

Thoughts on the Epistemology of Christianity in Light of Science

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Science and religion are commonly considered antithetical. The scientific enterprise leads to rational knowledge that is the acme of human knowing, whereas religious knowledge is viewed as dogma and faith without a rational basis. This assessment has of course been quite strong in intellectual circles over the last few centuries, but it seems to be breaking down somewhat as we move into the "post-modern era". For example it has become widely appreciated that science has some strongly intuitive elements that might be characterized as a kind of faith. Nevertheless, scientific knowledge is still generally held to be the epitome of rationally based knowledge.

In contrast, I believe there are some significant parallels between Christian and scientific knowing that lie at the very core of contingent epistemology. Specifically, observation and interaction are fundamental to both Christian and scientific knowledge.

Contingent Knowledge Requires Observation

The growth of scientific knowledge clearly feeds on observation. Not that it doesn't also feed on fruitful theoretical, deductive, and speculative reasoning. The history of science since the second World War illustrates how fundamentally science is data driven. The massive investments in new technology--new data gathering--have opened up new worlds to observation. For example, our understanding of the geology of Venus was about as fuzzy as a tennis ball when we first started to observe it with the Goldstone radar antenna a few decades ago. Recently the Magellan spacecraft, which arrived at Venus in August 1990, has supplied nearly a hundred Gigabytes of imagery--covering nearly the whole surface of this geologically active planet at a resolution of 75 meter pixels. The information transmitted by Magellan lies at the core of our knowledge of Venus.

Clearly it would have been impossible to deduce the contingent geologic realities of Venus by rational deduction from first principles of physics and chemistry plus the pre-Goldstone data. Of course we could have substituted assumptions for any lacking data, but to deduce a world of the complexity and intricacy that is revealed by Magellan would require a great intellectual effort and would lead us to a fascinating Tolkien-like world, but not the Venus of our Solar System. To actually learn about Venus, for example to study the fault-bend folds of the Artemis Chasma fold-and-thrust belt, radar from the Magellan spacecraft had to interact with the surface of Venus and then the information had to be transmitted back to Earth.

Our inability to use raw deduction to extend our knowledge of the contingent universe very far beyond the data comes as no surprise to science. It is a well known principle that we must interact with a system in an appropriate way to gain new information about it. Knowledge of the contingent universe must have a strongly observational basis.

Contingent Knowledge of God Requires Observation

If Christian knowledge is at all like the scientific, as I am claiming, then it also must have a strongly observational basis. There are several ways we might imagine Christian knowing could be observationally based. For example, we might observe the universe--in light of the claim that God is the Creator--and attempt to deduce attributes of God from properties of the natural world. This is of course natural theology, a subject that has barely come through the wars of the Enlightenment with its life.¹ Clearly, natural theology has been utterly incapable of bearing the weight of Christian epistemology over the last half millennium. Any cost-benefit analysis would conclude we should not invest a lot in natural theology; superconducting supercollidors seem to be a higher priority.²

The reason for failure of natural theology is of course that observing the natural world is not a very direct and specific source of information about God. Indeed we could not begin to deduce the full richness of Christian knowledge claims from observation of Nature. Nature is not totally irrelevant, but it is not a particularly powerful probe of God. It is too indirect. To obtain very specific knowledge of God we must interact with God as directly as possible.

Consider three possible theological claims, [1] that God exists, interacts, and communicates; [2] that God exists but does not interact; and [3] that God does not exist:

Theological Claim	God's Behavior	Possibility of Knowledge of God's Existence & Character
God Exists	God Interacts & Communicates	Knowledge Possible
God Exists	God Doesn't Interact or Communicate	Knowledge Impossible
God Doesn't Exist	-	Knowledge Impossible

Clearly, it is only in the first case that we have any possibility of any richly detailed contingent knowledge of God. The second two cases--that God exists but is silent or that God doesn't exist--are equivalent and indistinguishable in their results. Therefore if we want to consider the possibility of God we must seriously consider claims that God interacts and communicates with us. Otherwise we are functionally atheists.

Thus, we are thrown into a realm that makes many intellectuals, including many Christians, uncomfortable--the supernatural. God interacting with us in recognizable ways is always in some sense supernatural. If you are uncomfortable with the supernatural then forget about knowledge of God. If you don't like electromagnetic radiation, forget about astronomy.

Saying that we must consider the supernatural to address the issue of God, does not mean that we necessarily have to suddenly open a Pandora's box of unrestrained weirdness. The minimum requirement is simply that information be transmitted between God and man in recognizable ways. For information to be recognizably from God requires that it be in some sense unnatural. Thus if we are seriously interested in the possibility of God we must be open to the possibility of such phenomena as answered prayer, God speaking in language to and through us, God acting specifically through nature, and even incarnation of God. Otherwise our lack of knowledge of God simply follows from our presupposition of excluding the possibility of God's communication and interaction.

The Stumbling Block of Determinism

Thus, it seems that information must be transmitted between God and humans if they are to know much that is specific about God. Furthermore, there must be some effect on humans or their environment for information to be transmitted from God to us. For example, when God spoke to the boy Samuel or to Augustine under the fig tree they had to hear him or at least think that they heard him. This mental activity, involving chemical reactions in brain cells and transmission of electrons, apparently was induced by God.

At least if we are to take seriously God's communication, then God induces chemical reactions and the like in our brain by some unknown specific mechanism.

Some intellectuals, including some Christians, have claimed that we live in a deterministic universe and therefore God may not interact or intervene. The only alternative--still taking seriously the notion that God communicates--is that the messages (i.e., the chemical activity) were hard-wired in deistically at the Big Bang. If we erect a deterministic communication barrier between God and man (& matter) then the only way around it is through the big bang or--in the manner of Polkinghorne--through some quantum mechanical crack.³

This strikes me as very much like continental drift in the 1920's when Harold Jeffreys argued so forcefully that it was physically impossible for rock in the interior of the earth to flow in the manner that seemed required. The mechanisms of crystalline plasticity only began to be discovered in the 1930's. In contrast, many stratigraphers of the southern hemisphere were sufficiently impressed with the detailed stratigraphic similarities between the southern continents that they accepted continental drift without having a satisfactory physical mechanism. They held that if continental drift does happen it can happen. It is a matter of history, not mechanism. Sir Harold's mistake is common enough that there tends to be a fairly decent respect for observation in science.⁴

Christian Claims to Knowledge and Robust Observational Truth Claims

Christianity claims to be observationally, historically based. Its claims include [1] that God communicates in language to and through people (e.g., Moses, Baalam, Samuel, Jeremiah, Amos, John, Ananias, etc. "Thus says Yahweh..." and "My sheep hear my voice"), [2] that God acts in history (e.g., Exodus, Song of Deborah, rescue of Jerusalem under Hezekiah and Jehoshaphat), and [3] that God has come to Earth as a man, Jesus. The first two are not strongly separated in Old Testament understanding, because the "word" (dabar) is Yahweh's effective word that goes forth and accomplishes his historical acts.

There is possible ambiguity to Christian claims to knowledge--namely, there may be a 'natural' explanation for the knowledge claim. For example could there be a natural cause of a healing, is the answered prayer a coincidence, or is the prophet just 'hearing voices'? Most fundamentally, could Jesus be just a man? Biblical literature is quite sensitive to these ambiguities. There is considerable effort devoted, for example, to 'testing the prophets.'⁵

These natural ambiguities are in many cases overcome by what might be called "robust observational truth claims" that allow the primary observers to discount the possibility of coincidence, particularly when events are not prima facie supernatural. A good example is the calling of Nathanael in John 2, outlined as follows:

1. Philip claimed that Jesus is the fulfillment of Messianic prophesy.
2. Nathanael is among those that take Messianic prophecy seriously; that is, he is open to the possibility of God's action in history.
3. Nathanael doubts the observational report of Philip, yet is willing to "come and see", i.e., it is important enough to him to make the investigation.⁶
4. Jesus tells Nathanael something that is apparently known only to Nathanael.
5. Nathanael concludes that Jesus is the Messiah.
6. Jesus indicates that further confirmatory evidence will be much stronger.

Nathanael is well justified in concluding that Jesus is Messiah because, given circumstances 2 and 3, observation 4 could only have occurred if proposition 1 were true.⁷ There is in addition further opportunity for confirmation, 6. The account, in common with many scientific truth claims, also seeks to deal directly with specific doubts by the use of credentialing arguments:

Claim: Jesus is the fulfillment of the prophets.

Specific doubt: He can't be, he's from wrong place.

Rejoinder: He can be, he knows something only the Messiah can know.

Specific doubt: There are other ways one can know--e.g., someone (Philip) told him.

Rejoinder: Philip didn't tell him. Jesus knew it before Philip called Nathanael.⁸

A number of similar robust observational truth claims are presented in the Bible, for example "the woman at the well" (John 4), "Ananias and Saul in Damascus" (Acts 9), and "Peter, Cornelius, and the believers in Jerusalem" (Acts 10-11). In each case, given the circumstances, the observation could only take place if there is a spiritual causal connection.

The case of Peter, Cornelius, and believers in Jerusalem is especially interesting because it involves a highly controversial claim to new spiritual truth that seems to contradict accepted spiritual truth. Thus, it seems appropriate that the truth claim is exceptionally robust. The structure of the incident is complex with several nested and interrelated truth claims. Without going into a full analysis, the key elements are:

1. Jesus' words, "John baptized with water, but you will be baptized with the Holy Spirit."
2. Pouring out of the Holy Spirit--speaking in tongues--on Peter and other Jewish disciples in Jerusalem on Pentecost.
3. Cornelius' vision with prediction of Peter at Joppa.
4. Sending of Cornelius' men to Joppa and finding prediction true.
5. Peter's vision and prediction of visitors from Caesarea.
6. Arrival of visitors as predicted.
7. Spontaneous anointing of Gentiles by the Holy Spirit--speaking in tongues--at Caesarea during preaching.
8. Analogy between Peter's prior vision and events at Caesarea.
9. Claim that the Gospel is for Gentiles.

Peter and the Jewish believers in Jerusalem are well justified in concluding that the Gospel is for Gentiles because given the nested circumstances of 1 through 6 and 8, observation 7 could only have occurred if proposition 9 were true.

Evaluation of Truth Claims by Observational Repeatability

We have not yet addressed the issue of verifying observational claims and truth claims based on them. It is often considered that verification in science comes from repeatability, that experimental results can be checked by redoing the experiments. In fact, few experiments or observations in science are redone. Repeatability appears to not be as important in science as is sometimes claimed. In many cases major scientific conclusions have been made based on single, unrepeatable observations. What appears to be the case is that working scientists accept experimental results by analogy. If we have done similar experiments or have made analogous observations we can make evaluations of the experiments and observations of others. We do not have to do identical experiments or redo our own experiments or observations if we are reasonably experienced scientists. Most scientists have only a very limited body of first-hand experimental or observational knowledge. We accept, or reject, accounts of experience of others based on our own analogous experience as well as on theoretical considerations. The fact that the scientific community is knit together by a mesh of overlapping analogous experience allows us to make use of knowledge that is not based on first-hand observation.

Moving to the Christian community of knowledge, we may be inclined to accept, or reject, certain accounts of answered prayer or other accounts of God's interaction and communication--whether Biblical or not--based on the extent of our common analogous experience. Commonly it has been held that miracles are untestable because of their unique, unrepeatable character. This is not a strong argument to those who have experienced miracles. If I have had an analogous experience, I am more inclined to accept an account of a

similar experience. It does not have to be an identical or repeatable experience. Peter and the believers in Jerusalem had analogous experience to Cornelius and his household in Caesarea.

Why did John include the incident of Nathanael? Why did he believe it? Why was John's account acceptable to the Church in later centuries and eventually accepted as Canon? John possibly observed the event as a third party but he was not capable of fully entering into the event in the way that Nathanael was. Jesus' reference to the fig tree may have been as inherently ambiguous to John as it is to us. Apparently only Nathanael knew what Jesus was talking about. But John had analogous experiences himself and observed other analogous experiences as a third party or heard about them, for example the woman at the well. The Church believes these accounts second or third hand, but the claim of truth becomes especially strong when we have had analogous experiences. For example the people of Sychar said to the woman at the well, "We no longer believe just because of what you said; now we have heard for ourselves, and we know that this man really is the Savior of the world."⁹

Post-NT Claims of God's Interaction and Communication

If the Biblical truth claims are indeed true it seems reasonable to think that God would continue to communicate and interact with humans in post New Testament times. Otherwise God suddenly becomes the god of deists at the end of the first century. This likelihood of continued communication and interaction need not require that God interact in identical ways throughout history; for example significant differences in God's interactions or at least man's perceptions of God's interactions are apparent over the span of the Old and New Testaments. There are substantial claims from Christian literature that God continues to interact and communicate in a variety of ways, with the Biblical text as the canonical standard of Christian experience. Nevertheless, the acts of God are always to some extent hidden, even as they were when God called the boy Samuel: "In those days the word of the Lord was rare; there were not many visions."¹⁰ In a similar way, the young man Augustine, not yet converted, was surprised to hear accounts that God still acts in recent times:

We were amazed as we heard of [God's] wonderful acts very well attested and occurring so recently, almost in our own time, done in orthodox faith and in the Catholic Church.¹¹

Later Augustine experienced the power of God for himself when he, perhaps like Nathanael, sat under a fig tree in despair over his dissipated life and heard the voice singing, "Pick up and read!" and found his soul flooded with light as he picked up and read the closing words of Romans 13.¹²

Why not now? Why not an end to my impure life in this very hour?

As I was saying this and weeping in the bitter agony of my heart, suddenly I heard a voice from the nearby house chanting as if it might be a boy or a girl (I do not know which), saying and repeating over and over again "Pick up and read, pick up and read." At once my countenance changed, and I began to think intently whether there might be some sort of children's game in which such a chant is used. But I could not remember having heard of one. I checked the flood of tears and stood up. I interpreted it solely as a divine command to me to open the book and read the first chapter I might find. For I had heard how Antony happened to be present at the gospel reading, and took it as an admonition addressed to himself when the words were read: "Go, sell all you have, give to the poor, and you shall have treasure in heaven; and come, follow me." By such an inspired utterance he was immediately converted to you. So I hurried back to the place where Alypius was sitting. There I had put down the book of the apostle when I got up. I seized it, opened it and in silence read the first passage on which my eyes lit: "Not in riots and drunken parties, not in eroticism and indecencies, not in strife and rivalry, but put on the Lord Jesus Christ and make no provision for the flesh in its lusts."

I neither wished nor needed to read further. At once, with the last words of this sentence, it was as if a light flooded into my heart. All the shadows of doubt were dispelled.¹³

Given the circumstances, Augustine, like Nathanael, was justified in believing that God had specifically communicated to him. He became a Christian.

Claims of God's specific interaction and communication appear to be widespread right up to the present.¹⁴ Indeed they are perhaps more widespread now than any time in history; both because of the rapid worldwide growth of Christianity and because of widespread communication. The Gallup poll indicates that a significant percentage of Americans claim to have had a 'religious experience'. A study of contemporary religious experience in Britain indicates widespread claims of Christian religious experience.¹⁵

Whereas claims of religious experience are widespread it seems clear that not all is from God. Substantial notice is given in the Old Testament to the problem of telling the difference between true and false prophets. The New Testament deals with the issue of discernment of spirits. Christian mystics have addressed the issue, for example St. John of the Cross and Ignatius de Loyola. Johnathan Edwards addresses this at length in his essay, *On Religious Affections*. One of the points that Edwards makes is that we can distinguish true and false affections by their fruit (as in Galatians 5).

I would like to end this essay with a recent religious experience--in no way spectacular--that has borne eternal fruit. It is an experience like those of Nathanael and Augustine.

A woman--a bright young graduate student from China--gave a testimony last Thanksgiving at a church dinner. She said that a number of 'experiments' convinced her of the truth of Christianity and she presented two of them. [1] She prayed that her younger brother who had a problem of not working hard in school would change. Then she got letters from her father saying that her brother had changed. [2] She had done very well in the university in China but never had many friends. She felt that she wasn't pretty. Coming to United States she still felt she wasn't pretty and didn't have many friends. She went to a dinner or party welcoming new Chinese students held by a church. There also, not many talked to her and she again began to think that she wasn't pretty. As she was thinking this a small girl came up and said something like, "Auntie, you are so pretty." This made her think that God knows her innermost thoughts. She became a Christian.

1. It has been shown recently that the ontological argument for the existence of God, thought to have been disproved by Hume and Kant, is still very much alive. For a brief overview of this issue see Diogenes Allen, *Christian Belief in a Post Modern World*, Westminster/John Knox Press, Louisville (1989).

2. Indeed we are quite willing to spend money to build instruments to interact with the universe to obtain information about it, whether it is \$10 for a thermometer, \$600,000 for an electron probe microanalyzer, a half billion for the Magellan spacecraft to Venus, or as yet unknown billions for the superconducting supercollidor. We have to interact with the universe in suitable ways to obtain new information about it.

3. For example, John Polkinghorne, *Science and Providence: God's Interaction with the World*, Shambahala Publications, Boston, (1989).

4. Jeffreys not only pronounced in the 1920's that continental drift was impossible, but lived so long that he should have seen the error of his ways but didn't. Jeffreys died in 1989. Nevertheless, Jeffreys made many fundamental contributions to geophysics, planetary science, and mathematics.

5. There seems to be a fairly sophisticated understanding of spiritual authenticity in the Bible. For example in the NT, especially John, there is a great deal of emphasis on 'testimony'. Testify seems always to be 'testify against' or similar accusatory legal meaning in the OT, but in the NT the meaning is quite different, generally a witnessing to observationally based spiritual knowledge. The concepts of legal authenticity appear to have been taken over and applied widely to matters of spiritual authenticity in a relatively direct

way. Another example is that the Deuteronomic requirement of two or three witnesses in legal matters is applied in the NT, initially by Jesus and later by the Church, to spiritual authenticity.

6. We don't test every odd-ball scientific claim; it has to be worth the investment of time and money.

7. cf. chapters 12 and 13 of Frederick Suppe, *The Semantic Conception of Scientific Theories*, Univ. Illinois Press (1989).

8. The main specific doubt that is not dealt with in the account is the doubt that the account might be false. This is a more pervasive issue that is dealt with elsewhere in Biblical literature; we will deal with this issue indirectly below in the context of repeatability.

9. John 4.42.

10. 1 Sam. 3.1

11. 8.14 in Saint Augustine, Bishop of Hippo, *Confessions*: trans. with introduction and notes by Henry Chadwick. Oxford University Press, (1991).

12. While writing this I thought I should look up Augustine, but I didn't have a copy of his *Confessions*. The next day (Sunday, December 29, 1991), when my daughter went to the library in the afternoon, I thought of going with her or having her look for the book, but then didn't, thinking the Lord didn't want me to go. Later in the afternoon she came home from the library with a stack of books, Augustine's *Confessions* among them. She had not known I had been thinking about Augustine or wanted the book. I don't recall her ever having interest in such a book. She had looked up Augustine at the library; she said she didn't know why. My impression was that God did all this.

13. *Confessions* 8.29.

14. Some Christian groups in recent centuries have explicitly or implicitly concluded for a variety of reasons that God no longer continues to act. These ideas are outside the mainstream of orthodox Christianity. For example, some liberal scholars, accepting the arguments of Hume, have denied the possibility of God acting in history and have attempted to demythologize the Bible. Remarkably, some conservative scholars have taken the same arguments of Hume and argued that miracles are impossible in post NT times (for these, Hume's arguments somehow become invalid within the wall of Biblical times). Colin Brown has presented strong historical evidence that the conservative Protestant attacks on miracles began essentially as anti-Catholicism (Colin Brown, *Miracles and the Critical Mind*, Eerdmans/Paternoster, 1984).

15. Sir Alister Hardy, *Spiritual Nature of Man: A Study of Contemporary Religious Experience*. Oxford, (1979).