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COMMENTARY

Response to Eric M. Riggs

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As I read through Eric M. Riggs' comments on my essay "American Indian Spirituality, Traditional Knowledge, and the 'Demon-Haunted' World of Western Science," I was more taken by the things we agreed on than the areas on which we disagree. Riggs acknowledges the "all too common transgressions made in the name of science or improved technology." He also admits that "science tends commonly to carry with it a sense of invulnerability, a sense of possible omniscience, and paradoxically a kind of narrow-mindedness." These shared observations pretty much form the foundation of my entire essay. We do, however, disagree on the extent and depth of the conflict between science and spirituality, as well as the position that Carl Sagan assumed on such matters. It is to these disagreements that I will direct my response to Professor Riggs.

Riggs states that "the only conflict between science and spirituality comes from those at the extremes of each." He may be right. I believe, however, that defining extremism is a rather nebulous proposition which depends largely on the person making that judgment. In other words, if someone disagrees

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with us on an issue we feel strongly about, we tend to view and label that person an extremist. Moreover, extremism in itself is not necessarily a bad thing. I would argue that the forces which resulted in much, if not most, of mankind's progress were initiated by people others considered to be extremists. The key is to have someone else who ultimately finds the common ground.

Not long after Carl Sagan's death I watched a television special which reviewed his life and work. Included in this program were a number of segments taken from his popular series *Cosmos*. I watched these clips with great interest and once more, as I had many years earlier, found myself almost spellbound as Sagan presented the wonders of the galaxies, the excitement of space exploration, and, in general, a scientific view of the cosmos delivered in a manner only he was capable of. As I noted in my earlier essay, I've always been something of a Carl Sagan fan. In the past ten years or so, Sagan had, for various reasons, largely dropped out of public light, and it was not until the publication of his last book, *The Demon-Haunted World: Science as a Candle in the Dark*, that I had given much recent thought to him. Sagan possessed a youthful enthusiasm, boundless energy, and a magnetic personality. Like all great people—and Sagan was a great individual—he was passionate about life and about contributing toward the betterment of our world through his work in astronomy and space science. I don't profess to be an expert on the life of Carl Sagan, but I would guess that early in his career he was seen as something of a maverick by the mainstream scientific community. In time, at least in my mind, Sagan *became* the mainstream scientific community. To me, rightly or wrongly, Carl Sagan came to represent both the good and bad of Western science, and scientists in general. As Professor Riggs rightfully points out, Sagan was a product of his time. He stood at the forefront of a generation of scientists whose accomplishments were unprecedented and who would change forever our view of the world and mankind's role in it all. I would agree with Riggs that optimism was a motivational force for this generation of scientists. Unfortunately, this optimism transformed over time into arrogance. I believe that it is this spirit of arrogance which forms the foundation of Sagan's *The Demon-Haunted World*.

In my earlier essay, I rather bluntly accused Sagan of ethnocentric patronization for the manner in which he wrote of the traditional tribal discovery and use of quinine, and for the manner in which he dismissed the sacred knowledge utilized

by tribal hunters, specifically the !Kung San people of the Kalahari Desert. Riggs feels that I am guilty of grossly misinterpreting Sagan's position on these matters. Consequently, I have gone back and reread several times the questionable passages in *The Demon-Haunted World*. After doing so I am convinced that my first interpretation of Sagan was accurate. Nowhere in Sagan's writing can I find even a grudging acknowledgment that sacred knowledge possesses validity and is worthy of serious consideration. Sagan's viewpoint on this matter appears quite clear. While tribal people like the !Kung might possess valuable traditional knowledge, this knowledge is merely a product of observation and experience—little more than a mirror image of the scientific method—and not of sacred or supernatural origin to any degree.

Riggs, like Sagan, concedes that there has been a significant Native American contribution to science. Specifically, he refers to the many medicines that tribal people have historically used and which today form an important part of the pharmaceutical industry. He also makes reference to the less known tribal knowledge and practices in the area of fire management. He writes that Native cultures "have long known that fires are normal and such should be allowed to burn." He might have added that various tribal cultures not only allowed natural fires to run their course, but in some cases initiated "controlled burns." Riggs concluded this section by stating that "whatever the spiritual meaning or interpretation of these fires, the native cultures understand that they are not just destructive; they are necessary." It is disappointing that Professor Riggs does not express his personal opinion on the spiritual meaning and application to early Native American fire management. Herein lies the problem with most scientists, the refusal to even consider a source of knowledge that lies outside the realm of their own personal and professional reality. While they acknowledge that something unusual stands before them, they cannot quite bring themselves to consider a nonscientific origin for this phenomenon. In contrast, it is my position as a nonscientist that there is far more to traditional knowledge and the application of that knowledge than merely a "spiritual interpretation," and that in many instances, perhaps including early tribal fire management, there exists a sacred or supernatural origin upon which observation and experience are then applied to bring forth the desired end result.

Another example given by Professor Riggs is the "rain

dances" of the various Southwestern Native American tribes. Riggs writes: "These dances were conducted as a request to supernatural spirits for rain, and as such fulfilled a spiritual need. I'm sure these rituals regularly provided hope and common resolve for the tribe, but they were not expected to produce predictable, tangible results." I believe that Professor Riggs is mistaken in his interpretation as to the purpose of these rituals. Predictable, tangible results *were* exactly what was expected and usually realized. Indeed, the very survival of the tribe depended on these results. For a number of years I regularly attended the Hopi Snake Dances, which are held in the high mesa country of northern Arizona. In the secretive rituals which led to the final public "performance" on the ninth day, snakes were collected, brought into the kivas to be sung and prayed over, danced with, then ultimately released in the four cardinal directions to serve as messengers to the deities requesting rain. This ceremony is held the same time every year as determined by the lunar calendar. To the best of my knowledge, no Hopi priest has ever felt the need to consult a meteorologist from Accuweather to confirm the tribe's ceremonial plans, yet the desired results are usually forthcoming. I attended this ceremony for four consecutive years, and on every occasion it began to rain on the short drive home. In contrast, I've lost count of the number of snowstorms I have driven through while at the same time listening to radio reports of a 5 percent chance of precipitation.

Professor Riggs suggests that "our popular culture today is drifting from rational thought." Sagan shared this view and indeed it was his concern over this perceived problem that in part motivated him to write *The Demon-Haunted World*. I'm afraid I disagree with them on this issue. The concept of rational versus irrational thought, as in the case of extremism, lies largely in the eyes of the beholder. Since Professor Riggs is presenting a scientist's response to such matters, I assume that when he refers to rational thought he is referring to ideas which ultimately can be tested by the scientific method. When considering Professor Riggs' comment, the first thing that came to my mind is the current fascination our society, our popular culture if you will, seems to have with the possibilities of so-called intelligent extraterrestrial life. This interest is probably best reflected in the number of "alien invasion" films released during the past couple of years, and in the popularity of television programs such as the *X-Files*. As I noted in my earlier

paper, I regularly watch the *X-Files*, and I admit to having seen my share of the alien invasion movies. I think that in this respect I am pretty typical of most members of society. I may not necessarily, at this point, believe in the existence of extraterrestrial life—in fact I don't, but considering the large number of reported "sightings," I am at least keeping my mind open to the idea such life *might* exist. I would guess that Professor Riggs considers such thoughts as being irrational. However, it is interesting to note that Sagan, although he devoted a good part of *The Demon-Haunted World* to debunking the idea of extraterrestrial life, himself entertained such irrational thoughts throughout much of his career.

The second thing that comes to my mind in regard to Professor Riggs' comment regarding the rational, is the issue of alternative medicine and holistic healing practices. This includes nonscientifically-proven medicines, traditional treatments such as acupuncture, and even the spiritual power of prayer. All of these have been categorically rejected by Western science despite a mountain of evidence supporting their effectiveness. Part of the problem is, as Professor Riggs points out, we are a nation controlled by secular institutions, such as the American Medical Association. Fortunately, there exist enough irrational people to pressure the lawmakers, who in turn pressure institutions, such as the American Medical Association, to open their minds and explore other possibilities and other realities.

Professor Riggs also calls me to task for my comments regarding the spirituality, or more correctly the lack of spirituality, among most scientists. In doing so he counters with statistics from a poll showing that "39.3% of working physicists, biologists, and mathematicians have a personal god." To begin with, 39.3 percent is not exactly a ringing endorsement of the spirituality of scientists. More importantly, it is quite common in our society today for people to claim to be spiritual, then go on day to day living out both their personal and professional lives in a manner totally void of spirituality. Most people today, and this may be especially true for scientists given the very nature of their profession, live in a compartmentalized world in which they are able to perform their daily secular tasks with no thought whatsoever of the spiritual ramifications of their actions. The resulting lifestyle and value system thus enables, to repeat an example I gave in my earlier essay, a scientist at the University of Pennsylvania to pulverize monkey heads throughout the week, attend church on Sunday, and honestly

respond to a survey by stating that yes indeed he does have a personal god. Consequently, as Professor Riggs rightfully states, "Many scientists find no necessary conflict between the advance of science and their own spirituality."

I wholeheartedly agree with Professor Riggs that science and spirituality must not be at crossed purposes. I am, however, not quite as optimistic as he is that the coming together of these two realities is close at hand. While it is true that increasing numbers of scientists are willing to consider alternatives to their discipline—Professor Riggs himself being an excellent example of this new generation of enlightened people—too many prejudices and barriers remain. My own greatest concern is over the limitations Western science continues to impose upon itself. Professor Riggs writes that "Science is interested solely in how and why things work, not why they exist or what their underlying meaning may be." He goes on to state, "Science can never answer a question such as, 'Why does the universe exist?', because there is no test for this." Considering the fact that science has "progressed" to where it can now clone advanced life forms in a laboratory, are such self-imposed limitations any longer acceptable? I believe that we have reached the point where western science *must* look beyond that which is tangible and measurable. Consequently, Western science has also reached a point where it *must* turn to spirituality and its accompanying sacred knowledge, including that offered by traditional Native America, for future guidance.

In closing, I would like to sincerely thank Professor Riggs for his comments, and the editorial staff of the *American Indian Culture and Research Journal* for the opportunity to respond. It is only through such dialogue that we can hope to find the common ground which surely does exist between science and spirituality.