

THE COGNITIVE SCIENCE OF RELIGION/ATHEISM AND ITS IMPACT ON PLANTINGA'S REFORMED
EPISTEMOLOGY.

By

RICHARD JONATHAN SAGAR

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School of Philosophy
College of Arts and Law
University of Birmingham
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INTRODUCTION

If one considers the philosophy of religion in the 19th century it was not uncommon for philosophers (Ludwig Feuerbach, Karl Marx etc...) to offer hypotheses about the psychological origins of religious beliefs and what impact such origins might have on the justification for these religious beliefs (religious epistemology). However, As Josh Knobe and Shaun Nichols note in “An Experimental Philosophy Manifesto” with the rise of analytic philosophy, such considerations were largely set aside without strong arguments as to why this enterprise was without merit, but rather because such endeavours had fallen out of fashion. (p7, 2008)

I shall attempt to put such question back into the fore and re-consider them in light of the contemporary, and still emerging scientific field of the cognitive science of religion (the study of religious belief using the tools of modern evolutionary and cognitive science). In recent years scientists, philosophers and theologians have begun to reflect on the philosophical implications the cognitive science of religion might have. Through this thesis I will attempt to add to this growing body of work.

However, not only have the hypotheses to explain the origin of religious beliefs advanced since the time of Marx and Feuerbach, there has been notable progress in religious epistemology. A branch of religious epistemology known as ‘reformed epistemology’ has come to the forefront as one of the most influential accounts of the warrant of religious beliefs. ‘Reformed epistemology’, the idea that belief in God is ‘properly basic’ and it is thus rational to hold such a belief without appealing to a body of argument in support of it, has had a number of influential proponents but none more so than Alvin Plantinga.

In this thesis I shall explore the impact of the cognitive science of religion on Plantinga's conception of reformed epistemology. In particular, I shall examine whether or not the cognitive science of religion offers a credible *de jure* objection to theistic belief and if there are successful ontological objections to Plantinga's epistemology. I will claim that the cognitive science of religion does not present a plausible objection to Plantinga's account of theistic belief, but that the cognitive science of atheism does present a considerable challenge to Plantinga.

To achieve this, in my first chapter, I will initially present (albeit briefly) the core components of Plantinga's account of how theistic belief can achieve warrant without appeal to a body of argument. I shall then consider how some of the traditional naturalistic accounts of belief in God may pose a *de jure* challenge to theistic belief (the Freud/Marx complaint). This shall be accompanied with Plantinga's reply to such contentions. In the second chapter, I will give an explanation of the cognitive science of religion and some of the most credible theories it proposes as to the explanation of belief in God. Once this has been achieved, in my penultimate chapter, I shall consider the Freud/Marx complaint (and a number of other epistemological objections) in light of the explanations given by the cognitive science of religion. I will claim all of which ultimately fail. My final chapter shall consider a number of ontological objections to Plantinga's epistemological model. These shall include Stephen Maitzen's 'demographics of theism problem' and the challenge posed by the cognitive science of atheism. I will claim that the cognitive science of atheism poses a substantial problem to Plantinga. I shall conclude that somewhat paradoxically, the cognitive science of atheism offers a greater challenge to Plantinga than the cognitive science of religion

WARRANTED CHRISTIAN BELIEF AND THE FREUD/MARX COMPLAINT

It is frequently presumed that for any theistic belief p , it can be held rationally, if and only if, one has sufficient propositional evidence for p . Such a belief supposes evidentialism. Under evidentialism, those wishing to argue for/against the rationality of a particular theistic belief suppose something akin to the following argumentative structure:

1. For a theistic belief to be held rationally, one must have sufficient evidence for that belief.
2. There is/is not sufficient evidence for a certain theistic belief.
3. Therefore, one can/cannot rationally hold a certain theistic belief.

Alvin Plantinga's aim, and the aim of reformed epistemology more generally, is to deny premise (1) and thus to claim that theistic belief, and in the case of Plantinga Christian belief, can be "accepted with perfect rationality even if the believer doesn't have any such good arguments for this belief, and even *if there aren't* any such arguments." (Plantinga, 2007, p614)

What's more Plantinga not only claims that one can be rational in accepting Christian beliefs but also that one is warranted in holding Christian belief without an appeal to argument.

Before we can fully develop the reasons Plantinga holds such a view, we must first briefly examine his underlying view of warrant.

Plantinga on Warrant

According to Plantinga, the much vaunted extra ingredient needed for mere true belief to qualify as knowledge is 'warrant'. In 'Warrant and proper function' (1992) he suggests that a belief can acquire warrant if it is produced by cognitive faculties functioning properly, not subject to a disorder or dysfunction. The idea of 'Proper function' is linked to that of a

‘design plan’. Much in the sense that organs in the human body have a way they should work when all is well i.e. the lungs should transport a certain amount of oxygen into the bloodstream. So do our cognitive systems. (Plantinga, 2000, p154) they can either function properly or malfunction. Moreover our cognitive faculties will only achieve their purpose if they are ‘properly functioning’ in an environment for which they were designed. (This is not to suppose that they were designed by God, for evolution by natural selection might suffice in endowing us with design plans.) As well as the notion of ‘proper function’ and ‘design plan’ the cognitive faculties’ purpose must be to produce true beliefs. As a cognitive faculty properly functioning in the environment for which it was designed whose purpose is to console us/distract us from reality would seem to lack warrant. Even with these further clarifications, this definition is not adequate, as the design plan in question must be one which is successfully aimed at truth. I.e. one where there is a high probability that a particular belief produced as a result of the plan will be true. (Plantinga, 2000, p156)

So ultimately a belief is warranted if that belief is produced by cognitive faculties functioning properly (i.e. not subject to dysfunction) in a cognitive environment which is appropriate for those cognitive faculties, according to a design plan that is successfully aimed at truth.

(Plantinga, 1992, p615)

As Plantinga’s notion of warrant has been defined. I shall move on to consider a model Plantinga claims can give theistic belief warrant.

Aquinas/ Calvin Model and the ‘Sensus Divinitatus’

Plantinga considers, Whether Christian belief can get warrant, not by argument but by virtue of (broadly construed) religious experience (Plantinga, 2000, p136) Such religious experience broadly construed, needn’t be in a vivid veridical experience of the numinous, even though it could be of this kind, but instead the result of something Plantinga, following Calvin refers to

as the ‘Sensus Divinitatus’ (sense of divinity). The ‘Sensus Divinitatis’ is akin to a faculty or cognitive mechanism which, under the right circumstances, produces beliefs about God.

(Plantinga, 2000, p172) In typical instances such beliefs are not consciously decided upon, “we just find ourselves with them” (Plantinga, 2000 p172) much in the same way as perceptual and memory beliefs. (Plantinga, 2000, p173) Awareness of God under the Sensus Divinitatus is “natural, widespread, and not easy to forget” (Plantinga, 2000, p173) Plantinga also thinks that the capacity to form beliefs about God from the Sensus Divinitatus is innate. (Plantinga, 2000, p173) This is not to be confused with having an innate knowledge of God, merely the capacity to achieve such knowledge. Bearing these provisos in mind, Plantinga defines the Sensus Divinitatus as “a disposition or set of dispositions to form theistic beliefs in various circumstances, in response to the sorts of conditions or stimuli that trigger the working of this sense of divinity.” (Plantinga, 2000, p173) These stimuli could include the great wonders of nature, a sense of divine condemnation upon performing a morally wrong action or perhaps even a spontaneous prayer made when in danger. While such examples are not exhaustive instances of the Sensus Divinitatus in action, they are sufficient to demonstrate that there are many situations in which belief in God might arise. Thus the Sensus Divinitatus can be thought of as an input-output device in which the input (one of the stimuli mentioned previously) issues belief in God as an output. (Plantinga, 2000, p174-175) In addition to the outline of Sensus Divinitatus given there are a number of core characteristics of Plantinga’s reformed epistemology. These include issues from proper basicity to natural knowledge of God.

Before these are discussed, it is important to note that this output is not reached by way of something akin to the following argument.

P1) The lake district fills me with a sense of awe and wonder

C) Therefore, Theism is true.

Instead, Plantinga claims it is arrived at in a much more immediate way. “They are *occasioned* by the circumstances; they are not conclusions from them.” (Plantinga, 2000, p175) and as such “the Sensus Divinitatus resembles perception, memory, and a priori belief.” (Plantinga, 2000, p175) So, for example, In the case of memory we do not make an inference that it appears I remember something to the conclusion that I did such a thing. Instead, the belief arises spontaneously in me without the support of other propositions. It is in this sense that under Plantinga’s model belief in God arising from the Sensus Divinitatus is epistemically basic. (Plantinga, 2000, p175-176) As with other cognitive faculties (memory, perception, reason etc...) the Sensus Divinitatus can function properly or improperly (i.e. due to malfunction). For the most part when functioning properly the beliefs produced by the Sensus Divinitatus (or any other cognitive faculty) are true, or close to truth. That is to say there is a presumption of reliability, when concerned with the bulk or everyday beliefs. (Plantinga, 2000, p148) It is also properly basic with respect to justification and warrant/proper function. It is claimed that a believer can be within his/her epistemic rights (is not being epistemically negligent) to hold theistic belief basically, in terms of justification, if they have thought about the issues involved at great length, considered possible objections, but still hold the belief that theism is obviously true. (Plantinga, 2000, p177-178) What’s more theistic belief can be properly basic with respect to justification if one accepts it on the basis of testimony, (supposing it is on the basis of testimony which is suitably reliable) (Plantinga, 2007, p615) What conditions then have to be satisfied for theistic belief to be properly basic with respect to warrant? As has been previously defined, for a belief to gain warrant it must be “produced by cognitive faculties functioning properly in a congenial epistemic environment according to a design plan successfully aimed at truth.” (Plantinga, 2000, p178) In the case of theistic beliefs arising from the Sensus Divinitatus all the conditions are satisfied for such beliefs to have warrant in a basic way. As the Sensus Divinitatus is a cognitive faculty that produces beliefs that are not

based on other beliefs (i.e. not evidentially). On the model given the faculty is the product of a design plan which is intended to give us true beliefs about God and if the model is correct when functioning properly it does produce true beliefs about God. (Plantinga, 2000, p178-179) It then appears that belief in God can qualify as ‘properly basic’ with respect warrant. Moreover the belief in question could achieve a degree of warrant sufficient to qualify as knowledge. In the following section I shall consider a possible *de jure* objection to the claim that theistic belief can be properly basic, what Plantinga refers to as the ‘Freud and Marx complaint’ (F/M hereafter).

The F/M complaint and Plantinga’s response to it

As one might expect the F/M complaint concerns the work of both Sigmund Freud and Karl Marx. In particular it centres on their attempts to offer naturalistic explanations of why it is that people hold Christian beliefs (and religious beliefs more generally). Plantinga gives a truncated account of Freud and Marx’s explanation of religion (very truncated), followed by the reason such explanations are considered a critique of the rationality of Christian belief (a *de jure* criticism). Perhaps these accounts do not do justice to the nuance found in either Freud’s or Marx’s explanation of religion. For our present purposes this is of little or no concern, it is enough that they demonstrate how the naturalistic explanations of religion given by both thinkers present a *De Jure* objection to religious belief.

For Plantinga, Freud views belief in God as the result of a cognitive mechanism Freud refers to as ‘wish fulfilment’. (Plantinga, 2000, p139) The wish in question is to overcome our fear of the dangers of life, to grant our demand for justice in a world which has none and to offer us a prolongation to our earthly existence after death. (Freud cited in Plantinga, 2000, p139) So we unconsciously invent a divine father figure (God) to overcome these desires. We can then see

that for Freud, God is an illusion that arises from the cognitive mechanism of ‘wish fulfilment’. This illusion, which need not necessarily be false, in turn becomes internalized. (Plantinga, 2000, p139)

The account Plantinga gives of Marx’s explanation, while apparently similar, differs in a number of key respects. Plantinga suggests that for Marx, religious beliefs (include Christian beliefs) arise from a cognitive dysfunction, they are illusions which arise as a result of the social and economic system we find ourselves in. (Plantinga, 2000, p141) “Religion is the sigh of the oppressed creature” (www.Marxists.org) For Marx without such a cognitive dysfunction the believer would lose the religious beliefs they found themselves with.

For Plantinga the key difference between such accounts is now apparent, for Freud religion is produced by cognitive faculties that are not aimed at true beliefs, but rather ‘wish fulfilment’. Where as for Marx religious belief is produced by cognitive faculties which are disordered.

If we remind ourselves that for a belief to be warranted it needs to be (i) produced by cognitive faculties functioning properly (i.e. not subject to dysfunction) (ii) in a cognitive environment which is appropriate for those cognitive faculties, (iii) according to a design plan that is successfully aimed at truth. We can now see how both F/M offer a challenge to the warrant of Christian (and also religious) belief.

Under the Freudian account religious belief is produced by cognitive faculties that are functioning properly but through the process of ‘wish fulfilment’, beliefs produced by this cognitive faculty are not aimed at truth and therefore they fail the third condition of warrant. (Plantinga, 2000, p161) Marx on the other hand holds that the cognitive faculties that produce religious beliefs are not functioning properly, which is due to the social and economic structure we find ourselves in. These beliefs would then fail condition (i) of warrant and are consequently without warrant. (Plantinga, 2000, p162)

The F/M complaint has been offered and has presented a seemingly feasible De Jure objection to Christian Belief. In the following section I shall examine Plantinga's reply.

Plantinga argues that the question of whether or not belief in God is warrant basic, depends upon the truth of theism, this in turn means that the De jure question is not independent of the De Facto question of God's existence. For if theism is true then it is plausible to suppose that God would want us to have true beliefs about himself/herself, that we are beings created in his/her image, that she/he has a desire for us to know and love him/her etc... In which case something very much like the A/C model is true and thus the Sensus Divinitatus exists. This would mean that beliefs would have been 'produced by cognitive faculties functioning properly according to a design plan aimed at truth' (Plantinga, 2000, p189) they would therefore satisfy all the conditions to have warrant. (While Plantinga does consider possibilities in which this does not occur, they are deemed "an abstract possibility, but not much more") (Plantinga, 2000, p189)

If, on the other hand, theism is false it could not have warrant sufficient for knowledge, as no false belief can have warrant sufficient for knowledge. Furthermore, it is argued by Plantinga that if theism is false it could not have some degree of warrant. Two main reasons are given for this. The first considers when a false belief might have some warrant. This is in cases where "the faculty that produces the belief is working at the limit of its capability." (Plantinga, 2000, p187) So, for example, if I overhear a piece of music being played from a long distance I might mistakenly think the piece contains a cello playing. It turns out that if I were closer I would realise that it does not. In such instance the belief is false but has a degree of warrant. If, however, there is no such person as God the Sensus Divinitatus does not exist.

Consequently, there would be no truth aimed cognitive faculty to be working at its limit to produce the theistic belief.

The Second consideration given examines the specification that the cognitive faculty that produces the belief is successfully aimed at truth if there is a high objective probability that the belief produced by the cognitive faculty is true. (Plantinga, 2000, p187) As it seems there could be instances in which the cognitive process that produces the belief has an exceedingly high probability of being true, but nonetheless on a specific instance turns out to be false. Might something similar be occurring with relation to belief in God? So that the cognitive faculty that produces belief in God is successfully aimed at truth, even though the particular belief in question is false. Plantinga claims that for a proposition to be considered objectively probable with respect to condition C, it must be true in the majority of the close possible worlds in which C pertains. (Plantinga, 2000, p162) In the case of the faculty which produces theistic belief, if it was successfully aimed at truth then in possible worlds sufficiently close to the actual world it would produce true beliefs. If this were true then in these nearby worlds belief in God would be true, therefore in these possible worlds God exists. (Plantinga, 2000, p188) Plantinga claims that this is very unlikely, for a world in which God exists would be extremely different from one in which he did not, according to Plantinga it would be “enormously, unimaginably different ... and enormously dissimilar from it.” (Plantinga, 2000, p188) It is concluded that if theism is false, it is probably not the case that the faculty which produces such beliefs also produces a true belief in the majority of close possible worlds. So if theism is false, it probably has no warrant at all. (Plantinga, 2000, p188)

Once this has been accepted any debate as to the rationality (warrant) of theistic belief should not be a mere epistemological discussion, it must ultimately be an ontological dispute as to the truth of theism. (Plantinga, 2000, p190) It will depend greatly on your pre-existing view of humanity. If, on the one hand, you believe (as Plantinga does) that humans are created in the

image of God with a natural tendency to experience God, then you will think that such a belief is the result of a mechanism that is aimed at the truth. It is like cognitive faculties involved in the deliverance of sense perception, memory etc... (Plantinga, 2000, p191) If, however, you believe that humans are the result of blind evolutionary forces, in which there is no God, then you will most likely think, as Marx and Freud do, that belief in God is an illusion which results from the mechanism of wish fulfilment (or some other faculty which is not aimed at truth) or it is due to a dysfunction caused by the society in which you live. (Plantinga, 2000, p191) This means that there are not any credible *de jure* criticisms of religious belief that are independent of the *de facto* question of God's existence. Plantinga claims that there are not any convincing *de jure* criticisms of theism when combined with theism being true. (Plantinga, 2000, p191)

It is now time to see why Plantinga thinks the F/M complaint ultimately fails, while he narrows his focus on Freud's criticism of theistic belief he thinks that much the same could be said of Marx's. Firstly, in light of what has previously been discussed, he gives two conditions the F/M complaint must satisfy in order to be demonstrate that theistic belief lacks warrant:

- (i) It must show that theistic belief really does arise from the mechanism of wish-fulfilment
- (ii) It must show that this particular operation of that mechanism is not aimed at the production of true beliefs.

(Plantinga, 2000, p195)

In the case of (i) Plantinga doubts that one can argue successfully that it is the mechanism of wish- fulfilment which produces theistic belief. He contends that this is in part because the content of much traditional theistic belief is not something we would ordinarily wish for.

Take, for example, the belief of traditional Christianity that through sin we risk eternal separation from God and possibly even eternal damnation (Plantinga, 2000, p195). This belief, and others like it, are not what we would think of as examples wish-fulfilment, what is more there are those who do not even like the idea of God being actual. For instance, consider Thomas Nagel's comments regarding the existence of God "It isn't just that I don't believe in God and, naturally hope that I'm right in my belief. It's that I hope there is no God! I don't want there to be a God; I don't want the universe to be like that" (1999, p130) but Plantinga does not stop there, he calls into question the evidence that the Freudian has for his claim that theistic belief is the result of wish-fulfilment. He finds the evidence presented by Freud either lacking or extremely weak. (Plantinga, 2000, p195-197)

Even if we were to suppose that condition (i) could be satisfied, for Plantinga this would not be enough to vindicate the F/M complaint. To satisfy (ii) It would also have to be demonstrated that "wish-fulfilment *in this particular manifestation* is not aimed at true belief" (Plantinga, 2000, p197) because our cognition is a complicated affair there may be certain faculties that are not usually aimed at true belief but under rare occasions are. For it could be that God arranged things so that we would come to know him/her through the mechanism of wish-fulfilment, in which case in this particular instance wish-fulfilment would be aimed at truth. It is claimed that the Freudian could not establish that any such mechanism which produces us to believe in God is not aimed at truth. Rather Freud assumes that theism is false, then looks for an explanation which can account for such widespread belief. Once wish-fulfilment is decided upon as the cause it is again assumed that this faculty is not aimed at truth and thus beliefs produced by it are without warrant, but this is only so if theism is false. (Plantinga, 2000, p198) If this is true then the F/M complaint depends on the falsity of theism. In which case, Plantinga has shown that the F/M complaint, as with any other *de jure* objection

to theistic belief is not separate from the *de facto* claim that theism is false. Therefore, The F/M complaint fails as a *de jure* objection to theistic belief.

To clarify exactly what the Freudian complaint is and what Plantinga's objection to it is. We can construct the Freudian complaint in the following argument:

Freudian complaint:

- 1) A credible *de jure* objection to theistic belief (TB hereafter) must demonstrate that such a belief is without warrant.
- 2) A belief has warrant if that belief is produced by cognitive faculties functioning properly (i.e. not subject to dysfunction) in a cognitive environment which is appropriate for those cognitive faculties, according to a design plan that is successfully aimed at truth. (Plantinga, 2007, p615)
- 3) The Freudian complaint- TB is a result of wish-fulfilment.
- 4) The design plan of the 'wish-fulfilment' faculty is not aimed at truth.
- 5) Following 2) TB is without warrant
- 6) Therefore, following 1) we have a credible *de jure* objection to TB.

As we have seen, Plantinga's critique of the Freudian complaint is twofold. Firstly, he doubts that 3) is true, or at any rate thinks that it is at best underdetermined. Secondly, and perhaps more importantly, he thinks that an argument such as this one supposes the following tacitly accepted premise:

P*) Theism is false.

If not for P*), 4) could be false. For if theism is true, then it may be that the faculty that produces theistic belief is aimed at truth (I.E. The A/C model is correct and we possess a

Sensus Divinitatus) even though in most instances it is not (as with wish-fulfilment more generally).

So, Plantinga claims that for any independent *de jure* objection, like the F/M complaint, if we do not assume the falsity of theism any such objection will ultimately fail. (Plantinga, 2000, p191)

If this were indeed the case it would appear that there could not be any credible *de jure* question which is not detached from the truth or falsity of theism. In which case those arguing against theism (atheologians in Plantinga's terminology) would have to restrict themselves to traditional *de facto* arguments against God's existence, such as the problem from evil, the problem from divine hiddenness, that the properties of God under theism are either mutually contradictory or internally inconsistent etc... (Plantinga, 2000, p191)

In the next Chapter, I wish to examine another attempt to give a naturalistic explanation of religious belief which some consider (Pascal Boyer amongst others) to be a contemporary *de jure* challenge to theistic belief, this approach is known as the cognitive science of religion (CSR hereafter). I will consider if this fares any better than the F/M complaint in offering a *de jure* objection to the warrant of theistic belief. To achieve this I will first need to give an explanation of CSR with accompanying evidence as to the veracity of the claims it makes. This shall be accomplished in the next Chapter.

THE COGNITIVE SCIENCE OF RELIGION

The Cognitive science of religion is a multi disciplinary approach to the origin, transmission and content of the underlying mechanisms which facilitate religious beliefs. It encompasses psychology, anthropology, biology among an increasing number of disciplines. While there is much disagreement as to the correct explanation of religious beliefs (I shall address this in turn), there are a number of assumptions all explanations share. I shall now address these assumptions:

Underlying assumptions of CSR

Firstly, that Religious belief is seemingly ubiquitous across different eras and throughout cultures which vastly differ from one another. As a result of this it is presumed that there is something inherent to human cognition which gives rise to these beliefs. It is also supposed that “The human mind is not understood as an all-purpose problem solver but as a collection of subsystems carrying out content specific operations.” (Pyysiäinen cited in Pyysiäinen & Anttonen, 2002, P1) So as evolutionary psychologists Leda Cosmides and John Tooby argue, the human mind should be thought of as something akin to a Swiss army knife (or perhaps the numerous ‘apps’ on an I-pad in modern parlance) with different parts having specific functions, rather than something analogous to a blank slate (1994). It is through a combination of these different modules that religious belief arises. There is much debate, which is still on-going, as to exactly how these beliefs might arise and be transmitted. I shall briefly describe several of the

most plausible candidates. Before this is undertaken, it will be prudent to clarify a potential terminological misunderstanding, when those in CSR use the term ‘God’ it is not used to signify a being with the characteristics traditionally associated with the Judeo-Christian-Islamic conception of God. Instead, the term God is closer in definition to ‘supernatural agent’, so “ghosts, demons, chimeras (such as centaurs or satyrs), or the supreme gods of religions. Even space aliens may count” (Barrett, 2004, p21). Similarly, religious belief is taken almost exclusively to mean belief in God, so defined. So, religious belief is taken to mean belief in some kind of supernatural agent. (Barrett, 2004, p21)

As the key underlying assumptions which underpin CSR have been presented, I shall now describe several of the most prominent proposals as to the origin and transmission of religious belief.

Adaptationist and By-product Accounts of Religion

As Psychologist Lee Kirkpatrick has pointed out ““The first question to be addressed by any evolutionary approach to religion is whether religion is an adaptation or a by-product of adaptations designed for other purposes” (Kirkpatrick in Sosis, 2009, p315)

While Adaptationist accounts differ in why they think religion is adaptive, they share the view that religious beliefs and practices are actively selected for (I.E they confer a fitness advantage on the possessor), that is they are originally evolved adaptations. Where as the by-product accounts claim that religion emerged from either the by-product of a single cognitive process or as the result of a combination of all ready existing cognitive by-products (the cognitive faculties themselves are adaptive, but for purposes that have nothing to do with there religious output). In the following section I shall give a brief description of some examples of both perspectives. While the accounts I will present are by no means an authoritative tract on all the possibilities available. They should, if successful, give an

overview to some of the most plausible explanations of religion and demonstrate some of the differences between the two paradigms (adaptationist and by-product accounts).

By-product Accounts

It is fair to say that the majority of researchers in the field of CSR (Barrett, Boyer, Whitehouse, Kelemen etc...) except some form of the by-product account of religious belief. According to this view there are no specific religious cognitive faculties. Instead, religious belief develops from either a single, or amalgamation of a number of different, cognitive processes evolved for other adaptive purposes. Within the panoply of by-product explanations as to the character of religious belief there are at least three different types of explanation given. Following Clark and Barrett, I shall refer to these as attribution, dispositional and preparedness accounts (2011, p176-77) It is important to note that these accounts are not incommensurable; they may, and often are, used in conjunction with one another.

HADD

One such attribution account claims that we possess a cognitive process known as an Agency Detection Device (ADD). This detects whether an object is an agent, or whether an action is the result of an agent, and as anthropologist Stewart Guthrie has pointed out, we have a bias to interpret ambiguous events as being caused by an agent. (Barrett, 2004, p32) It appears this device has a hair-trigger, we quickly leap to attribute agency where it may not be present. So if we hear a rustling in the bushes we are more inclined to think 'who caused that rustling' rather than 'what caused that rustling'. This in turn led Cognitive psychologist Justin Barrett to coin the term Hypersensitive Agency Detection Device (HADD) to refer to the ADD. (Barrett, 2004, p33) Such a device being hypersensitive would be beneficial (and thus a likely candidate for an adaptation), for if we detect agency and we are wrong little is lost. If, on the

other hand, we fail to detect agency where an agent is present the cost may be potentially catastrophic. As Guthrie states “one real enemy justifies a hundred false alarms” (1980, p190) Another cognitive tool which often links with HADD is the Theory of Mind describer (ToM), this process generates descriptions and predictions about mental activities such as beliefs, desires attitudes etc... (Barrett, 2004, p127) So once the HADD has detected agency, the ToM then reasons about the intentions and desires (among other things) of the agent in question. In an oft repeated study by Heider and Simmel (1944), participants who observed a collection of geometric shapes moving around a screen, when asked, were quick to attribute intentions and desires to the shapes. Thus not only did they detect agency, they reasoned about the mental states of the shapes. As HADD will detect agency when we are faced with an event which violates our intuitive assumptions for the movement of an ordinary physical object. (Barrett, 2004, p33) In this case geometric shapes seeming to move of their own volition. It is worth noting that HADD and ToM will not always lead us to view the ambiguous events as agents themselves. In some instances the events might make us believe they are evidence of agents. So when faced with the sound of rattling chains in an old house, we need not automatically think of the rattling chains themselves as an agent, but instead they could be the result of an agent with intentions and desires.

‘Promiscuous Teleology’

A version of the preparedness account, which as the name implies supposes there is something in our cognition which disposes us or prepares us for belief in god/s, the specific account I shall be describing is that of developmental and child psychologist Deborah Kelemen, She claims that as a result of their cognitive architecture, children have a tendency to reason about nature in terms of purpose and intention, what Kelemen has termed ‘promiscuous teleology’. In one study Kelemen found that children were more likely than adults to explain natural kinds in terms of purpose, so when asked ‘why prehistoric rocks

were pointy?' young children preferred explanations that invoked purpose, (so that animals could scratch themselves when itchy) as opposed to purely physical accounts (because bits of stuff piled up over a long time). Furthermore, even when given a pre-trial which explained in physical (non-teleological) terms how natural kinds formed, the results did not differ, teleological explanations were still preferred. (Kelemen, 1999, p1440) Due to experimental evidence of this sort, Kelemen has felt it appropriate to label children 'intuitive theists' insofar as they are seemingly disposed to view nature as the result of godlike design (Kelemen, 2004, p299) (bearing in mind previous terminological clarifications that have been made about 'god/s').

There is also good reason to suppose that such a design bias continues into adult life. As explaining nature in a non-teleological way is a development quite recent to human thought. Even present-day adults are still prone to use teleological explanations. (Kelemen, 2004, p299) Even those who are staunch advocates of physical explanations of the natural world are aware of the tendency to think in teleological terms, "We humans have purpose on the brain. We find it hard to look at anything without wondering what it is 'for,' what the motive for it is, or the purpose behind it." (Dawkins, 1995, p96) Even when adults are ostensibly using scientific explanation there is still evidence of intentional reasoning. (Evans cited in Kelemen, p300)

Research with uneducated Romany gypsy adults has shown that they share similar intuitions to children of primary school age with regard to teleological explanations (Casler & Kelemen, 2003). Which provides further evidence that a tendency to prefer explanations in terms of design continues on to adulthood unless specific measures are taken to try and combat this.

MCIs

A dispositional explanation declares that we come to belief in god/s as a consequence of a cognitive structure which gives us a natural disposition to believe in god/s. A prominent

example of this type of explanation can be found in the work of Cognitive anthropologist Pascal Boyer. He has observed that god concepts may be so memorable and appealing because they fall into the category of concepts known as ‘minimally counterintuitive’ (MCIs hereafter). Before MCIs can be fully developed, it is first crucial to explain the notion of categorizers and describers and the role they play in our mental lives.

Describers and categorizers are terms used for a class of non-conscious mental tools, both with different functions. Describers generate beliefs non-reflectively (i.e. not consciously held and generated by the functioning of mental tools) about the properties that certain things possess. (Barrett, 2004, p125) Categorizer form beliefs, again non-consciously, about the identity of things and then sorts them into groups accordingly. (Barrett, 2004, p125) For example HADD is an example of a categorizer, it determines beliefs (non-reflectively) about the identity of objects, as to whether the object in question is an agent. The ToM would be an example of a describer, as it produces descriptions of the mental states of the agents detected by HADD. There are large numbers of other categorizers and describers found within our cognitive framework, such as artefact categorizers and describers, object describers, animal categorizers etc...

MCIs are concepts that on the whole match our intuitive assumptions that the describers and categorizes produce, we can therefore find them easy to understand, but violate a minimal number of our assumptions about them, just enough to be particularly memorable and captivating. (Barrett, 2004, p23)

MCIs are thus produced by either violating one (or a small number) of the non-reflective assumptions we hold about naturally occurring categorisers and describers, or by transferring an assumption from one category of things onto a different category altogether. (Barrett, 2004, p22) So for example, a cat which can teleport is an MCI as it satisfies all the non-reflective

assumptions of naturally occurring categorisers and describers apart from one (the property of being able to teleport). A chair that can talk is also an MCI as the property of being able to talk, an assumption made about the category of living things, has been transferred to the category of artefacts. While there is experimental evidence that MCI concepts are more likely to be passed on than other kinds of concept. (Boyer and Ramble, 2001) Not all are created equally when it comes to their ability to be transmitted. The most successful MCIs are ones which have the potential to generate predictions or explanations. What Barrett has referred to as ‘inferential potential’. (Barrett, 2004, p25) Likely candidates for MCIs with a large amount of ‘inferential potential’ are those which can qualify as intentional agents. They have so much inferential potential because they can cause things to happen, we can anticipate what they might do, what they might think and why they might have certain desires. (Barrett, 2004, p25-26)

The resultant picture of beliefs that are prone to spread and be readily accepted fits very nicely with the concept god/s, who are MCI agents with a great amount of inferential potential. This however is not the only thing that they have in their favour. Agents that have great amounts of knowledge are more likely to be remembered and spread than other kind of MCI agents. It cannot however be just any kind of knowledge. Knowledge about many facets of the natural world may be of interest to some, but knowledge of information that pertains to social interactions (ones that relate to reproductive and resource based information) will be of concern to many more, as this sort of information can be used to modify or plan such encounters in the future. Boyer has called such information ‘strategic information’. (Boyer cited in Barrett, p49). So god/s that have access to strategic information of others and oneself will be of more significance than those who are not. They will accordingly be more likely to be remembered and spread to others, because such beings would potentially be a powerful ally or dangerous enemy. (Barrett, 2004, p49) So god/s with a large amount of knowledge (in

particular of strategic information) will be of more interest than those that do not possess such knowledge.

As we have seen, those who believe religion is a by-product claim that religious belief finds its origin as the result of the side-effects of a number of different cognitive faculties that we deploy non-consciously. Individually, or if we combine these together, it should be clear how they might naturally lead to belief in god/s.

A Hypersensitive agency detection device (HADD) which is prone to attribute ambiguous events as agents or as the result of agents, which in turn feeds information to a 'Theory of Mind' (ToM) system which assigns intentions and desires to such agents. Bearing in mind that agents that possess 'Minimally Counter Intuitive' (MCI) properties are more likely to be remembered and spread, specifically those with great inferential potential, those which have a large amount of knowledge and access to 'strategic information' are of particular interest. Also we have a cognitive bias to explain nature in terms of purpose, rather than mere physical explanations. Through the combination of these factors we have the beginnings of an explanation of our widespread belief in god/s.

Adaptationist Accounts

Those who advocate religion as an adaptation claim that religious belief is the result of an adaptive complex of cognitive and behavioural traits. This complex of traits helped to solve a number of potential problems faced by our evolutionary ancestors, the majority of which concerned co-operation and co-ordination in social relations. We can see just such a sentiment in anthropologist Richard Sosis' paraphrasing of Bloom and Pinker's famous comments on the design of the eye:

“It is impossible to make sense of the coalescence of elements that constitute the religious system without noting that it appears as if it was designed for the purpose of uniting individuals under common purpose. Systems that can do what the religious system does are extremely low-probability arrangements. By an unimaginably large margin, most biologically possible arrangements cannot unite unrelated organisms under common purpose, achieve extraordinary self-sacrifice, and motivate large-scale cooperation and coordination. All of this suggests that the religious system is an adaptation.” (Sosis, 2009, p328-29)

As with their by-product counterparts, there is an abundance of such adaptationist explanations. I shall restrict myself in describing several of the best developed and plausible adaptationist candidates for an explanation of religion.

Religious belief as fostering cooperation through supernatural punishment of defection

It has long since been discovered that religion is an influential motivating force in human societies, while on the one hand encouraging cooperation among its adherents and antagonism from those who are not members. Many of those who claim religion is an adaptation contend that the ability religion has to enhance cooperation among individuals is the adaptive characteristic religion possesses. Living in groups that cooperate is largely believed to have adaptive benefits. This is in part because cooperation leads to both an increase in the size of groups and as a result of this increase in size, specialization of function among its members. (Schloss and Murray, 2011, p46) So individuals within the group can choose specialized niches, such as becoming hunters or those who grow food etc... The whole group benefits from such arrangements and they cannot occur without a large degree of cooperation. It might then seem that it is in everybody's interest to engage in inter-group cooperation, but on the level of the individual there is an equally powerful push toward defection (free riding on the work of others within the group whilst contributing nothing). The challenge which

defection poses for group life is deemed by many to be the central problem which must be solved if the benefits of groups are to be realized. (Schloss and Murray, 2011, p47)

A possible solution to this problem is to 'punish' (impose a cost) on those who defect, because if an individual faces a sufficiently robust punishment for defection, it would no longer be of net benefit, and thus the punishment would discourage people from doing so and consequently it would no longer be advantageous to do so.

However, there are a number of theoretical problems with punishment as a means of stopping the occurrence of defection.

- i) It imposes a cost upon those enforcing it- the group will have to contribute precious resources to ensure punishment is delivered.
- ii) The apparatus of punishment can be corrupted.
- iii) There has to be an effective means for detecting cheaters- if not, then cheaters may avoid detection which would diminish the disincentive one might have for cheating.
- iv) The problem of 'second-order' cheating- economist Ernst Fehr (among others) has pointed out that there will be an incentive not to contribute to the punishment of cheaters but still receive the benefits of the punishing of cheaters within the group. This second-order cheater would then bear no cost in the punishment of defection and still gain the benefits of belonging to a group which punishes defectors bestows. (2004, p49-50)

(Schloss and Murray, 2011, p47-48)

The group is then faced with the problem of how to receive the benefits of punishing defectors to help promote group cohesion without the drawbacks that have been outlined.

One solution to this problem would be to find a method of cheater punishment for which there was no cost to individuals in the group, the apparatus for detection could not be corrupted, the means for detecting cheaters was perfectly reliable and in which the problem of ‘second order’ cheating does not arise. A Proposal by Dominic Johnson and Jesse Bering which satisfies all of these conditions is that of a god/s who distribute supernatural punishments for defection (of course the proposal does not suppose that such beings are actual, but merely that our ancestors believed such beings were actual). Their proposal combines the idea of the deterrence of cheating through supernatural punishment with that of the psychological trait to monitor the flow of social information among groups and the tendency to attribute events to supernatural agent/s. Under there model it appears that we could account for the four challenges with using punishment as a means to subdue cheating:

- i) The punishments would not cost the group anything as they are given by god/s
- ii) There is no possibility of corruption with god/s
- iii) As god/s knows all of the groups strategic information, cheaters could not avoid detection
- iv) The problem of ‘second order’ cheaters would not arise, as following i) no cost would be incurred in punishing cheaters, so it is not coherent for an individual to cheat in the punishing of cheaters.

Johnson and Bering hypothesize that the fear of supernatural punishment would be adequate to steer individuals away from defection and so long as the net benefits of co-operation from the fear of supernatural punishment surpassed that of co-operation without supernatural punishment. Such ‘god fearing’ individuals would out compete those who did not believe. (Johnson and Bering, 2006, p219) and thus belief in agents that give supernatural punishments (god/s) would be a likely candidate for an adaptation.

The model presented, so far, has been almost entirely theoretical. Is there any empirical evidence for the claims made by it? There is in fact such evidence; McKay et al (2010) demonstrated that participants in a punishment game who were given religious punishment primes were far more likely to enact costly punishments for unfair behaviours than either the participants given secular punishment primes or those in the control group. There is also ethnographic evidence which indicates that communities that take part in moralizing through punishing god/s do show a greater propensity to engage in co-operation. (Schloss and Murray, 2011, p51) So it may be that belief in god concepts arose as a means to increase co-operation through supernatural punishment defection.

Jesse Bering has argued human beings possess a number of cognitive systems which are specified to form illusory representations about existential questions. He has argued that such faculties are likely to have increased the net genetic fitness of individual humans (Bering, 2006, p456) and therefore, are a strong candidate for an adaptation. For Bering, we naturally possess an organised cognitive system which is devoted to forming a number of illusory representations which in turn are responsible for our belief in god/s, three of which are of primary importance, they are: (1) A system devoted to a belief in psychological immortality, the belief that ones mind will survive their death. This is, in part, because we cannot imagine what it is like to be dead. There is a 'simulation constraint' on consciously representing an end state of unconscious. This according to Bering leads to type I errors of reasoning (inferring mental states when there aren't any) with dead agents. (Bering, 2006, p455) (2) We are prone to a belief in the intelligent design of the self (this is not to be confused with the specific proposals made by the 'Intelligent Design' movement of Behe, Dembski etc...), because our bias towards intentional explanations (as previously mentioned in my description of the work of Deborah Kelemen) is also present in beliefs about the origin of the self, there is a tendency for humans to think teleo-functionally about ourselves. Such thinking is present

when people claim that they were “born to do” a certain thing or that they were not “meant for” their present life situation. (Bering, 2006, p458) (3) Humans have a propensity to view natural events as having symbolic supernatural meaning. As there is evidence that people naturally view events in their lives as having hidden purpose, so as a result of ToM (as previously described) errors when unexpected events occur people often look to identify the intentions of the supernatural agent that caused them. (Bering, 2006, p460) Bering claims that the cognitive system responsible for these three representations, when combined, created the further illusion that the social behaviours of the self were of great importance, even outside of human relations, so the immortal soul has resilient connection with the natural world. (Bering, 2006, p461) These beliefs, though illusions, conferred a net fitness advantage to the individuals who held them and were thus adaptive.

Another hypothesis as to how religion might facilitate co-operation among the group is ‘costly signalling theory’ this theory argues that that religious beliefs and the rituals associated with them help promote co-operation by requiring ‘costly signals’ (costly displays of group commitment) from their adherents. These costly signals would help to overcome the problem of defection as those wishing to achieve the benefits of group life must be willing to engage in behaviours which are of cost to oneself. These could be actions that one has to perform, such as donating a certain amount of one’s wealth, spending time in religious activities or undergoing acts of bodily mutilation (Pyysiäinen and Hauser, 2010, p104) or by requiring certain affective responses from its members, such as demonstrating emotion cues to certain events. This would help spot cheaters as they will not be prepared to engage in such actions or displays. Which would then promote intra-group co-operation and resultantly be a likely candidate for an adaptation.

As with theories that posit supernatural punishment as a means of promoting group co-operation, there is a good body of empirical evidence in favour of costly signalling theories of

religion. Anthropologist Richard Sosis (one of the most notable proponents of such a view) with Eric Bressler, through a historical survey of data of 83 19th century communes from the USA, demonstrated that those communes who imposed the costlier requirements survived significantly longer. (Sosis and Bressler, 2003) Furthermore, it was only the communes which were religious that benefited from the costly signals. Additional support for costly signalling theory can be found in studies which look at contemporary Israeli kibbutzim (a type of collective community). It was found that members of religious kibbutzim, which engage in collective rituals, exhibited higher levels of co-operation than those from their secular counterparts and within these religious kibbutzim those who most frequently took part in communal prayer exhibited the highest level of co-operation on average. (Sosis and Ruffle, 2003)

While there is on-going disagreement as to correct explanation of religious belief and behaviours, as I am primarily interested in the implications of these theories on Plantinga's conception of reformed epistemology, in particular whether CSR can provide a credible de jure objection to theism, I will not try to determine which specific account is best supported by the evidence. I shall suppose that both the by-product and adaptationist accounts presented are plausible explanations of religion. In the next section I shall see if either account can fulfil the role that both Freud's and Marx's explanation of religion failed to accomplish, that is offer a convincing de jure objection to theistic belief.

THE COGNITIVE SCIENCE OF RELIGION AND THE DE JURE QUESTION OF
THEISM

In the following section I will consider how the differing explanations of religion given by CSR might provide a buttress for F/M style complaints and thus provide a credible *de jure* criticism of theistic belief. Before I move on to consider how different explanations in the CSR might impact on Plantinga's claim that theistic belief is warrant basic. It is important that we recap what Plantinga believes is at the heart of the F/M complaint. To do this I shall briefly describe and examine what Plantinga believes to be the Freudian criticism of the rationality of theistic belief and why he thinks such an argument fails:

Freudian complaint:

- 7) A credible *de jure* objection to theistic belief (TB hereafter) must demonstrate that such a belief is without warrant.
- 8) A belief has warrant if that belief is produced by cognitive faculties functioning properly (i.e. not subject to dysfunction) in a cognitive environment which is appropriate for those cognitive faculties, according to a design plan that is successfully aimed at truth. (Plantinga, 2007, p615)
- 9) The Freudian complaint- TB is a result of the cognitive faculty of wish-fulfilment.
- 10) The design plan of the 'wish-fulfilment' faculty is not aimed at truth.
- 11) Following 2) TB is without warrant
- 12) Therefore, following 1) we have a credible *de jure* objection to TB.

Plantinga calls into question both premise 3) and 4) of the above argument. He claims that there is not sufficient evidence for the claim that belief in God is the result of a wish

fulfilment faculty “in any event where is the evidence (empirical or otherwise) for the Freudian claim?” (Plantinga, 2000, p195) and that even if 3) was true and that the wish-fulfilment faculty on the whole is not aimed at truth, it would have to be demonstrated that the particular functioning of the wish fulfilment faculty which caused belief in God was not aimed at the truth. So, for example, God could have created a system in which, in certain instances, wish fulfilment was the method by which he wanted people to come to know and love him. Perhaps this is true of wish-fulfilment; in general, its purpose is not that of producing true beliefs, but in this special case precisely that *is* its purpose. (Plantinga, 2000, p197)

So, for any naturalistic explanation of religion to be successful in offering a *de jure* criticism of religion, it must at least fulfil the following criteria: Firstly, there must be good evidence that the explanation is the correct account of theistic belief. Secondly, it must fulfil at least one of the following; (i) that the cognitive faculty/faculties responsible are not functioning properly, (ii) that the cognitive environment is not appropriate for the cognitive faculty/faculties or (iii) that the design plan of those faculties is not successfully aimed at truth. Hereafter, I shall label these F/M conditions. But this is not all, it must also determine that in the specific operation the cognitive faculty is not aimed at truth.

Can any of the accounts of theistic belief given by CSR satisfy these conditions? I shall examine some of the possible contenders in turn.

The By-product Account

As has been described in the previous chapter, by-products accounts of religious belief (BPA henceforth) claim that belief in supernatural agents (of which God would be a prime example) arose as a by-product of a combination of different adaptive cognitive systems e.g. HADD, promiscuous teleology, our tendency to favour MCI agent concepts etc... Among some scientists there has been a fairly crude attempt to show that belief in god/s is

unwarranted if CSR can explain them naturally. For example Pascal Boyer has claimed that “In a cultural context where this hugely (scientific) way of understanding the world has debunked one supernatural claim after another, there is strong impulse (among the religious) to find at least one domain where it would be possible to trump the scientist But evolution and microbiology crushed all this.” (Boyer cited in Clark and Barrett, 2010, p185-86) and that CSR explains religion away as an “airy nothing”. (Boyer cited in Clark and Barrett, 2010, p186) Such claims are not particularly well thought out and do not offer a credible challenge to the warrant of theistic belief. I shall see if a genuine challenge to the warrant of theistic belief can be obtained from CSR. In particular, might BPA satisfy the F/M conditions? As, unlike the Freudian account, there is a fairly large amount of evidence for each of the cognitive mechanisms described, I shall suppose that they are an accurate description of how theistic belief arises, it then seems that the first condition is satisfied. Of the three options available (i-iii) which might BPAs satisfy? It does not appear that (i) is satisfied, as there is nothing to suggest the cognitive tools described by BPA are subject to dysfunction, nor is (ii) fulfilled, as the cognitive environment does seem to be the appropriate one. Condition (iii) however does seem to be satisfied, as the design plan, for systems like HADD, is not aimed at truth per se, but rather for the purpose of avoiding danger or as Barrett puts it, to avoid being lunch. (Barrett, 2004, p31)

So the BPA objection to the warrant of theism is similar to Freud's, in that they both claim that belief in God is produced by a cognitive system which is not aimed at truth. Can BPA overcome Plantinga's contention that the *de jure* question of belief in God cannot be separated from the *de facto* one? “There isn't a sensible *de jure* question or criticism that is independent of the *de facto* question. There aren't any *de jure* questions that are sensible when conjoined with the truth of theistic belief.” (Plantinga, 2000, p191) That is to say, can BPA objections still provide a criticism of the warrant of theism even if we include the premise

‘theism is true’? There is reason to think that it fares no better than Freud’s. Because our ability to detect agency is hypersensitive, does not mean it is always in error. Sometimes when there is an ambiguous event, HADD is correct in detecting agency and the ToM is also correct in inferring certain mental states about the agent in question. Sometimes a rustling in the bushes is in fact a predator with the intention of harming us. For BPA objections to succeed they must also demonstrate that when we detect supernatural agency, HADD (and all the cognitive systems associated with it) is delivering a false positive, but this would be to make metaphysical commitments as to the truth of theism. Justin Barrett makes a similar point:

“To be able to call genuinely religious beliefs “illusions” we need to be able to demonstrate that they too, upon further examination, are in error. However, this task is not aided by the evolutionary or cognitive sciences of religion ... To call theism “cognitive illusion” is a premise and not a conclusion of this argument” (Barrett, 2007)

Adaptationist account

Do the adaptationist accounts, previously described, fare any better than BPAs and offer a genuine challenge to the warrant of theistic belief? Prima facie, there is little reason to think so. As with BPAs adaptationist accounts claim that the design plan of such faculties is not aimed at truth, but instead at purely pragmatic ends, such as helping to facilitate pro-social behaviour among individuals in groups, either through the perceived supernatural punishment of defection, costly signalling practice or our ability to form representations about existential questions. Because the truth of the beliefs produced by the faculties are not integral to truth of them does not mean that they are then false. If theism were true, God could have chosen one of the means given by adaptationist theories to let himself/herself be known to the world. Again the *de facto* question as to whether God exists is crucial to the question of warrant.

Does this then mean that any argument that theistic belief is without warrant will ultimately collapse into an ontological discussion as to the truth of theism? I shall present two arguments as to why this may not be the case. The first shall examine if all naturalistic accounts of theistic belief can be equally well incorporated as the divine method for instilling belief in God. This might in turn leave open the possibility of a de jure objection which is separate from the de facto question of God's existence which CSR could fill. The other argument shall draw heavily on the work of Joshua Thurow to produce a 'modified process defeater argument' against belief in God having warrant. I shall argue that both ultimately fail to demonstrate that CSR establishes that theistic belief lacks warrant.

Incorporating naturalistic accounts with theism

According to Plantinga, any naturalistic explanation of theism which claims that the design plan of the cognitive faculties that produce theistic belief is not successfully aimed at truth (and thus is without warrant), must also suppose that theism is false. For if not, it could be that God used the cognitive faculty described in the naturalistic explanation in such a way to produce theistic belief.

“Perhaps this is how God has arranged for us to come to know him. If so, then the particular bit of cognitive design plan governing the formation of theistic belief is indeed aimed at true belief, even if the belief in question arises from wish-fulfilment.” (Plantinga, 2000, p197)

So we can reasonably infer from the above statement that for any naturalistic account of how we come to form belief in God, which claims that such a belief is formed by a cognitive faculty which is not aimed at truth, God may have used such a faculty for us to come to belief in him, if theism is true. We can then garner something akin to the following argumentative structure:

- 1) If theism is true, then God would endow us with a cognitive faculty to believe in him/her. (e.g. Sensus Divinitatus)
- 2) God chooses the cognitive faculty for us to come to believe in him/her.
- 3) Naturalistic explanation of theism N asserts that belief in God is produced by cognitive faculty C.
- 4) N is true.
- 5) The design plan of C does not appear to be aimed at truth.
- 6) The design plan of C is not aimed at truth iff theism is false.
- 7) Therefore, if theism is true, then the design plan of C is aimed at truth.
- 8) And consequently, if theism is true, C is the cognitive faculty God chose to endow us to come to belief in him/her.

1) and 2) are a direct result of Plantinga's conception of reformed epistemology. 3) and 4) are true if the explanation of religion given is true and this can be supposed for the purposes of the argument, 5) is true in the case of all CSR accounts of religion (or at least in all the accounts I have given). While 6) and 7) are what Plantinga declares to be the problem with the Freudian complaint against belief in God. So we are left with the conclusion that if theism is true, the cognitive faculty which produces theistic belief is the method God chose to come to believe in him/her, whereas it is only if theism is false that the faculty in question is not aimed at truth. Again a seeming *de jure* question collapses into a *de facto* one. I think, however, that such an argument maybe problematic for Plantinga. Consider the following:

In Warranted Christian Belief, in an attempt to mock the tenuous nature of some of the evidence given in favour of some naturalistic explanations of religion, Plantinga draws attention to the following article by Michael Carroll "Praying the Rosary: the Anal-erotic

origins of the popular catholic devotion” (1987) Whilst I agree with Plantinga, that in this particular example, the explanation given does somewhat strain credulity (to put it mildly!). It is at least possible that an explanation of this sort could be correct. So let us suppose that not only was a certain Catholic practice the result of Anal eroticism, but that belief in God was in fact the result of a cognitive faculty devoted to anal-eroticism. Supposing there is such a faculty (which is of course, extremely unlikely) it would not appear that the design plan of such a faculty is aimed at truth. Would the standard reply Plantinga has presented for the Freudian account pass muster? Let us consider this case transferred *mutatis mutandis* to the previous argumentative structure.

- 1) If theism is true, then God would endow us with a cognitive faculty to believe in him/her. (e.g. *Sensus Divinitatus*)
- 2) God chooses the cognitive faculty for us to come to believe in him/her.
- 3) Michael Carroll Claims that belief in God is produced by the by-product of a cognitive faculty that is devoted to anal-eroticism.
- 4) Carroll’s theory is true
- 5) The design plan of the anal-eroticism faculty does not seem to be aimed at truth.
- 6) The design plan of the anal-eroticism faculty is not aimed at truth iff theism is false.
- 7) Therefore, if theism is true, then the design plan of anal-eroticism faculty is aimed at truth.
- 8) and Consequently, if theism is true, the anal-eroticism faculty is the cognitive faculty God chose to endow us to come to belief in him/her!

The intuition that I am attempting to pump, is that not all explanations of the origin of belief in God are equally conducive to Plantinga’s reply to the Freudian complaint. As it is unlikely that Plantinga would wish to concede 7) or 8). This is the case because for a faculty like

‘wish fulfilment’ there is at least some plausibility that God might choose to reveal him/herself in a way the faculty describes, but with the example I have just given (Carroll’s account) this does not appear to be the case. This might leave open a modicum of space for a potential *de jure* objection which is separate from a *de facto* concern. To make such an objection more than just potential, we would need to find a more credible naturalistic account of religion, such as the CSR account, which also did not seem to cohere well with theism. So, are CSR explanations of belief in God closer in kind to the Freudian account of wish fulfilment, which can be accommodated by theism or is it more akin to the far fetched account given by Michael Carroll, which is not so easily accommodated by Plantinga’s account?

While there does not appear to be an ostensible way to determine such a thing. *Prima facie*, the account given by CSR (either by-product or adaptationist accounts) seem closer to the Freudian account. To paraphrase Justice Potter Stewart’s infamous obscenity test, we can say that when an explanation of theistic belief does not seem to fit comfortably with a theistic explanation ‘we will know it when we see it’. In the case of CSR explanations there does not appear to be a problem with them being the method God would choose to produce theistic belief in us. Whereas to produce consilience between anal-eroticism and God choosing this process to instil belief in him/her seems, to quote Peter Van Inwagen as “unreasonable, contrived, artificial or desperate” to suggest it was “God’s way of doing it” (Van Inwagen, 2009, p136) Since it looks as if CSR accounts can be plausibly incorporated into theistic explanations, we will have to look elsewhere for CSR to provide a critique of Plantinga’s epistemological model.

Modified Process Defeater Argument

A variety of the ABC objection has been discussed by Joshua Thurow (2011) in relation to theories from CSR and their implications for the justification of theism. While the argument I shall present is slightly different from his 'Process defeater argument', in that it specifically challenges accounts which claim theism is warrant basic, it does owe a lot to Thurow's argument. I shall therefore label the argument the 'modified process defeater argument'.

All accounts from CSR claim that even if theism was false, the cognitive processes responsible for theistic belief, would still produce belief in God within us. In the case of cognitive processes such as this, we should suspend judgement about their reliability until we have independent evidence in their favour. Furthermore, if we are suspending judgment about the process that produces belief in God we should also suspend judgement about belief in God. As we should suspend judgement about belief in God until we have evidence in its favour, belief in God is not warrant basic (so long as CSR theories are correct). (Thurow, 2011, p14)

To justify the claim that for cognitive process's that would produce theistic belief, even if theism were false we should suspend judgement about their reliability in producing theistic belief, in absence of independent evidence for the reliability of the belief forming process. Thurow offers the following example. Suppose, much like Paley that while walking upon a heath you stumble upon an astronomical device which gives the location of numerous astronomical objects (satellites, planets, nebulae etc...). Upon further inspection you determine that the device has built in information about the location of these objects from the past, it determines their current location by calculating a number of variables relating to that information. It does not scan the objects then determine their locations. Thurow argues that we should first confirm the reliability of such a device, say by testing the location it gives for

a certain planet next month, then checking with where the planet actual is in a months time, before we trust its reliability. (Thurow, 2011, p13) Similarly for our cognitive processes which form beliefs about god/s, as CSR supposes that we have a built in predilection to form beliefs about god/s, we should suspend judgement about the reliability of those processes until we have independent evidence for them. If we suspend judgement about the processes that form belief in god/s, we should also suspend judgment about belief in god/s until we have independent evidence in their favour. If we relied on independent evidence for them, such beliefs would not be basic with regard justification. So theistic belief is not a candidate for a basic belief. To see how this would also undermine the warrant of such beliefs, consider the third condition that must be satisfied for a belief to have warrant on Plantinga's conception, it is not only that the cognitive faculty is aimed at truth, but that it is successfully aimed at truth. For a cognitive faculty to be successfully aimed at truth there should be a high objective probability that a belief produced by this faculty is true. As has been previously described Plantinga defines objective probability in terms of possible worlds. So, a proposition is objectively probable, with respect to condition C only if that proposition is true in the majority of nearby possible worlds in which C pertains. (Plantinga, 1992, p162) So a cognitive faculties design plan is successfully aimed at truth (presuming that the faculty is functioning properly, in a congenial epistemic environment) if the beliefs produced by it are objectively probable, that is to say, true in the majority of nearby possible worlds. If CSR theories are true, which we have supposed they are, then in possible worlds in which theism was false they would still produce belief in god/s. While it is difficult to determine if this is true in the majority of possible worlds, there is at least a possibility that it is. In which case, in a similar vain to Thurow, we should withhold judgement as to whether the faculty responsible for belief in God is successfully aimed at truth. We should then suspend judgement as to the

warrant of theistic belief until we have independent evidence for it. If we formalize this argument we get the following

1. For a cognitive faculty to have warrant, it must be successfully aimed at truth.
2. A cognitive faculty is successfully aimed at truth, if it produces beliefs which have a high objective probability, i.e. if beliefs produced by it are true in the majority of nearby possible worlds.
3. The faculty which produces theistic belief would produce theistic belief even if theism were false.
4. There might (it is undetermined) be more nearby possible worlds in which theism is false
5. Therefore, it might be that the cognitive faculty that produces theistic belief is not successfully aimed at truth.
6. If a faculty might not be successfully aimed at truth, we should suspend judgment as to its warrant.
7. Following 5) we should suspend judgement as to the warrant of the faculty which produces theistic belief.

Which of the following premises would someone wishing to defend Plantinga reject?

1 and 2 are a result of Plantinga's conception of warrant and objective probability respectively and 3 is a fair supposition given the truth of one of the theories of CSR I have presented. So it seems reasonable to accept them. However, 4 is more problematic. If we consider the formulation of God known as 'Anselmian theism' under which, among other things, God is taken to exist necessarily, which is commonly taken to mean, God exists in all possible worlds (Plantinga, 1974). In the above argument if we substitute theism with 'Anselmian theism' 4 is false. As not only can theism not be false in the majority of nearby possible worlds, there can be no possible worlds in which theism is false. If one, as a

rejoinder wishes to question the truth of Anselmian theism, one is concerned with an ontological question as to the truth of theism. This means another seeming *de jure* question has collapsed into a *de facto* question, in this instance as to the truth of Anselmian theism.

In this chapter I have examined a number of possible *de jure* objections that could be raised by CSR explanations of religious belief to Plantinga's reformed epistemology. I have found them all to be wanting, as in most instances they collapse into an ontological question as to the truth of theism or the truth of Anselmian theism. While I have till this point pondered how CSR might provide a credible *de jure* objection to Plantinga's account of theistic belief. I wish to consider a possible adverse consequence of accepting cognitive science accounts of religious belief. I shall achieve this in the subsequent chapter.

ONTOLOGICAL CHALLENGES TO THE EXTENDED A/C MODEL

In the previous chapters I have primarily focused on epistemological issues with Plantinga's reformed epistemology. In this chapter I shall examine potential ontological problems for the Aquinas/Calvin model of belief Plantinga proposes. I will first present a traditional problem levelled against theism to see how it might challenge the notion of a Sensus Divinitatus and a potential reply Plantinga could offer to such a problem. This shall be followed with Stephen Maitzen's 'demographics of atheism problem' and how it challenges the existence of the Sensus Divinitatus. I shall argue that the extended A/C model of belief put forward by Plantinga is an adequate response. I shall conclude by briefly explaining some findings from the cognitive science of atheism and how it may be more problematic to the extended A/C model than the cognitive science of religion. To do this I shall present three possible arguments from findings in CSA to the conclusion that the extended A/C model is false. The first two I will argue fail, whereas the third does offer a convincing objection.

Problem of Divine Hiddenness

The problem of divine hiddenness as proposed by J Schellenberg is often considered a significant problem for theism. The argument is as follows:

1. If there is a God, he is perfectly loving.
2. If a perfectly loving God exists, reasonable non-belief does not occur.
3. Reasonable non-belief does occur.

Therefore,

4. No perfectly loving God exists.

So,

5. There is no God.

(Schellenberg, 1993, p83)

While there have been many replies from theists to Schellenberg's problem of divine hiddenness, the vast majority argue against premise 2, there are very few who claim that epistemically reasonable non-belief does not occur. Does the mere existence of reasonable non-belief offer a defeater for the Sensus Divinitatus and if so how might Plantinga respond?

We can state the problem thusly:

1. If the Sensus Divinitatus exists, reasonable non-belief would not occur
2. Reasonable non-belief does occur

Therefore,

3. The Sensus Divinitatus does not exist.

To begin to see how Plantinga can respond to such a problem, we should consider the role sin plays in his view of cognition.

Sin and its impact on cognition

Plantinga has a number of additions to the Aquinas/Calvin (A/C) model of belief, previously described. Briefly put, the extended model claims that not only has God created us in his own image, in that we are persons with will and intellect, that we were originally created with an extensive and intimate knowledge of God, which is delivered through the Sensus Divinitatus.

(Plantinga, 2000, p204) Additionally, human beings have fallen into sin, a condition which has both cognitive and affective consequences. The affective consequences have damaged the will which means we no longer love God above all else. The cognitive consequences, which are of particular concern, mean that our knowledge of God has been compromised; the

Sensus Divinitatus has been distorted and deformed. Humans are no longer capable of a knowing God in the unproblematic way we were intended to, we have developed a resistance to the deliveries of the Sensus Divinitatus. (Plantinga, 2000, p205) What is more, we find ourselves in a state of sin from our very birth. (Plantinga, 2000, p206-07) Also according to the extended model not only has sin damaged the Sensus Divinitatus but restoration is available through the internal instigation of the Holy Spirit (the third person of the trinity), which endorses the teaching of scripture which is also divinely inspired by the Holy Spirit. The result of this is faith, which gives the beliefs produced by this process warrant. However, it is not enough to merely have sure and certain knowledge of the things just described one must also have the right affections, one is reminded of the words of Jonathan Edwards “He that has doctrinal knowledge and speculation only, without affection, never is engaged in the business of religion.” (Edwards cited in Plantinga, 2000, p238)

There is, of course, much more to say about the extended A/C model and the role it plays in Plantinga’s epistemology but for our present purposes we can see how the cognitive consequences of sin would help in a defence against the problem of reasonable non-belief.

Plantinga (or anyone who accepts the extended model) does not need to accept premise 1. As under the extended model the Sensus Divinitatus has been distorted and deformed by sin, as a result of this the Sensus Divinitatus is not working in the way it was initially intended.

Premise 1 would be true, if the Sensus Divinitatus had not been damaged by Sin, but as it has, reasonable non-belief is to be expected and is thus consistent with the existence of the Sensus Divinitatus. In the next section, I will consider an analogical objection to the problem of reasonable non-belief, that of the demographics of theism.

The Problem of the 'Demographics of Theism'

In his paper 'Divine hiddenness and the demographics of theism' (2006) Stephen Maitzen claims that the uneven distribution of believers in God offers a stronger challenge to theistic belief than the traditional problem of divine hiddenness and even the problem of evil.

Furthermore, he claims that it casts doubt on the existence of a *Sensus Divinitatus*. While the main thrust of his article is looking into difficulties with traditional replies to the problem of divine hiddenness, for our present purposes I shall focus on the problem it may cause for the existence of the *Sensus Divinitatus*.

Maitzen claims that those examining the problem from Divine Hiddenness have frequently overlooked the disparity between theistic believers across differing countries. He draws attention to contemporary demographic evidence to show that in certain cultures and countries theism is overwhelmingly popular for example in Saudi Arabia 95% of people self-identify as Muslim (theist). Whereas, in some countries 95% of the population hold non-theistic beliefs, in Thailand for instance. (Maitzen, 2006, p179) or in Sweden only 23% claimed to believe in God, whereas in Turkey 95% claimed to believe in God (2005, Eurobarometer)

He claims that this poses a unique challenge to the idea of an innate cognitive faculty responsible for producing belief in God. To do this he makes a comparison with other innate human capacities such as the ability to hear or the ability to learn a language. With these capacities they are, broadly speaking, spread evenly across the human species. (Maitzen, 2006, p187) Whereas, belief in God is produced unevenly among human societies, even if we claim, as Plantinga does, that Sin (of both the original and self-inflicted kinds) deforms and distorts the *Sensus Divinitatus* from its original intended capacity and that it can be restored through grace via the Holy Spirit. This "only pushes the question back a step" (Maitzen, 2006, p187) as to why the Holy Spirit works so unevenly across national boundaries, which social scientists claim they can explain entirely through cultural means. So, the demographic data which

suggests such an uneven distribution of theistic belief casts doubt on the existence of such an innate faculty. (Maitzen, 2006, p187) Not only does Maitzen's argument challenge the existence of a *Sensus Divinitatus*, the uneven distribution of theistic belief might also raise problems for the CSR explanations of religion. For if theism is most uncommon in certain nations (Thailand, Sweden) might this suggest that belief in god/s is due to cultural factors rather than the product of the way our minds naturally work?

There is reason to believe that this challenge is not convincing, as there is nothing in the CSR accounts presented that suggests that belief in god/s cannot be successfully challenged over time. For example Justin Barrett suggests that urban settings may help to contribute to atheism, the numerous alternative frames for reflectively interpreting the non-reflective beliefs which give rise to belief in god/s may help to reduce the occurrence of religious thought. (Barrett, 2004, p116) He paraphrases the saying that 'there are no atheists in foxholes' to "there are no atheists in the pre-industrialized world". (Barrett, 2004, p116) This would, in part, help to explain why there is an uneven distribution of theistic belief. Even in countries like Sweden where only roughly a quarter profess belief in God. If we take into account those who acknowledge belief in a 'spirit or life force' then we increase those with religious belief to over three quarters of the population. (Eurobarometer, 2005) As has been stated previously, CSR attempts to explain why people hold belief in supernatural entities broadly defined, not the Judeo-Christian Islamic conception of God. While CSR explanation of religious belief can evade Maitzen's challenge by claiming to explain belief in god/s rather than God. Plantinga's account of the *Sensus Divinitatus* however, is an account of why people believe in God.

We can see how the uneven distribution of belief in God is problematic for Plantinga's A/C model of theistic belief through the following 'demographics of theism' argument:

1. If Plantinga's A/C model is true, belief in God is the result of an innate cognitive faculty (Sensus Divinitatus)
 2. If belief in God were the result of an innate cognitive faculty (Sensus Divinitatus) it would be evenly spread across cultural and national boundaries.
 3. Demographic data demonstrates that belief in God is not spread evenly across cultural and national boundaries.
 4. Therefore, belief in God is not the result of an innate cognitive faculty.
- So,
5. Plantinga's A/C model is false

Maitzen justifies premise 2 through a comparison with other innate cognitive faculties (such as seeing and hearing). Premise 3 is true if the data used is reliable, which we have good reason to suppose it is. How then might Plantinga respond? An appeal to the extended model and the notion that sin comprises the performance of the Sensus Divinitatus would not provide a reason to think premise 3 is false and it is not clear how it would help to undermine premise 2. As it does not explain why sins impact on the Sensus Divinitatus seems to occur more powerfully in certain nations rather than others or why the Sensus Divinitatus is healed by the Holy Spirit in some areas and not others. If one argues that the demographic data only suggests that belief in theism per se is unevenly spread, in countries like Thailand which are 95+% atheistic they still hold religious beliefs, as roughly 95% are Buddhists (on a somewhat tangential note, while there is much disagreement as to whether Buddhism is a religion, it will suffice to say that it shares many of the common practices associated with religion, rituals, holy books etc...) Perhaps the Sensus Divinitatus is not as fine-tuned as was previously thought, instead as Clark and Barrett have suggested its purpose might be to make humans aware of a divine and moral dimension to reality, rather than a belief in Yahweh.

(Clark and Barrett, 2011, p33)

This move may be too much of a concession for those wishing to defend Plantinga's extended model, for in conceding that the faculty is devoted to producing a mere 'divine and moral dimension to reality' the faculty responsible for belief in God would be more coarse grained than is necessary for his specific epistemological project.

However, there may be other options open than accepting the watered down account given by Clark and Barrett, for those wishing to retain a *Sensus Divinitatus* with a more robust character. As Plantinga claims there are numerous ways in which sin can impact on the working of the *Sensus Divinitatus*. One of which is through testimony, so if someone is brought up to believe there is no such person as God and that belief in God is intellectually primitive or an evolutionary relic of a bygone era. The deliverances of the *Sensus Divinitatus* can be compromised or perhaps suppressed altogether. (Plantinga, 2000, p215-16)

This may help to give an explanation of how the *Sensus Divinitatus* is compatible with such uneven distribution of belief in God. Perhaps in countries where belief in God is particularly low, testimony encouraging disbelief in God is more prevalent or in the case of countries with different religious beliefs, such as Thailand, testimony has skewed the *Sensus Divinitatus* toward these different religious beliefs. This also would help to demonstrate why Maitzen's analogy with other innate capacities is not apt. Under Plantinga's model the capacity to hear and see are not effected by sin in the same way as the *Sensus Divinitatus*. Perhaps because the *Sensus Divinitatus* is a capacity concerned entirely with theological matters.

At any rate, premise 2 of 'demographics of theism' argument is false if the uneven distribution of belief in God is the result of testimony in the way I have described and it is plausible to think that we would not expect the distribution of theistic belief to be even across different cultures and countries given the different cultural backgrounds of these different

nations. So, Maitzen's demographics of atheism problem does not undermine the existence of Sensus Divinitatus described by Plantinga's extended model.

Thus far I have looked at CSR and evidence that pertains to the demographics of theism in relation to how it might impact Plantinga's reformed epistemology. In the following section I shall consider how the Cognitive science of atheism (CSA hereafter) might impact on his reformed epistemology. In particular, I shall consider a number of possible objections towards Plantinga's extended model which could be garnered from findings in CSA.

Cognitive Science of Atheism

While it is fair to say that CSR is still very much in its infancy, the CSA is a much more recent research paradigm, resultantly we should be less assured of its findings and concede that the origin of atheism requires further empirical verification. Be that as it may, there are still a number of interesting studies which help to explain why certain people are less prone to belief in god/s. The most robust evidence is found in those people who have Autism and Asperger's syndrome (these conditions are commonly referred to as autistic spectrum conditions) I shall consider if there is evidence to suppose that those with autistic spectrum conditions, as a result of their cognitive composition, are less disposed to belief in god/s than people who are neurotypical (people who are not autistic) and what the consequences might be for the extended A/C model.

In both the by-product and adaptationist accounts of religion previously described, there are a number of cognitive mechanisms which seem crucial for belief in god/s. One of which is the theory of mind describer (ToM), without this faculty people could not infer about the contents of the mental states of god/s and as such those who did not possess such a faculty would struggle in holding a belief in god/s.

In fact, a difficulty in inferring mental states is a core cognitive component of those on the autistic spectrum and there is good evidence to suggest that ToM difficulties are universal amongst those with autism spectrum conditions. (Baron-Cohen, 2001, p174)

What is more, there is an increasing body of empirical evidence which suggests that those high on the autistic spectrum are far less likely to believe in God than those who are neurotypical. For example, through an analysis of online forum discussion postings and a questionnaire that explicitly asked about participants religious beliefs Caldwell-Harris et al. (2011) found that those with high functioning autism, in both instances, were much more likely to be atheist and agnostic than people who were neurotypical.

In a similarly but somewhat different vein to Michael Murray's "Four Arguments that the Cognitive Psychology of Religion Undermines the Justification of Religious Belief." (2007) I wish to consider three arguments as to how CSA might undermine Plantinga's extended A/C model. The first of which is as follows:

Argument 1

As has previously been stated, according to Plantinga all human beings have been created with a Sensus Divinitatus; a belief forming process or source of belief, which under certain conditions produces beliefs about God (which can be considered warrant basic). (Plantinga, 2000, p199)

The evidence that those with autistic spectrum conditions lack the ToM describer undermines the claim that all people have the belief forming process as ToM is required to form beliefs about God, we can construct the first objection, what I shall call the 'CSA capability argument' against the A/C model, it is as follows:

1. If the A/C model is true, then all people possess the Sensus Divinitatus.

2. If all people possessed the Sensus Divinitatus, all people would be capable of forming beliefs about God.

3. To be capable of forming beliefs about God one requires the ToM describer.

4. Those on with autistic spectrum conditions do not possess the ToM describer.

Therefore,

5. Not all people are capable of forming beliefs about God

Consequently,

6. Not all people possess the Sensus Divinitatus

So,

7. The A/C model is false.

Premise 1 and 2 are a result of Plantinga's model, premise 4 is true if findings in the cognitive science of autism are true and given that there is good empirical evidence to support them we can suppose they are. Premise 3 on the other hand is somewhat dubious, as the experimental results of Caldwell-Harris et al (2011) do not suggest that those on the autistic spectrum were incapable of holding belief in God but rather that they are much less likely to. In the Caldwell-Harris et al (2011) study there were cases of those on the autistic spectrum, who presumably lacked ToM, but still believed in God. In fact, in response to the questionnaire almost a quarter of participants with high-functioning autism responded as being Christian. (2011, p4)

While the CSA capability argument fails to undermine the extended A/C model, perhaps we can modify the argument to construct a more formidable challenge to Plantinga's epistemological model.

Argument 2

People with Autistic spectrum conditions may be capable of believing in God but due to a lack of the ToM describer and a number of other cognitive deficits they are not capable of an affective as well as a cognitive response to theistic belief, as it is well known that those on the autistic spectrum find great difficulty in demonstrating emotive responses, according to the extended model, both of which are necessary for Christian belief. We can then modify the first argument to the following:

1. If the extended A/C model is true, then all people possess the Sensus Divinitatus.
2. If all people possessed the Sensus Divinitatus, all people would be capable of the affective response to God in addition to the cognitive forming of beliefs about God.
3. Those with autistic spectrum conditions are not capable of an affective response to God.

Therefore,

4. Not all people possess the Sensus Divinitatus

Consequently

5. The extended A/C model is false

As with argument 1 the first premise is a result of the description Plantinga gives of the extended model. One should accept premise 2 because under the extended model one must have the right kind of affections to belief in God. Faith, isn't just a matter of believing certain propositions, one must also love of God, have a desire to be a relationship with God, achieve a unity with God etc... (Plantinga, 2000, p292-293)

With regard to premise 3, it is not clear that people on the autistic spectrum cannot have these kinds of affective responses. Even if they ordinarily could not, the extended model predicts that such a response is the result of the internal instigation of the Holy Spirit, perhaps as a

result of the Holy Spirit they are then capable of loving God above all else. So, there are then two main problems with premise 3; firstly it interprets ‘affective’ to mean having an emotive response, as opposed to the sense in which Plantinga uses it, which is more akin to “inspired to gratitude and love” (Plantinga, 2000, p293) and secondly, it ignores the possibility that the Holy Spirit could restore the correct kind of affective response. As such, we have due cause to believe premise 3 is not true.

Argument 3

While there is evidence that those on the autistic spectrum are capable of belief in God, they are, presumably because of their cognitive makeup, significantly less prone to belief in God than those who are neurotypical. Might such an uneven distribution of theistic belief raise similar concerns to the existence of Sensus Divinitatus than Maitzen ‘Demographics of atheism problem’? Let us consider the following argument for this position.

1. If Plantinga’s A/C model is true, belief in God is the result the Sensus Divinitatus
2. If belief in God is the result of a Sensus Divinitatus, then all people’s cognitive faculties would be equally prone to belief in God.
3. People with autistic spectrum conditions cognitive faculties are less prone to belief in God than those people who are neurotypical.

Therefore,

4. belief in God is not the result of the Sensus Divinitatus

So,

5. Plantinga’s A/C model is false

As with objection 1, premise 1 is true if Plantinga’s model is true. Data from Caldwell-Harris et al (2011) and information regarding the cognitive abilities of those with autistic spectrum conditions, that they lack Tom and have a hypoactive agency detection device, provide

justification for premise 3. It is of note that the same response to Maitzen's demographics of atheism problem is not available to a defender of the A/C model in this instance. If we recall the response to Maitzen's argument was to claim that sin through testimony could explain why certain cultures and countries did not believe in God, which could in turn help to explain why theism is so unevenly distributed geographically. Sin through testimony would not help to explain why some people's innate cognitive faculties were less prone to belief in God than others. The only option available is to argue against premise 2, perhaps one would wish to claim that under Plantinga's extended A/C model it does not matter if people (or a group of people) are less prone to belief in God because these faculties can be restored to the way they were originally intended to work and as such it is not required for all people to be equally prone to belief in God. Though if we recall, restoration of these faculties is achieved through faith, which involves believing in the things contained in the extended A/C model. As Plantinga states

The typical way of appropriating this restoral is by way of faith which, of course involves belief in these things – that is, belief in the great things of the gospel. If so, however God would intend that we are able to be aware of these truths. (2000, p285)

In which case belief in the extended A/C model, of which belief in God is possibly the crucial tenet, is the means of restoring the cognitive faculties of those who have faculties which make them less prone to belief in the extended A/C model than other (neurotypical) people. This would be a most perverse solution to the problem at hand.

Perhaps in response someone could claim that faith is produced in a person by the internal instigation of the Holy Spirit, so through the Holy Spirit the faculties responsible for belief in God are turned in the right direction, once this has occurred then faith is made possible for the person.

Even so, one is left with the evidence that people with autistic spectrum conditions are not only less prone to belief in God, but also actually are less likely to believe in God (and therefore less of them do believe in God) than people who are neurotypical. In which case, one must account for why the internal instigation of the Holy Spirit is less prevalent in the autistic spectrum community. Self-imposed sin does not seem a plausible candidate as there is little or no good reason to suppose those with autistic spectrum conditions are more sinful than neurotypical people. Geographical and cultural concerns are also not plausible, as the evidence in question is cross national and cross cultural and as such there is also reason to believe that we should accept premise 2. Consequently, if there are no other objections to premise 2 CSA does ultimately offer a credible objection to the extended A/C model of belief. It should, however, be noted that the argument I present does not offer a challenge to theism, per se, but rather to the idea of the *Sensus Divinitatus* Plantinga suggests (or any similar innate cognitive faculty).

I have considered three possible arguments as to how CSA might undermine the extended A/C model of belief. The first two of which failed, whereas the third appears to fair much better to scrutiny. Accordingly the extended A/C model Plantinga puts forward cannot adequately account for findings in the CSA that relate to those with autistic spectrum conditions.

Conclusion

In summary, I have been primarily concerned with two questions pertaining to Plantinga's reformed epistemology. Firstly, can the cognitive science of religion help to provide a credible de jure objection to theistic belief and secondly, might Plantinga's account succumb to an ontological challenge. While I answer the former in the negative and the latter in the affirmative, there are a number of points which I should address before I finish. In my

discussion of the potential epistemological problems an explanation in the cognitive science of religion might present Plantinga, I only covered two possible challenges. There could, of course, be other contenders which have yet to be considered, but there is reason to think that this will not be case. As all those who have considered the epistemic challenges CSR might offer theism, have found such objections to be wanting (i.e. Thurow (2011), Barrett (2007), Murray (2007), Clark and Barrett (2010), Clark and Barrett (2011) etc...).

I have ultimately claimed that Plantinga's reformed epistemology cannot account for findings in the cognitive science of atheism, which suggest that people on the autistic spectrum are less prone and less likely to believe in God. This is, of course, is not to say that there is therefore nothing of interest to be found in Plantinga's work on the epistemology of religious belief, on the contrary, I believe that his account of reformed epistemology is the most thoroughly developed and sophisticated available. Though I claim his account is flawed, it should be of note how this was achieved, i.e. through findings in the cognitive science of atheism. There has to date, been little or no work done examining the impact this field might have on religious epistemology, through this paper I have attempted to begin to address this concern.

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