" and seeing the subsequent universe as an artifact. This is an ancient argument

[160] Nakissa, 1100-1101. See Kelemen 2004; Also see Olivera Petrovich, Natural-Theological Understanding from Childhood to Adulthood (Routledge, 2018).

[161] See Tania Lombrozo, "Simplicity and Probability in Causal Explanation," Cognitive Psychology 55, no. 3 (2007): 232-257, https://doi.org/10.1016/j.cogpsych.2006.09.006

[162] Justin L. Barrett and Frank C. Keil, "Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts," Cognitive Psychology 31, no. 3 (1996): 219–247, https://doi.org/10.1006/cogp.1996.0017

[163]Justin L. Barrett, Robert M. Newman, and Rebecca A. Richert, "When Seeing Is Not Believing: Children's Understanding of Humans' and Non-Humans' Use of Background Knowledge in Interpreting Visual Displays," Journal of Cognition and Culture 3, no. 1 (2003): 91–108, https://doi.org/10.1163/156853703321598590 as cited in Nakissa, 1108; Petrovich 2019, 85–105. In such a view, Muslim theological hostility towards anthropomorphism is consistent with deep human intuitions.

[164]Nakissa, 1108.

suggested by "Plato, Cicero, Gersonides, Aquinas, Shankara, and Udayana." CSR argues that children view God in this way[165] and that the prevalence of conceptualizing God this way is a testament to "human intuitions about artifacts."[166] I will expand on this relationship of fitra and reason as a part of it, through the epistemic lens of Ghazali and how the cognitive modules of CSR can be seen as kinds of fitra judgments.

I will add to this discourse by examining fitra vis a vis the perspective of the preeminent 12th-century scholar Abu Hamid Al-Ghazali.[167] The specifics of Ghazali's view on fitra are not systematically developed and are scattered amongst his works. The topic of Fitra became a greater topic of discussion after Ghazali's time among Islamic thinkers. Therefore, I will illuminate Ghazali's perspective in light of Ibn Sina's epistemology to understand him better. I will also conceptualize Ghazali's perspective of fitra broadly with respect to Ibn Sina and Ibn Taymiyyah, who both wrote on the topic, primarily to highlight what makes Ghazali's perspective distinct and relevant to our discussion within CSR. This specification of fitra as an epistemic process will allow me to draw a parallel to the epistemic processes of cognitive modules regarding god-beliefs within CSR. I will argue that the judgments that cognitive modules produce can be thought of in terms of the estimative judgments of fitra a la Ghazali.

[165] Justin L. Barrett, Robert M. Newman, and Rebecca A. Richert, "When Seeing Is Not Believing: Children's Understanding of Humans' and Non-Humans' Use of Background Knowledge in Interpreting Visual Displays," Journal of Cognition and Culture 3, no. 1 (2003): 91–108, https://doi.org/10.1163/156853703321598590

[166] Nakissa, 1108.

[167] Frank Griffel, "Al-Ghazali's Use of 'Original Human Disposition' (Fitra) and Its Background in the Teachings of Al-Farabi and Avicenna," *The Muslim World* 102, no. 1 (2011): 1–32, 2.

Abu Hamid Muhammad ibn Muhammad al-Ghazali (d.1111) was a renowned Persian theologian, jurist, Sufi, and reticent philosopher, born in the Tabaran region of current-day Khorasan, Iran in 1058. He was endowed with the honorable title of reviver or *Mujaddid* which is given to those in the Islamic tradition who renew the faith and are thought to appear once every century. His seminal contributions include synthesizing the Islamic legal tradition with Sufism and establishing the latter as more tolerable amongst the general public. His popularity rose as he was given a professorship within the Nizamiyya schools with the full support and patronage of the Seljuk Vizier Nizam al Mulk. At roughly forty years of age, he experienced a kind of self-perceived spiritual crisis. He became unable to engage in basic functions like eating, drinking, or speaking. His interpretation of this incapacitation was not naturalistic but rather a result of the treachery and wickedness that was present in the Seljuk court after a series of murders and power grabs. He fled his prestigious role and spent a decade making trips to Damascus, Jerusalem, and Tus. He turned toward Sufism and became a spiritual and intellectual giant within Islamic history. [168]

Ghazali's perspective on the epistemic function of fitra regarding belief in God was influenced by Persian philosopher, physician, and polymath Ibn Sina (Lat. Avicenna, d. 1037) even when he doesn't always explicitly refer to him. Ibn Sina was himself influenced by Aristotle who made a distinction between knowledge gained through demonstrative arguments versus that which comes through *nous* which may variously be

[168]Frank Griffel, *The Philosophical Theology of Al-Ghazali: A Study of His Life and His Cosmology* (New York: Oxford University Press, 2009), 19-59.

thought of as insight or intuition.[169] For Aristotle, certain primary concepts could only be known through *nous* and Ibn Sina probably translated this as *aql.* This "intuitive knowledge that exists before we acquire (*iktasaba*) proper scientific knowledge (*ilm*) though demonstrative arguments are one of them."[170] Aristotle says those intuitions that come from *nous* are always true in their "apprehension of the primary concepts."[171] Ibn Sina's understanding of this is very crude and does not speak to how certain intuitive judgments make their way via the fitra**.**[172] However, Ibn Sina does aim to explore where they appear from**.**

In his *Book of Definitions* (*Kitab al-Hudud*), Ibn Sina makes a distinction between what the average person understands the intellect to be as part of fitra versus the understanding of the philosophers.[173] The ordinary person understands intellect as being akin to the fitra and the means by which individuals make moral distinctions amongst other things. However, this is different from the philosophers who hold eight different conceptions of the intellect (*aql*).[174] However, he argues that the first intellect is the one that involves the notion of fitra and can be differentiated between the intellect that comes

[169]Griffel, *The Philosophical Theology*, 12.

[170]Ibn Sina translates *Aql* as *Nous.*

[171] Griffel, 12. See Aristotle, Posterior Analytics, 100b, 5–10.

[172] Griffel, 13.

[173] Griffel, 11. See Ibn Sina, Kitab al-Hudud. A.-M. Goichon (Cairo: Institut français d'archéologie oriental, 1963), 11.9–12.1; See also Kiki Kennedy-Day, Books of Definition in Islamic Philosophy: The Limits of Words (London: Routledge, Curzon, 2003), 102.

[174] Griffel, 12.

to know insight *intuitively* versus knowledge (ilm) which occurs via *acquisition* (*bi-il-*iktisab). This latter *ilm*, as I mentioned, may be more akin to Aristotle's understanding of deductive reasoning. [175]

In *The Salvation (Al-Najat*) where he engages in a treatment of Aristotle's *Posterior Analytics,* Ibn Sina makes the connection between judgments and *fitra* in a particularly instructive manner.[176] He argues that the fitra cannot discern between whether arguments are true, untrue, useful, or completely false. Ibn Sina posits that one's *fitra* for instance can produce false judgments. He states this as the reason why people have all kinds of disagreements in judgments and opinions. Hence, the necessity for logic. He goes on to say that the *Fitra* doesn't contain the talent for analytic thinking that is involved in composed judgments which come about through syllogism.

Fitra includes the intellect (*aql*), as well as the faculty of estimation (*wahm*). There are various kinds of propositions that derive from the intellect known as, "first intelligibles (*al-awwaliyyat*), those propositions that derive from the estimative faculty (wahmiyyat) and those commonly held judgments about right and wrong (*dha'i'at*).[177]In his *Najat* (The Salvation)*,* he argues that the intellect and the propositions they give rise to, referred to as the first intelligibles become the premises of demonstrative reasoning

[175] Griffel, 12. See Ibn Sina, Kitab al-Hudud, 12.8–9. See also Kennedy-Day, Books of Definition, 103.

[176]Griffel, 13-14. See Ibn Sina, al-Najat min al-gharq fı¯ bah· r al-d· ala¯la¯t, edited by M. T. Da¯nishpazhu¯h (Tehran: Intisha¯ra¯t-i Da¯nishga¯h-i Tihra¯n, 1364/1985), 7.3–8.

[177]Griffel, 15. See also Frank Griffel, Al-Ghazali's Philosophical Theology (New York: Oxford University Press, 2009), 208–212.

(*Burhan*) which are always true.[178] Alternatively, the *wahm* produces estimative judgments which are acquired through some element of sense perception and often produce opinion (*ara*) through the faculty of estimation (*quwwat al wahm*). *Wahm* produces immediate knowledge that may include entities that cannot be perceived with the classical five**.**[179]

Fitra for Ibn Sina is not a technique per se, but rather a type of judgment that anyone can form regardless of where they are from. Frank Griffel argues that, for Ibn Sina, fitra is not akin to *a priori* knowledge. Rather "the wahmiyyat" or estimative judgments as part of one's fitra involve sense perception but are knowledge that everyone shares and can be found to be true without a person's education or upbringing. [180]

Judgments can have the feature of necessity wherein they come from the "inside (*batini*) or from the outside (*zahiri*). He argues that the kind of knowledge that comes from "inside (*batini*) can derive from the intellect. Knowledge that is derived from the "active intellect" and is from outside *(Zahiri*) itself or as having been acquired. They make up the middle term in a syllogism. Such premises typically are universal concepts and they come from the active intellect. However, due to the fact they are acquired, it is not part of one's fitra. Meanwhile, there are primary concepts that come from in the mind, or *inside* the intellect and they require no acquisition vis-a-vis, sense perception

[178]Griffel, 15. He explicates nine types of propositions which are defined by the property of being deemed true or false. I only discuss three of them as relevant to our discussion.

[180]Griffel, 19.

and/or experience. When the middle term is a primary concept, it comes from "inside (*batini*)" the intellect. First intelligibles derive their knowledge from "the pure intellect" and do not derive themselves from a source outside themselves. This knowledge is then related to one's fitra.[181]

This concept of *fitra* played a significant role in Ghazali and his life trajectory. This can be gleaned from his intellectual and spiritual biography, *Deliverer from Error* (*Munqidh al-Dalal*).[182] However his overall interpretation of fitra is not elucidated systematically. The reference to Fitra in his intellectual autobiography is crude as it is written for a lay audience, not necessarily Islamic Scholars or experts. Thus, the tone and depth of detail are not highly philosophical in the manner of Ibn Sina. He alludes to the fact that one's fitra makes individuals become Muslims rather than "Christian, Jews, and Zoroastrians."[183] Yet, this exemplifies a common sense understanding palatable to his wider audience. This accords with what Ibn Sina said about the common sense understanding by most people, namely conventional morality understood through religion.

Yet if we look more broadly, Ghazali's notion of fitra although scantily elaborated is more complicated than it appears in his autobiography. Griffel argues that fitra is the

[181]Griffel article, 17. To summarize, middle terms "that appear in the minor and major premise, produces knowledge without the need for any kind of acquired knowledge."

[182]Abu Hamid Al-Ghazali, Deliverance from Error and the Beginning of Guidance, trans. William Montgomery Watt (Kuala Lumpur, MY: Islamic Book Trust, 2005).

[183] Griffel, 5.

"means" for humans to ascertain the truth,[184] akin to what Ibn Sina thinks. He posits fitra as a means by which people perceive the "essences of things" through their fitra and that both cleverness as well as stupidity come from one's fitra. Thus, "a sound intellect" must come from the fitra.[185] Ghazali posits that fitra does not *necessarily* "contain the answer to the question of the truth." [186] Yet, he refers to the time in his life when he rejected uncritical emulation (*taqlid*) and he relied on his fitra to lead him to the truth.

Ghazali also shares with Ibn Sina the notion that fitra is fundamental to one's epistemology insofar as they are a summation of what he calls the set of necessary judgments that are known empirically, some of which may be true and others which may not be. This is without recourse to cultural or moral learning through one's environment. Ghazali uses Ibn Sina's perspective in many ways even when he does not make explicit where he draws his concepts from. So, for instance, Ghazali is in accordance with Ibn Sina that one's fitra includes a set of stock judgments that all people converge on, regardless of their knowledge or their mode of living.[187] These stock judgments are primary, people differ in the extent to which they possess them, and they may include false judgments, as part of the category that Ibn Sina and Ghazali both call the judgments of estimation (*wahymiyyat*).[188] These stock judgments are distinct from one's rational

[184]Griffel, 6. See also -Ghazali, *Ihya Ulum al-Din*, 5 vols. (Cairo: Mu'assasat al-H· alabı¯ wa-Shuraka¯'hu, 1387/1967–68), 3:19.11.

[185] Griffel 6. See also *Revival of the Religious* Sciences (*Ihya Ulum al-Din*), 29th book.

[186] Munqidh min Dalal (Deliverance from error), 11.7-10, as cited in Griffel, 5.

[187] Griffel, "Al-Ghazali's Use, 28."

[188] Griffel, 29.

capability, for instance in the case of deduction. This latter mode of thinking is known as intellect (*aql*) and the innate ability or preparedness for acquiring various forms of theoretical knowledge, as I discussed.

Fitra does not begin with a knowledge of the world. Ghazali states, "Know that the substance (*jawhar*) of a human in the initial original disposition (*fi as·l al-fit·ra*) is created blank and plain, without having any information about the worlds of God."[189] He also interprets the fitra as a "body of knowledge that leads to other knowledge." In his 21st book of the *Revival of the Religious Sciences*, he describes knowledge as coming from a "net" of prior knowledge that does not derive from one's fitra but rather is taken from other knowledge that has already been ascertained.[190] Griffel argues that this reference to a net of hunting knowledge with prior knowledge sounds like syllogistic logical reasoning where earlier judgments combine to produce new knowledge. However, he argues that no premises are required for the knowledge that derives from the fitra. No syllogisms are needed. He shares these ideas with Ibn Sina.

Another way in which he conceptualizes fitra is that of that inborn capacity (*ghariza*) that differentiates us from animals.[191] This is what leads the way for acquiring theoretical knowledge and this includes what we learn through social learning (ie. he cites parents and teachers). This kind of knowledge is not equivalent to the fitra but comes

[189] Munqidh, 41.3-4, as cited in Griffel, 6.

[190] Griffel, "Al-Ghazali's Use," 6.

[191] Al-Ghazali, The Book of Knowledge, in The Revival of the Religious Sciences, trans. Kenneth Honerkamp (Louisville: Fons Vitae, 2012), 1:118.2–3 (1:145.9).

about through it and requires a "cause (*sabab*)" to come into being. These causes could be the prior knowledge that Ghazali mentions, as well as sensory data. Thus, this theoretical knowledge is acquired initially from the fitra and then vis a vis a cause.

Ghazali also describes fitra as that intellect in infants that discerns between possibility/impossibility.[192] These would include beliefs like "two is greater than one" or "one person cannot be at two places at the same time." Griffel argues that although Ghazali does not explicitly state this intellect to mean fitra, Ghazali effectively takes this from a section in Ibn Sina's *Kitab al Hudud,* referring to Aristotle's Posterior Analytics. For Ibn Sina, this form of intellect is referred to as "the initial original disposition."[193]Thus, Ghazali although not directly explicating this kind of intellect as fitra, through Ibn Sina's influence can be thought to conceive of the intellect that discerns possibility/impossibility as akin to fitra. these things as being akin to one another.

He also describes fitra in his *Touchstone of Reasoning* (*Mih· akk al-naz·ar*), where he states that akin to Ibn Sina that fitra are not precluded from doubt and that certain moral judgments are social conventions. He further makes a statement about fitra being comprised of one's estimative faculty as I mentioned earlier and one's intellect and that moral judgments like," lying is bad" are not entailed within fitra. The estimative faculty and the intellect are mentioned many times, particularly with reference to commonly accepted statements (*mashhurat*).[194] From this, we can understand why one's fitra is

[192]Al-Ghazali, "The book of Knowledge," 1:120.2–3 (1:147–148).

[193] Griffel, "Al-Ghazali's Original Use," 7.

[194] Griffel, 7. See Al-Ghaza¯lı¯, Mih· akk al-naz·ar fı¯ l-mant·iq, edited by M. B. al-Na'sa¯nı¯ and M. al-Qabba¯nı¯ (Cairo: al-Mat·ba'a al-Adabiyya, n.d. [1925]), 57.16–17.

devoid of this kind of knowledge ie. *mashhurat,* and why it cannot be adopted via syllogisms.

To summarise, Ghazali's interpretation of fitra includes a range of meanings: it is that which contains both an intellect as well as the estimative faculty that produces judgments. It includes both true and false judgments and the role of the intellect is to discern between them and potentially arrive at truth. As such fitra is a means/technique to perceiving the essence of things. Fitra includes necessary judgments which can be true or false but that are available to anyone regardless of their upbringing. Fitra also includes stock judgments that people converge on to differing degrees and which include estimative judgments. Fitra is a body of prior knowledge which produces new knowledge but that itself does not require any premises. Fitra is that which distinguishes us from animals and leads to theoretical knowledge that comes about through one's fitra and a "cause (*sabab*)." Ghazali and Ibn Sina essentially agree on these interpretations of fitra. However, Ghazali adds one thing, "knowledge of God's existence."[195]

It is important to highlight the distinctiveness of Ghazali's views on fitra and how this is relevant to my later discussion of CSR and the innateness of belief in supernatural agents like God. There are specifically two broad features of Ghazali's notion of fitra that are important to my discussion. The first feature is Ghazali's notion that belief in God is wholly innate and natural and is not equated with institutional Islam with its moral judgments. Ghazali and Ibn Sina's perspective on *fitra* is that both figures omit moral

[195] Griffel, "Al-Ghazali's Use," 30.

judgments from Fitra. Ibn Sina's understanding of *fitra* was appealing to Ghazali, namely since *fitra* involved eschewing the moral and social conventions about what is right and wrong; rather turning inward to one's *fitra* which leads to the knowledge of the truth of God. This was attractive to Ghazali because he acknowledged the notion that our moral judgments are not simply the dictates of one's parents and it allows space for the role of revelation. This allows for the precepts derived from the Quran as well as reliance on one's individual fira.[196] This allows Ghazali the possibility of eschewing the innateness of conventional morality and therefore offer Islam's guidance in its stead.[197] Therefore, Ghazali does not equate fitra with Islam. They are seen as distinct. Furthermore, the belief in God is part of one's fitra and a natural and innate judgment or belief. By contrast, Ibn Taymiyyah and his disciple Ibn Qayyim al Jawziyyah took *fitra,* or rather the innate knowledge of God's existence as being equivalent to institutional or conventional Islam.

The second notable feature of Ghazali's perspective on fitra which is shared with Ibn Taymiyya (d. 1328) is the eschewing of rational proof for God.[198] Ghazali and Ibn Taymiyya converge on the premise that God's existence is part of one's fitra, (unlike Ibn Sina), as I previously mentioned. Furthermore, they both engage in rejecting the necessity of rational proofs for God, deeming it superfluous. In contradistinction, Ibn Sina who is influenced by Aristotle, believes that belief in God requires rational proof. This is distinct

[196]Griffel, "Al-Ghazali's Use," 30.

[197] Griffel, "Al-Ghazali's Use," 24.

[198]Griffel, "Al-Ghazali's Use," 31.

from Ghazali who believes people are born with this belief. [199] Frank Griffel speculates that due to Ghazali's scant elaboration on fitra, one can gain insight from Ibn Taymiyyah's explications on *fitra.* Ibn Taymiyyah explicitly outlines the perspective that the fitra includes knowledge of God. Ibn Taymiyya also argues against the rationalist perspective of proving God's existence vis a vis argumentation and that in fact, this was an indication of a fitra that has been adulterated. Griffel argues that this may be an indication that Ibn Taymiyya is picking up on what had been a commonly held belief from the period after Ghazali, for instance.[200]

Therefore, Ghazali's distinctive view includes fitra as encompassing knowledge of God's existence (unlike Ibn Sina), excluding moral judgments (like Ibn Sina but unlike Ibn Taymiyya), and like Ibn Taymiyya eschewing rational proofs as necessary for belief in God. CSR here also agrees insofar, as belief in God doesn't necessarily require any rational proof. It can be bolstered by theological beliefs and made more reflective and expanded but the basic capacity to believe in God is seen as completely natural such that human beings have minds that have the capacity for such belief. I will draw out the significance of this to CSR in the next section.

This is where I would like to draw attention to parallel features between Ghazali's mode of epistemic reasoning and that of the knowledge claims of CSR, as it pertains to belief in God. In his classic book *Why Would Anyone Believe in God,* psychologist Justin

[199]Majid Fakhry, Islamic Philosophy: A Beginner's Guide (Oxford, UK: Oneworld, 2015), 58-67.

[200]Griffel, "Al-Ghazali's Use," 31.

Barrett delves deep into the cognitive architecture of the mind, including how it relates to belief in agents like spirits and gods. He is sure that cognitive modules do not aim to explain the origin of God/gods. Rather, they explain why our minds reinforce beliefs about these agents so readily. Despite his own Christian convictions, he argues that the results of his analysis are not self-evidently "explaining away" theological beliefs and concepts, as opposed to scholars who have argued the theoretical assumptions of CSR favor atheism. The argument that I will be making is also not meant to "explain away" anything. Rather I would like to draw attention to the parallels between CSR and Islamic studies to underscore the commonality of seemingly disparate modes of thinking about belief in agents like God. My goal is not to draw a one-to-one analogy between what Ghazali and by extension, Ibn Sina is delineating regarding knowledge formation as compared to the psychologists. Rather I would like to draw attention to the features of similarity between reflective and non-reflective belief within psychology and Ghazali.

Chapter 3

Convergence

Barrett first explicates how belief and knowledge are conceptualized by psychologists as the basis for expanding cognitive modules which I discussed earlier. He argues that how he conceptualizes belief is more akin to what philosophers might think of as knowledge. His explicit aim is to delineate not which belief people ought to hold, but why they do hold the beliefs they hold. This groundwork is relevant and necessary for understanding the knowledge claims of CSR and that of Ghazali and its relationship to Fitra. Belief is seen as effectively a mental process.[201] Psychologists typically categorize belief into two categories. The first category is that of r*eflective* belief and the other is

[201]Justin L Barrett, *Why Would Anyone Believe in God?* (Walnut Creek, CA: AltaMira Press, 2004), 1-2.

non-reflective belief. The former is derived through intentional thinking and contemplation. These include beliefs like 12x 8=96 and the beliefs we typically hold like belief in God.[202] They involve evaluating information and producing a more conscious opinion that may or may not be in accordance with our initial unconscious beliefs. Reflective beliefs are decisive, and they form typically when a problem needs to be solved.

Barrett suggests that reflective beliefs arise out of non-reflective beliefs and that there are factors that influence the propensity for this occurring. Three reasons he suggests for the impact of non-reflective beliefs on the emergence of reflective beliefs are as such: 1) Nonreflective beliefs are the default basis for reflective beliefs. 2) Whenever non-reflective beliefs align with reflective beliefs, they seem more credible, 3) Lastly, non-reflective beliefs mold the experiences that individuals use as evidence for their reflective beliefs.[203] Thus, Barret argues that reflective beliefs arise out of non-reflective beliefs, and in situations where a reflective belief is demanded from us, our unconscious beliefs will be "read off" so to speak, and if there aren't any significant reasons to discount this non-reflective belief, our mental faculties accept them reflectively.

There is a kind of general distinction that Ghazali makes with regard to wahm which produces immediate and intuitive knowledge and that of the intellect. According to Ibn Sina, estimative judgments can be manifest in a mother experiencing love for her

[202]Barrett, *Why Would* Anyone, 1-2.

[203] Barret, 12.

child, or a sheep knowing intuitively that a wolf is dangerous.[204] These estimative judgments can later form "universal judgments," but they can in fact be false. Those that are true become so through the confirmation of one's intellect. Furthermore, estimative judgments (*wahmiyyat*) that come from the *wahm* have the potential to be false and they can't always necessarily be distinguished from the true judgments i.e., the first intelligibles (*awwaliyyat*). Both the intellect and estimative faculty of the fitra cannot distinguish the truth or falsity between them.[205] They can deceive us quite easily. The wahmiyyaht and the awwaliyyat can seem similar and the fitra is hard pressed to discern between them. Barrett also makes a broad distinction between non-reflective beliefs and more reflective beliefs. Non-reflective beliefs are automatic, fast, spontaneous, as well as the distinct in the contexts where they form. They form spontaneously, non-reflective beliefs come about automatically and don't require intentional thought. It is not efficient or feasible for many of our everyday common beliefs to have to be thoughtfully and intentionally considered. Thus, non-automatic beliefs like "I can't walk directly through a wall" rightfully remain in the realm of automatic beliefs. Another automatic belief may be, that if you see someone take a bit of a sandwich, you will produce a non-reflective belief that the individual is hungry. This kind of instinct and the utility of these tools as well as the nonreflective beliefs that they produce are crucial in our everyday functioning.[206] Barrett argues that belief formation is not necessarily truth-oriented. Non-

[204]Griffel, "AL-Ghazali's Use," 16.

[205]Griffel, 17.

[206]Barrett, *Why Would Anyone*, 6.

reflective beliefs are formed through their functional usage and efficiency rather than their truth. It can be a challenge to discern their truth. This is shared with the judgments that form through the wahm.

Furthermore, these estimative judgments (wahmiyyat) can contain truth in the domain of sense perception but false be with respect to those domains outside of sense perception. Yet, it is in some sense convincing to the intellect that such judgments are generalizable beyond the scope of the senses. The stronger one's intellect is, the more one is able to discern the differences. It is important to note that the intellect accepts false judgment from the wahm when it pertains to things that are outside the scope of our external senses.[207] As I mentioned, estimative judgments are not necessarily true but the *wahm* makes them appear as being necessary and thus not being subject to doubt. However, the judgments that come from the *wahm* can be true for the domain of things that they pertain to, wherein information derives from sense perception. Outside the domain of sense perception, however, the *wahm* can produce false judgments that appear to us to be true.

Thus, estimative judgments (*wahmiyyat*) have two features that are relevant to my argument: namely that of deceiving us or rather not being easily distinguishable from true beliefs. Secondly, estimative judgments can produce false beliefs when one aims to generalize them to outside the scope of the realm of sense perception. So, what relevance

[207]Griffel, "Al-Ghazali's Use," 22.

does this have to cognitive modules and belief in supernatural agents like God and the Islamic context?

Earlier in the thesis, I described the byproduct model within CSR which includes the various mental modules/devices. Cognitive Scientists believe in the human mind as containing different kinds of tools. The mind is seen as a kind of workshop or switchblade. There is much debate amongst cognitive scientists regarding whether certain brain areas are used in service of multiple tools, akin to how a hammer is seen as having more than one function. There is also debate about how many tools exist and whether they are innate or they are developed via experience. What isn't as contentious is the belief in mental tools themselves. Rather than having one "powerful multipurpose mental tool" it makes more sense for there to be a number of specialized tools. These mental tools are all working on the non-reflective level. Barrett thinks that it is useful to think of mental tools in terms of three different categories: "categorizers, describers. And facilitators."[208]

1) Categorizers: The agency detection device (ADD) would be an example of a categorizer.
2) Describers: Theory of Mind (ToM) would be a good example of a describer.
3) Facilitator: The Social Status Monitor would be a good example of a facilitator.

Categorizers tend to take in information from our basic senses and make a determination about what kind of thing we are perceiving. This instantaneous perception

[208]Barrett, *Why Would* Anyone, 4.

is done outside of one's conscious awareness. This is active as infants. So, for instance, a mental tool known as a face detector is present at birth. Infants can upon being a day old discern human faces and imitate them. One kind of mental tool that falls under this class of mental tools is the Agency Detection Device (ADD), sometimes referred to as Hyperactive Agency Detection Device, for reasons I will discuss later.

The second class of mental tools is describers. Once the categorizers determine what category an object is, the describers start to suppose the properties of it. It generates property-related features and expectations. So for example, if an object is identified as a rock or a ball the kinds of expectations that will be generated will be that they are "occupying a single location at a time, not being able to pass through other solid objects, being subject to gravity, being movable through contact, requiring time to move from one place to another, and so forth."[209] One mental tool that falls into this kind of "describer" is the *theory of mind* or *agent describer* tool, which is relevant for our discussion. When the agency detection device discerns something as seeming to engage in self-initiated action, the theory of mind tool ascribes to it mental properties like desires, motivations, "thoughts and beliefs that guide actions, memory for storing precepts and thoughts, and so forth."[210]

The last category of mental tools is that of facilitators. Their function is to coordinate social activities and situation-based behaviors, that do not simply depend on

[209]Barrett, 4.

[210]Barrett, 4-5.

the kind of *things* involved. An example of this would be the *social exchange regulator.* This mental tool is involved in monitoring reciprocity and who owes who what. This last category will not be relevant for our purposes.

What these mental tools have in common is that they function automatically and are implicit. They do not function at a conscious level. They are present cross-culturally.[211] As a result, they may be helpful in understanding beliefs and behaviors that reoccur across cultures. It is important to note however that this does not indicate that they are necessarily biologically hardwired or that they are developmentally inevitable.[212] There is also variability with regard to their emergence. No doubt, it is a difficult thing to conceptualize these tools and how they exist and function. It is important to note that these mental tools result in non-reflective beliefs.

Barrett hypothesizes about HADD and *theory of mind* as one set of explanatory factors responsible for carving out the propensity and naturalness for belief in God/gods. Barrett argues that HADD and ToM don't necessarily explain the "cause" of beliefs in God. This is key to note as his explanation does not aim to explain the origin of God, but merely why god beliefs come so naturally and are reinforced so easily. We have already established that god beliefs, according to those in CSR, are seen not as an aberration but rather as a result of our minds and the manner in which our mind utilizes mental tools. It is not my intention to superimpose scientific explanations in an attempt to explain away

[211]"Facilitators may have more variability than categorizers or describers." Barrett, 5.

[212]Barrett, 5.

theological tenets, nor is it to proclaim shared causal mechanisms between scientific explanations and theological explanations. Rather I want to gesture towards similarities between what both are trying to express and bring them into dialogue with one another. I argue that Ghazali's notion of *wahm*, or rather the estimative faculty within the fitra which pertains to epistemic functions can be thought of as a broad framework for understanding and situating various cognitive modules, specifically the hyperactive agency detection device and theory of mind and in light of non-reflective and reflective thinking.

Ghazali's commentary on Quran verse 30:30 in his 21st book of the *Revival* wherein he states, "Every human is created with fitra towards belief in God, exalted, and also toward knowing the things as they really are."[213] Here he obviously differs from Ibn Sina as I previously discussed. Griffel argues that we can think of how this fitra occurs within the paradigm of Ibn Sina's influence. His suggestion for how Ghazali's perspective on belief in God vis a vis fitra might come about is through positing that the *wahm* comes to some kind of initial judgment like "this thing has a single cause."[214] This involves some kind of sense perception. Then the *wahm* posits a judgment that "all things have a single cause."[215]Followed by the intellect verifying this judgment and concluding the creator God is the cause. This occurs irrespective of one's social and moral

[213]Al-Ghazali, "The book of Knowledge," 1:120. 9–10 (1:148.8).

[214]Griffel, "Al-Ghazali's Use," 31.

[215] Griffel, 31.

upbringing. This is a suggested and speculative pathway. There are CSR scholars who support this hypothesis.[216]

However, I would like to reappropriate the model that Griffel puts forth in understanding one's fitra for belief in God and apply it to HADD and ToM. Through Ghazali's own thinking about the various subcomponents of fitra; one can interpret the belief in God as an estimative judgment which is then confirmed as true by the intellect. Again, not necessarily through rational proofs, according to Ghazali's own opinion on the matter, but rather more like the reflective beliefs of CSR. The distinction must be kept in mind. I speculate that one can apply the epistemic process of the estimative judgment (*wahmiyyat*), entailed within the fitra, which includes sensory perceptions to cognitive modules like HADD and ToM.

Justin Barrett argues that the cognitive module/device referred to as the agency detection device (ADD) is prone to hyperactivity and sensitivity. What does this mean precisely? The hyperactive agency detection device (HADD) is thought to be related to older theories of religion that suggested religion was akin to a form of systematized anthropomorphism. In other words, "the making of the cosmos in the image of people." [217] The anthropologist Stewart Guthrie revivified this older theory. He noticed that humans have a tendency or bias to perceive obscure data in terms of being caused by an agentic force. Barrett argues that when one hears an ambiguous sound at night, one tends

[216]Aria Nakissa, "The Cognitive Science of Religion and Islamic Theology: An Analysis Based on the Works of Al-Ghazali," *Journal of the American Academy of Religion* 88, no. 4 (2020): 1087–1120.

[217] Barrett, "31.

not to ask *what* it is but rather *who* it is. Anthropologist Stewart Guthrie argues that there is a survival advantage in thinking that ambiguous data are caused by agentic forces like people and animals rather than non-agentic forces. Agentic forces are both our most considerable threat as well as our most considerable asset for survival.

As I have discussed, a key feature of this agency detection is its hyperactivity, making ADD into HADD. Stone Age humans scanned their environment and tended to assume agentic forces in the environment. If they turned out to be incorrect, no harm occurred. However, if a person assumes in response to ambiguous data that there isn't an agentic force and there happens to be one, there may be far more at stake. So much so that it could cost someone their life. In lay terms, imagine our ancestors in the forest. They see an ambiguous-looking branch and assume it is a snake, and it happens to be a branch, nothing is lost. However, if it ends up being a snake and they assume it is a branch, it could cost them their life. Therefore, it conferred survival advantages to assume agentic figures rather than not assuming them. This inevitably leads to false -positives, such that the overactivity of the mental tool is referred to as being hypersensitive. Guthrie refined this theory of systematized anthropomorphism and Barrett developed the terms ADD and HADD.

Estimative judgments share several features with judgments produced by HADD and ToM cognitive modules. Firstly, both HADD and ToM judgments can be thought of as kinds of estimative judgments (*wahmiyyat*). They both are inherent, intuitive, and estimative in nature; thus, easily form. They both have the capacity to be true or false and are very hard to distinguish as such. They both involve sensory perception. Estimative

judgments can appear to be necessary and true, whilst HADD and ToM also form judgments that are not truth-oriented but survival-oriented and can easily appear to us as being true. In addition, further judgments that are formed as a result of HADD experiences can be confirmed as false in the case of say a false-positive with respect to an agentic force or true if they are supported by evidence that turns them into a reflective belief. Similarly, estimative judgments (*wahmiyyat*) can be confirmed into a true judgment vis a vis the intellect.

Based on his experimental data, Barrett has concluded that all the input that is required for the triggering of the HADD module or mental tool is that of self-propelled motion that is goal or action-oriented. One highly replicated study showed participants a film with geometric shapes moving around a square. Upon completing this film, they described the series of shapes as agents having mental states, desires, beliefs, personalities, and at times genders.[218] Despite the fact that they didn't resemble actual agents they were attributed with agency and rich mental states. Another study showed that participants attributed agency to the movement of ball bearings that had hidden magnets made to move them. In this condition, their HADD was being triggered and agency was attributed to them. In another condition, the participants "indirectly controlled when the marbles moved (but not how they moved). In this condition, participants did not attribute agency."[219]

[218]Barrett, 32.

[219]Barrett, 32.

Barrett suggests that in the second condition because HADD is targeted towards non-inertial and self-directed motion, the result is that the individual searches for an agent. If an alternative agent can account for the motion that has taken place, then the object itself is not seen as an agent. However, if an alternative agent cannot be identified then the object becomes a "prime candidate for agency"[220] Barrett's work focuses on "self-propelled movement" but there are other factors like vocalizing of objects without having been contacted evoking attributions of agency. Thus, HADD perceives objects as agentic when there is a violation of assumptions about normal physical objects. These would include violations like "moving on non-inertial paths, changing directions inexplicably, or launching itself from a standstill."[221] Again if no other agent can be identified for this motion, then it assumes the object is agentic. It is important to reiterate that the HADD mental tool is non-reflective and unconscious.

Barrett argues that HADD's functioning has played a role in the development of religious concepts. He argues that ambiguous phenomena such as a "wispy form" can be attributed to agency like that of a "ghost or spirit."[222] With the help of facial detectors, people see the appearance of human forms. HADD then finds evidence to support the premise that these agents have mental states like thinking and feeling. Whether this judgment is real or not is irrelevant. As long as HADD is fed enough inputs to justify this

[220]Barrett, 33.

[221]Barrett, 33.

[222]Barrett, 33.

belief, and there are no major reflective beliefs to believe otherwise, the system can produce belief in an agent like a spirit or ghost.

There is another way in which HADD is involved in the reinforcement of natural religious beliefs. In addition to known objects, HADD can be triggered by unknown agents that are exhibiting agentic features. So, Barrett states that a storm cloud that destroys a singular home in a whole village with lightning may be perceived as acting purposefully. If there is a better candidate for explaining the phenomena, then it will be attributed to that candidate, for instance, an already existing god, like one who may control the weather.

HADD also identifies the *effects* of agents such that events of super agentic forces can elicit a HADD belief. Thus, an object does not itself have to be present but even the consequences of the agent's actions can be enough to trigger HADD.

When the consequences of a supposed agent are triggered, another mental tool known as theory of mind *begins to act on it.* Theory of mind (ToM) begins to speculate reasons for the agent having acted. When there isn't an obvious cause that is "mechanistic or biological," HADD starts searching for a cause and if there is perhaps an end for such actions i.e. Are there any goals that the event is trying to achieve? If HADD can identify a possible agent, ToM aims to bring about the motivations possible for the event as caused by the agent.

In *Why would anyone believe in God,* Barrett speaks of his wife's coworker who underwent a propane explosion in a grain silo. He somehow managed to survive the first

blast, and upon calling for God, he heard a voice responding to him. Shortly thereafter he found himself outside after having experienced being lifted 12 feet through a window. The doctor would tell him that given the situation, it does not make sense that he somehow survived the blast. The explosion should have killed him and caused major damage. Doug posits that angels carried him out of the building. The doctor and everyone else affirm this belief about angels. Here, we see HADD acting. Doug was not a believer prior to this experience, but his HADD elicited a candidate for an agency working in a goal-directed way. This was bolstered or facilitated by the cultural concept of "angel," which had been known/remembered by him. [223]

Doug's cultural concept of "angels" fortified his anomalous experience and took his non-reflective belief into a reflective one by way of a lack of alternative explanations bolstered by evidence to bolster his belief that he was carried out by angels. When Doug aimed to develop a reflective belief, his notion of angels strengthened this belief. Although this may seem irrational, the system that produces this outcome is comprised of mental tools that seek a sense of intuitive satisfaction and are largely nonconscious. Barrett is very clear in reiterating that his theory is not meant to explain the origins of religion but rather that these mental tools reinforce and make belief in God very natural, rather than an aberration or some external social as it sometimes is viewed as.[224] When the agency detection device is triggered, it starts speculating on the cause or agent or

[223]Barrett, 34-35.

alternatively the effects of an agent. It employs *theory of mind* to speculate on the motivations of said agent, even if the agent is not physically present.

To give a concrete example of such a process, one can look to Ghazali's own life and history through a CSR lens. Anecdotally, let us ponder Ghazali's own life and see if we can examine his belief in God vis a vis the mental modules of CSR. Ghazali had the highest-ranking professorship in the Nizamiyya schools under the Seljuk empire and had all the fame and prestige one could possibly want. The Seljuk empire was engaged in all kinds of political plots and murders.[225] There was treachery that was transpiring and his involvement with the court as his patrons and biggest supporters were a cause of great distress to him. Whilst in Baghdad Ghazali fell ill, which precipitated relinquishing his professorship. He came to understand his condition as a spiritual illness that had led to him being unable to eat, drink, or speak. Rather than interpret his sudden illness through naturalistic terms, he frames it within the spiritual framework and paradigm. We can examine this through Barrett's framework. Insofar as Ghazali is dealing with these unspeakable circumstances, his spiritual illness is interpreted by him as the *effects* of an agent, namely God. CSR would understand this mental process as a HADD process. The HADD module starts trying to determine a cause for his spiritual illness, perhaps an agentic cause. In Ghazali's terms, he comes to understand his psychosomatic illness as the result of God's agentic action. Barret argued, as I mentioned that HADD can be triggered not only with regard to agents but the *effects* of supposed agents. So, Ghazali

[225]Griffel's *Philosophical Theology*, 39-43.

having conceived of this anomalous physical effect on him, concludes that it is the agentic force of God who has sealed his lips so to speak.

HADD triggers *theory of mind* to start speculating on the motivations and goals of the agent in question. Ghazali perceives his actions and involvement with the court and his motivations for fame and glory to be maligned. God is expressing disapproval, which leads to this extreme distress within him. Thus, Ghazali comes to interpret his spiritual illness as an effect of the ultimate agent, Allah. Furthermore, he interprets God's mental state as being one of disapproval. HADD judgments can be potentially false judgments or conclusions, like Ghazali's estimative judgments. However, when they aren't disproven, they can be perceived as true; the mind fills in the blank with the characteristics of judgments regarding minds using *theory of mind*, taking a non-reflective belief into a reflective belief.

It is important to note that CSR makes a distinction between theologically "correct" and theologically "incorrect" beliefs. Effectively, when individuals are asked to describe God in impromptu conditions they describe a more personal God with human-like properties, versus conditions where they are reflectively describing God, and posit more abstract unintuitive notions like God is everywhere all at once. This latter category is thought of as theologically "correct." This does not refer to the truth or falsity of these beliefs.[226]

[226]Barrett, *Why Would Anyone*, 11.

Barrett might argue that these non-reflective beliefs turn into sophisticated theologically "correct" beliefs, if bolstered by theological concepts and if there are no obvious reasons to disprove such non-reflective beliefs. Ghazali's conceptions of God are of course not the anthropomorphic kind but the theologically correct kind of beliefs about God. Thus, his non-reflective beliefs which very well *could* produce anthropomorphic conceptions of God based on our mental modules like HADD and ToM and their expansion to nonphysical entities, do not do so. Instead, his non-reflective beliefs are bolstered and used as evidence with the support of classical monotheistic concepts to produce Ghazali's more reflective beliefs about God.

Furthermore, I would argue that theological concepts like Ghazali's occasionalist ontology are contributing factors to how his reflective beliefs about God are propped up from his non-reflective beliefs. Ghazali was a staunch proponent of occasionalist ontology, which was also held by the theological school of Asharites before him. This ontology is a kind of rejection of individuals actually causing their actions since it is thought that God directly acts and causes each moment to occur. God creates everything spontaneously irrespective of a cause (*Illa*) or a cause (*sabab*). Thus, humans do not "create" their actions so to speak. God creates actions" and individuals only acquire them effectively. Often this is referred to as the *theory of acquisition* (*kasb*). Since Ghazali has the theological concept of Allah, especially within the occasionalist ontology, God is the

ultimate cause and ultimate creator of all actions. Thus, Ghazali's spiritual illness is an *effect* of Ghazali's ultimate agent, Allah.[227]

I have established the role of estimative judgments as part of one's fitra in relation to the various functions of cognitive modules like HADD and ToM; as well as the role of reflective beliefs like theological concepts bolstering non-reflective beliefs. Yet, how does one go from an agentic figure produced by a HADD experience to a supernatural agentic figure, like the full-fledged God of Ghazali? One can perhaps find the answer in Ghazali's own thinking.

So how could one go from simple agency detection to supernatural belief in an agentic God? Ghazali asserts that estimative judgments can be false when individuals try to generalize them outward to the realm of non-sensory perception. A belief can be true within the domains of sense perception and simultaneously be false with respect to the realm of non-sensory perception. Similarly, when one is speculating on an agent, particularly one that is not physically and materially present like that of the Islamic and Monotheistic conception of God, one is subject to making false judgments, since he is thought to be out of the realm of sensory perception. That's how one might go from a simple agent triggered by a HADD experience to generalizing to a non-sensory being like God. This does not mean that God is a result of a false estimative judgment. As I articulated, false estimative judgments can sometimes form because one tries to apply

[227]Griffel, *Al-Ghazali's Philosophical Theology*, 124-128.

estimative judgments to the realm that is beyond one's external senses. Therefore, it will result in erroneous conclusions.

Ghazali believed anthropomorphizing came from erroneous judgments from the *wahm* when it was more powerful than the intellect and thus would result in false judgments.[228] I think one can look at Ghazali's claim that an anthropomorphic God is conjured with respect to the false estimative judgments; and what are HADD beliefs if not non-reflective intuitive beliefs that have the potential to be incorrect as Ghazali believes. They are not rooted in reason (*aql*). As we described earlier, our rudimentary mental tools which are the basis of non-reflective beliefs are geared toward survival and not necessarily truth. The strength of these non-reflective beliefs is influenced by various biases and how these non-reflective beliefs get utilized. Barrett tries to make the claim that theological beliefs like belief in God regardless of truth or falsity are so intuitive because they are sustained by our mental tools which shape non-reflective beliefs. This is where I could see Ghazali's theory that false estimative judgments could produce an anthropomorphic God as being viable with the Cognitive Science of Religion framework. However, I would argue that CSR might assert that non-reflective beliefs which come from cognitive modules like HADD and ToM become reflective beliefs when there are theological and cultural concepts to bolster them or there aren't any alternative explanations for the HADD event outside of the cause as an agent. Therefore, in response to Ghazali, I argue that if kept at the level of estimative judgment (*wahmiyyat*), then a HADD experience may just remain at the level of a material agent or anthropomorphic

[228]Griffel*, Al-Ghazali's Use,"* 29.

agentic God unless a theological or cultural concept like Allah can bolster/scaffold the non-reflective belief into a reflective belief. It is this intellect, in Ghazali's manner of thinking that takes an overpowering *wahm* into a true judgment by the process of discernment.

Next, I will examine what role fear plays in eliciting one's fitra (ie. belief in God), and how CSR might understand this process. The question of fear and its role in eliciting god beliefs has been a long-standing observation among religious studies scholars, philosophers and those involved in CSR. I believe there are fruitful areas of application of CSR to the field of Islamic Studies with regard to a human's fitra and its relationship to fear. The role of evoking fear and God has been prevalent throughout religious traditions, specifically the Abrahamic faiths. There is a plethora of Quranic verses that deal with the relationship between the two. For instance, in surah Baqarah verses 155-157 God says, "Who, when disaster strikes them, say, "Indeed we belong to Allah and truly, and indeed to him we shall return." Utz suggests that trials are integral in clarifying an individual's obscured fitra; and that one's social influences create false beliefs that do not align with Islam, and which develop over time. It is during times of distress or trauma that individuals call out for help.[229] Utz suggests that it is in these moments that individuals in calling out to Allah, uncover their fitra which has been denigrated by "false beliefs, principles, ideals and behaviors."[230]

[229]Aisha Utz, *Psychology from the Islamic Perspective* (Riyadh, SA: International Islamic Publishing House, 2011), 111.

[230]Utz, *Psychology*, 112, 193.

Cognitive Science of Religion literature argues that there is a connection between threat detection and belief in supernatural agents. It has been argued that threatening circumstances to ambiguous situations may bias one to over-detect agency, as well as intentionality thus stimulating one's belief in supernatural agents,[231] as I discussed with HADD. Furthermore, I would conceptualize fear as the affective response to threat. It can be mediated by various factors such as religious beliefs that can influence and moderate agent detection.[232] One can look textually to see evidence of the relationship between threat and the subjective response of fear eliciting god-beliefs.

In the Islamic context, the relationship between fear and eliciting specific judgments and beliefs, like fitra is quite clear. Ghazali quotes Quranic verses that underscore the relationship of knowledge of God with fear; like "Only the knowledgeable amongst God's creatures fear him."[233]Thus, the "merit of knowledge points to the merit of fear, because fear is the fruit of knowledge."[234] He cites many such Quranic verses and hadiths referring to the relationship of fear to God. Such as the hadith of the prophet

[231]See Stewart Guthrie, *Faces in the Clouds a New Theory of Religion* (New York, NY: Oxford University Press, 1993); See Justin L. Barrett, "Why Santa Claus is not a God," Journal of Cognition and Culture 8, no. 1–2 (2008): 149–61; See also Lisdorf 2007.

[232]For a discussion on the effect of illusory agency in paranormal believers see M. van Elk, "Paranormal believers are more prone to illusory agency detection than skeptics," Consciousness and Cognition: An International Journal 22, no. 3 (2013): 1041–1046, https://doi.org/10.1016/j.concog.2013.07.004

[233] Quran 35:28.

[234]William McKane, ed., Al-Ghazali's Book of Fear and Hope (Brill Archive, 1962), 38.

wherein a "voice" (ie. God) says, "The most preferred of you with God are those who are most god-fearing"[235]

I argue that Ghazali's endorsement of the therapeutic role of fear as a tool of instruction is based on the observation of its functional role in eliciting and strengthening one's belief in God. In the *Book of Fear and Hope,* from his magnum opus *Revival of the Religious Sciences* Ghazali argues for the therapeutic role of fear and hope. In the preface of the text, William McKane argues that Ghazali's principal objective is to outline the means by which to use fear and hope as a cure for the soul.[236] His goal is to ensure individuals the means to salvation and sure one's soul. He posits that the topic is one of "pastoral psychology," and is a good sample of Ghazali's work insofar as it exemplifies why Ghazali is a highly theological figure. He even uses medical idioms because he is viewing his role as being that which tends to the community in relation to spiritual ills. His primary goal is practical and to bring the highest benefit to the most people in the community of the faithful. He is keen on protecting the ordinary believer who should be "fed" so to speak on the Quran and the Hadith rather than on the dialectic of the scholars which is not suitable for the masses, whose minds are modestly endowed. The tools for eliciting faith must consider the variability of people's intellectual capacities and their temperaments.[237] Ghazali posits that hope and fear were tools that could be leveraged to elicit faith, and in so doing al-Ghazali points to this deep-rooted insight into how fear

[235] McKane, Book of Fear and Hope, 40.

[236] McKane, x.

[237] McKane, preface, XI.

elicits god-beliefs. McKane argues that it may seem repulsive to speak of fear, as it is often viewed as antiquated, but in the best sense of the word, insofar as it is old it can be attested to intuitively.

Ghazali speaks of the role of Fear and Hope in two different circumstances. He believes Hope is a remediation for the excesses of despair and is most useful at the time of death. This orients a person towards God's pardoning him. Yet its scope as *a therapeutic* mechanism is limited because it is not attuned to the "condition of most men." All it would do is increase the feeling of despair, and the role of these two therapeutic techniques in tandem is to correct "excesses." He does not do a deep treatment of hope because the theologians according to him had already settled this matter as it directly pertained to resurrection and judgment. In his mind, these questions were settled and did not require further investigation. Despair is mentioned only in relation to its pathological nature and the manner that it could be remedied with hope. Fear and Hope in isolation are not "better" or "worse;" rather they complement one another. He believes hope and fear should be employed to rectify excesses in the soul and achieve equilibrium Thus, his treatment of fear is more pertinent as a set of pastoral techniques to bring individuals to safety eschatologically.

He describes fear among two types of people. The first group is the spiritual elites whose fear is rooted in the knowledge of "predestination and the evil of the seal," as well as the sense of being alienated from God. This is relevant for our purposes. The other

group is the healthy (s*alih*) whose fear is based on the knowledge of one's sins.[238] The basis of the individual's fear is rooted in what he knows vis-a-vis authority. He references a tradition from Abu Bakr wherein it is demonstrated that the fear of God's "stratagems" is a more advanced kind of fear than fear that is rooted in God's promises. The other kind of fear is more useful as it applies to the many. The middle path of fear is to be achieved. He argues that "deficient fear" results in "sentimental regret." However, the employment of adequate fear can prevent one from transgressing God and being obedient. This is an expression of his belief in moderation.[239]

The optimum between fear and hope that he posits is dependent on which is in greater need. Each one is a therapy that is needed in proportion to the spiritual disease, to use Ghazali's language. "Fancied security," as he refers to it, from God's stratagems (predestination) requires fear. Conversely, the higher good is hope in cases of deep despair. Yet he also states that it is perfectly acceptable to say that fear is the greater good since the cure that it targets is "disobedience and self-deceit" that plagues people more frequently and is more dominant.

Ghazali believed a complete knowledge of God was not possible through philosophical inquiry. This is demonstrated in the implicit difference between "knowledge of science (*ilm*) versus knowledge or gnosis (*ma'rifa*)." The first mode is dangerous, and the second mode is a "self-authenticating insight." As part of his Sufi

[238]McKane, preface, XII.

[239]McKane, XIII.

teachings, he explicates the various "stations" of the spiritual path and what they involve.[240] He delineates fear and hope as being where the "root of assurance" takes hold, followed by patience, then spiritual combat and utter devotion, then guidance and *ma'rifa* in individuals for whom "the way" has presented itself. According to McKane Al-Ghazali's overall imperative is the manner in which to imbibe the masses with the "salutary effects" of religion. It must not only be an intellectual exercise or the purview of some saints. Thus, it's clear that fear is involved in the rudimentary aspects of the steps of faith in God.

Al-Ghazali posits that the spiritual elites' fear is rooted around two things: Predestination as well as something he refers to as *the Seal;* "the confirmation of what has been predestined for a man."[241] "The evil of the seal" includes the major seal comprised of apostasy and doubt and the minor seal, that of worldly preoccupations. There are also two causes that he specifies regarding the major seal. One is incorrect belief and the second is weak faith.

At the beginning of the book, al-Ghazali states that the feeling of fear and hope pertains to what is not determined. He states that it would be akin to hoping for the sun to rise and to fear the sun setting. Both are determined so hoping and fearing them would not occur to most.[242] He states that fear is the suffering of the heart through anticipating

[240]McKane, XVII.

[241] McKane, XY.

[242]McKane, 3.

that which is an undesirable future contingency.[243] This is important for our circumstances since fear comes about as a response to unknown causes and fearful circumstances. He goes on to say that being intimate with God does not allow room for fear or hope since her state is higher than either of these states. These things distract. However, in this book, he aims to discuss the initial stations of faith as it were. What I think he means here is the role of fear in the rudimentary and primary stages of faith, and I would contend that this is compatible with CSR claims about belief at its rudimentary level, not in its reflective and elucidated levels.

What's important to note is that Ghazali focuses on the functional aspect of fear. He also wants to conceptualize fear in terms of the trajectory of "knowledge, state, and action." Fear can only be as such if it functions in service of action. It must produce a change in behavior. Most helpful is this fear to none other than those who possess illusory security, like the atheist in the foxhole, and those who fall prey to the major seal. Furthermore, there are certain degrees of its effect on a person. It can produce abstinence, and at higher levels, piety, and the higher state which is surrounding yourself with only God and nothing else. Thus, fear is useful only if it causes a shift in behavior. Again, the necessity for action and how fear acts as an incentive for it. It is however not useful at death since the incentive is deemed irrelevant at this point.

Having knowledge of causality produces fear in relation to the thing feared or loathed. This knowledge is proportionate to one's fear. So, he states that it is as if an

[243] McKane, 25.

individual transgressed against a king and then fell before him. His fear would be proportionate to the extent of knowledge he has regarding his being killed, like the temperament of the king and the degree of transgression. Conversely, the fear is faint when the knowledge of the means is weak. Ghazali states that fear does not derive from the "crime" but from the subject ie. the king, in the aforementioned example. Moreover, the nature of the thing is the feature that is most relevant. He explicates the various categories of fear relative to the objects of fear. He says that fear occurs due to the expectation of what is feared due to its essence, like the case of fire, or because of the effects which are abhorred. Furthermore, he repeatedly brings up the example of the lion. Whomsoever falls into the grips of the lion, is afraid as a result of the nature of the lion. The knowledge of the means of the *thing* is the cause of fear.

I think it is instructive that he uses this primitive example of humans relating to the fear of vicious animals followed by its relation to the fear of God. He argues that this fear can be produced in regard to either 'knowledge' of God or knowledge of one's sins, respective to the spiritual elites or *Salih*, as he refers to them. Thus, when knowledge of God in the sense of gnosis or *ma'rifa* is perfected, fear is utmost. This fear is again like the claws of a lion for whom the victim is yet unaware if he will be spared or ravaged and is consumed with his fear. This is the state of he who is knowledgeable of God.[244]

I am going to focus on the relationship that he fleshes out between fear and knowledge of God. He states that fear is the "whip" of God insofar as it pushes God's

[244] McKane, 28.

creatures towards "knowledge and action."[245] In so doing, they gain proximity to God. Thus, he states, one should not fear the whip, and that fear in excess is not salutary. Rather, equilibrium and the mean are what one should strive for.[246] Too much fear stifles individuals and impedes action. It leads only to hopelessness. "The aim of fear is the same as the aim of the whip which is to incite action." Thus, the result of fear is caution and abstention as well as "piety and spiritual combat and worship and reflection."[247] He warns against the extremes of fear, such that it may lead to the "atrophy of mind and health" and so doing requires hope as treatment.

The spiritual elites fear the knowledge of God and his attributes, and those he refers to as the Sound in faith (*Salih*) are afraid of their disobedience. The disobedient, if he had a knowledge of God, then his fear would be for God, not merely his disobedience. He claims that obeying God is due to a combination of "the will to obedience" or "the will to disobedience" in combination with the irrevocable will and power that comes over a person, and thus an action comes about vis a vis necessity. This is related to what has been decreed. Thus, one must fear that being who decrees as he wills. He mentions what was said to King David, "Fear me as you fear the harmful lion."[248] This comes back to Ghazali's occasionalist ontology wherein God creates all actions and thus fear of this group of spiritual elites comes from the knowledge of God's decrees and will.

[245] McKane, 29.

[246] McKane, 29.

[247] McKane, 31.

[248] McKane, 36.

Ghazali asserts that a great knowledge of God increases fear, and in a related fashion his assertion that fear can be used as a "whip" so to speak to evoke and strengthen belief in God. How can this be understood within the context of the Cognitive Science of Religion and what I have discussed regarding how HADD functions in relation to threat detection and fear? Perhaps it is the case that in more sophisticated beliefs in God like Ghazali's conception of God, reflective beliefs are being engaged. These beliefs employ sophisticated cultural and theological beliefs to bolster rudimentary god-beliefs. Thus, greater knowledge of God incites more fear, in Ghazali's own conceptualization.

This is different from the model of HADD that posits agency is detected in situations that are threatening and ambiguous ie. there is less knowledge of the situation, which occurs at the level of unconscious non-reflective belief. I would like to argue that Ghazali's description of fear as being utmost when one has greater knowledge about the means and object of fear, is most relevant to the higher stages of faith. These stages of faith manifest in the spiritual elites who fear God's predestination and his seal, meaning they fear his actions knowing they are powerless relative to God and what he chooses to enact. Here, the cause of fear is clear.

One CSR study showed that priming people with supernatural beliefs had the effect of detecting agency, but that this was only effective on those who held religious beliefs, not skeptics.[249] Thus it is argued that religious beliefs and the role of culture can

[249]Michiel van Elk, Bastiaan T. Rutjens, Joop van der Pligt, and Frenk van Harreveld, "Priming of Supernatural Agent Concepts and Agency Detection," Religion, Brain & Behavior 6, no. 1 (2016): 4-33, doi:10.1080/2153599X.2014.933444

have a mediating effect. The higher stages of faith wherein one has the utmost knowledge of God and subsequently as Ghazali states an utmost fear of God, is where I see this mediating effect of religious beliefs and theologically correct God concept, as Barrett might put it. This is done at the reflective level. Another study found no relationship between threat and heightened agency detection. However, they cited their operationalizing of threat to be not in line with natural occurrences of threat, like being in a dark forest at night. [250]

Thus, Ghazali's description of the fear of the lion is more apt in describing clearly fear and its relationship to God in CSR terms. Ghazali tells us of a youth and his father responding to a lion or a snake. The youth does fear although does not know the 'why' or the cause, whilst his father does know vis a vis insight and knowledge. Through authority, the youth look to his father for guidance via the authority vested in his father. So, what is this relationship between the fear of those innately fear-inducing objects in nature and that analogy that he makes to the fear of God?[251]

He states that fear of the lion is not due to the sin against the lion but comes about as a result of the essence of the lion. Al-Ghazali then analogizes this parable to the fear of God. There is an implication that individuals fear it. So too individuals fear God due to his essence and the manner in which he does what he wills without concern. This may be

[250]Van Elk, "Paranormal Believers," 1041-1046.

[251] McKane, *Book of Fear and Hope*, 52.

manifest in his decreeing those who go to heaven and those who go to hellfire and is related to the fear of the Seal.

Ghazali is clear in reiterating that the lion is not being equated to God. However, I would argue that since he interprets all agency in terms of God's power, he is going from the general ie. God, to describe events as particulars of God's actions, ie. the fear instilled in a person from confronting a lion. It is, however, instructive that he analogizes the lion at the rudimentary level to describe the basic levels of faith and belief in God, rather than the higher stages of faith in God, wherein a deep knowledge of the means of God is utmost. This accords with the CSR claim that ambiguous threatening situations stimulate the detection of agency.

Important to note is the "order of ascent of the stages of religion, and no one station can succeed the root of assurance except fear and hope" as a kind of foundation and necessity for the later stages in his various spiritual stations. Thus, the higher stages of belief in God and piety are wholly different from the rudiments and early stages of faith which require the whip of fear. Similarly, CSR would argue that a threat, like that of the lion, would induce the early stages of agency detection, much like the rudimentary stages of faith in God, as per the analogy that Ghazali makes between the fear of the lion and the fear of God.

Conclusion

The Cognitive Science of Religion (CSR) makes the claim that god-beliefs are a natural phenomenon and that the kinds of minds we have resulted in similarities of religious belief across different cultures. The mind, it is thought is comprised of various cognitive modules, that according to the byproduct model of religion produce religious beliefs incidentally. The pluralist approach that I chose for this thesis put forth a theoretical framework of religion that accepts the byproduct model with their cognitive modules in a primary role, as well as a level of adaptationism, and a role for culture. The general outlook that CSR has towards the study of religious belief is that of aiming for explanatory accounts of religion, lending itself towards the comparison of different religious phenomena, along with scientific frameworks. It is in this paradigm that I thought there were fruitful areas to explore within the work of theologian and medieval scholar Abu Hamid al-Ghazali. Islamic thought contains the notion of fitra that explains the belief in God as part of one's inherent disposition. Ghazali's notion of fitra was explained in many different respects, although not in a deep and systematic way. It has different connotations, and some of these interpretations were inspired by the Persian philosopher and Polymath Ibn Sina.

One aspect of the fitra that I elaborated on was the epistemic function of fitra which included faculties like the estimative faculty (*wahm*) and the intellect (*aql*).

Ghazali scholar Frank Griffel posited that one could interpret the estimative judgment as positing that God exists followed by its confirmation via the intellect. I reappropriated this process but with an application towards the various cognitive modules of the mind as posited via CSR. I argued that the *wahm* shared features of non-reflective beliefs which is an aspect of the foundation of cognitive modules.

The hyperactive agency detection device is a posited cognitive module that is sometimes proposed as an explanation for belief in supernatural agents. It is thought that our ancestors in the Stone Age were more likely to survive if they were highly vigilant about potential agents in the environment, even if it resulted in an excess of false positives. Thus, this module aims to find agents in the environment. It can sometimes be triggered by a cause and sometimes a HADD moment is triggered in response to *effects* that are then speculated as having agents. The cognitive module referred to as theory of mind aims to speculate on the mental states, desires, and goals of other subjects. It tries to fill in the blanks of said agents. I argued that HADD and ToM could be seen as kinds of estimative judgments that get either accepted or negated through reflective beliefs somewhat akin to intellect (*aql*), as per Ghazali's understanding. Two features estimative judgments share with HADD and ToM modules are they are posited judgments that aren't necessarily true however they may deceive us. Secondly, these estimative judgments like HADD judgments may lead to erroneous beliefs when they try to extend themselves out of the realm of sensory perception.

Ghazali also argued that erroneous and anthropomorphic conceptions of God would occur if one's wahm aimed to produce judgments outside of the realm of sensory

perception. However, this also may explain how a HADD experience and the agentic figure it produces can get extended outside the realm of sensory perception to a supernatural agent, in Ghazalian terms.

Furthermore, theological concepts can bolster non-reflective beliefs into reflective beliefs, and I argue that Ghazali's occasionalist ontology which posits God as the agent of all actions and moments bolsters his non-reflective belief in God. Justin Barrett, one of the early founders of CSR claimed that posited cognitive modules did not explain the origin of belief in Gods, but merely explained why our minds tend to reinforce such beliefs so naturally.

My last argument was that the role of fear and its eliciting of god beliefs have always been a reoccurring theme in Islamic belief. Some CSR scholars claim that threat and fear can heighten HADD experiences, making a person more likely to detect agents in response to causes or effects. I argued that Ghazali in his *Book of Fear and Hope* makes the point that fear is like a whip or a therapeutic technique for those dealing with doubt or apostasy. The claim that fear can be used to incite action in a person who doubts God, is based on the observation that Ghazali had about the relationship between fear and its potential for eliciting God beliefs. This research is contributing to an area of intellectual discourse that seeks to bring more convergence between Islamic Studies and the Cognitive Science of Religion which is virtually non-existent. It is not my intention to posit theories that "explain away" religious phenomena and theological concepts, as they are not mutually exclusive. I would like to merely draw attention to areas of thought where there can be points of convergence and wherein thoughtful discussion can be had.

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