

## Scientific Tactics, Islam, and Science

(Critical Musings On Khaleel's (2003) Book: *Science and Religion*)

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Running Head: Religion And Science

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### Abstract

*If we would like to know if a religion is true or false, we should not depend on our emotions, feelings, or traditions. Rather, we should depend on our reason and intellect.” -- (Ibrahim, 1997, p. 4)*

One likes this advice from Ibrahim (1997) since pitting “traditions” and “feelings” against “reason” is good advice. Science is the pitting of some things against other things, the pitting of some hypotheses against other hypotheses, the pitting of some theories against other theories, and the pitting of some paradigms against other paradigms. It can be profound challenge, however, to advocate the use of reason when it goes against the grain of one’s deep emotion-based commitments. Emotions generally take the lead. People are “predictably irrational” (Ariely, 2008), biased, invested, prone to illusory thinking, tottering with cognitive imbalance, vulnerable to a narrowed focus, and susceptible to self-deception. One must plan to address these in all critiques—of self and others, and of the products of self and others. Tactical scientifically based critique is the key. This present essay respectfully calls for (1) a critique of Khaleel’s (2003) Book: *Science and Religion*, and (2) the use of his critique within the book making truth claims. Khaleel’s book claims to make a case for Islamic truth claims, and he leans towards attempts to frame the evidence as scholarly evidence and scientific evidence. I suspect Khaleel is a compassionate person, after all, he is a medical doctor. I suspect Khaleel is an informed person, after all, he would have studied numerous disciplines related to medicine. I suspect Khaleel loves science, after all, exposure to the world of science (human physiology, anatomy, medicine, research) is enamouring. But, the evidence and claims offered for his positioning on Islamic science is troublesome. Even so, the ideas offered, and claims made, should be on the table for consideration. Where and why the evidence and argument offered is troubling is addressed first. Why there is a breakdown in the calibre of the evidence and argument offered is considered secondly. The breakdown is potentially driven by insufficient attention to addressing possible issues of faulty epistemology, cognitive processing limitations, self-deception, paradigmatic blindness, the influence of religious narratives, cognitive imbalance, and muddled systems of thinking considerations and practices. The scientific tactic addresses all sides fairly!

### Introduction

*“Muhammad told his followers in a hadith, ‘Drink camel urine, it contains the cure for all ills.’ Muslims can graduate from the most famous medical schools in the world yet still believe that camel urine can cure illness.”*  
 – Wafa Sultan (2009).

No insult is intended by offering this quote. Rather, the intention is purely academic—presaging historical, scientific, religious, philosophical, psychological and cultural inquiry. There is no emotion driving the quote. Simply put, it’s a simple question: was Mohammed’s scientific claim in the above quote scientific and true?<sup>1</sup> While this is a mere academic challenge, and a search for understanding, it does raise the issue of cultural context, Islamic context, and

<sup>1</sup> One does encounter references to urine as an application for wounds in some cultures; and there was a rather humorous episode of the TV series “Friends” referencing the application of urine for a jellyfish sting. As noted in Scientific American, though, the case is more fiction than fact <http://www.scientificamerican.com/article.cfm?id=fact-or-fiction-urinating> .

cognitive context for truth claims, claims for innovation, and claims for the cultural high ground. Khaleel (2003), it seems, is contending for such a high ground in science, history, and culture. But is it a high ground?

### History of This Response

The genesis of this particular reaction to Khaleel (2003) is rooted in a booklet (Ibrahim, 1997), a conversation, a reflection on the Ibrahim booklet, and now an additional book to consider. Having attended a “Reasons To Believe” (RTB) chapter meeting in Toronto (May 2013), and listening to a lecture on *water* given by Iain Sommerville (PhD in Metallurgy), I was struck by a knowledge-building and a faith-building presentation tied to the amazing properties of *water*. There was a clear case made for *water* pointing to a designer!

Following the lecture, a discussion with a few individuals ensued where a question arose related to a booklet on Islam (Ibrahim, 1997) that addressed water facts and purported to offer evidence for miraculous underpinnings of the Qur’an and hence proof for Islamic claims. Curious, I volunteered to have a look at the booklet and consider a response. A 100-page response followed. Those critical musings left me with two major conclusions. First, I had become so convinced that there was no merit in any of the evidences and arguments offered in the booklet that I ended my critical musings (and case-building) around the 100-page mark. Secondly, those critical musings had led to resources (i.e., Internet resources) and reflections indicating cogent arguments, evidences, and tests, against many of the Islamic booklet’s claims.

On the first Tuesday in June I attended a second RTB meeting, and after a brief exchange on the original booklet I was invited to consider a second chunk of text: chapters 4 and 5 of Khaleel’s (2003) book, *Science and Religion*. I agreed to have a look; I suspected that too could be a learning experience. Basically, though, I was just plain curious (Kashdan, 2009).

### Scientific Tactic – Considering The Topical Breakdown

After reading through chapters 4 and 5, I was cognitively perplexed. The problem was where to begin? I was asking myself all sorts of questions and generating many impulsive statements. For example:

- This is an opinion piece, not an argument. It doesn’t even rise to the level of typical written commentary like “Letters to the Editor” in local newspapers. This was my initial reaction.
- The search for evidence, any evidence, in the text for support of claims made was frustrating. The bibliography was bare.
- The search for arguments was equally frustrating. The text seemed to be merely a concatenation of claims.
- The search for a fair treatment of critics, opposing arguments, theories, and evidential challenges highlighted the fact that they were never considered. There was nothing scholarly, scientific, or epistemologically sound about the book. It was ironically not at a scientific level of writing.

- Like the Ibrahim (1997) book, this book seemed to be a classic example of confirmation biases, illusory thinking, and self-deception. And if not, such constructs should be attended to in the text, at the very least.

Still, I needed a place to begin. Which item or items in the following list might be appropriate focal items or starting points?

- The claims for scientific knowledge in the Qur'an
- The claims for Islamic roots for all modern progressive institutions, sciences, knowledge, etc.
- The issue of education.
- The issue of equality, tolerance, etc.
- The issue of slavery.
- The issue of the moral character of Mohammed.
- The issue of the nature of the Qur'an.

I had already engaged some of the claims for scientific knowledge in the Qur'an when considering Ibrahim (1997). I saw no grounds for confidence in such claims. Were there grounds for expanding this analysis for a consideration of religion and science here? Perhaps. But what were the questions raised? I was intrigued by the question of slavery, the issue of education, and the moral character of Mohammed. Most intriguing though was the issue of the nature of the Qur'an as this was foundational for all the other issues and claims, including science. If the foundation failed, then all else tottered if not crumbled. The initial task was to consider the following issues: (1) Education, (2) Slavery, and (3) the Qur'an. Are these supportive of the high ground for which Khaleel contends? If so, then there may be grounds for expanding the consideration to science, the major consideration that Khaleel (2003) wished to advance.

### On Education

Here's an intriguing question: Why do so many Muslims, from so many different Islamic countries, wish to be educated in the West? One answer is that the Western educational systems surpass the Islamic opportunities. Another answer is that there are simply more universities in the West. On the other hand, one could argue that there is a good case to be made an educated person will seek a broader educational opportunity; hence, look to other countries, like the West. Does one reason seem more compelling than others? It might be practically possible to make a case for the high ground in education in Islam, but what is that case?

Western literacy is praised by Warraq (2011, p.68). "While intellectual freedom permitted scholars to probe the secrets of nature and even criticize religious doctrine, it also resulted in a great increase in literacy that had no parallel elsewhere in the world. For example, Lawrence Stone found that by 1640, 'over half the male population of London was literate,' and the proportion of adult males across the country who could read was also growing. Protestantism gave momentum to a broadening of literacy and the ideal of universal education, in part because Protestant reformers starting with Martin Luther believed that reading the Bible was a religious

duty for every Christian and that it should be made available in the vernacular (p. 68).” Book production and newspapers were markers for such dramatic growing literacy.

Islamic literacy is dramatically weaker. The statistics for various Islamic countries listed on Wikiislam ([http://wikiislam.net/wiki/Muslim\\_Statistics\\_%28Education\\_and\\_Employment%29](http://wikiislam.net/wiki/Muslim_Statistics_%28Education_and_Employment%29)) are quite discouraging. For example,

- How many books are translated by the entire Arab world each year? Answer: about 300.
- How many books are translated by Greece alone each year? Answer: about 1500.
- What is the literacy rate for the 1.4 billion Muslims? Answer: about 40%.
- What is the literacy rate for Christendom? Answer: about 78%.
- Using the history of the use of the printing press as a proxy for literacy one can ask: who used the printing press, and when?
  - “Books and printed matter in Turkish and Arabic were unknown before the end of the 18th century, and even then they were of limited impact because of widespread illiteracy. Jewish refugees from the Spanish Inquisition established a Hebrew printing press about 1494. Armenians had a press in 1567, and Greeks had press in 1627. These presses were not allowed to print in Turkish or in Arabic characters, owing to objections of the religious authorities. One result of this delay was to give Greeks, Armenians and Jews an advantage in literacy, and therefore an advantage in commerce, and in having a means to preserve and propagate their culture, that was denied to Turks and Arabs. The major result was to retard the development of modern literate society, commerce and industry. The first Turkish printing press in the Ottoman Empire was not established until 1729. It was closed in 1742 and reopened in 1784. The press operated under heavy censorship throughout most of the Ottoman era.”

[http://wikiislam.net/wiki/Muslim\\_Statistics\\_%28Education\\_and\\_Employment%29](http://wikiislam.net/wiki/Muslim_Statistics_%28Education_and_Employment%29)

The literacy rates broken down by Islamic and non-Islamic country, and reported on Wikiislam are not supportive of an education high ground for Islamic culture.

What are the historical precursors to education? Of particular interest what are the pre-Islamic precursors.

- The Greek philosophers developed schools, developed followings, and developed opportunities for education. Admittedly, such opportunities were limited largely to the free males in a society, but the seeds were planted
- The Jewish synagogue. The Jewish mandates to educate their children were quite clear in the Hebrew Scriptures and practices. The Jewish emphasis on education has spanned several millennia, multiple cultures, Diaspora, persecution, and holocaust. They are a group that has always valued the book, books, and learning.
- The Christian education mandate is to “make disciples.” Early Christian models of educated leaders are seen in Luke and Paul. The Church Fathers and their diverse learning reflected well on educated leadership. The monasteries were involved in education. The Reformation ideal as with Martin Luther was for every Christian to be literate and read the Scriptures in their own language. The Christian universities showed the value placed on education. Sunday schools were for educational purposes.

These seeds of education may not have been clearly for “universal education” in their seminal state, but the move to universal education grew over time, as a tree developing or a flower unfolding. The teleology was there in the seeds. Growth followed as a function of environment.

In Islam there may have been seeds and sprouts, but the plant, the educational plant wilted. It didn’t unfold properly as in other cultural environments. Obviously, as with the plant,

more than a seed or sprout is needed. One needs good soil, nutrition, light, water, weeding, and attention to the garden. That's a scientific tactic!

### On Slavery

Khaleel (2003) writes: "...in contrast to ancient Greece, where outsiders were discriminated against or enslaved, the environment of Islam provided equal status for all races. Thus, as compared to all previous civilizations the Islamic one was the most tolerant. In fact, its liberal approach remains unmatched even to this day (p. 86)." Khaleel seems to miss a few historical things here that present some sort of challenge to his claim.

What Khaleel fails to acknowledge is the success of the West in the abolition of slavery. He was obviously aware of this as he shows familiarity with Bruxton's 19<sup>th</sup> century writing on "The African Slave Trade." Since Bruxton was a leader in the abolition movement following the Christian William Wilberforce's monumental success in getting the slave trade abolished, and since Bruxton too was a Christian (affiliated at times with both Church of England and Quakers), Khaleel would be appropriately informed. But it doesn't show!

Furthermore, on the other side of the coin, what Khaleel fails to acknowledge is the involvement of Islam in slavery. Warraq (2011), for one, comments on this dark side of Islam. Many black Africans participated in the slave trade willingly. The Atlantic slave trade spanned roughly four centuries. "...Arabs were engaged in the slave trade for thirteen centuries and shipped far more black slaves across the Sahara and the Red Sea than were sent across the Atlantic (p. 108)." This is a dramatic and dark indictment.

And the numbers are dramatic. Warraq (2011) draws upon Pétré-Grenouilleau for a series of statistics: "...between the seventh century and the 1920s, Arab merchants handled more than seventeen million black slaves, of which more than one and a half million died en route, many across the Sahara. In the nineteenth century alone, over a million slaves were exported from eastern ports of Africa to Yemen, Saudi Arabia, and the Persian Gulf; millions more were transported around the African interior and along the eastern coast (p. 111)." Furthermore, it wasn't just black Africans who made up the slave cohort. White Europeans were enslaved; approximately a million, or so, were taken into slavery by Barbary Coast Muslims "between 1530 and 1780" (Warraq, 2011, p. 112). A UN report from 1995 noted a current form of slavery in Sudan with the abduction of children in the South and transportation for sale in the North.

And again Khaleel seems to overlook, or he fails to acknowledge, the involvement of the Qur'an, and major Muslim thinkers, in support of racism and slavery precursors. There is ignorance amongst mid-stream Muslims and black converts to Islam of (1) this dark Islamic history, and (2) the more enlightened history of Christian abolitionism. "They are unaware that the Christian conscience of individuals like William Wilberforce played a central part in the eventual abolition of the slave trade. Moreover, they have only a vague knowledge of Islamic history or theology, even of the foundational texts. They have been taught a tendentious version of Islamic culture, one that is painted as being free of racism, colonialism, imperialism, and



slavery. But the Koran accepts the existence of slavery and regulates its practice. Among African Americans there is little awareness of the Muslim Arab participation in the black African slave trade, both trans-Sahara and East African, or of the antiblack racism of major Muslim thinkers (Warraq, 2011, p. 109).”

Many of the Qur’anic foundational texts that seem to support slavery can be found here: <http://www.thereligionofpeace.com/Quran/015-slavery.htm> . The superstructure claims for some Muslims that praise Islamic ideals related to education, racism, tolerance and slavery have roots in culture, hadiths, and imams, but primarily in the Qur’an. It is the focus on the foundation, the Qur’an, then that is most important. That’s a scientific tactic!

On the Qur’an

Khaleel (2003) roots his positioning in the nature of the Qur’an. He writes regarding the Qur’an: “While it is realized that belief in it is a matter of personal choice, the fact is in terms of content the Qur’an is irrefutable. This is because it is free of human influence. In other words, since it was written by a non-human source it is devoid of the inevitable errors in human thinking. Its method of revelation is also impossible to deny. This is because it was revealed to a man who was illiterate (pp. 131-132).” This is the Achilles heel! If this can be successfully challenged the rest falls (including the claims regarding science, education, slavery, laws, tolerance, antiracism, and so on).

Two of the relevant texts from the Qur’an here are:

*Nay, this is  
A Glorious Qur’an  
(Inscribed) in  
A Tablet Preserved  
--Sura 85:21-22*

*We have, without doubt,  
Sent down the Message;  
And We will assuredly  
Guard it (from corruption).  
--Sura 15:9*

Both of these texts seem to assure the idea of irrefutability (regarding content) advanced by Khaleel. At the same time, they point to the test, the appropriate test, the academic test, the scholarly test, the fact-based test, the scientific test, the test of reason. Is there evidence of corruption or error in the Qur’an?

Drawing upon chapter 10 of Morey’s (1992) book, which itemizes a number of arguments and facts, one can consider claims that could refute the notion of an error-free Qur’an. If just one factual error, of the many purported factual errors, is admitted into the mix the foundational claim from Khaleel fails and falls. On the other hand, knowing the human

propensity to rationalize, to follow a confirmation bias, and to fall to self-deception, one will be best served by considering the cumulative case as well as the singular fact. That said, consider a few of Morey's (1992) listings of logical and factual problems.

### **Some Principles, Arguments, and Factual Errors**

#### *The Freedom To Criticize.*

Morey (1992) makes the point that there should be "Freedom To Criticize." This is a principle anyone who purports to value science must adopt. There must be agreement between those on different sides of an issue that there is freedom to critique the other's position, the other's facts, their documents, their sources, their authorities, and what they dearly venerate. Hopefully, many modern Muslims will adopt this principle, be open to criticism, dialogue, and change. That's a scientific tactic!

#### *Logical Fallacy.*

While all logical fallacy claims should have a place at the discussion table one particular fallacy that Morey (1992) flags is the circular reasoning fallacy. This can be a foundational fallacy for Muslims. In fact, this seems to be a fallacy that Khaleel (2003) adopts when he advances the following: "While it is realized that belief in it is a matter of personal choice, the fact is in terms of content the Qur'an is irrefutable. This is because it is free of human influence. In other words, since it was written by a non-human source it is devoid of the inevitable errors in human thinking. Its method of revelation is also impossible to deny. This is because it was revealed to a man who was illiterate (pp. 131-132)." In effect, the claim that Mohammed is the prophet of God is based on the piece of information that the Qur'an says so, and the Qur'an is without error. But then the claim that the Qur'an is the authoritative, irrefutable, errorless message from God is based on the piece of information that Mohammed says it is. The major problem is: that's circular reasoning! One needs to examine the evidence and arguments for such claims not merely accept them. That's a scientific tactic!

Similarly, to contend that a Biblical text has been corrupted because it does not agree with the Qur'an is circular reasoning. What one needs to argue is where, how, and why a text is corrupted, without reasoning in a circle. That's a scientific tactic!

#### *The Double-Edged Sword.*

What Morey (1992) notes with respect to the double-edged sword is the following: some Muslims will draw on a fact or a claim in support of their argument, seemingly not aware that the broader context actually undercuts their argument. The example Morey uses to make this point is the Muslim use of the Gospel of Barnabas. For Muslims to draw upon the Gospel of Barnabas in support of some Qur'anic claims is dangerously double-edged. Why? First the Gospel of Barnabas condemns having more than one wife and supports the eating of pork. This then argues against Muslim claims. Secondly, and more importantly, the Gospel of Barnabas is a well known fraudulent work that could not have originated in the first century. In fact, it has been dated quite late by some scholars [http://en.wikipedia.org/wiki/Gospel\\_of\\_Barnabas](http://en.wikipedia.org/wiki/Gospel_of_Barnabas) . Avoid the double-edged sword. That's a scientific tactic!

*The Bible vs the Qur'an.*

There are several points that could be made here. Foremost, there is reason to guard against the logical fallacy that if one shows problems in the Biblical text, one thereby supports the Qur'anic text. This is a non sequitur; it does not follow logically. In fact, both texts could be wrong. The scholarly approach is to examine the problems in both texts independently, fairly, using the best scholarship available, and to be open to change when reasonably required. That's a scientific tactic!

*The Mohammed Test*

The next point is the Mohammed test. It has been suggested that Mohammed himself pointed to the Bible as a means to test his claims, to see if he spoke the truth. His appeal to the Bible gives the Bible temporal priority and logical priority. But how does this align with the Muslim rejection of Biblical texts as corrupted? The Muslim presupposition is that the Qur'an takes precedence. But why should it? What is the argument and evidence for the superiority of the Qur'an, independent of circular reasoning? One argument, perhaps the most compelling testable argument is the error-free claim. Is the Qur'an error-free? This is the fundamental question to address. That's a scientific tactic!

*The Errors Test.*

If there are errors in the Qur'an then the Qur'an falls as in a self-refutation. Are there errors? What are the purported errors? Morey (1992) lists 100 errors as evidence for an error-laden Qur'an. Some are compelling, some are weak and even explainable using broader contexts, some are prone to language constraints, some have alternate explanations any first-year courtroom lawyer could advance, and some are sufficient to sway the skeptic. The cumulative case advises caution rather than acceptance of the Qur'anic claims. That's a scientific tactic!

A sample of those errors are presented, and considered, here.

## The Weak Errors:

- The Abraham Errors.
- The errors that Morey notes as discrepant from the Biblical history are: (1) the name of Abraham's father (Sura 6:74), (2) where Abraham lived and worshipped (Sura 14:37), (3) the building of the Kabah (Sura 2:125-127), and (4) the son who went to be sacrificed by the hand of Abraham (Sura 37:100-112), along with other discordant facts like the number of offspring and the number of wives Abraham had. Of course one could argue that the Biblical text was corrupted. But as Morey notes: claiming a corrupted text is far short of demonstrating corruption; and claiming corruption on the basis of the claims of the Qur'an is circular reasoning. Evidentialism, and evidence, are needed as critical vehicles for consideration of Islamic claims. That's a scientific tactic!
- The problem of having Nimrod responsible for throwing Abraham into a fire (Suras 21:68-69 and 9:69), when Nimrod had been dead for centuries, seems to be a problem, but it could be a minor problem. One could claim that Mohammed (or Gabriel) had a different Nimrod in view here. Perhaps. But which is the more reasonable evidence-based

conclusion? Error? This is critical openness on the part of the critic. That's a scientific tactic!

- The Days of Creation.

- It is not clear how many days of creation there are from Sura 4:9-12. The earth was created in two days (Sura 41:9), the amalgamation of the earth and sky (as seven firmaments) in two days (Sura 41:11-12); and then there were four days for things on the earth (Sura 41:10). This seems to add up to eight days! Of course mental gymnastics will follow to attempt an explanation. That's natural! For example, one set of "two-days" might be a subset of the "four-days" period. If so, then one can get a "six-days" total. Considering alternate possibilities is reasonable. But it is also reasonable to consider the possibility of error. That's a scientific tactic!

- The Denial of the Death of Jesus

There is a denial of the death of Jesus on the Cross (Sura 4:157-158).

*That they said (in boast)  
 "We killed Christ Jesus  
 The son of Mary,  
 The Messenger of Allah"—  
 But they killed him not,  
 Nor crucified him  
 But so it was made  
 to appear to them...  
 (Sura 4:157-ff).*

- This seems to be a clear historical mistake. One needs to forgo reason, and sound historical scholarship, to accept such a historical misrepresentation. Still, it is fair to ask: is there any evidence other than the Qur'anic claim? Ali (2004), in a note to this text, points to outside sources (e.g., Gospel of Barnabas albeit late-dated and the Marcionite gospel he dates around 138) for support. But these are Gnostic texts or pseudopigrapha; and the Gospel of Barnabas is arguably redacted to align with the Qur'anic doctrine in the case. Consider the historical scholarship independent of theological overrides. That's a scientific tactic!
- Which is the better argument? Jesus died on the cross? Jesus did not die on the cross; it was just made to appear so. Which has the better evidential case? Christians, and major secular historians, quite clearly believe Jesus died on the cross. Are there any secular historians who support the Islamic claim? I don't think so. But the question is a scientific tactic!
- The Noah Problems.
- The Qur'an has one of Noah's sons refusing to go on the Ark (Sura 11:32-48). There is a suggestion that this son forfeited his right to be considered a son because he was unrighteous (Sura 11:46). However, the Bible has all of Noah's family on the Ark (Gen 7:1), regardless of the apparent unrighteousness of others ("...you alone I have seen to be

righteous before Me in this time -- Gen 7:1”) including Ham (Gen 9:20-27). A second inconsistency is the identification of the resting place of the Ark—Mt. Ararat (Genesis account) or Mt. Judi (The Qur’anic account)? Ali’s (2004) footnote to this text claims support for Mt. Judi as a lower peak of the Ararat system. The support he sees is from local traditions which are purported to be accepted by Josephus, Nestorian Christians, Eastern Christians and Jews. He could be right. That’s a scientific tactic! Given the counterclaims it is a weak error, at best, if an error at all.

- About Joseph.
- The Bible has the wife of Potiphar attempting to seduce Joseph (Gen 37:36); the Qur’an names the husband as Aziz (Sura 12:30). Ali (2004) attempts to skirt the problem by contending that Aziz is a title. However, if he is right it is an Arabic or Syriac title, not an Egyptian title. Possibly, it could be argued that Mohammed (or Gabriel) was not intending a personal name and the Arabic title was some form of accommodation, or translation. Hence, the error is in the weak category and possibly not an error at all. That’s a scientific tactic!
- About Samaritans.
- According to Morey, the Qur’an has a Samaritan molding the golden calf at mount Horeb (Sura 20:85-87, 95-97) but the term Samaritan and the people identified as Samaritans came much later, several hundred years later. Samaritans emerged from Jewish intermarriages in the Babylonian captivity. However, the term in Sura 20:85 is “Sāmīrī” and how do we know: (1) if this is truly equivalent to Samaritan, or (2) if there was a another group of people named Sāmīrī present when he descended the Mount to find the golden calf, or (3) if there was an order or office for some people which was named Sāmīrī who were present then, or (4) if Sāmīrī was a personal name identifying a particular person even though the definite article is used. It is not a clear cut case, hence tentativeness is required. One needs more evidence regarding the language issues involved, the cultural contexts, the intent of the author, and the range of alternative reasonable explanations. That’s hermeneutically sound. That’s a scientific tactic!

#### The Stronger Errors:

- About Moses.
- A number of possible errors are pointed out here by Morey (1992) and a couple of them are less ambiguous than the weaker errors. First, Moses was found and raised by Pharaoh’s daughter (Ex 2:1-10), but the Qur’an has Pharaoh’s wife raising Moses (Sura 28:8-9). This is a clear error. A second error connecting Moses and Haman looks like a chronological error, but someone might argue that the Haman referred to in the various suras (27:4-6; 28:38; 29:39; 40:23-37) was not the Haman in focus in Esther. A relevant historical question then is: was “Haman” a name in use in Egypt in the time of Moses? I’ll have to suspend judgment on this point. That’s a scientific tactic! A third error points to crucifixion in Egypt in the time of Moses (Sura 7:124). The history of crucifixion is

evidently not a part of Egyptian history under Pharaoh. That's evidence of an error. That's a scientific tactic!

- About Mary.
- Where did Mary give birth to Jesus: under a palm tree (Sura 19:22) or in a stable (Luke 2:1-20)? Does the dialogue between Mary and the voice beneath the tree, between Mary and the people, between Mary and the infant Jesus (Sura 19:23-33) seem mythical or historical? Clearly mythical!! Hence, this has the ring of an error of major proportions. This seems to be a sound preliminary inference. That's a scientific tactic!
- Was Mary the daughter of Imran as reported in the Qur'an (Sura 66:12), and the sister of Aaron (Sura 18:28)? What is the historical evidence? Are the timelines (about a possible 1400 year difference or mix-up) a problem? Is this confusion and error? The contradiction is addressed on-line at various locations. Consider the claims here: <http://www.answering-islam.org/Quran/Contra/qbhc06.html>. The following are a series of quotes, somewhat balanced, from this resource.
  - Problem #1
  - "I am aware what Muslims claim to be a solution to this problem. Yusuf Ali for example writes in his footnote 2481 commenting on the above verse: "Aaron the brother of Moses was the first in the line of Israelite priesthood. [Mary and her cousin Elisabeth](#) (mother of Yahya) came from a priestly family, and were therefore, 'sisters of Aaron' or daughter of `Imran (who was Aaron's father)."
  - "This is faulty reasoning. Only Aaron became a Priest of the Lord and in fact the first High Priest. And only Aaron's **descendants** became priests. Neither Moses nor their sister Miriam are ever understood to be in "priestly lineage." Amram is definitely **not** a priest. If Mary's lineage of being part of a priestly family should be stressed then necessarily she would have to be called a **daughter of Aaron**, since all of Israel's priests are descendants of Aaron, while his brother and sister are **not** counted among the priestly line."
  - Problem #2
  - "The big problem is that the Qur'an is explicitly **not** talking about wider clan relationships as we see in the following verse. Behold! wife of `Imran said: "O my Lord! I do dedicate unto Thee what is in my womb for Thy special service ... When she was delivered, she said: "O my Lord! Behold! I am delivered of a female child!" ... "... I have named her Mary ..." -- Sura 3:35-36
  - Yusuf Ali in his footnote 375 to Sura 3:35 even goes so far to invent (?) a second `Imran by claiming that "by tradition Mary's mother was called Hannah ... and her father was called `Imran," in order to somehow save the Qur'an from this contradiction. But the same tradition that calls Mary's mother Hanna, also gives the name of her husband as **Joachim**. Why would Y. Ali accept one part of this tradition (e.g. in the Proto-Evangelion of James the Lesser) and reject the other? Yusuf Ali does not give any reference for this "tradition" he refers to."
  - Problem #3
  - "And a last question: Is there any other instance in the Qur'an where a person is **consistently** called daughter [son] or sister [brother] of people which are only wider relatives? Even if there was to be one name in the clan so overpowering that everybody is named in his or her relationship to that one person, it is doubly improbable that anybody would be named always after two distant relatives in the place of "father" and "brother", and **never** be mentioned in relationship to his or her real parents' or brothers' names. If this is the only instant then the Muslim explanation is even more strained since ad hoc explanations, i.e. explanations which serve no other purpose than to explain away this one problem but are not used anywhere else are not very credible. It does appear to be such an artificial reasoning in this case. And the fact that Aaron is indeed `Imran's son and this is a direct and correct genealogical relationship, also indicates that the rest is understood as daughter and sister in the normal everyday sense.
  - Thomas Patrick Hughes in his "Dictionary of Islam", page 328, writes on this issue that "it is certainly a cause of some perplexity to the commentators. Al-Baidawi says she was called `sister of Aaron' because she was of Levitical race; but Husain says that the Aaron mentioned in the verse is not the same person as the brother of Moses."
  - As always, conflicting explanations are evidence that there is indeed a problem and no one clear and satisfactory solution is available."

- This problem regarding Mary seems clearly error-laden. The evidence leads to a tilt towards the error inference. The responses do not resolve the issue. Hence the tentative conclusion supports the error inference. That's a scientific tactic!
- Self Contradictions.
- These are errors potentially reason-based. Basically, the Qur'an purports to be free from contradiction (Sura 39: 23, 28). Yet, there certainly seems to be contradictions which logically refute the claim.
  - Morey (1992) notes four conflicting accounts of the reception of the Qur'an: (1) via Allah in the form of a man (Sura 53:2-18; 81:19-24) (*but Ali has this as Gabriel*), (2) via the holy Spirit (Sura 16:102; 26:192-194) (*but one might argue for a distinction between formal cause, final cause, and material cause*), (3) via angels (Sura 15:8) (*but it could be that angels are intermediate*), and (4) the angel Gabriel (Sura 2:97). Morey's case is not the clincher one looks for regarding error; there are ways around such purported errors. Acknowledging alternative explanations is reasonable. That's a scientific tactic!
  - Morey notes: "The Quran differs on whether a day is a thousand years or fifty thousand years in God's sight (Sura 32:5 and 70:4) (1992, p. 145)." This one does seem to be a legitimate self-refutation point. But there could be a trivial explanation. That's a scientific tactic!
  - Morey notes: "In Suras 2:58 and 7:161 the same quotation is given with conflicting wording.... The presence of conflicting wording is serious because Muslims claim that the Quran is absolutely perfect even in its quotations (1992, p. 146)." If the claim is true, then this is an example of error. However, one suspects many Muslim scholars would rationalize here and claim that the meaning is what is consistent, not the exact wording. Or they might argue for a focus on the original language, Arabic, as a loophole. Openness to alternate explanations, even if they are rationalizations is acceptable. That's a scientific tactic!
  - Morey (1992) asks: "Who was the first to believe? Abraham or Moses (Sura 6:14 versus 7:143)? You can't have two 'firsts' (p. 146)." But Ali (2004) escapes this problem by contending that the "first to believe" used in Sura 7:143 was not referring to 'first' in time. The reference was to zeal rather than time. "It has the intensive and not the comparative meaning (Ali, 2004, note 1104, p. 384)." While Ali offers a convenient escape clause, it does illustrate how difficult it can be to flag an error. One must make a judgment, an inference to the best explanation that does not depend on circular reasoning. That's a scientific tactic!
- The Theological Errors
  - The most striking theological error is the theological view of the Trinity portrayed in the Qur'an and attributed to Christians. The Qur'an "portrays the Trinity as Allah, Mary, and Jesus and is concerned to repeatedly deny that Allah could have a son. The relationship implied—father, mother, child—is far, far removed from anything that can be remotely identified as Christian (White, 2013, p. 100)." Why

would the Qur'an report this "error" as fact, if the Qur'an was the divine revelation purported? Error!

- "The Muslim must understand what is at stake. It is not an arguable fact that Christianity is clear in its profession of monotheism. Followers of Christ did not believe God had taken a human wife and by her sired a child named Jesus, and hence he was the 'son of God.' The Qur'anic text seems plainly to say otherwise. What does this say concerning the truthfulness of its claims to divine origin and inspiration (White, 2013, p. 100)?" Error!
- "Is it not more than possible, even likely, that what we are reading came from Muhammad? It is easy to understand how a person living in Mecca could be confused on the subject. Doesn't dedication to truth require one to consider the possibility that the Qur'an is in error because its author was a human being whose own understanding was likewise in error (White, 2013, p. 100)?" A scientific approach—a virtue epistemology—demands such rigour. That's a scientific tactic!
- Are there other theological errors? Arguably yes! But one is all it takes.

#### Attitudes To Women -- An Evidential Critique Suggesting Error

- The case for error here is based on reason, argument, evidence, humanity, empathy, common sense, compassion, and intuition, just for a start. Wawa Sultan (2009) makes a fairly compelling case that the Islamic attitude to women which is rooted in hadiths, Islamic culture, history, the Qur'an and fear, is a clear and certain error.
- It is true that the attitudes to women throughout history have been abysmal. Women have been viewed as the weaker sex, property, morally inferior, and cognitively inferior. This is true even in the "enlightened" Jewish tradition accepted as revelation. As with slavery, though, the high road was not attained overnight. The process had seeds and roots in earlier environments; and over time the better view developed. The Christian view seems to be more positive than the earlier Jewish view. In Christianity, women were seen as (1) equals to males ("...there is neither male nor female" in Christ), (2) capable of holding a prophetess role, (3) involved in service, (4) honourable witnesses (as to the resurrection), (5) equivalent to males regarding a relationship of submission ("...submit yourselves to one another..."), and more. Over the period of Christian history the attitude to women matured; females were involved in education, service, missions, medicine, abolition, suffrage, and so on. Today Western women occupy majorities in many university programs, undergraduate and graduate. They occupy prominent places in virtually all professions.
- In Islamic countries the case for women has not followed a progressive developmental path as pronounced as that of the West. Sultan (2009), along with others (e.g., Ali, 2007, 2010) sees the role of women, and the attitudes to women, in Islamic countries as representative of a major error in Islam.
  - Consider these hadiths as flagged by Sultan (2009):
    - "But what is a Muslim woman? She is whoever Islam tells her she is in her early years. What motto does Islam painfully inscribe on her



birthmark? ‘A woman is a defect.’ This hadith pronounced by Islam’s prophet, Muhammad, was handed down mother to daughter, ... (Sultan, 2009, p. 117).”

- “Muhammad in a hadith told his followers: ‘Oh ye women, you are the majority of those who dwell in hell, for when you receive you express no thanks, when afflicted you show no patience, and when I keep aloof from you, you complain.’ ... According to Muslim belief, women are incapable of gratitude or patience, and like to grumble and complain (Sultan, 2009, p. 138).”
  - “Muhammad said in another hadith: ‘A woman must not feed anyone without her husband’s permission, unless the food is about to spoil. If she feeds anyone with his consent, her recompense is the same as his, but if she feeds anyone without his permission, he receives the recompense, while she will bear the responsibility for the sin (Sultan, 2009, p. 138).”
  - “Muhammad said in another hadith: ‘If a man summons his wife to his bed and she refuses, the angels will curse her until morning.’ Who is this God who asks his angels to devote their attention to cursing women who refuse to go to bed with their husbands (Sultan, 2009, p. 139)?”
  - “When there is a conflict between obeying her husband and obeying God, a woman owes her first obedience to her husband. This means she is not allowed to fast or pray unless her husband agrees, as laid down by the words of the Prophet of Islam in a hadith: ‘A woman shall neither fast nor pray without her husband’s authorization.’ (Sultan, 2009, p. 139).”
  - “Can you imagine how enslaved a woman must be if she believes this hadith from her prophet: ‘A man has the right to expect his wife, if his nose runs with blood, mucous or pus, to lick it up with her tongue.’ Can you imagine the conceit of a man who believes that this God has entitled him to such a position that his wife must lick up the filth that comes out of his nose (Sultan, 2009, p. 139)?”
- This cultural evidence points to error in any inferences I make. That’s a scientific tactic! Of course, one might make the claim that the hadiths are not the Qur’an; they are suspect, or in need of qualification. But until such a clear and compelling argument is offered “error” is the reasonable inference. That’s a scientific tactic!
  - Sultan (2009) goes beyond the hadiths; she also considers the Qur’anic models, that is, Mohammed’s marriages, as they apply to the formulation of the theological concept of women.
    - Mohammed marries Aisha when she is six and consummates this marriage to Aisha when she was nine years of age. “Through the story of this ‘marriage,’ Islam denies women the right to reach the stage of physical, intellectual, and emotional maturity at which they are fully ready to marry. It denies Muslim women the right to marry as a rational human being. That a girl should jump from her swing and become within a few minutes a mature woman in the arms of a man—this is something the most basic

laws of morality cannot accept (Sultan, 2009, pp. 123-124.)” This certainly seems to indicate error. As an escape, some have contended that Aisha was nineteen. Perhaps! Openness is a scientific tactic! But, which is the stronger evidentially-based claim? Which is the dominant view amongst Muslim scholars, and secular historians? The dominant scholarly evidence-based view carries the most weight. That’s a scientific tactic!

- Mohammed’s marriage to Zeinab is likewise problematic. Zeinab was his daughter-in-law, the wife of his adopted son. Mohammed was smitten by her, having seen her inadvertently unveiled. At first he resisted his desires likely recognizing what was forbidden given the law written on the heart, and the cultural law of that time period. “But, Muhammad was unable to resist his desires and the rock began to tumble down from the mountain peak, verse after verse, enabling him to give free rein to those desires, while the angel Gabriel began to shuttle back and forth, up and down, until he had resolved Muhammad’s dilemma (Sultan, 2009, p. 124.)” The first revelation-point (Sura 33:37) apparently reprimands Mohammed for concealing his feelings; it seems the feelings, and the subsequent marriage, were a divine intention. The second revelation-point has to do with Mohammed’s marriage to Zeinab being orchestrated by divine intention. The third revelation-point was that this marriage was to serve as an illustration of a marriage law being revised to permit such marriages. “When God’s Prophet coveted his adopted son’s wife and God ordered him to satisfy that desire, this behavior, for Muslims, became enshrined in both religious and secular law. Muhammad banned adoption in order to justify his socially unacceptable marriage—by the standards of his time—to the wife of his adopted son. This ban put an end to a social system that at the time helped save many children who, for one reason or another, had been left fatherless, and the ban to this day, continues to rot the soul of Muslim societies (Sultan, 2009, p. 126.)” This certainly has the earmarks of error.
- Mohammed’s marriage to Safia is also problematic when empathy is considered. And empathy is a vital human and moral consideration in our contemporary times and in earlier historical times. In David’s time Nathan confronts David with the metaphor of the rich landowner who had many sheep, yet who takes the single pet sheep from the poor man to prepare a feast for his own guests. David’s judgment is clear and dramatic: “That man shall die!” Nathan points out the empathic fact: “Thou art the man.” The sense of empathy was there. In current times the empathic focus is equally prominent (de Waal, 2009; Rifkin, 2009). The very day that the Jewish woman, Safia, is captured following the battle and slaying of her husband, father, and brother, she is married to Mohammed. It seems so unseemly. So loveless! So lacking in empathy.
- These Qur’anic models advanced by Sultan (2009) are indeed troublesome; they seem to indicate error to most reasonable, empathic,

humane, people with a conscience. Until one can make a case that the Qur'anic models are theological truths (i.e., superior, accurate, and correctly mapped onto reality), the reasonable approach is to infer error, or at the very least, immature morality. That's a scientific tactic!

- Appeals can be made to the positive treatment of women in Islamic society (e.g., property rights) or the reverence of women, but the more egregious markers (body covering, female circumcision, denial of permission to drive, denial of an education, honour killings, female court testimony, female rape, attitudes to women, the hadiths, and so on) overpower the purported positives. That's a scientific tactic! Read the writings of some Islamicized females (e.g., Ali, 2007, 2010; Manji, 2003; Sultan, 2009). That's a scientific tactic! The stories are heart rending. Do some followers of Islam misunderstand the Qur'an and tradition? Sultan (2009) asks this question also, but asks further: "Have the same followers misunderstood the Prophet's attitude to women in his lifetime? Where are the Koranic verses or Prophetic traditions that can alleviate the ugliness of these attitudes (p. 127)." Her question is a good question. That's a scientific tactic!

The Cumulative Case.

- Morey notes the use of legendary materials (Arabian, Jewish, heretical Christian sects, Sabeian sources, and Eastern Religions). He notes convenient revelations that were self serving related to marriages and privacy. He notes doctrinal errors like mistakes or Mohammed's misunderstanding about the doctrine of the trinity. And there is more. True enough, the use of a virtue epistemology would allow that many of Morey's claims can be reasonably challenged. While rationalizations, alternative explanations, and reasonable possibilities, can be offered for many of the purported "mistakes" the cumulative case leads to a strong tilt away from Islamic claims, not towards Islamic claims. The cumulative case against an errorless Qur'an emerges from considering Qur'anic claims, hadiths, history, and common sense. That's a scientific tactic!

## Scientific Tactic – Considering The Cognitive Breakdown

### Introduction

Attempting to address an answer to the question about why this cognitive breakdown, this bad belief, happens in Islam is not limited to Islam. Actually there are entrenched learnings capturing bad belief and cognitive processing problems in all worldviews. This includes an Islamic worldview, an atheistic/naturalist worldview, a Christian worldview, and so on. So the broader question is: what are factors that predispose worldview adherents to faulty worldviews? Answers are seen in the following: (1) a narrowing of focus, (2) ignoring of serious problems, (3) shallow thinking, (4) rationalization, (5) self deception, (6) cognitive rigidity, (7) cognitive imbalance, (8) paradigmatic blindness, (9) competing thinking systems (10) epistemological limitations, and so on. There are numerous constraints and liabilities that interfere with belief formation, change, and revised belief formation, that is, reformation. Change is not an easy move to initiate, nor an easy road to follow. So what blocks sound belief formation, sound belief retention, dropping beliefs, and sound belief reformation? A preliminary list follows.

Epistemological Failures  
 Cognitive failures  
 Confirmation bias  
 Illusory thinking  
 Bad beliefs formulated  
 Paradigmatic blindness  
 Imbalance  
 Dual processes  
 Systems failures

There are more constraints and limitations but these are listed here to give a general picture of the nature and range of the problem. They are elaborated in the following sections. That's a scientific tactic!

### **Key Epistemologies That Breakdown**

While many epistemologies (e.g., evidentialism, virtue epistemology, prudential epistemology, passional epistemology, volitional epistemology, existential epistemology, Gethsemane epistemology, etc.) should be relevant here, particularly where religion is the worldview in focus, the first focus is obviously straightforward evidentialism. Hence, evidentialism is the first-line epistemological approach considered. Moreover, this naturally leads to an additional scientific thrust linked to virtue epistemology.

### On Evidentialism

We make choices for reasons. We make deductions, inductions, and abductions for reasons. We form beliefs for reasons. We accept hypotheses, opinions, models, and theories for reasons. Underpinning our reasons are: (1) basic beliefs, arguments, and evidence on the one side of the ledger, and (2) desires, emotions, biases, heuristics, and faulty beliefs on the other side. Both sides are important, and considered. That's a scientific tactic!

Although both sides are important the appeal here is primarily for evidence. Clifford's (1876/1999) dramatic appeal to evidence, solid evidence, as the underpinning of belief, resonates, at least initially. Clifford held that it was wrong "always, everywhere, and for anyone" to believe something without adequate evidence. But, if it is wrong to believe anything upon insufficient evidence, one needs to ask: what is sufficient evidence? And what about probabilities (subjective judgments, opinions, and statistical probabilities), what is a sufficient probability? Inducements to accept a proposition as credible are varied—for example, sensations, intuitions, authorities, memories, logic, common sense, even hope and love can be inducements. Inducements are sometimes unconscious or automatic, and sometimes inducements are practical or pragmatic. Such factors do serve to broaden the scope of evidence, and thus, evidentialism. That's a scientific tactic! But again, what is sufficient evidence? Addressing the question is a scientific tactic!

With respect to research in the areas of science, psychology and education, evidentialism is a methodological-given. As well, the methodology applies to disciplines like history, theology, biography, linguistics, and so on. It is a given as methodologically important. Yet, upon subsequent reading and reflection one sees an automatic response regarding evidence is cognitively narrowing to a dangerous point; it is not prudent to ignore (1) the alternate and varied epistemologies on the scene (e.g., Baehr, 2008, 2011; Cook, 2012; Jordan, 2006, 2008; Moser, 2008, 2010, 2012, 2013; Spufford, 2012; Wainwright, 1995, 2005), and (2) the cogent critiques of evidentialism on the scene (e.g., Dougherty, 2011; Jordan, 2006; Wainwright, 1995).

Drawing upon Locke, Dougherty, Jordan, and Wainwright, a workable approach to evidentialism, or framework for evidentialism, can be constructed—an approach that improves on Clifford’s narrow view by broadening his basic view. Such views, albeit often overlapping, can be offered as contributing to this broadened view. These views are here labelled as: Basic, Core Broad Empiricism (CBE), Faculty Evidentialism, Ethical Evidentialism, Epistemic Evidentialism, Absolute Evidentialism, Defeasible Evidentialism, and Dutiful Evidentialism.

*Basic Evidentialism.* First, then, Locke gets the *Basic* label being historically first. He makes a case for empirical and rational demands for evidentialism. In his essay *Concerning Human Understanding* Locke addresses degrees of assent from high to low—ranging from certainty, through degrees of probability, to improbability, to impossibility. There are “...degrees of assent from full assurance and confidence, quite down to conjecture, doubt, and distrust... (Book IV, Ch. 15, Sec 2).” Where one is on this continuum depends upon two evidential grounds: personal experience or the reported experience of others. “Probability then, being to supply the defect of our knowledge and to guide us where that fails, is always conversant about propositions whereof we have no certainty, but only some inducements to receive them for true. The grounds of it are, in short, these two following: -- First, The conformity of anything with our own knowledge, observation, and experience. Secondly, The testimony of others vouching their observation and experience. In the testimony of others is to be considered: 1. The number [of witnesses]. 2. The integrity [of the witnesses]. 3. The skill of the witnesses. 4. The design of the author, where it is a testimony out of a book cited. 5. The consistency of the parts, and circumstances of the relation. 6. Contrary testimonies. (Book IV, Ch. 15, Sec 4).” Locke further stresses that before one comes to make a judgment, the pros and cons of all the arguments “ought to be examined (Book IV, Ch. 15, Sec 5).” Amen! That’s a scientific tactic!

Such an examination leads to a weighted judgment proportional to the evidence: quality and quantity, sources and critics, intentionality and integrity, and pros and cons. This would be *basic* evidentialism, but Locke does keep the evidential door open for context, history, charity, disagreements, time, analogy, and even divine revelation, albeit secondary to right understanding of such revelation. That’s a scientific tactic!

In a more contemporary setting the *basic view* would be expressed as Jordan’s (2006) “first stab” where he frames it as:

“EV. For all persons  $S$  and propositions  $p$  at times  $t$ , it is permissible for  $S$  to believe that  $p$  at  $t$  if and only if believing  $p$  is supported by  $S$ 's evidence at  $t$  (p. 42).”

Regarding this assertion Jordan adds: “The notion of support encapsulated in (EV) is that of a preponderance of evidence: a person may believe a proposition  $p$  just in case  $p$  is more likely than not on  $S$ 's evidence. ....what we might call ‘the evidentialist imperative’ (Jordan, 2006, p. 42).”

*Core Broad Empiricism (CBE)*. Adding a little to the basic view, Dougherty (2011) broadens the evidential sources somewhat to include internal experiences. He writes: “The only indications of how the world might be are ultimately derived from experiences of some kind (including memory impressions, apparent logical insights, introspection, and other traditional sources of evidence) (p. 6).” Obviously evidence is more than sense data in this formulation. That’s a scientific tactic!

*Faculty Evidentialism*. Knowing, or true belief, occurs when one is appropriately responsive to the evidence. One’s faculty for knowing (i.e., perception, *perceptual knowledge*; memory, *memory knowledge*; insight, *a priori knowledge*) aligns with one’s appropriate evidences. Dougherty expresses it as: “The conceptual core is that when one forms a true belief because they were appropriately responsive to their evidence, then they know. Perceptual knowledge is true perceptual belief appropriately responsive to perceptual evidence, the ‘testimony of the senses’. Memory knowledge is true belief appropriately responsive to memory impressions, what we might call ‘the testimony of memory.’ A priori knowledge is true belief about a priori matters appropriately responsive to apparent insights (2011, p. 12).” One quantifies across basic faculties like those identified. The process seems to have elements of a cumulative case weighing not just the single line of evidence, but the evidence across faculties, and then the total case. “One then has knowledge that  $p$  when the balance of one’s reasons is sufficiently heavily tipped in favour of the true belief that  $p$ , and the main reason one holds that belief is because of those reasons (Dougherty, 2011, p. 12).” That’s a scientific tactic!

Why then do people differ with respect to their beliefs? The faculty evidentialist might answer: “total experience.” As an illustration: “An expert’s visual faculty could deliver the report ‘That’s an elm.’ where the novice’s could not. Though the expert and the novice might have the same *sensuous* experience, they would not have the same *total* experience, because something in the expert’s past experiences causes him to have a different experience in the present observation. When the expert hosts the exact same sensuous qualia there is an additional experience. The expert sees the object as an elm. This difference in total experiential/evidential profile explains the difference in their justification regarding the thing they both see and have the same *visual* experience of (Dougherty, 2011, p. 12).” That’s a scientific tactic! For Dougherty the theory aligns with common sense, “paradigm cases of knowledge,” and explanations for problematic cases.

*Ethical Evidentialism*. Jordan (2006) uses this terminology and attributes it conceptually to Clifford. Since Clifford held that it was wrong “always, everywhere, and for anyone” to

believe something without adequate evidence, his appeal was moral. There are detrimental effects of such inappropriate beliefs for both individuals and society; thus harm links to the moral aspect. Jordan (2006) elaborates on the ethical framing: “The most plausible construction of ethical evidentialism is an indirect consequentialist one (p. 43).” Such a construction grounds the normative import of the evidentialist assertion “... on the claim that one should obey any rule that is such that, if everyone were to follow it, collective utility would be maximized (p. 43).” In effect, there is an *ethical evidential imperative*. That’s a scientific tactic!

*Epistemic Evidentialism.* Beyond the moral sense addressed above there is an intellectual sense, and justification. Essentially, “...it is unreasonable to believe something without adequate evidence (Jordan, 2006, p.43).” To pursue a course that is unreasonable is a violation of epistemic evidentialism. In effect, there is an *intellectual imperative*. That’s a scientific tactic!

*Absolute Evidentialism.* “If the evidence is balanced, or one finds oneself in a state of radical uncertainty, then one should neither believe nor disbelieve. One should withhold belief (Jordan, 2006, p.45).” Withholding belief, or suspending belief, is viewed as the wise choice in the absence of evidence, in the presence of balanced evidence, and perhaps for the sceptic-in-principle, the experimental researcher, and the personality type that demands absolute certainty. In effect, there is an *agnostic imperative*. That’s a scientific tactic!

*Defeasible Evidentialism.* “Defeasible evidentialism allows exceptions. Not every proposition falls under its purview, since it assigns the evidentialist imperative a limited scope, allowing the possibility that some propositions reside outside its jurisdiction. ...it leaves open the possibility that one may have grounds other than the evidential from which to believe (Jordan, 2006, p. 45).” What would these other grounds look like? Duties!

Moral duty can push one to adopt a proposition that seems inadequately supported, or push one to reject a proposition that seems adequately supported. This is rationally permitted as no one is irrational pursuing moral duty. That’s a scientific tactic!

### *An Islamic Application*

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003), it is quite likely they have a prior commitment to Allah and therefore see a moral duty to advance the cause of Allah. They are Allah’s “helpers.” They have a “moral duty” to advance the cause of Allah. This duty can be seen as an override on the evidence. In spite of lacking adequate evidence for the claims advanced they respond inappropriately; one way to look at their responses is that they emerge from a sense of “moral duty,” not evidence, not an *intellectual imperative*, and not drawing on experience and the sophisticated cross-faculty case. When applied to a situation like that presented by Ibrahim (1997) or Khaleel (2003), it is quite likely Clifford would see their claims as a moral failure, that is, the very opposite of the moral duty that Khaleel and Ibrahim might draw upon. Both lack adequate evidence for the claims they advanced.

Intellectual duty, particularly as a research protocol, is a strategy to force consideration of alternatives. It is a planned scepticism or a defensive rally (see Lakatos, 1970). It can make scientific sense, in that one has a duty to consider all sides of an issue or argument. It is rational, responsible, scientific, scholarly, and defensible. No one is irrational for pursuing intellectual duty, although the pursuit may have irrational aspects. It is these irrational aspects that require further rational considerations. What might be truly irrational is placing all of one’s eggs in the absolute evidentialist basket, or the tattered and frayed religious basket, or the bloody ideological basket. One has an intellectual duty to broaden perspective, consider alternatives, adopt a critical tentativeness, test hypotheses, revise positions, reject fallacies, and change-one’s-mind in line with evidences, arguments, and epistemologies that make sense. That’s a scientific tactic!

There are principled problems with evidentialism (Dougherty, 2011, Jordan, 2011, Wainwright, 1995). Jordan notes: “...if one wants to hold that evidentialism is obligatory, it is at most a defeasible obligation. If the evidentialist imperative is defeasible, it can be overridden if there are occasions in which it is morally or rationally obligatory to believe a proposition that lacks adequate evidence. So, it is possible that a use of pragmatic arguments is compatible with the evidentialist imperative, understood as a defeasible obligation (Jordan, 2006, p. 46).” The tilt here is towards a case for a broadened evidentialism, an evidentialism that permits the pragmatic, and thus the choice to include views beyond moral duty, or beyond, absolute evidentialism. There are permissible, rational, evidential tilts towards theism! And away from a faulty theism!

On Virtue Epistemology

Virtue epistemology refers to an approach to evidence-establishment that involves: (1) virtues like “...carefulness and thoroughness in inquiry, inquisitiveness, attentiveness, fair-mindedness, open-mindedness, intellectual honesty, and intellectual integrity (Baehr, 2011, p. 98),” and (2) attention to effects or vices such as “... intellectual laziness, inattentiveness, lack of intellectual discrimination, gullibility, carelessness, disregard for truth, ignoring and distorting counterevidence, self-deception, and the like (Baehr, 2011, p. 98).” At least for one formulation or framework, virtue epistemology focuses on persons, or agents, and their properties, rather than the properties of beliefs. There are cases of “defective inquiry” and cases of “defective ‘doxastic handling’ of evidence” that Baehr addresses.

Earlier, Baehr (2008) advanced four frameworks or approaches for character-based virtue epistemology. The table below presents a graphic representation.

Table 1. Baehr’s Four Framings of Varieties of Virtue Epistemology (VE)			
Conservative		Autonomous	
Strong	Weak	Moderate	Radical
“Strong Conservative VE is the view that there are major, substantive connections between intellectual virtue and traditional epistemology, that the concept of	“Weak Conservative VE is the view that the conceptual connections between intellectual virtue and traditional epistemology, while genuine, are	“...defenders of Moderate Autonomous VE insist merely that epistemology proper is not <i>reducible to or exhausted by</i> traditional epistemology, and that	“Kvanvig argues that the notion of intellectual virtue should be the focus of epistemology, but that the belief-based, synchronic framework of traditional



<p>intellectual virtue stands to “save the day” within or to transform traditional epistemology (Baehr, 2008, p. 475).”</p>	<p>more secondary or less central (Baehr, 2008, p. 475).”</p>	<p>the borders of traditional epistemology ought to be <i>expanded</i> to make room for a more immediate or independent concern with intellectual virtues. One representative sample of Moderate Autonomous VE is Lorraine Code’s <i>Epistemic Responsibility</i> (1987) (Baehr, 2008, p. 475).”</p>	<p>epistemology cannot accommodate such a focus (more on this argument below); consequently, he calls for a rejection of the traditional framework and the issues and questions central to it. Kvanvig’s preferred, more diachronic and socially oriented framework begins with a conception of “human beings in terms of potentialities in need of socialization in order to participate in communal efforts to incorporate bodies of knowledge into corporate plans, practices, rituals, and the like for those practical and theoretical purposes that ordinarily characterize human beings” (1992, 169) (Baehr, 2008, p. 474).”</p>
<p>Formidable challenge: “...on account of its commitment to the idea that something like an exercise of intellectual virtue is an essential feature of knowledge (Baehr, 2008, p. 493).”</p>	<p>Favourable rating.</p>	<p>Favourable rating: “...according to which an independent concern with intellectual virtues and their role in the intellectual life offers a suitable <i>complement</i> to traditional epistemology (Baehr, 2008, p. 493).”</p>	<p>Formidable challenge: “...on account of its contention that traditional epistemology should be <i>repudiated</i> in favor of an autonomous, virtue-based approach (Baehr, 2008, p. 493).”</p>

“While the approaches of Weak Conservative VE and Moderate Autonomous VE are still largely undeveloped, they seem likely to represent the way of the future within character-based virtue epistemology (Baehr, 2008, p. 493).” While the Weak Conservative and Moderate Autonomous views are intellectually appealing, one should be reluctant to shelve the Strong Conservative view at this time. There are reasons to lean to the Strong Conservative view.

Note that Baehr, while distinguishing between *character-based* qualities (e.g., openness, fair-mindedness, carefulness, and so on) and *faculty-based* approaches (e.g., memory, perception, and so on), limits his four-group analysis to character-based approaches. Reasonably, merit is assumed for both character-based and faculty-based approaches. Moreover, “proper function” is arguably critical for both character-based and faculty-based approaches. Essentially, Plantinga’s (1993a, 1993b) notion of a requirement of “proper function” could apply to a range of substrates—neurological and cognitive on the one hand, and moral, dispositional, and character-qualities on the other hand. That’s a scientific tactic!

### An Islamic Application

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003), it is appropriate to ask if we are seeing “...carefulness and thoroughness in inquiry, inquisitiveness, attentiveness, fair-mindedness, open-mindedness, intellectual honesty, and intellectual integrity (Baehr, 2011, p. 98),” as well as attention to effects or vices such as “... intellectual laziness, inattentiveness, lack of intellectual discrimination, gullibility, carelessness, disregard for truth, ignoring and distorting counterevidence, self-deception, and the like (Baehr, 2011, p. 98).” If the

subsequent limitations and constraints addressed seem to be evident in Khaleel, for example, then the question of problematic virtue epistemology gains strength. Virtue epistemology, the very methodological mindset of science, should be evident when truth claims are made. Khaleel's book does not read like a scholarly treatise. It reads more like an opinion piece, or letter to the editor in a newspaper. A virtue epistemological critique is warranted. That's a scientific tactic!

## Cognitive Processes Breakdown

### *On The Confirmation Bias*

When competing arguments, hypotheses, models, and theories are not considered in a scholarly text it is clear there is a serious academic limitation. One major problem is the confirmation bias. Cognitively, we are prone in our human tendencies: (1) to *look for information* in support of our current beliefs, favoured beliefs, and chosen beliefs, (2) to *interpret information* as supportive of our current beliefs, favoured beliefs, and chosen beliefs, and (3) to *avoid information* (i.e., facts, models, hypotheses, and theories) not supportive of our current beliefs, favoured beliefs, and chosen beliefs. These tendencies fold into a bias favouring our *active position*. The *active position* we hold can be our preferred position or just our current position. It can even be our imagined position, our initial position when considering pros and cons, our selected position for a debate or position paper, or even our peers' position. This *active position* leads to a bias—a “confirmation bias.” For the most part the confirmation bias propensity is viewed in a negative light and as a major problem for thinking clearly, rationally, and convincingly (Nickerson, 1998).

*Mechanics.* Nickerson (1998) notes a number of specific mechanics which can be operative in the confirmation bias, actions which restrict understanding, actions such as:

- Restriction: “...restriction of attention to a favored hypothesis (p. 177)”
- Restriction: “...restricting attention to a single hypothesis (p. 177)”
- Restriction: “...preferential treatment of evidence supporting existing beliefs (p. 178)”
- Restriction: “...looking only or primarily for positive cases (p. 178)”
- Restriction: “...overweighting positive confirmatory instances (p. 180)”
- Restriction: “...seeing what one is looking for .... regardless of whether the patterns are really there (p. 181)”
- Restriction: by seeing “illusory correlation (p. 183)”
- Restriction: by being subject to a “primacy effect... information acquired early in the process is likely to carry more weight than that acquired later (p. 187)”
- Restriction: by being vulnerable to our “Own-judgment evaluation.... studies have typically shown overconfidence to be more common than underconfidence (p. 188)”
- Restriction: by being subject to “the illusion of validity.... experts are not immune (p. 189)” Attorneys, physicians, psychologists, engineers, and clinicians have been found to

be overconfident with respect to their judgments and beliefs (a form of professional blindness).

*Societal Implications.* The confirmation bias has societal implications noted by Nickerson (1998) with respect to understanding in various areas. It has been implicated in number mysticism; Nickerson (1998) links the confirmation bias to the preoccupation with numerology over millennia. One example he discusses is the numerology associated with the Great Pyramid and the mathematical relations “hidden” therein—a form of mysticism.

The confirmation bias was also seen in the judgments of apparently “decent people,” people who were nevertheless involved in indecent witch hunts. Confirmations of witchcraft were found to be easier than exonerations. Other religious examples would relate to heretics, to prophets, and to proclaimed authorities. Most striking, confirmation bias can be seen with respect to holy texts (like the Qur’an, the Book of Mormon, Gnostic gospels, and the Bible itself) where adherents seek confirmations and fail to deal with the disconfirming evidences.

Confirmation bias is seen in the rationalizations advanced for various political policies. For example, “Obamacare” for the Obama administration, is prone to confirmation influences via supportive evidences, arguments, and even political manipulation and deceptions. On the other side of the political coin, seeing “Weapons of Mass Destruction in Iraq” was prone to confirmation via supportive evidences and arguments for the Bush administration. The downside is not seen, or is suppressed.

The confirmation bias has a long history in various medical treatments (e.g., bleeding, purging, homeopathy, etc.). Rigorous drug testing protocols, and medical treatment studies, are the standards now in order to deal with the confirmation bias. Still, it is likely that some procedures do slip through because of a confirmation bias on the part of the author, the drug companies, the research team members, the universities, and so on.

The confirmation bias is potentially quite damaging in judicial reasoning by jurors tainted by primacy effects. The initial judgments jurors make in a trial process tend to entrenchment, and then a confirmation bias. This is a difficult bias to address. Judges give jury instructions and guidelines but the bias likely persists. Hopefully the jury experience (cross examinations, expert testimonies, jury deliberation, etc.) counteracts a number of these biases.

In science the confirmation bias can be counterproductive in that it leads to theory persistence and change resistance (see Kuhn, 1970; Lakatos, 1970). This is a problem when such theories are wrong and misleading.

*Causes of the Confirmation Bias.* What are the causes of such a bias? Nickerson (1998) offers a few reasons to help elucidate the possible drivers of the confirmation bias.

- *Wanting to Believe*: “The Desire to Believe ... dubbed the Pollyanna principle (Nickerson (1998, p. 197)” .... The desire might be rooted in rewards; one envisions substantial rewards (material rewards, ego rewards, ideological rewards in the form of triumphalism, or the manifestation of ultimate justice associated with being right).
  - With respect to Islamic apologists like Ibrahim (1997) and Khaleel (2003) it is certainly conceivable that each one “wants to believe.” Furthermore, the rewards Islam claims to offer (material rewards, ego rewards, ideological rewards in the form of triumphalism, or the manifestation of ultimate justice associated with being right) are motivational.
- A variant of the “desire to believe” is the propensity to believe; it is called “*a principle of credulity*” by both Reid (1818/2011), and more recently Swinburne (2013). Belief is basic.
  - With respect to Ibrahim (1997) and Khaleel (2003) it is certainly conceivable that they have a propensity to believe, this *principle of credulity*, nurtured by their authorities (i.e., parents, teachers, peers, Imams, apologists, the Qur’an, the hadiths, and so on).
- *Cognitive Restrictions*: “Information-Processing Bases for Confirmation Bias.... tendency of people to gather information about only one hypothesis at a time.... people are fundamentally limited to think of only one thing at a time (Nickerson, 1998, p. 198).” Also in play here should be, arguably, *virtue epistemology*. Nickerson (1998) notes: “Another explanation of why people fail to consider alternatives to a hypothesis in hand is that they simply do not think to do so. Plausible alternatives do not come to mind. This is seen by some investigators to be, at least in part, a matter of inadequate effort, a failure to do a sufficiently extensive search for possibilities ... (p. 200).” This is a classic failure related to *virtue epistemology*!
  - With respect to Ibrahim (1997) and Khaleel (2003) it is certainly conceivable that their thinking is restricted; they think narrowly of “one thing at a time.” There is an argument to be made that they do not adopt the more scientific virtue epistemology.
- *Reference Frames*: “Conditional Reference Frames.... when people are asked to explain or imagine why a hypothesis might be true or why a possible event might occur, they tend to become more convinced that the hypothesis is true or that the event will occur, especially if they have not given much thought to the hypothesis or event before being asked to do so (Nickerson, 1998, p. 203).” This fascinating phenomenon seems to parallel somewhat “ideomotor action theory” where simply thinking about an act sets

the human being into a motoric action pattern to implement the act. As a parallel here, we have what might be termed *ideo-ideological action theory*—thinking about a hypothesis as true sets a cognitive confirmation bias in cognitive motion. Also in play would be the order of considering pros and cons; to consider the pro reasons first is conducive to a bias to the pro side of the argument.

- With respect to Ibrahim (1997) and Khaleel (2003) it is certainly conceivable that their “reference frames” are predisposing them to a strong confirmation bias.
- *Error Avoidance*: “Pragmatism and Error Avoidance.... some ways of being wrong are more likely to be regrettable than others (Nickerson, 1998, pp. 203-204).” Type 1 Errors (i.e., rejecting the null hypothesis inappropriately) and Type 2 Errors (i.e., accepting the null hypothesis inappropriately) are considerations for the pragmatic decision makers. “In general, the objective of avoiding disastrous errors may be more conducive to survival than is that of truth determination (p. 204).” Is one side of Pascal’s Wager the classic example of “avoiding disastrous errors?” That is: One ought to believe in God because if there is a God, and one bets against this possibility, the loss is infinite. If there is no God, and one bets that there is a God, the loss is finite and minimal. The errors, and the route to “avoiding disastrous errors,” are clear for Pascal. What Pascal’s wager accomplishes is not a technique, or call to make a bet on God. One can’t choose to believe as a bet. Rather, what Pascal’s wager accomplishes is better perception; one perceives the magnitude of the possible gain and loss. Such perception can motivate one to explore fully the theistic message, worldview, evidences, and arguments.

*Problems of the Confirmation Bias*. The problems can be cast as *methodological* or *moral*. The confirmation bias is a *methodological* problem addressed by those who see attempts at refutation as the hallmark of scientific progress (e.g., Popper, 1965). Popper’s solution to the bias is to work intentionally to refute hypotheses rather than seek to confirm them. The objective is verisimilitude which is viewed as more reasonable than truth-finding.

The confirmation bias is a *philosophical/methodological* problem for those epistemologists oriented towards truth-seeking. Virtue epistemologists argue for understanding the bias and guarding against the bias methodologically. They broaden perspective; they set up safeguards; they experiment; they weigh alternatives; they apply rigour; and they remain open-minded to various hypotheses and theories. The characteristics of the virtue epistemologists are in a broad sense scientific.

The confirmation bias is a *moral* problem for the evidentialist epistemologists like Clifford—those who call for more evidence before belief. In one’s cognitive processing, when

facing the threat of confirmation biases, rigour, perspective, and effort are possible, but such safeguards require work.

*The Problem for the Believer—Theist or Atheist.* Here the issue is the clear and present danger for the atheist who finds herself unwittingly distracted by a propensity to the confirmation bias. Of course, the same problem exists for the theist. The confirmation bias is placed on the table as a constraint that both camps face. The constraint can help with respect to understanding theistic misunderstanding, Islamic misunderstanding, and Christian misunderstanding. The atheist, whether (1) *committed to atheism*, (2) *merely considering the pro side of atheism*, (3) *exposed to atheism*, or (4) *imagining atheism*, is vulnerable to a confirmation bias. Similarly the Muslim, whether (1) *committed to Islam*, (2) *merely considering the pro side of Islam*, (3) *exposed to Islam*, or (4) *imagining Islam*, is vulnerable to a confirmation bias. The confirmation bias acts as a constraint against a fair and just critique of Islam, the Qur'an, and the hadiths.

That the Christian is vulnerable to the same mechanisms is a fair observation. If we don't know which side is right it is fitting that we consider: (1) the side with the better arguments, (2) the side with the better defense mechanisms, (3) the side making refutation attempts, (4) the side withstanding better the proposed defeaters, (5) the side having abduction and the cumulative case effect working for it, and (6) the side with the more prudential outcomes.

*Confirmation Bias—A Good Thing?* Is the confirmation bias in any way a good thing? The simple answer is yes, if one's belief is true. That the confirmation bias can be a good thing, pushing one to stick with a scientific theory in spite of troubling facts (see, for example, Lakatos, 1970), would be part and parcel of the scientific process. That the confirmation bias can be a good thing pushing one to stick with the legal principle "innocent until proven guilty," can serve justice well, and the innocent person well. That the confirmation bias can be a good thing pushing one to stick with a friend or spouse surrounded by the likes of Iago, is a good thing (see Lewis, 1960b on the obstinacy of belief). The confirmation bias can be a good thing when survival is the goal; it is definitely a better thing when truth is at the end.

*Confirmation Bias And Choice.* Is there a role for choice in the confirmation bias? Yes, there is a role for choice at least at two levels. First, at a *seminal level* one's choices can set the confirmation bias in motion. Choosing to entertain an idea can set the confirmation bias in motion. Choosing to explore the pro side (or argue for the pro side) of an issue can set the confirmation bias in motion. Choosing a peer group espousing an idea can set the confirmation bias in motion. Many of our *initial choices* have confirmation bias effects. The effects are inadvertent, but they are contingent on choices.

Secondly, at a *critical level*, when one understands the nature of the confirmation bias one is in a position to apply strategy to circumvent the bias. Choose to practice virtue epistemology,

to implement multiple-perspective-taking, and to consider the suspect motivational rewards of confirmation. This indicates an important role for choice. It can be post hoc, but it is still critical.

### *An Islamic Application*

When applied to situations like those presented by Khaleel (2003) there does seem to be a confirmation bias that needs to be faced squarely. In Islam the confirmation bias seems to be in play with attempts to confirm many Qur'anic claims, hadiths, Islamic policies, and so on. The Muslim apologist ought to practice serious efforts at critique via virtue epistemology, attempts at refutation as opposed to confirmation, examinations of the range of restrictions generated by the confirmation bias, and consideration of personal, cultural, and psychological motives. That's a scientific tactic!

### *An Illusory Thinking Model*

An illusory thinking focus (Piattelli-Palmarini, 1994) can be tied to mistakes in knowing, or illusions about what we think we know, and thus, bad beliefs. Piattelli-Palmarini argues for seven deadly sins, or dangers, that lead us to wrong conclusions and bad beliefs.

- The first danger is “**overconfidence.**” Many people show an unrealistic overconfidence in their answers to questions, even factual questions. Indeed, “...the discrepancy between correctness of response and overconfidence increases as the respondent is more knowledgeable” (p.119). The more you know, the more you need to guard against overconfidence.
- The second danger is “**illusory correlations**” or magical thinking. The person convinced of a “positive correlation...will always find new confirmations and justify why it should be so (p.122).” “We are naturally... verifiers rather than falsifiers... (p. 123).”
- The third danger is the “**Historian's Fallacy**” or “predictability in hindsight.” In essence, “...we all honestly think we could have predicted what happened, as long as we know, or think we know, that it actually did happen (p. 124).”
- The fourth danger is “**anchoring.**” Our beliefs and opinions get arbitrarily “anchored” to such things as “first impressions,” original opinions, contexts, propaganda, news reports, authorities, and emotions. These first impressions are quite resistant to change. It is almost as if pride gets in the way.
- The fifth danger is “**ease of representation.**” For example, when asked which is greater, death from suicide or death from homicide, homicide usually gets the nod. People typically report a greater death rate via homicide, as “...the more the occurrence impresses us emotionally, the more likely we are to think of it as also objectively frequent (p. 128).” Be wary of your imagination!
- The sixth danger is “**probability blindness.**” “Any probabilistic intuition by anyone not specifically tutored in probability calculus has a greater than 50 percent chance of

being wrong (p. 132).” We are “blind not only to extremes of probabilities, but also to intermediate probabilities... (p. 131).” Is our reaction to genetic engineering, nuclear power, pharmaceutical test demands rational? We have a non-rational “...peremptory desire that there be no risk at all... (p. 131),” and thus small risks can gain greater proportions than warranted.

- The seventh danger is “**reconsideration under suitable scripts,**” or what Piattelli-Palmarini calls the “Othello Effect.” In essence, “...our judgment of probability allows itself to be influenced by fictions, including scenarios we know to be pure inventions (p. 134).” As Othello was influenced by the script, the fictitious script, offered by Iago, so we are vulnerable to alternate scripts.

In essence, the entire notion of illusory thinking simply reduces to bad beliefs, or faulty beliefs. What Piattelli-Palmarini offers, and the offerings are valuable, are psychological sources of bad beliefs.

### *An Islamic Application*

When applied to situations like those presented by Islamic apologists like Ibrahim (1997) and Khaleel (2003), there do seem to be red flags related to “overconfidence,” “illusory correlations,” the “historian’s fallacy,” “anchoring,” “probability blindness,” and “The Othello Effect.” The confidence that Ibrahim and Khaleel show in their books strikes the informed reader as dramatic “overconfidence,” unjustified confidence. The “illusory correlations” linked to magical thinking are apparent in the purported nature of the Qur’an and the revelation to Mohammed. “Anchoring” would be characteristic of Muslims who were raised under the banner of Islam; their beliefs would be anchored to their background, propaganda, news reports and so on. Even some who leave Islam find they still have beliefs anchored in Islam (see Sultan, 2009). Then, there is “The Othello Effect.” We can allow ourselves to be influenced by scripts we suspect as fictions. We can allow ourselves to be influenced by people with a more malevolent agenda. Awareness of these dangers, these illusions, invites close scrutiny for the reasonable person. That’s a scientific tactic!

### *A Darkened-Mind Theory—Psychological*

Sometimes the mind is “not firing on all eight cylinders” to use an automobile metaphor. At times a particular aspect of mind can fail to function in which case the subsequent actions are flawed. In a sense, this aligns with Plantinga’s (1993a, 1993b) notion of warrant requiring “proper function” to attain a level of adequacy for the support of a belief. A cognitive architectural component that is not functioning, or not functioning properly, is not likely to provide a sound foundation for belief or confidence. For example, in states like sleep-walking, somnambulism, hypnotism, altered states like religious ecstasy or trance, drug-induced states, crowd psychology, and so on, any beliefs advocated, or truth-claims made, would be suspect. In fact, it is likely that many of the behaviours and beliefs would have the earmarks of irrationality, or even “stupidity.” It would seem like important critical functions are suspended—a part of the mind is “missing in action.” Such dispositional atrophy would “darken” judgment, and support an inference of a darkened-mind.



Less striking, but possibly more important, examples emerge in social influence research—research that addresses the power of situational factors as opposed to dispositional factors in the generation of “evil” behaviour (Zimbardo, 2004). Zimbardo lists a number of situational factors that one would be well advised to consider: “...role playing, rules, presence of others, emergent group norms, group identity, uniforms, anonymity, social modeling, authority presence, symbols of power, time pressures, semantic framing, stereotypical images, and labels, among others (p. 47).” These all have the power to push one in a particular direction. If they push one into faulty constructions, flawed inferences, premature conclusions, bad behaviour, and so on, it is a condition easily characterized as a “darkened-mind.”

Something as simple as inducing a *small first step* can be quite powerful in triggering a fall. Zimbardo (2004) lists ten ingredients in a recipe for the apparent evil compliance in Milgram’s (1974) studies of obedience to authority where subjects were induced to commit to serious levels of electric shock to their fellow human beings. Ingredient #7 is: “Starting the path toward the ultimate evil act with a small, insignificant first step (only 15 volts) (p. 29).” People easily agree to a small initial step like a mild shock. Similarly, a small initial step like a few puffs on a cigarette, or one or two cigarettes, an innocent office flirtation, or a glance at a pornographic image can cascade to large consequences. One can agree to a simple sexual caress, or curious prod, but small steps, like multiplier effects, cascade.

People agree to do minor things, which then draws them more easily in to subsequent commitments to major things. Wegner (2002) uses such research to explain compliance even in such phenomena as hypnotism. He refers to the early study of compliance by Freedman and Fraser (1966) where researchers asked home owners for permission to place a large “Drive Carefully” sign on their lawns. Most home owners refused. However, those who were first asked to display a small “Be a Safe Driver” sign in their windows, and agreed to do so, were more likely to agree to the large lawn sign when asked later. Progressive, sequential involvement is the proverbial story of the camel getting his nose in the tent. The first cigarette is a small step into a big tent. The first sexually curious activity is a small step that can lead to the darker side of curiosity (Kashdan, 2009).

Even an organization as sinister as the Ku Klux Klan seems to have had innocuous roots, small step roots, neither political nor racial. It was rooted in “fun,” initially. “At first they played jokes on one another and then on members of the public in general. Then gradually they began to aim their pranks at black people (Baumeister, 1997, p. 239-240).” Baumeister’s speculations are a reasonable reconstruction of how pranks escalate to cruelty as a function of small step-by-step social interactions. Seemingly decent people can be led to do indecent things by *small steps* (Freedman & Fraser, 1966) by *authority figures* (Milgram, 1974), by *rewards*, by *good intentions*, by *egotism*, by *curiosity* (Kashdan, 2009), by *simple fun* (Baumeister, 1997), by *time pressures* (Zimbardo, 2004), and by a host of *other innocuous situational factors*.

The social influence research does seem to offer a mechanism to explain the progress from “commitment to do the innocent small things” to “commitment to do the stupid” or evil big things. Of interest, the ten ingredients for change that Zimbardo (2004) lists in discussing

Milgram's research have implications for dispositions related to behaviours as simple as smoking, religious-positioning and scientific-positioning. Consider the information in Table 2.

In the table one sees the line of progress from *small first step* in smoking to entrenchment of smoking. The progress from the small first step in Islamic religious-positioning to entrenchment is evident. Similarly, the line of progress from a small first step in Islamic science-positioning to entrenchment is evident. The darkening of the mind is unfolding psychologically in Zimbardo's ten ingredients.

Milgram	Smoking	Religious-positioning	Scientific-positioning
<u>Cover Story</u> -Present an acceptable rationale or justification -An Ideology	-artist -rebel / radical	-Qur'anic revelation? -religion of peace? -models?	-modern science -Qur'an confirmed by modern science?
<u>Contract obligation</u>	-peer acceptance	-Sharia law	-Qur'an takes precedence over science? -Hadiths take precedence over science? -Islamic authorities take precedence over science?
<u>Meaningful roles</u>	-artist -rebel / radical	-worshipper, servant -imam -martyr , jihadist	-scientist, researcher, -apologist
<u>Basic rules</u> -Justify mindless compliance	-peer-related badge -habit -addiction	-environmental influence -parental influence -peer influence	-Qur'an is the hermeneutical principle for interpreting science; it trumps science?
<u>Alter semantics</u> of act -hurt to help	-claim: smoking is calming -claim: it's image-enhancing	-claim: religion of peace (yet via the sword?)	-claim: nasyeth refers to "forehead" rather than "forelock" (Ibrahim)
<u>Diffuse responsibility</u> -authorities	-to advertisers -to peers / parents	-radical sub-groups, jihadists -Qur'an responsible -Imams responsible	-scientists offering support for Qur'an and science
<u>Small innocuous first step</u> -start	-a few drags -a butt -just one cigarette	-listen to lectures -attend mosque -read a booklet -follow an admired Imam	-find a weak analogy as with the cerebrum (see Ibrahim, 1997)
<u>Gradual steps</u> -progress	-1, 5, 10, a pack -two packs	-indoctrination -listen to propaganda -join a supportive group	-neuropsychology -embryology -geology -hydrology -cosmology
<u>Gradual shift of image</u> -good to bad	-rebel -to loss of stamina -to health damage -to social ostracism	-interested -to seeker -to follower -to radical	-modern science community -medieval scholars -rationalization -scientific foolishness
<u>Exits costs</u> -high	-physical and psychological addiction -social networks	-social isolation -parental rejection -death penalty	-forego science!! -social ostracism -reject the Qur'an

### *An Islamic Application*

When applied to Islamic representatives like Ibrahim (1997) and Khaleel (2003) there does seem to be a scenario worth considering. As with all entrenched learnings there would be *small first steps*; such steps would be clear in developmental influences linked to parents, peers,

communities, local media, and so on. The *compliance would be mindless*. There would be *gradual steps* of deeper and deeper involvement. *Meaningful roles* and the *Cover Story* would be prominent. The *diffusion of responsibility* (e.g., to the Qur'an, hadiths, and Imams) and the *high exit costs* (e.g., death for apostates) are easily seen. The *Gradual Shift in Image* is arguably evident. In effect, Zimbardo's ten ingredients for being drawn into a position are factors the critically concerned need to consider. That's a scientific tactic!

### A Darkened-Mind Theory—Religious

In a Christian worldview there are three sources proposed for the darkened mind: (1) the human self, (2) Satan, or the god of this world along with principalities and powers, or (3) God himself. The biblical case seems to attribute causality to all three sources with God being the more prominent source. Thus, a fourth option—considering various influences in combination from the three key sources—would be a prudent consideration in this worldview. Again, drawing upon various components of causality (i.e., material cause, final cause, formal cause, efficient cause, proximate cause, sufficient cause, direct cause, and so on) can facilitate integration and coherence.

God blinds certain people. God can be the direct cause of a darkened mind (i.e., that God is the final cause, and perhaps involved in the formal cause) (for biblical examples see Isaiah 6:9-10; Rom 11:7-15).

Satan, or various principalities and powers can blind the mind. Whether blinding from the god of this world (II Cor 4:3-4) is a direct cause from a malevolent source, or a permitted cause, or material cause, to mediate God's intent either directly, or confluent, is not clear. Seeing God as the final cause, however, and in fact as "the god of this world," has been argued cogently by Hartley (2005).

People are blinded as a result of their acts and attitudes. As evident in Paul's argument in Romans (Rom 1:18-25), people are viewed as instrumental in the darkening of their minds, even if God is the final cause. Conversely, people seem to be viewed as instrumental in the removal of the blindness—they can have a veil removed as a result of their actions (II Cor 4:14-16).<sup>1</sup>

Regardless of the cause of the darkened mind, it seems appropriate to root it biblically in beliefs. In Romans 1:18-32 one gets the impression that Paul sees certain individuals with a darkened mind opting for beliefs they "know" are inferior, positions they "know" are wrong. Such beliefs interfere with belief shifts. In fact, the religious call to repentance (metanoia) is a call to a belief shift—a changed mind.

### *An Islamic Application*

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<sup>1</sup> A point of interest here is the comment from Jesus that "if they were blind they would have no sin." It seems to be a stretch to assume that God could blind people as an act of grace so that they would have no sin, and thus less judgment to face. But it's possible. Moreover, the blinding by God might be somewhat congruent with the gracious Divine hiding of God (Moser, 2008).

When applied to Islamic representatives like Ibrahim (1997) and Khaleel (2003), and assuming a Christian worldview, where does the problem lie? Principalities and powers would be one source of the darkness; personal acts, and intentions, would be another source. One can ask oneself: is my mind being darkened by my environment, my beliefs and attitudes, or my religion? That's a scientific tactic! Moreover, it is a fair question to keep in mind for all worldviews

### On Self-deception

Addressing self-deception is an important key to understand the propensity to see supernatural reporting in the Qur'an that purports to hold the cultural high ground and presage modern science. With the human propensity to self-deception, there may be an argument that Islamic claims are a form of self-deception.

Self-deception is a form of blindness. Self-deception is one possibility to explain how or why someone might abandon a belief, even a properly basic belief (Plantinga, 1983, 2000), or what Barrett (2004, 2009, 2011) terms a non-reflective belief. Self-deception may explain how a person comes to hold a belief that is unreasonable, immature, logically fallacious, or superficial.

Self-deception has many access routes. It is curiously strange that self-deception would saturate human nature, but it does seem pervasive. Self-deception is a prominent theme in the psychological literature; human beings fall prey to a range of defense mechanisms like denial, rationalization, suppression, repression, and projection. Self-deception can be formulated such that it makes psychological and theological sense. As applied to belief in God, belief in the wrong god, and the absence of any theistic belief, several frameworks are of interest here.

### *Bahnsen's View -- Reformed-Based Presuppositionalism*

Bahnsen wrote his doctoral dissertation on self-deception. His dissertation is available as a pdf with a Google search. As an alternative, and also a shorter read, one can access his article in the Westminster Theological Journal (1995) which is based on his dissertation: <http://www.cmfnow.com/articles/PA207.htm>

Self deception is framed by Bahnsen as a critically important consideration to understand the human situation. His call to focus on self-deception is based in: (1) his research examining the nature and existence of self-deception, (2) the theology of self-deception one sees in Paul (Romans chapter 1), and (3) the arguments of Van Til related to his transcendental argument for God. Quoting Bahnsen (1995) here provides the gist of his claim:

“So then, far from being a species of ‘fideism,’ as it is so often misconstrued by writers like Montgomery, Geisler or Sproul, Van Til's approach to the question of God's existence offers, I believe, the strongest form of proof and rational demonstration - namely, a ‘transcendental’ form of argument. He writes, ‘Now the only argument for an absolute God that holds water is a transcendental argument... [which] seeks to discover what sort of

foundations the house of human knowledge must have, in order to be what it is.’ To put it briefly, using Van Til's words, ‘we reason from the impossibility of the contrary.’

In *The Defense of the Faith*, Van Til explains that this is an indirect method of proof, whereby the believer and the unbeliever together think through the implications of each other's most basic assumptions so that the Christian may show the non-Christian how the intelligibility of his experience, the meaningfulness of logic, and the possibility of science, proof or interpretation can be maintained only on the basis of the Christian worldview (i.e., on the basis of Christian theism taken as a unit, rather than piecemeal).”

The self-deception then emerges with respect to espoused-beliefs and beliefs-in-use. The argument is that one’s “beliefs-in-use” presuppose theism. When espoused-beliefs conflict with beliefs-in-use *self deception* must be in play. Bahnsen (1995) expresses it as follows:

“The charge is made, you see, that presuppositionalism implies that unbelievers can know nothing at all and can make no contribution to science and scholarship since belief in God is epistemologically indispensable according to the presuppositionalist. And it is right here, right at this crucial point in the analysis, that the notion of self-deception by the unbeliever enters the picture.

Van Til always taught that ‘the absolute contrast between the Christian and the non-Christian in the field of knowledge is said to be that of principle.’ He draws ‘the distinction... between the regenerated consciousness which in principle sees the truth and the unregenerate consciousness which by its principle cannot see the truth.’ If unbelievers were totally true to their espoused assumptions, then knowledge would indeed be impossible for them since they deny God. However the Christian can challenge the non-Christian approach to interpreting human experience ‘only if he shows the non-Christian that even in his virtual negation of God, he is still really presupposing God.’ He puts the point succinctly in saying: ‘Anti-theism presupposes theism.’ The intellectual achievements of the unbeliever, as explained in *The Defense of the Faith*, are possible only because he is ‘borrowing, without recognizing it, the Christian ideas of creation and providence.’ The non-Christian thus ‘makes positive contributions to science in spite of his principles’ - because he is inconsistent.”

The self-deception is a given. The atheist functions with a fundamental conflict between beliefs-in-use and espoused-beliefs. The non-Christian theist (e.g., the Islamist) functions with fundamental conflicts at the level of espoused-beliefs. The task of the apologist, with respect to the Islamist, is to present arguments showing why, and where, the espoused-beliefs of the Islamist are faulty. That’s a scientific tactic!

*Garver's Elaborating View -- Working With "Working Hypotheses"*

Garver offers a critique of Bahnsen and presents a richer elaboration on self-deception which springs from Bahnsen's original formulation. Garver's critique may be found here: <http://www.joelgarver.com/writ/phil/bahnsen.htm>

For one thing Garver finds Bahnsen *too rationalistic*. He asks: "Why not just come out and say that sometimes people believe contradictory propositions? His analysis seems to me to be caught in the same kind of dynamics that prevented Plato's Socrates from seeing the possibility of a person knowingly doing what she believes to be wrong." A possible sequence is: (1) knowingly doing wrong, (2) suppressing the knowledge of wrongdoing, and (3) living with the repression in an unconscious state. The first two steps involve choice. It is at the second and third steps that the self-deception solidifies.

The point Garver makes is consistent with the contrast between beliefs-in-use and espoused-beliefs. This framing is useful. People, especially postmodern academics, frequently advance a set of espoused-beliefs. Yet, somewhat ironically, you often catch them doing things, and saying things, that indicate they do not use their espoused-beliefs, or truly believe their espoused-beliefs. Their cognitive surface structure (i.e., espoused-beliefs) does not align with their noetic deep structure, their real beliefs (beliefs-in-use). It is a form of self-deception. This self-deception doesn't need to be of the profound calibre. Such self-deception can be a product of one's working-worldview, one's game-playing, one's appetites, one's preferences, and so on.

The elaborating suggestion in Garver relates to the notion of working with a *working hypothesis*. It is common practice in science and research to adopt a working hypothesis. Garver expresses the notion of a *working hypothesis* in several ways, seen as follows:

- "Cases of accepting not-*p* as a working hypothesis by resolving to act as if not-*p* were true." (See where it leads! *Is this hypothetical self-deception?*)
- "Cases of taking a policy of action to bring oneself to believe that not-*p*." (See if it works, and has pragmatic value! *Is this functional self-deception?*)
- "Simply asserting that not-*p*, despite underlying belief to the contrary." (*Is this malevolent, prideful, or foolish self-deception?*)
- "Aligning oneself with others who are committed to not-*p*." (*Is this socialized self-deception? Is this group-think self-deception?*)

Then, as Garver notes: "None of these cases would count as full-blown belief that not-*p* (and thus would not count as cases of holding contradictory beliefs), but they might look very much like it." It is conceivable, however, that a process could be operative here; in effect, working hypotheses could morph into actual beliefs as a function of habit, lack of self-examination, simple preference, or the operation of confirmation bias. Self-deception would be a product of earlier choices—a choice history.

A third proposal offered by Garver is related to *existential awareness* as opposed to propositional knowledge. Garver notes that there are “forms of knowledge” that one must consider when flagging self-deception. He writes: “...according to Bahnsen, unbelievers ignore and deny through a process of rationalization” but this “... is not always best analyzed in terms of the subject's *propositional* knowledge--a belief in certain propositions. There are forms of knowledge (personal awareness or acquaintance, practical know-how, intuition, etc.) which are not exhausted by propositional knowledge. For example, can a couple's knowledge of how to dance the Lindy Hop be best analyzed in terms of a set of beliefs about the dance? Or does it involve some kind of practical feel for the steps, an embodied awareness of the movements that cannot be fully exhausted propositionally? If so, then there may be kinds or instances of knowledge that do not in any way involve the subjects believing certain propositions. Thus, rather than knowledge ‘*that* God exists,’ the knowledge of God may sometimes be better theorized in terms of an existential awareness of the divine presence, a fundamental openness of the human person to the Person of God, or the like.” Existential awareness (via emotional sense, intuition, *sensus divinitatis*, synchronicity, experience, and so on) requires epistemological expertise in distinguishing sound beliefs, reasonable beliefs, better beliefs, and true-beliefs, from self-deception. Critical thinking in this area involves knowledge, strategies, skills, and a disposition.

Then there is the issue of *trust*, which is a key feature of the Reformation view of faith as one of three components in the triad: knowledge, assent, and trust. Garver writes: “There may also be unbelievers who quite consciously believe that God exists and assent to that proposition, but still lack the requisite faith *in* God--a trusting reliance upon God, working itself out in love. According to James, the demons have such a faithless belief in God.”

Consider also that there are self-deception drivers like *levels of consciousness*. Garver asks: “What about unconscious beliefs? Levels of consciousness? A multiplicity of competing wills? Compartmentalization? Sure, these are complicated, but so are people in the image of an infinite God.” Psychological states like altered levels of consciousness could be important drivers of self-deception. Consider somnambulism, hypnotism, hypoxia, drug-induced states, split-brain/split-consciousness effects, the confabulations of the left hemisphere, heuristic strategies, the confirmation bias, and so on. One needs to be vigilant with respect to propensities to self-deception in self, and in the others one considers as authorities. One altered state that an Islamic jihadist might be open to is crowd psychology. In news reports Islamic crowd protests seem more like ranting mobs than rational arguments.

The *messy side of things* is also flagged by Garver: “Rather, not to put too fine a point on it, we are pulsing, hot, smelly bodies, whose hearts are revealed in emotions, desires, gestures, positions, poetry, music-making, and relationships and who are equipped with conceptual, linguistic, and symbol-transforming capacities that are thoroughly embedded and enmeshed within habits, family, society, and culture. Epistemological analyses that don't make room for these kinds of considerations, it seems to me, either falsely portray experience or provide accounts so general as to be vacuous.” Again, one needs to be vigilant with respect to the shallow side of human beings, the dark side of human being and the immature side of human

beings which are conducive to faulty beliefs which then serve as sources of self-deception in self, and in the others one considers as authorities.

The “*heart* has reasons” that reason knows not of, is a flag alluding to Pascal. Garver writes: “The question is, given Bahnsen's emphases and the overall shape of his apologetic, what do you do with a person who basically offers no intellectual reason why he rejects Christ? In such cases it is often a far more complex matter of desires, personal identifications, emotional configurations, past experiences, idols, unrighteousness in lifestyle, and so on. Even when intellectual reasons are given, they are more often than not, I think, less intellectual rationalizations and more the epiphenomena of practical rationalizations that arise from the heart.”

### *An Islamic Application*

When applied to Islamic representatives like Ibrahim (1997) and Khaleel (2003), is such self deception an important consideration? What might be happening in this area of self-deception? Rationalization, denial, projection, suppression, and so forth, lead to self-deception; this is a dangerous self-deception. The fact of the existence of self-deception, and the case for self-deception, calls for careful consideration of beliefs. Clearly, such self-deception factors do indeed influence rejection of properly basic beliefs, fundamental beliefs, epistemologically sound beliefs, common sense beliefs, and prudential beliefs. Self-deception is a darkness, a blindness, a state in need of light. Evidence, critique, and argument, offer light to both the anti-theist and the non-Christian theist. The anti-Christian theist, for example the Islamist (e.g., Ibrahim, 1997; Khaleel, 2003), would be well advised to consider critique, argument and evidence that challenges a personal position. The Islamist should ask: does their personal position stand up to critical evaluation? Such a critical disposition and critical evaluation would be scientifically sound and epistemologically sound. That's a scientific tactic!

### *Trivers' View -- Evolutionary Selection Principles*

Does an evolutionary psychology approach to self-deception offer any tools for a consideration of Islamic self-deception characterizing Khaleel (2003) with respect to the quality of his arguments? For Trivers (2011) self-deception is viewed as preferentially excluding from consciousness true information, yet including false information. Why would one do this? Answer: Adaptive advantage! Trivers' hypothesis is as follows: “...this entire counterintuitive arrangement exists for the benefit of manipulating others. We hide reality from our conscious minds the better to hide it from onlookers (2011, p.9).” The self-deceived person has an advantage in the deception of others.

Trivers posits a threefold advantage to this self-deception.

- (1) First, a self-deceived person, being unconscious of their deception, does not give off tells or cues that signal deception.
- (2) Second, the self-deceived person does not have an increased conscious cognitive load to maintain the deception, and consequently the brain has more access to resources for other tasks.



- (3) Third, if the deception is revealed, the self-deceived person has an excuse, an escape hatch—they can blame it on something other than the self, the willful self.

In effect then, the self-deceived person potentially has an advantage over others in manipulation. This, in accord with his Darwinian view, serves to propagate one's genes. An interesting evolutionary take! Does it also serve to propagate one's cultural memes? Natural selection selects for deception, and ultimately self-deception. If there is a natural selection process in play here, independent of the creation/evolution conflicts, the "deficient-person outcome," that is, from an epistemological and moral perspective, is alarming. But also the "successful-person outcome," that is, from a gene-propagator perspective, is alarming. Either route to self-deception is potentially quite important. The self-deception we are dealing with would be quite entrenched. Overcoming such self-deception would require some dramatic precursors: time, effort, openness, education, authorities, models, evidences, arguments, virtue, power, and perhaps even the miraculous, driving a desire for truth.

Trivers' view is not particularly truth-friendly! It is certainly consistent with Darwinian notions of development, and current variants of the principle of natural selection. Those wishing to advance knowledge and truth (as correspondence with reality) have a major battle ahead of them in dealing with deception and self-deception. Trivers frames the issue in a bleak light: humans are not truth-seeking, nor truth oriented. The lesson seems to be that we should not look to humans for truth; and that would hold for the naturalists, the scientists, the evolutionary biologists, as well as the politicians, theologians, atheists, and moralists we encounter.

Several challenges to Trivers' thesis parallel challenges to naturalism. First, Trivers' position is somewhat consistent with the naturalism that Plantinga (1993b, 2002) challenges as self-refuting. Plantinga would agree that: on naturalism, humans are not truth seeking. See the discussion on Plantinga's contention that naturalism is self refuting.

Second, naturalism as presented by Rea (2002) argues that there are ontological consequences of adopting naturalism, "unpalatable consequences" as he labels them. Particularly, naturalism fails at saving two key ontological views: the realism of material objects (RMO), and the realism of other minds (ROM). That people believe in the realism of material objects and the realism of other minds points to beliefs-in-use that do not align with a particular espoused belief, an espoused belief in naturalism, as Rea (2002) sees it. An aspect of the blindness, it seems, is partly in not seeing the problems!

Thirdly, leaving aside for the moment the fact that Triver's natural selection predisposes one to be deceived about natural selection, there are other substantive challenges. Behe's (2007) challenge to the mechanism of natural selection gives one pause here. If Behe is right, and given the empirical data he examines he seems to have a case one should consider, then natural selection apparently can get one only a few steps along the way to creating the phylogenetically new (Behe, 2007, 2010). Natural selection might work well within species but the construction of new structures is a bridge too far at the moment (see also Mazur, 2009). Even someone like Provine questions natural selection. Natural selection for deception, even self-deception, may work very well within species, but if natural selection fails to generate new structures additional

bases should be on the table for understanding self-deception. If so, then self-deception is open to other roots; those roots are sin, evil, self-preservation, malfeasance, and “principalities and powers.” These may be stronger roots than self-propagation driven by natural selection.

Fourth, Smith (2009) offers a challenge linked to rights. He asks: “Does moral belief in universal benevolence and human rights fit well with and flow naturally from the facts of a naturalistic universe (2009, p. 294).” He then adds: “The answer I will consider is: No, if we are intellectually honest we will see that a belief in universal benevolence and human rights as a moral fact and obligation does not make particular sense, fit well with, or naturally flow from the realities of a naturalistic universe (p. 294).” While not a refutation of Trivers’ position, Smith puts more information onto the table for consideration. In the broad context of these challenges suggested here, the issue of self-deception, human misunderstanding, is elaborated.

Fifth, common sense acknowledges the deceptive side of human nature, and common sense accesses the position that humans are indeed truth-seeking at a transcendent level, in spite of the deception. On the one hand, there is the override of the sciences pushing for truth. Further, there is the theological override, the call of truth. Strikingly, Reid makes the common sense case, the case that humans are basically truth-seeking. There is a tilt towards the Reidian position, hence truth, hence theism, and hence Christian theism.

What then of Trivers’ claim? It is a rich resource for the study of our current state, a state of self-deception. Even if Trivers is wrong regarding the evolutionary source as the sole source, he is often quite right in elaborating on the blight of self-deception. The blindness! His nine categories (see Trivers, 2011, pp. 15-27) of self-deception offer various sources of blindness that ironically open Christian-theistic-eyes: (1) self-inflation, which has as an intention the blinding of others, is consistent with a type of self-blinding, (2) derogation of others, is a blinding to others, and reflective of blindness-seeking, (3) “out-group” derogation and targeted hostility is a type of blindness, (4) power blinds, it blinds the self as seen in cognitive studies using power primes, (5) a sense of, or positioning of, moral superiority shows the judging of others more harshly than the judging of self, signalling our blindness to both others and the self, (6) the illusion of control, (7) biased social theory construction: here our theories of marriage, employment, society, and so on, are such that we are then able “...to persuade self and others of false reality, the better to benefit ourselves (p. 24),” that theories might be adopted, or constructed to self-blind is a challenge to science, (8) the creation of false personal narratives and histories are designed to make one more attractive (with regard to power, physicality, morality, intelligence, etc.) which is a deception of others, and self, and (9) personal psychological modules that are unconscious and deceptive, such as, the module Trivers confesses to: a mild kleptomania. Blindnesses ironically can be seen. But the blindnesses that are seen, along with their drivers, speak more to a broken, sinful, malevolent, and untrustworthy human nature. Trivers’ side! Also in the background are the blindnesses to the other side: (1) the historical aspect for humans of benevolence, creativity, service, knowledge-building of mankind, and the noble, honourable, self-sacrificing, loving side, (2) the relational aspect for humans with others, God, animals, ancestors, and nature, and (3) the teleological aspect for mankind, with respect to the redemption of human being and nature, forgiveness and the grace available.

Further insights from Trivers (2011) that flesh out the pandemic state of self-deception can be seen in his treatment of the rewriting of historical narratives (e.g., The Japanese travesties during World War II, the Armenian genocide, Zionism, etc.), the justifications of war, the practices of religions, the treatment of women, male-female relations, and more. Particularly fascinating are the biological links attempted to correlate religious diversity with parasitic load in a geographic area. Interesting, but likely one is still more inclined to see religious diversity linked to cognitive processing rather than the processing of parasites.

#### *An Islamic Application*

When applied to Islamic representatives like Khaleel (2003), one wonders if the self deception is accepted in the service of a higher ideal: helping God. Possibly characteristic of certain Muslim groups may be the nine factors in play (see Trivers, 2011, pp. 15-27): (1) *self-inflation*, (2) *derogation of others*, (3) “*out-group*” *derogation* and targeted hostility, (4) *power blinds*, (5) a sense of, or *positioning of, moral superiority*, (6) the *illusion of control*, (7) *biased social theory* construction, (8) the *creation of false personal narratives and histories* designed to make one more attractive (with regard to power, physicality, morality, intelligence, etc.), and (9) *personal psychological modules that are unconscious and deceptive*. Are there modern Muslims that are characterized by the “nine factors?” Such mapping is critical. That’s a scientific tactic!

#### *Mele’s View -- and Subsequent Cognitive Construals*

For Mele (1997) self-deception is viewed as not intentional, not a by-product of evolutionary psychology, and not a valuable thing; rather, it is largely the product of biases, particularly motivationally biased beliefs, desires, and wants. We can be biased to believe what we want to be true. For Mele, one cannot hold that a belief is true and false at the same time, at least in light of current cognitive research.

“In stock examples of self-deception, people typically believe something they *want* to be true: that their spouses are not involved in extramarital flings, that their children are not using drugs, and so on. It is a commonplace that self deception, in garden-variety cases, is *motivated* by wants such as these (Mele, 1997, p. 93).”

Motivation influences cognitive behaviour selectively. Selective attention, biased hypothesis-generation, biased evidence-gathering, hypothesis-testing and acceptance criteria, types-of-inferences, selective memory search, beliefs placed on the table, theory consideration, and theory construction are utilized in support of preferred beliefs, desires, and wants. Self-deception! The goal is to support a particular conclusion, a confirmation bias, and a conclusion that aligns with what one wants to be true, or hopes to be true. The overall case for not believing  $p$  is greater than the case for believing  $p$  yet one opts for believing  $p$ , or commits to believing  $p$ . This seems to be the case with some Islamic apologists (e.g., Ibrahim, 1997;Khaleel, 2003) and their commitment to believing purported evidential claims in spite of the overwhelming case against such belief.

“Should it turn out that the motivated nature of self-deception entails that self-deceivers intentionally deceive themselves and requires that those who deceive themselves into believing that  $p$  start by believing that  $\sim p$ , theorists who seek a tight fit between self-deception and stereotypical interpersonal deception would be vindicated. Whether self-deception can be motivated without being intentional – and without the self-deceiver’s starting with the relevant true belief – remains to be seen (Mele, 1997, p. 93).”

There are many who offer additional considerations for Mele, additional factors that when placed on the table seem to show that self-deception is a construct not yet fully formulated or grasped in psychology, philosophy, theology, or religious studies. For the present purposes, in addressing “understanding theistic misunderstanding,” or “understanding the choosing of the wrong god,” the fact of non-intentional self-deception is sufficient to make the case that the psychology of self-deception shows self-deception functions as a belief constraint.

Broadening the issue of constraint, one can draw upon the comments from the Open Peer Commentary on Mele’s arguments. These comments add cognitive construals that enrich the construct of self-deception, and the outcome of disbelief, or faulty belief. A few comments are added here as a list:

- “‘Self-deception’ usually occurs when a false belief would be more rewarding than an objective belief in the short run, but less rewarding in the long run. Given hyperbolic discounting of delayed events, people will be motivated in their long-range interest to create self-enforcing rules for testing reality, and in their long-range interest to evade these rules (Ainslie, 1997, p. 103).” (*Note the importance of rewards short term and long term.*)(James 4:3)
- “Mele views self-deception as belief sustained by motivationally biased treatment of evidence. This view overlooks something essential, for it does not reckon with the fact that in self-deception the truth is dangerously close at hand and must be repeatedly suppressed. Self-deception is not so much a matter of what one positively believes as what one manages not to think (Bach, 1997, p. 105).” (*Note the importance of proximity to truth, and apparently the intentional suppression of truth.*)(Rom 1:18)
- “Mele’s analysis of self-deception is persuasive but it might also be useful to consider the varieties of self-deception that occur in real world settings. Instances of self-deception can be classified along three dimensions: implicit versus explicit, motivated versus process-based, and public versus private (Bornstein, 1997, p. 108).” (*Note the importance of a broadened perspective.*)(Proverbs 18:17; 23:12)
- “The simultaneous possession of conflicting beliefs is both possible and logical within current models of human cognition. Specifically, evidence of lateral inhibition and state-dependent memory suggests a means by which conflicting beliefs can coexist without requiring ‘mental exotica.’ We suggest that paradoxical self-deception enables the self-deceiver to store important information for use at a later time (Brown & Kenrick, 1997, p. 109).” (*Note the importance of various models of cognitive processing that are supportive of self-deception.*)(Rom 1:20-21)

- “In an analysis of the role of emotion in self-deception is presented. It is argued that instances of emotional self-deception unproblematically meet Mele’s jointly sufficient criteria. It is further proposed that a consideration of different forms of mental representation allows the possibility of instances of self-deception in which contradictory beliefs (in the form  $p$  and  $\sim p$ ) are held simultaneously with full awareness (Dagleish, 1997, p. 110).” (*Note the potential importance of emotional factors.*)
- “The mechanisms invoked to demonstrate how self-deception can occur without intention or awareness imply that self-deceptive beliefs are nevertheless the outcome of inappropriate and often egoistically driven processes. In contrast, models of pragmatic reasoning suggest that self-deception may well be the “reasonable” output of a more generalized, adaptive approach to hypothesis testing (Friedrich, 1997, p. 113).” (*Note the possible importance of reasoning and even types of reasoning.*) (*Isaiah 1:18*)
- “A major worry in self-deception research has been the implication that people can hold a belief that something is true and false at the same time: a logical as well as a psychological impossibility. However, if beliefs are held with imperfect confidence, voluntary self-deception in the sense of seeking evidence to reject an unpleasant belief becomes entirely plausible and demonstrably real (Gibbins, 1997, p. 115).” (*Note the importance of calibrating beliefs.*) (*John 20:30-31*)
- “As understood by neodissociation and sociocognitive theorists, hypnotic responses are instances of self-deception. Neodissociation theory matches the strict definition of Sackeim and Gur (1978) and sociocognitive theory matches Mele’s looser definition. Recent data indicate that many hypnotized individuals deceive themselves into holding conflicting beliefs without dissociating, but others convince themselves that the suggested state of affairs is true without simultaneously holding a contrary belief (Kirsch, 1997, p. 118).” (*Note the insight from hypnotism, altered states of consciousness, unconscious motives, and so on.*) (*Rom 7:15-23*)
- “Contrary to Mele’s suggestion, not all garden-variety self deception reduces to bias-generated false beliefs (usually held contrary to the evidence). Many cases center around self-deceiving intentions to avoid painful topics, escape unpleasant truths, seek comfortable attitudes, and evade self-acknowledgment. These intentions do not imply paradoxical projects or contradictory belief states (Martin, 1997, p. 122).” (*Note the importance of functional ends or goals in self-deception.*)
- “An important way to become self-deceived, omitted by Mele, is by intentionally ignoring and avoiding the contemplation of evidence one has for an upsetting conclusion, knowing full well that one is giving priority to one’s present peace of mind over the search for truth. Such intentional self-deception may be especially hard to observe scientifically (Perring, 1997, p. 123).” (*Note the importance of peace of mind as motive for self-deceptive belief-selection.*)

The value of such Open Peer Commentary serves to keep self-deception in the forefront of belief constraints, disbelief, and faulty beliefs. Thus self-deception, as both an objective

pursued and a methodology used, becomes an important source of disbelief, or faulty belief, in various forms, levels, and scenarios.

### *An Islamic Application*

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003) the problems can be seen. Motivation influences cognitive behaviour selectively. Selective attention, biased hypothesis-generation, biased evidence-gathering, hypothesis-testing and acceptance criteria, types-of-inferences, selective memory search, beliefs placed on the table, theory consideration, and theory construction are utilized in support of preferred beliefs, desires, and wants. Self-deception! The goal is to support a particular conclusion, a confirmation bias, and a conclusion that aligns with what one wants to be true, or hopes to be true. The overall case for not believing  $p$  is greater than the case for believing  $p$  yet one opts for believing  $p$ , or commits to believing  $p$ . This seems to be the case with some Islamic apologists (e.g., Ibrahim, 1997; Khaleel, 2003) and their commitment to believing purported evidential claims in spite of the overwhelming case against such belief.

How might this self-deception be operative in the case of the claims advanced by someone like Khaleel (2003)? From the Open Peer Commentary we might consider that *rewards* are in play (Ainslie, 1997, p. 103), the *intentional suppression of the truth* is in play (Bach, 1997, p. 105), and *narrowing of thought* is in play (Bornstein, 1997, p. 108; see also Vallacher and Wegner, 1985, 1987). Also, *emotions, types of reasoning, calibration of beliefs, functional goals, and peace of mind*, are seen to be factors to consider by various critics of Mele's views. For Mele, it is *beliefs, desires and wants* that are in play (Mele, 1997, p. 93). Critique is critical. That's a scientific tactic!

### **Religious Narratives Constrain Belief**

The manner in which religious narratives can serve to constrain belief could be viewed as threefold: (1) situating people into a system, (2) pushing people away from a system, and (3) dismantling a system.

#### *Religious Narrative Beliefs That Situate One In A System And Constrain Belief*

Certain religious narratives are typically seen as the source of religious beliefs, and such beliefs are usually construed in contemporary society as bad beliefs, ill-conceived beliefs, or poorly-based beliefs. Such a position is not unreasonable. Such a position could very well lead to the possibility of precluding correct beliefs. The following list is typical of how many see the source of beliefs as a function of one's religious narrative context.

- Beliefs of one's Parents
- Beliefs of one's Culture
- Beliefs triggering the confirmation bias
- Beliefs offering material rewards
- Beliefs offering ego rewards
- Beliefs offering ideological rewards

- Beliefs offering emotive rewards (schadenfreude, vigilante justice, humour, vengeance, venting, gloating, ...)

Indeed, context situates one in a belief system, and the belief system drives one's belief acquisitions.

### *Religious Narrative Beliefs That Push One Away And Thereby Constrain Belief*

Certain religious narratives are typically seen as the source of theistic misunderstanding. They inadvertently are dysfunctional. They can lead to possibly precluding correct beliefs.

Consider the following push-narratives:

- A narrative that there is a prominent, singular, interpretive principle (e.g., literalism, allegory, myth, blind faith, “warming in the bosom,” Qur’an, Bible, reason, science, etc.), or interpretive institution (Roman Catholic Magisterium, Papacy, Watchtower society, Sunni, Shiite, Egyptian Brotherhood, El Qaeda, etc.).
- A narrative with egregious problems (e.g., silliness, fantasy, imaginings, illogical claims, refuted claims, etc.).
- A narrative with philosophical problems (e.g., problem of evil, myth-type miracles, textual errors, epistemological limitations, etc.)
- Methodological narratives like Prioritizing
  - The priority of reason
  - The priority of absolute evidentialism
  - The priority of science, and scientific methodology
  - The priority of a magisterial authority as criterion (e.g., Nihil Obstat, Imprimatur, ...papal infallibility, etc.)
  - The priority approach to scriptural revelation involving full plenary inspiration, error-free status, the priority of special revelation over natural revelation, etc.)
  - The priority of dichotomized thinking

### *Religious Narrative Beliefs (Islamic) That Don't Make Immediate Sense*

There are some religious narrative beliefs that seem particularly troubling. Deconstructing such beliefs shows problems with coherence, logic, reasoning, and consistency. As such, it seems reasonable to suspect these problematic narrative beliefs are thereby possibly precluding correct beliefs. Consider the following sample candidates:

- Role of Revelation via Gabriel
- Role of the Qur’an
- Role of Mohammed
- Role of Hadiths
- Mythic Themes
- Polygamy
- Errors
- Slavery

- Role of Women
- And more

Of course some of these beliefs might find cogent and reasonable supporting arguments. That takes work. So initial reactions, initial deconstructions, could serve to push one away from a correct belief. The problem then is the fact that a religious belief can undermine theistic understanding; it can constrain belief. Ultimately, however, the one who has the better argument should win. The one with the better argument is in the better position to support correct understanding.

### *Religious Narrative Beliefs That If True Are Conducive To Correct Belief*

In Christianity there is a somewhat different narrative, a God-prescribed, and God-powered narrative. It could be viewed as a para-natural narrative! The sequential components of this narrative could be itemized as follows:

- First: There is a *natural revelation* of God. The God above the gods is part and parcel of this revelation. This form of monotheism (one God, or highest God) seems to be universal as argued by Varghese (2011).
- Second: There is a *sensus divinitatis*. We have a sense of the divine (Plantinga, 2000). It is hard-wired in a sense. It is properly basic knowledge in a sense.
- Third: There is the *conscience* seen in the law written on the heart (Jer 31:33); seen in the honouring of prayer and alms (see Cornelius in Acts 10:1-4); and seen in the good response of some generated from an inner nature (see Rom 2:14-15).
- Fourth: There is the *divine draw*, or draws. The draw: (1) of the Father (Jn 6:44), (2) the draw of Jesus (Jn 12:32-33) (Jesus indicated that if he was lifted up he would draw all men unto himself), and (3) the reciprocal drawing (Jas 4:8) where a step towards God draws God towards oneself.
- Fifth: There is the *work of the Holy Spirit*—leading, teaching, convicting, comforting, and so on.
- Sixth: There is the *fruit of the Holy Spirit*. One key fruit here being faith. He produces faith—that is, He would be producing knowledge, assent, and trust.
- Seventh: There is the *discipleship* offered by the church. The charge to the church was to make disciples. The church then is a repository of knowledge building. The gifted authorities, the epistemological authorities, the scientific authorities, and so on are emergent from the church. That the monasteries were church-driven disciple-makers is informative. That the first universities were church-driven disciple-makers is informative. That pretty much all early universities in the United States were church-driven disciple-makers is informative. The academic disciplines, and the knowledge generated there, are for building Christians.

In Christianity we see a religious narrative where God is the operative agent for the most part. If true, this para-natural narrative offers forces that circumvent the constraints of mere religious narratives. These basic drawing forces can exist in “mere Christianity” and hence cross



denominational boundaries—religious narrative boundaries. In Christianity this is a major difference from traditional religions. Of course, in many religious narratives (although not all) one could resist the drawing forces that are offered.

### *An Islamic Application*

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003) one sees how religious narratives can lead to entrenchment in learning. If the learning is faulty, the opportunity for change diminishes over time. One needs a critical approach from the very beginning. That's a scientific tactic! And if the Christian framing is correct one needs the work of God operative to ensure a proximity to correct beliefs, verisimilitude, and then truth itself.

## **Paradigmatic Blindness**

### Reigning Paradigms

Historically, there are various reigning paradigms—in the political arena, in religious framings, in the sciences, and even in the arts. These paradigms might be pervasive or at times localized.

In *politics*: two thousand years ago one might have held that Pax Romana was the reigning paradigm. In medieval Europe Christianity was the reigning paradigm. In the nineteenth century it was the Pax Britannica that reigned. More recently Marxism-Leninism, Stalinism, Maoism, Nazism, and the Pax Americana have served as reigning paradigms.

In *religion*: polytheism, was replaced by monotheism; now atheism is on the rise. Buddhism, Hinduism, and Islam can be seen as reigning paradigms in more specific locales. In the *arts*: realism, impressionism, Dadaism, cubism, held sway at different times.

In *science*: the ancient Greeks (e.g., Aristotle) held the dominant position for quite some time. European rationalism and British empiricists then moved to the high ground. Though experimental science can be seen as a reigning paradigm today there are guises in the form of Darwinism, or physics, or materialism that can be seen to place Naturalism as the reigning paradigm.

With respect to reigning paradigms entrenched learnings follow. Change is difficult. The reigning paradigm drives the learning; if the reigning paradigm is seriously flawed the learning outcomes will be seriously flawed—disordered. With respect to the West (and atheism), the reigning paradigm is naturalism and its offshoots or proxies: materialism, reductionism, scientism, evolutionism, Darwinism, and humanism. These are entrenched. With respect to the Middle East, the reigning paradigm is Islam, and its variants. These are entrenched.

### *Challenging The Reigning Paradigm (Kuhn and Lakatos)*

The standard formulation for a dominant paradigm from a science perspective is seen in Kuhn's (1962, 1970) classic work "The Structure of Scientific Revolutions." What does a scientific revolution look like? The primary context is a scientific paradigm that reigns across scientific disciplines. There are competing views, alternate theories, and empirical challenges bubbling up regularly but rarely are these seen as threats, revolutions, or usurpations. More often than not such challenges are viewed as refining the dominant paradigm.

However, some serious challenges can arise in both quantity and quality. It can also be culled from the growing philosophical literature addressing challenges to the major paradigm—a literature not limited to theists (see for example the atheist, Monton, 2009; the atheist Nagel (2012), the agnostic, Berlinski, and the former atheist, Flew, 2007). Nor is the paradigmatic challenge limited to one domain of science. It spans cosmology, biology, physics, information sciences, mathematics, engineering, and more. At this point Kuhn sees the dominant paradigm in science under revolutionary attack. The threat continues and builds prior to a revolutionary change. There could be a plethora of views arrayed against the dominant paradigm prior to a major paradigm shift. Typically, the establishment would band together to protect the dominant paradigm (Lakatos, 1970), often at all costs—obfuscation, suppression, denial, or even fraud. Nevertheless, a boiling point can be reached and a major shift occur—the old paradigm falls, and the new paradigm rules the day.

Of particular interest are the blindnesses that characterize the professional in the dominant paradigm when under attack by the new school. People have a vested interest in the traditional way of looking at things, doing things, and valuing things. There is a reluctance to adopt a mind-change, particularly a change that they have been fighting for years. It can be humbling to admit oneself a fool, and thus it is the willingly humble who experience the growth spurt.

#### *The Heuristic Response to Challenges to the Reigning Paradigm (Lakatos)*

An informative and elaborate approach to resistance to change is seen in Lakatos (1970). To address the resistance to change consider a configuration proposed by Lakatos (1970) that offers an epistemological approach, or methodological rules, for knowledge building. Lakatos argues with respect to research programs that we have three aspects to consider: a hard core, negative heuristics and positive heuristics. It is probably fair to assume that the "hard core" is constructed to include the basic assumptions, beliefs, principles, knowledge, and so on that we accept as firm and foundational.

The methodological technique he terms "negative heuristic" is the principle, and practice, of protecting the "hard core." "The negative heuristic of the program forbids us to direct the modus tollens<sup>1</sup> at this 'hard core'. Instead, we must use our ingenuity to articulate or even invent 'auxiliary hypotheses', which form a protective belt around this core, and we must redirect the

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<sup>1</sup> In logic the modus tollens is configured as If P then Q; not Q, therefore not P. But this is not necessarily true if P is bivalent. For example the claim "where there's smoke, there's fire" is not necessarily true; thus, the claim that there is no fire, does not support a denial of the claim "there is no smoke."

modus tollens to these (Lakatos, 1970, p. 133).” While such an approach is clearly scientific, and potentially valuable, one must be open to allocating doubt to these auxiliary hypotheses proportional to the evidence, lest one be blinded to more credible alternative hypotheses.

The “positive heuristic” involves plodding along with knowledge building in spite of the problems. “The positive heuristic of the programme saves the scientist from becoming confused by the ocean of anomalies.... He ignores the actual counterexamples, and available ‘data’ (Lakatos, 1970, p. 135).” A selective sight is a form of blindness, much like the confirmation bias.

While the focus of Lakatos is on the methodology of science, and science programs, it seems that the formula applies equally well to the psychology of personal knowledge building, whether psychological, religious, political, moral, or pragmatic. Our basic “hard core” beliefs are often immune from critique; instead we build auxiliary hypotheses as a protective belt. Then we plod along with knowledge building in spite of the problems. Of course this applies to both sides of an issue—the pro-smoking faction and the anti-smoking lobby, the pro-homosexual agenda and the traditionalists, the healthy eaters and the eaters-of-the-healthy, the neo-Darwinist ramp and the Intelligent Design camp, the carnivores and the herbivores, and so on. Both sides have their “hard core” immune from the negative heuristics; both sides have their positive heuristics for knowledge building. Such opposition should be eye-opening, not blinding.

#### *An Islamic Application*

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003) the mapping is easy. Their basic “hard core” beliefs are often immune from critique; instead they build auxiliary hypotheses as a protective belt. Then they plod along with positive heuristics for knowledge building in spite of the problems. Their “hard core” is immune on principle, and given the use of “negative heuristics.” Such opposition should be eye-opening, not blinding. But until there is a sufficient accumulation of challenges, facts, arguments, alternative hypotheses and models, there will be no paradigm shift.

#### **Imbalance As Breakdown**

Sternberg (2002) advances an imbalance model as a theory of foolishness. He contrasts foolishness with wisdom, as opposed to the stupid/intelligent contrast. It seems—admittedly taking a little interpretive liberty—the imbalance can apply to *deficits*, *dispositions*, and *desires*. Sternberg sees the beginning of foolishness in a problem with tacit knowledge which is considered to be in a *deficit* state. Tacit knowledge is procedural (i.e., knowing how), instrumental (i.e., strategy tools for achieving goals and valuables, or what one desires in the context of competing desires), and indirectly acquired (e.g., via pragmatics, socio-linguistics, or dispositions). In this configuration the “beginning of foolishness” is dependent on faulty beliefs, poor knowledge of strategies, weak skills, and personal agency.

The three *dispositions* that interfere with tacit knowledge use are: a sense of omnipotence, a sense of omniscience, and a sense of invulnerability. Such dispositions would

indicate a psychological state that was out of balance. Such dispositions are unreasonable for human beings. Such dispositions can be found in youth, in the socially powerful, in authoritarians, in the wealthy, in the arrogant, in the criminal, and in those in positions of prestige.

Finally, there are *desires* out of balance. This might be seen in a selective focus on an interest, a timeframe, or an action. Wisdom involves balance: (1) between INTERESTS, intrapersonal interests (e.g., growth, knowledge, security, etc.), interpersonal interests (e.g., friendships, love relationships, teacher-student relationships, etc.), and extrapersonal interests (e.g., city, country, God), (2) between TIMEFRAMES (the short term and the long term), and (3) between ACTIONS (adaptation to an environment, shaping an environment, and selecting a new environment). Foolishness is seen in an imbalance in one or more of these areas. While Sternberg's balance theory does provide a descriptive framework, a very real question is: what pushes the *deficit* in tacit knowledge? Is it a failure to learn? Is it incorrect learning? Is it an inability to learn? Does it reduce to belief? What pushes problematic *dispositions* to the surface? Are these just problematic beliefs? Are desires entangled with beliefs?

Sternberg's focus on balance can reduce to a focus on beliefs. Beliefs underpin tacit knowledge, dispositions, and desires. Beliefs underpin interests, objectives, and actions. Beliefs underpin restoration of balance, personal agency, and responsibility.

By way of illustration, applying Sternberg's model to smoking we start with the *dispositions*. Young smokers just beginning their smoking trajectory do seem to have a disposition characterized by a sense of omnipotence, a sense of omniscience, and a sense of invulnerability. They don't see the harm they are open to encounter. But it isn't just youth that have these dispositions. They can show up in the intelligentsia, the powerful, the wealthy, and the arrogant.

Secondly, these young smoking neophytes clearly have *desires* out of balance: (1) between INTERESTS, intrapersonal interests (e.g., health, athletic ability, status, peer approval), interpersonal interests (approval from parents, teachers, peers, etc.), and extrapersonal interests (e.g., fitting into city, country, and religion), (2) between TIMEFRAMES, (i.e., the initial dabbler in the short term and the addict in the long term), and (3) between ACTIONS, adaptation to an environment, shaping an environment, and selecting a new environment. They don't see the variables in play.

Finally, with respect to *deficits* in tacit knowledge, they have them. They lack the procedural and instrumental knowledge necessary to deal appropriately with situations, dispositions, interests, timeframes, and aspirations. Foolishness is seen in the behaviour of the smokers. But it is also seen in the beliefs of the smokers. Arguable, the imbalance in beliefs precedes the imbalance in behaviour.

Though Sternberg's model contains a great deal of detail and direction for thought it too does seem to reduce to faulty beliefs, competing beliefs, or bad beliefs, and, equally importantly, the choices such beliefs sustain. Deficient beliefs and imbalances walk together.

### *An Islamic Application*

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003) one could suspect imbalance. Young Muslims do seem to have dispositions characterized by a sense of omnipotence, a sense of omniscience, and a sense of invulnerability. That's imbalance! There may be *desires* out of balance: (1) between INTERESTS, intrapersonal interests (e.g., growth, understanding, acquisitions, self concept, ideological service), interpersonal interests (approval from parents, teachers, peers, Allah, etc.), and extrapersonal interests (e.g., fitting into city, country, religion, and world), (2) between TIMEFRAMES, (i.e., short term rewards and long term effects), and (3) between ACTIONS, (i.e., adaptation to an environment, shaping an environment, destroying an environment, and selecting a new environment). Flying planes into buildings is an ideological service showing unbalanced interests. Attention to long term effects only is an imbalanced time framing. Actions to destroy an environment is a lack of balance!

### **Systems Thinking Breakdowns**

There are various systems in play that can interfere with sound thinking. For example there are parenting systems, societal systems, religious systems, political systems, reward systems, and so on, that can impact commitment to an ideal, a paradigm, a hypothesis, a theory, or a worldview. There are also cognitive systems that influence such commitments. It is the cognitively rooted systems that are considered here.

### **Dual-Systems Thinking (Cognitive Science & Creedal Thinking)**

On the cognitive science side of this framing, a case is formulated for two cognitive systems involved in human information processing (see Kahneman, 2003, 2011; Sloman, 2002). In fact, there are numerous two-system models (see Sloman, 2002) including such configurations as deductive versus inductive systems, or analytic versus non-analytic cognition systems, or even the Freudian formulation of primary processes (seeking gratification) versus the secondary processes (dealing with limits, constraints, obstacles, and boundaries via the "reality principle"), as Sloman (2002) notes. The two cognitive systems considered here, however, are labeled as System 1 and System 2, and structured as: (1) the Intuitive versus the Reasoning systems—that is, System 1 versus System 2—(see Kahneman, 2003, 2011), or (2) the Associative versus the Rule-Based systems (see Sloman, 2002).

## Kahneman

As Kahneman presented his two-processing system in 2003, he sees an Intuitive system—System 1—which displays processing characterized by: fast speed, parallel processing, automaticity, effortlessness, associative, slow-learning, and emotionality. The other system—System 2—is a Reasoning system and is characterized as: working at a slow speed, using serial processing, under executive control, requiring substantial effort, rule-governed, flexible, and showing emotional neutrality.

In the Intuitive system, System 1, faulty beliefs (and blindnesses) could be linked to: (1) associativeness, if the associations are defective or limited, (2) emotions or affect, which could overpower cognition, and (3) automaticity, where that which is automatic is a learned dysfunction or bad habit precluding better learning, or the automatic response is premature, precluding the better response. Further, sources of faulty beliefs can be linked to biases, and the use of “a limited number of heuristics, such as representativeness and availability” (Tversky & Kahneman, 2002, loc 419).

People make “natural assessments” routinely. “Such natural assessments include computations of similarity and representativeness, attributions of causality, and evaluations of the availability of associations and exemplars (Tversky & Kahneman, 2002, loc 421).” These assessments impact judgments. We rely on these natural assessments to produce an estimate or a prediction. This judgmental heuristic can lead to “the relative neglect of other considerations (loc 428)” and possibly error or bad beliefs. Judgmental heuristics can also lead to “predictable biases,” misinterpretation of the task, and inappropriate anchoring. Faulty beliefs surfacing, then, are quite believable!

A judgment from the Intuitive system “will be modified or overridden if System 2 identifies it as biased (Kahneman, 2003, p. 711).” These corrective operations by the Reasoning system can be somewhat desolate, however, if certain constraints are in play. Blockages, or constraints, identified by Kahneman from existing literature (p. 711) are:

- *Time*-“time pressure,”
- *Load*- “concurrent involvement in a different cognitive task,”
- *Time-of-day*-“performing the task in the evening for morning people and in the morning for evening people”
- *Mood*-“surprisingly, by being in a good mood” can impair corrective operations. One wonders if this is being too relaxed.

Facilitators identified by Kahneman from existing literature (p. 711) are:

- *Intelligence* –more intelligent processors can use System 2 overrides

- *Cognitive Drive*-“need for cognition” Some individuals have a need to engage cognitively. They enjoy it, they seek it out. Intricate thought is fulfilling for some (see Shafir & LeBoeuf, 2002).
- *Expertise*-“exposure to statistical thinking”

With respect to beliefs, then—which are the underpinnings of judgments and behaviour—it is evident how beliefs can go awry via System I or System II processes. Heuristics and biases can interfere with beliefs—distorting beliefs—as can a host of constraints such as time, load, mood, intelligence, expertise, cognitive style (drive or need), and even time-of-day. Motivations and emotions can be constraints as Kahneman notes under the label “The Affect Heuristic” (2003, p.710). Even that great recent boon to human knowledge, the Internet, can be a heuristic with serious constraints for using the Reasoning system (see Carr, 2010 for discussion of what might be called “the shallowing of thinking” as a result of the Internet).

## **Sloman**

Sloman’s (2002) two systems of reasoning are similar. He terms them as an Associative system and a Rule-Based system. The Associative system shows automaticity and has certain illustrative cognitive functions (e.g., intuition, fantasy, creativity, imagination, and associative memory). The Rule-Based system draws upon language, culture, logic, concrete and abstract concepts, and strategy, etc. Illustrative cognitive functions drawn from Sloman are: deliberation, explanation, formal analysis, verification, ascription of purpose, and strategic memory.

In Sloman’s model the systems are interactive. They work together to solve problems, but utilize their own unique cognitive resources. In the Rule-Based system there are three sources of rules: culture, self-made rules, and discovered rules (in nature and logic).

Sloman contends: “The associative system encodes and processes statistical regularities of its environment, frequencies and correlations amongst the various features of the world (location 5895).” Further, “...associative thought uses temporal and similarity relations to draw inferences and make predictions that approximate those of a sophisticated statistician. Rather than trying to reason on the basis of an underlying causal or mechanical structure, it constructs estimates based on underlying statistical structure (loc 5899).”

One piece of evidence that Sloman (2002) finds quite compelling for two forms of reasoning is the fact that a person can hold two simultaneous contradictory beliefs. He uses the whale as an example. “A whale is simultaneously both a mammal (technically) and a fish (informally) (loc 5951).” Obviously the label “fish” comes from the Associative system, while the label “mammal” comes from the Rule-Based system. There are situations where “...people first solve a problem in a manner consistent with one form of reasoning and then, either with or without external prompting, realize and admit that a different form of reasoning provides an alternative and more justifiable answer. Judges are often forced to ignore their sense of justice in order to mete out punishment according to the law (loc 5955).” Again, the Rule-Based system is seen to exist with the Associative system, albeit, the Rule-Based system trumps the Associative

beliefs. This would be a good move, however, only if the Rule-Based system gets it right. Two systems of reasoning are in competition!

Developmentally, on the one hand, it seems the rule-based system precedes the associative system; over time rational inferences become intuitive. Sloman (2002) writes: “The claim is that people first figure the world out deliberately and sequentially and only with time and practice does the knowledge become integrated into our associative network (loc 6101).” At the same time: “Evidence also suggests that people rely on associative processes when they do not have knowledge of or access to rule-based ones (Quine, 1977, said that we fall back on our ‘animal sense of similarity’ when a lay theory is not available) (loc 6104).” In this scenario, the Associative system is primary. In actuality, there are two systems of reasoning in interaction, developmental interaction!

Sloman (2002) contends that associative responses are automatic and persist even when the person tries to ignore them. They remain compelling even when faced with rule-based arguments. Nevertheless, “The rule-based system can suppress the response of the associative system in the sense that it can overrule it (loc 6055).” The associative system might be primary, temporally, but the rule-based system is primary, authoritatively. This can be a good thing if the associative system is wrong; it would be a bad thing, a blinding, if the associative system was right.

In one scenario, problems obviously arise if one engages in shallow processing, that is, one reacts from the intuitive associative system, almost impulsively, and proceeds no further. Interestingly, as noted earlier, Carr (2010) makes the case that the computer (particularly the Internet with hyperlinks and linguistically terse text like e-mail) is propagating a generation characterized by impulsive, shallow, and surface-level processing. Failure to get to rule-based thinking could clearly be a source of bad beliefs, and blindness. Thus, preferential positioning of the associative system could be a source of bad beliefs. The intruding of the associative system on the rule-based system could be a source of bad beliefs. The fact that people are pulled in two directions at once is a potential source of bad beliefs.

In another scenario, problems arise if the associative system is right and the rule-based system overrides it. As mentioned earlier the override of the “promiscuous teleology” of system 1, by the Darwinian rules in system 2 (e.g., by Darwin himself, by Francis Crick, by others) are seen by some as a blindedness.

Both of the two-processing frameworks (i.e., Kahneman and Sloman) clearly point to mechanics for generating bad beliefs which then underpin bad judgments. And clearly it is a complicated field. The bottom line is the need for thinking at higher levels: reasoning, rule-based thinking, slow thinking, methodical thinking, linear thinking, and ferreting out potential constraints and biases related to heuristics, culture, and personal psychological characteristics. Harmonizing the two systems is not just getting two eyes working together it is getting two eyes operating in the presence of light.



## Barrett

On the creedal side, one important idea that can be drawn from the cognitive science of religion as developed by Barrett (2004, 2009, 2011), with respect to beliefs, is that there are two, or perhaps three, key categories of beliefs. Barrett has termed two of the categories: non-reflective beliefs and reflective beliefs. Non-reflective beliefs would align with Kahneman's (2003) Intuitive thinking (System 1), and Sloman's (2002) Associative system. Reflective beliefs, on the other hand, would align with Kahneman's (2003) Reasoned thinking (System 2), and Sloman's (2002) Rule-Based system.

Rather than posit a possible third belief category which would be basic beliefs, perhaps even common sense, these could be folded into System 1 level beliefs and processing. Appraising current thinking on evolutionary psychology, albeit outside of the biological box (e.g., Barrett, 2004, 2009, 2011; Murray, 2009, Murray & Goldberg, 2009; Plantinga, 2009), challenges some of the more naturalistic accounts of belief formation, or even naturalism itself (Haught, 2009; Plantinga, 2009). The challenges offer insights regarding beliefs and belief-formation relevant for many arguments regarding beliefs of interest in this book (i.e., beliefs which underpin a stupidity, blindnesses, a smoking orientation, an Islamic worldview). The beliefs in System 1 are important; the beliefs in System 2 are important. Integration of the two systems, philosophically, epistemologically, psychologically, and theologically, is important.

Using Barrett's (2009) distinction between non-reflective and reflective beliefs, as well as the possible separate category of properly basic beliefs, provides a three-category system of beliefs: properly-basic beliefs, non-reflective beliefs, and reflective beliefs. There are times when the categories overlap; for example, a reflective belief that has gained automaticity, or habit-status, will function as a non-reflective belief. A properly basic belief (e.g., "I think therefore I am," or my senses are generally trustworthy, or my memory is generally trustworthy, ...) can also function as a belief in the non-reflective beliefs category. At this point, though, the emphasis is on Barrett's two category system (reflective beliefs and non-reflective beliefs) as these neatly map onto both Kahneman and Sloman.

Barrett includes the following list as non-reflective beliefs:

- People act in ways to satisfy desires.
- Rainbows exhibit six bands of color.
- Raccoons and Opossums are very similar animals.
- People from outside my group are more similar to each other than people inside my group.
- Animals have parents of the same species as themselves.
- Unsupported objects fall (Barrett, 2009, p.78).

There are mental tools, or cognitive tools, that lead to such non-reflective beliefs. Foremost would be a belief along the lines of basic beliefs:

- belief in one's existence
- trust in one's senses generally
- trust in one's memories generally
- trust in the rules of logic generally
- trust in one's intuitions generally, and
- trust in reason generally
- perhaps even a trust in common sense

The first four mental tools that Barrett advances from various sources are: (1) Naïve Biology (“Naïve Biology generates the non-reflective beliefs that animals bear young similar to themselves, and living things act to acquire nourishment...”), (2) Naïve Physics (“Naïve Physics generates the non-reflective belief that objects tend to move on inertial paths, cannot pass through other solid objects, must move through the intermediate space to get from one point to another, and must be supported or they will fall...”), (3) an Agency Detection Device (“The Agency Detection Device automatically tells us that self-propelled, goal-directed objects are intentional agents...”), and (4) Theory of Mind (“Theory of Mind gives us non-reflective beliefs concerning the internal states of these intentional agents and their behaviors: agents act to satisfy desires, actions are guided by beliefs, beliefs are influenced by percepts, and satisfied desires prompt positive emotions...” ) (Barrett, 2009, p.79). These mental tools lead to non-reflective beliefs.

There are more mental or cognitive tools that generate non-reflective beliefs. For example, “Intuitive Morality,” Intuitive Dualism,” and Intuitive Teleology or “promiscuous teleology” have been posited (see Barrett, 2009) as drivers of non-reflective beliefs. As well, there is the intuitive “Contagion Avoidance” (Murray, 2009) that strikes one as consistent with non-reflective belief.

Before moving on to Barrett's reflective beliefs it is worth noting that McCauley (2011) divides System 1 thought (Kahneman's Intuitive system, Sloman's Associative system, and Barrett's Non-Reflective system) into two systems, two types of naturalness: (1) practiced naturalness (e.g., writing, riding a bike, playing chess, and more), and (2) maturational naturalness (e.g., chewing, walking, deep structure of language). As he notes: “The distinction between practiced naturalness and maturational naturalness applies no less readily to intuition, thoughts and beliefs. Cognition too can seem natural simply because it is well-practiced and because it is culturally well-supported or, on the other hand, because it emerges, independently of any cultural distinctive influences, in the course of human development (p. 26-27).” Some intuitions align with practiced naturalness and result from schooling, from exercise with routine problems, and from domain-specific experience—expertise. Other intuitions align with maturational naturalness and are typified by descriptors like innateness, hard-wired, modularity, unlearned, non-cultural, species-specific, nativistic, knowledge.

Barrett posits reflective beliefs as conceptually distinct from non-reflective beliefs. Reflective beliefs are beliefs we acquire through reflection: deliberate reflection, or reading, or authorities, or induction, or deduction, or abduction, or confabulations, or gossip, or mere opinion-formulation. Quoting Barrett: "... when people say they believe that insects are more plentiful than mammals;  $E = mc^2$ ; bananas are yellow; Lance Armstrong is the reigning Tour de France champion; or Tom Cruise is six feet five inches tall; they are expressing reflective beliefs. Whether a belief is reflective does not bear on its truth-value or whether it is justified (2009, p. 78)." . . . Reflective beliefs are beliefs that emerge from the interplay of bottom-up information processing using cognitive tools and top-down applications of executive cognitive processors. The products are reflective beliefs.

Reflective beliefs are not necessarily true beliefs. False beliefs, and bad beliefs, are constructions, or reflective beliefs, that might be adaptive. By the same token, false beliefs, and bad beliefs, are reflective beliefs, that might be maladaptive. At the extremes, theft might be adaptive, or maladaptive. Rape might be adaptive, or maladaptive. In a naturalist worldview there is such a case to be made for various adaptive and maladaptive scenarios. In a credal worldview there is the greater likelihood of challenging adaptive and maladaptive formulations. In credal worldviews there is a call to change one's belief, to adopt a better belief, a good belief, a true belief.

With respect to reflective beliefs, thinking can go awry as a result of: (1) logical fallacies, (2) various heuristics and biases (see Gilovich, Griffin, & Kahneman, 2002; Kahneman, 2003; Kahneman & Miller, 2002), (3) perceptual, conceptual, and memory limits on processing, and (4) context-specific biases. Barrett illustrates context specific biases by flagging what can go awry in the face of testimony. We trust others generally, which aligns with a credulity principle (see also Reid, 1818/2011). The trust is undergirded by a conformity bias (we conform to the beliefs of those around us), a prestige bias (we trust those with status, power and celebrity), and similarity bias (we trust people like us). With such biases things can go awry! Bad beliefs and blindnesses can follow.

There are other cognitive constraints that serve as interferences, as well. In fact, the list seems endless, and one wonders how clear reflective thinking is at all possible. In this current project a number of cognitive traps and dangers are advanced for consideration (e.g., Kahneman, 2003; Piattelli-Palmarini, 1994; Sternberg, 2002; Twerski, 1997). Paradoxically, we can see the blindnesses, our blindnesses, all around us, if we look.

Reflective thinking is hard work. As McCauley expresses it: "Natural cognition is what comes to all of us easily (2011, p. 13)." But the reflective, higher order, scientific thinking is hard; it is unnatural. There is a seeing that comes naturally, spontaneously, basically. There is a seeing that takes effort, work, and guardianship.

With respect to non-reflective and reflective beliefs, thinking can go awry as a result of (1) limitations on perception, memory, and attention, (2) responses to limitations like change-blindness, illusions, confabulations (Gazzaniga, 1985), (3) intrusions from long term memory

systems, (4) content-specific biases, and heuristics (Kahneman, 2003), and (5) personal factors like fatigue, time-of-day, and mood (Kahneman, 2003). Barrett (2011) presents three content-specific biases as samples of the “tip-of-the-iceberg” of biases that impact non-reflective beliefs: face detection, fear of snakes, and categorical colour perception. This “hard-wiring” aligns with innate biases which have the potential to impact our beliefs. He writes: “...our minds preferentially attend to and differentially process some types of information over others, handling different domains of information in different ways (p. 38.)” Back to McCauley’s (2011) claim: it’s going to be hard work. It takes effort to get good reflective beliefs, theories, science, verisimilitude, and truth.

### *An Islamic Application*

When applied to Ibrahim (1997) and Khaleel (2003) one can attempt to identify their use of System 1 and System II level thinking. Actually, it seems that System II level thinking is shallow in Khaleel. For Sloman, the Associative system (System I) shows automaticity and has certain illustrative cognitive functions (e.g., intuition, fantasy, creativity, imagination, and associative memory). This seems more characteristic of Khaleel’s chapters. The Rule-Based system (System II) draws upon language, culture, logic, concrete and abstract concepts, and strategy, etc. Illustrative cognitive functions drawn from Sloman are: deliberation, explanation, formal analysis, verification, ascription of purpose, and strategic memory. This seems absent in Khaleel. Back to McCauley’s (2011) claim: it’s going to be hard work. It takes effort to get good reflective beliefs, theories, science, verisimilitude, and truth.

With reflective beliefs (System II), thinking can go awry as a result of: (1) logical fallacies, (2) various heuristics and biases (see Gilovich, Griffin, & Kahneman, 2002; Kahneman, 2003; Kahneman & Miller, 2002), (3) perceptual, conceptual, and memory limits on processing, and (4) context-specific biases. Barrett illustrates context specific biases by flagging what can go awry in the face of testimony. We trust others generally, which aligns with a credulity principle (see also Reid, 1818/2011). The trust is undergirded by a conformity bias (we conform to the beliefs of those around us), a prestige bias (we trust those with status, power and celebrity), and similarity bias (we trust people like us). With such biases things can go awry! Bad beliefs and blindnesses can follow. Further, thinking in either system can go awry as a result of responses to limitations like change-blindness, illusions, and confabulations (Gazzaniga, 1985), inappropriate intrusions from long term memory systems, content-specific biases and heuristics (Kahneman, 2003), and personal factors like fatigue, time-of-day, and mood (Kahneman, 2003). These limitations and potential constraints seem characteristic of Khaleel; at least they are questions to be raised regarding Khaleel’s claims.

Developmentally, the rule-based system precedes the associative system; over time rational inferences become intuitive. Sloman (2002) writes: “The claim is that people first figure the world out deliberately and sequentially and only with time and practice does the knowledge become integrated into our associative network (loc 6101).” At the same time: “Evidence also suggests that people rely on associative processes when they do not have knowledge of or access to rule-based ones (Quine, 1977, said that we fall back on our ‘animal sense of similarity’ when a lay theory is not available) (loc 6104).” In this scenario, the

Associative system is primary. In actuality, there are two systems of reasoning in interaction, developmental interaction! That the Associative system becomes primary helps explain the Khaleel case. He may well have formed his reflective beliefs years earlier, perhaps as a teenager, which then transferred to an Associative system. In his more mature state, as a practicing medical professional, he simply defaults to the associative system rather than invest in the “hard work” of developing the more mature arguments consistent with, and required by, the Reflective system.

Sloman (2002) contends that associative responses are automatic and persist even when the person tries to ignore them. They remain compelling even when faced with rule-based arguments. Nevertheless, “The rule-based system can suppress the response of the associative system in the sense that it can overrule it (loc 6055).” This takes hard work, work consistent with a virtue epistemology. The associative system might be primary, temporally, but the rule-based system should be primary, authoritatively. This primacy of the Reflective system can be a good thing if the associative system is wrong; however, it would be a bad thing, a blinding, if the associative system was right. Nevertheless, it is the arguments from the Rule-based system that warrant first-order consideration, not the intuitions and imaginings of the associative system.

### Hot and Cold Systems

Metcalf & Mischel, 1999; Mischel & Ayduk, 2004 address recent work on delayed gratification, work that includes attention to a rational system. Essentially, there are at least three issues that point in this direction: (1) there are two clear “types” that deal with delayed gratification, *hot* vs *cold* types, (2) there are brain-bases, or *differential neurological substrates*, consistent with rationality, and (3) there is the possibility of change, or at least openness to change, via *strategic influences*, again a rational approach.

*Hot vs Cold* types. With respect to types, Metcalfe and Mischel (1999) identified two types in their proposal of a two-system framework (a hot system versus a cool system) for self-regulation, the dynamics of willpower, and the delay of gratification. As offered in Mischel and Ayduk (2004) the cool system, “... is an emotionally neutral, know system: it is cognitive, complex, slow, and contemplative. ...the cool system consists of a network of informational, *cool nodes* that are elaborately interconnected to each other, and generate rational, reflective, and strategic behavior (p. 109).” The hot system “...enables quick, emotional processing: simple and fast, and thus useful for survival... (p. 109).” The hot system is automatic, developmentally early, and typically precludes effortful control. The notion of rationality would align with the operation of the *cool* system.

*Differential neurological substrates.* With respect to brain bases, somewhat tentatively, Mischel and Ayduk (2004) link the cool system to hippocampal and frontal lobe processing. They link the hot system to the amygdala. More recently, Casey, Somerville, Gotlib, et al (2011) relate the two systems to neurological substrates as follows:

“Two neurocognitive systems that rely on distinct neural systems have been proposed to enable self-control. Whereas the ‘cool’ system involves cortical control

regions, including the prefrontal cortex, the ‘hot’ system involves deep brain structures such as the ventral striatum that are implicated in the processing of desires and rewards. Resisting temptation, as measured by the ‘hot’ go/nogo task in the present study, supports this view, with the prefrontal cortex and the ventral striatum differentiating low and high-delay participants. The difference in inferior frontal gyrus recruitment for ‘nogo’ relative to ‘go’ trials was reduced in low delaying participants, potentially reflecting reduced ability in these individuals to invoke cognitive control in the context of emotional or ‘hot’ cues. The ventral striatum has been implicated in reward and in immediate, as opposed to delayed, choice behavior. Thus, sensitivity to environmental cues influences an individual’s ability to suppress thoughts and actions, such that control systems may be ‘hijacked’ by a primitive limbic system, rendering control systems unable to appropriately modulate behavior. Similar analogies of imbalances between these neural systems in the literature suggest that addiction and adolescence may be contexts when cognitive control may be particularly vulnerable to alluring environmental cues (p. 4).”

The cool system is more controlled by neuro-cognitive systems, particularly prefrontal cortex, and thus more amenable to delayed gratification. Individuals predisposed to the *cool* system are more likely to respond to arguments that favour delaying gratification, or opting for the bigger rewards at a later time. Rational behaviour seems evident here.

*Strategic Influences.* Mischel and Ayduk (2004) note: “As the cool system develops it becomes increasingly possible for the child spontaneously to generate diverse cognitive and attention deployment cooling strategies (e.g., self-distraction, inventing mental games to make the delay less aversive<sup>1</sup>), and thus to be less controlled by whatever is salient ... (p. 110).” If defending God is the salient feature of a worldview one needs to delay the practice in order to fully consider the rationale. It takes work and strategy to suppress the salient temporarily.

### *An Islamic Application*

When applied to quasi arguments like those presented by Ibrahim (1997) and Khaleel (2003) there is a lack. Apologists and polemicists for a particular worldview (e.g., Islamic, Naturalism, Christianity, etc.) ought to demonstrate the use of the cool system—slow methodical, cognitive, strategic, rational, reflective arguments, evidence based, logically coherent, and critically examined arguments. There ought to be a critical suppression of the “salient” (say, helping God, or serving Allah, or denying theism) in order to fully consider the arguments and evidence. I don’t see this in Khaleel (2003). His offering is more of an opinion piece than a rational argument.

## **Discourse on Science**

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<sup>1</sup> Other strategies to regulate affect, strategies that are logically, or reasonably, amenable to learning have been offered by Larsen and Prizmic (2004, pp. 44-51). For example, they suggest: distraction, avoidance of rumination, expressing negative affect as in venting, suppression, cognitive reappraisal, social comparison with those worse off, planning to avoid future problems, socializing, getting advice, looking for one’s positive blessings, helping those less fortunate, laughter as medicine, and so on. These strategies align with both rational behaviour and learning—and even support “cold turkey” in a cool system.

## The Scientific Skeptical Stance

I have argued earlier (see *Entrenched Learnings* – Vol. 1) that we need to be on guard with respect to the sciences. Our most valued approach to knowledge, that is, the scientific methodology, can blind us, or contribute to our blinding. I have argued earlier the adoption of a particular worldview (e.g., naturalism) can blind us (see also Rea, 2002). I have argued earlier, System 2 processes (see also Kahneman, 2011)—where the sciences reside—can override System 1 processing which is a major problem when System 1 contributions to our cognitive mixing-pot are correct. I have argued earlier, the scientific “circling of the wagons” can blind those trying to break free (see also Feyerabend, 1975, 2011; Kuhn, 1970; Lakatos, 1970). I have argued earlier, the sciences are filled with fraud, fudging, rigging, gate-keeping abuses, self aggrandizement, ambitions, and so on) blinding the unsuspecting. I have argued earlier, the imprimatur of authorities can blind one. I have argued earlier, the professional can be primed for a blindness, which would blind others. I have argued earlier, learning theory can blind one. I have argued earlier, technology can blind one via shallowing-of-thinking and narrowing thinking as in action-identification theory. I have argued earlier, a broader epistemic scope is needed than the pure absolute evidentialism of the sciences. Sciences can blind! Even in this most respectable epistemic field one needs to be extremely vigilant and critical. The same applies to worldviews like Islam and Christianity.

### *An Islamic Application*

When applied to situations like those presented by Ibrahim (1997) and Khaleel (2003) the need to be critical on multiple dimensions is striking. Khaleel shows no immediate evidence that he has attended to the problems, the constraints, the liabilities, and the potential blind spots. Hence, one can place little confidence in his claims, his opinion-piece.

### Conclusions: The Abductive Claim

When considering the claim for the Qur’anic high ground (as with Khaleel) and the supernatural underpinnings for the Qur’an, the cumulative case against such claims mushrooms. That some professionals, like a medical doctor, adopt such beliefs uncritically is puzzling but not compelling. There are reasons for smart people to believe stupid things (see Sternberg, 2002). And as Sultan (2009) noted in the quote that opened this essay, the beliefs of educated people can be strange: “*Muhammad told his followers in a hadith, ‘Drink camel urine, it contains the cure for all ills.’ Muslims can graduate from the most famous medical schools in the world yet still believe that camel urine can cure illness.*” – Wafa Sultan (2009).

Khaleel would do we well to attend to the rigours of System II level thinking, virtue epistemology, critique, evidence, comparatives (like Christianity), the problems of a confirmation bias, the problems of various religious narratives, illusory thinking, and the mechanics of self deception. Bringing such issues to bear on the claims he wishes to make will either make or break the claims. I believe they will break the claims. But if not, at least there will be claims that surpass a mere opinion piece.

Khaleel would do well to adopt an openness to change. Proclaiming the pre-eminence for one's religious ideology as Khaleel (2003) does is insufficient. One must demonstrate the pre-eminence. Such a demonstration must reflect awareness of: (1) the issues with psychological thinking and confirmation biases (see Kahneman, 2003; Nickerson, 1998), (2) the issues with scientific research (e.g., Broad & Wade, 1982; Ioannidis, 2012; Tipler, 2003), and (3) the history of scientific and conceptual revolutions over the past few millennia (Feyerabend, 1975, 2011; Kuhn, 1970; van Fraassen, 2002, 2011). One is best positioned when one adopts a stance that is open to change (van Fraassen, 2002). Consider the issue: "So here is the problem for epistemology; we take ourselves to have knowledge and to know what it is to be rational. Yet we also look back and see that in our past our presumed knowledge went into crisis, and the crisis was resolved in ways that burst the very categories of our then-putative knowledge and reason. We could perhaps think of ourselves as so superior to our past that these reflections are now irrelevant—and maybe that is the natural epistemological attitude. But what if we acknowledge that we could be in that position again? ... There were times when epistemology itself needed to undergo radical changes and did so. Can we coherently acknowledge that we could be in that same position again? This problem is a touchstone for epistemology and a fortiori for empiricism, if an empiricist position is to include an epistemology in its stance (van Fraassen, 2002, p. 73-74)." One must be open to change! Hence one must be critical and tentative, proportioning belief as a function of evidences, arguments, and epistemological principles that reflect wisdom and common sense.

Khaleel would do well to attend to some Moslem critics inside Islam; for example Fatah (2008) and Manji (2003). He would also do well to attend to critics who were former Moslems (e.g., Ali, 2007, 2010; Sultan, 2009; Warraq, 2011). More important are the historically rooted critics that both Spencer (2012) and Holland (2012) draw upon. The critical attitude characteristic of a virtue epistemology (and the scientific method) would put Khaleel on far firmer ground.

The approach in this report is designed to examine claims and encourage an openness to change. The approach is layered then in terms of addressing: (1) *content specifics* from Khaleel's book, and (2) *explorations* with respect to the roots Khaleel's letdown. Change is seen as the reasonable move, when the warrant for such a move is clear!

All things considered, so far, the abductive inference to the best explanation is as follows: the Islamic evidential case fails: (1) on its own merits, (2) when considered philosophically, psychologically, and hermeneutically, and (3) when considered through a straightforward scientific lens involving contemporary evidences, arguments, theories, and accepted knowledge.

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