

## **Part I**

### **A Physicist Considers Spirituality**

# Chapter 1: The Nature of Spirituality

We have entered into an era of spiritual disrepute. Perhaps following Marx, Richard Dawkins (“The God Delusion” [4]) and Christopher Hitchens (“God is Not Great” [7]) characterize religious myth as a haphazard collection of politically convenient rhetoric that cannot have a source in physical reality.

Now men like to change things. Thermodynamically, the easiest way to change something is to break it. Unfortunately, I have the sense that Dawkins and Hitchens are looking for something more. If something is broken already, what is the next step? Euthanasia?

They might well argue that religion is broken. From a survey of pronouncements in common currency, we might conclude that in too many places, religion has suffered under hands that lack either the moral integrity or the managerial skill to safeguard the trust of the faithful. Among the most painful testimony I have heard are:

- The denial of the Holocaust by the Iranian Mullahs.
- Catholic prelates allowed their brotherhood to be infected by pedophiles.
- Radical Islamic Imams celebrate suicide bombers as martyrs to the faith.
- Hindu tolerance has been recast as nationalism in Gujarrat and elsewhere, leading to ethnic purges.
- conservatives in America allowed the avaricious to use the sanctity of the fetus as political cover for economic policies that are destroying the middle class.

But at the heart of religious practice are millions of men and women that sacrifice their right to hold property, live simply and wrestle every day with the needs of their communities. They comfort and tend to the sick. They speak truth to power in defense of the rights of the poor. They organize the distribution of relief during emergencies. And they give moral counsel to those making critical life choices. At the core of their motivation to serve is their experience of spirituality.

The great religious scriptures are humanity's best attempt to express the mysterious power of spirit. But how valuable are they as a record? Looking at the four Christian Gospels, it would be hard to argue against the existence of inconsistency. Does that mean that they must be cast aside before we can work to secure a future built upon justice?

It is thus reasonable to ask, before proceeding on our study of spirituality, just how much myth I propose to break off and swallow as truth. My approach may seem a little odd: I'll put forth the strongest arguments supporting disbelief.

## ***Myth as Pre-Scientific Learning***

At the near edges of disbelief are studies that could be characterized as “pseudo-scientific”. Alchemy and astrology fall into this category. Alchemy evolved into chemistry, and so gained respectability.

Astrology grew into astronomy, and is rationalized to a certain degree by the change in biochemical environments experienced by fetuses conceived at different times of the year. In different seasons, the mother's skin receives different amount of sun. Diet also varies dramatically. These are two examples of seasonal variations that affect the biochemistry of the mother. Those differences change the biochemistry of her developing child, and consequently the behavior of the child after birth. Astrology can be characterized as a rationalization of those variations.

Astrology and alchemy are examples of spiritual practices that we can *explain away*. Their ancient practitioners are understood as people involved in diligent study without proper tools. Lacking microscopes and the Periodic Table of the Elements, they were left to correlate the behavior of their subjects with grosser observables, such as the shapes of crystals, the positions of the stars and the phases of the moon.

At least, that is true in their modern formulations. Astrology on the funny pages is comfortably free of the macabre and frightening demonology of the Middle Ages. How should these imaginative flights play into a rational study of matter and personality?

The practice of engineering in ancient cultures also has produced architecture that we struggle to explain. Given the materials available to the builders, it seems impossible that they could have achieved certain results. While no mythos asserts the centrality of spiritual practice in the accomplishment of such great projects, the Incan ruins and the stone heads of Easter Island wordlessly beg for explanation.

### ***Myths Founded in Psychological Error***

Faulty and incomplete understanding of the world is one of three common ways of explaining away records of spiritual phenomena. Surprisingly, the second broad thread of spiritual history grew out of attempts to wrestle with that very problem. Our own senses can limit our ability to perceive reality. A simple example: the world looks different when we put on rose-colored glasses. Recognizing that control of our perceptions is important to the growth of understanding, philosophers (perhaps earliest in India) were led to a study of the barriers between our minds and accurate perception of the world.

Mastery of those studies is claimed to produce powers of translocation ("spirit walking"), clairvoyance (seeing things at a distance), precognition (knowing the future) and telepathy (knowing another's unspoken thoughts). The development of these skills is related to opening of "energy centers" that attach to specific locations in the body. Some people report the ability to see the flow of energy from those centers as "auras".

Perhaps the most extreme of the "mental powers" would be the process of reincarnation, in which a mind transfers at death from one body to another.

The challenge in subjecting these claims to objective analysis arises from the complexity of the mind itself. Given that neurologists still lack satisfactory models of such basic capacities as consciousness, memory and thought, there is a lot of wiggle room to explain away "higher senses".

These explanations take different views of the integrity of spiritual practitioners. Precognition, for example, can be considered a simple disorder of memory, where the practitioner confuses the sequence of sensation and realization. Looking back on an accident, it is frequently the case that different observers will report differing sequences of events. This may be due to sensory focus: two friends walking down the sidewalk may witness the same accident, but one was looking at an attractive model while the other was thinking about a difficult conversation at work. The first might be immediately aware of the interruption of their visual experience by the careering taxi-cab, while the other would be conscious first of shouting pedestrians. Only after processing the interruption might the brain be free to analyze other sensory input, resulting in different recollections of the “order” of things.

The more time between the experience and recall, the more likely such confusion is to occur. In this explanation, “precognition” is simply an honest confusion of memory.

A more cynical understanding is that precognition is mere hocus pocus. The practitioner “predicts” the future using the techniques developed through science, economics or sociology, but publishes them as communications from “spirits”. The ploy allows the “medium” to prey upon the gullible, particularly those unable to master his practical predictive skills. As Arthur C. Clarke once put it, “Any sufficiently advanced technology is indistinguishable from magic.”

The least charitable explanation of precognition is simple fraud. Unless we follow the practitioner around twenty-four hours a day, seven days a week, there is the possibility of collusion. Obviously politicians and financial experts pass information to influential leaders to guide public opinion. The population served by mediums could be particularly susceptible to such manipulation. Exploitation of that susceptibility has almost certainly occurred.

The common medium packages this process as a form of paid entertainment, generally with the tacit support of the audience.

Variations of these explanations apply to every one of the mental powers listed above. With axioms concerning the sequential march of time and the proximity of matter and energy, modern physics holds that the mental powers are theoretically impossible, and so an explanation through psychological or moral error is demanded. Trained in modern physics, I myself was quite fond of such arguments, and subscribed to the view among scientists that only those without the benefit of higher learning could subscribe to a belief in mental powers.

### ***Myths as a Method of Social Control***

The third of our explanations for the historical record of spirituality draws upon the psychology of socialization. In this model, spiritual records are understood as exaggerations that produce valuable social archetypes.<sup>1</sup>

---

<sup>1</sup>In this line of explanation, I will pass by the “telephone line” theory of exaggeration through errors of transmission from generation to generation. That should result generally in incoherence, rather than a systematic tendency to exaggeration.

How might such archetypes arise? Consider a rather mundane story, such as the murder of a liberal social philosopher from Galilee: those interested in building support for social change would be inclined naturally to exaggerate his qualities in order to differentiate him from the common criminal or revolutionary. A similar psychology applies to oral traditions in which the skills of the hunt are communicated through story and dance. In order to separate the essential from the trivial, the qualities of the hero-hunter may be exaggerated. The exaggeration also serves to motivate successive generations of listeners to strive for ever greater excellence.

Exaggeration also has political utility. When power is inherited, exaggeration may be expedient when a weak heir is challenged. The heir may claim legitimacy on the basis of the accomplishments of the lineage, which would be expected to produce another hero in future generations. Exaggeration of the accomplishments of the line therefore builds political legitimacy in the public mind, ultimately justifying tyranny in defense of the ruler.

In the modern age, influence is more important to our survival than our ability to control nature, and so the methods of socialization have been handed to the entertainment industry. They build and market archetypes that trigger strong emotional responses in an audience. Unfortunately, the power of archetypes to awe and inspire diminishes as we hear the story again and again (much as the impact of psychotropic drugs diminishes over time). To keep audiences coming back, the production process must reach towards ever increasing heights of sensation. Ultimately, the stories lose their connection with our concrete physical and social needs. The intellectual and moral weight of our entertainment might be expected to decrease over time.

This tendency towards sensationalism has drawn the masters of the craft back towards many of the more bizarre manifestation of myth. Vampires, lycanthropy (people changing into animals) and mythical beasts (unicorns and dragons) are common mythical references, and appear more and more frequently as entertainment. The serious social commentator, however, cannot help but be concerned that the visual fascination of their modern cinematic representations distracts from the moral message of the original stories.

We are still left, however, with the problem of the distance of time. We weren't there when the original stories were crafted. That telling reflected some combination of psychological, physical and spiritual truth. Can we assume that the last had no part in the experience of the originator?

### ***Seeds of Spiritual Fact***

Now, with that inventory behind us, the reader should ask where I plan to draw the line between spirituality and myth. Well, the simple answer is "I won't". We're going to assume that every manifestation of spiritual history has some basis in physics previously not understood, and see where it leads us.