

Toward a Rapprochement of Religion and Science

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Ev'ry gambler knows that the secret to survivin'

Is knowin' what to throw away

And knowin' what to keep

Kenny Rogers, "The Gambler"

Abstract

In this article we will explore the domains of religion and science as areas of human activity and understanding. Where are they independent of each other? Where do they overlap, with the resulting opportunity for conflict? How might this conflict, when it occurs, be most productively dealt with, e.g. in ways that benefit both religion and science? The article begins with several currently popular viewpoints on the relationship between religion and science, all mutually (and dramatically) inconsistent. The next major goal will be to make it comprehensible that people living on the same planet could hold all these views, and to do it without putting down the holders of any of those views. Reaching this goal will be facilitated by the resources of Descriptive Psychology (DP), so the exposition will detour through a sketch of what DP is and why it is useful for the task at hand. With the above analysis in hand, the limits of religious pluralism and the overlaps between religion and science will be explored. I hope to convince the reader that (a) the apparent conflict between religion and science, as represented in the popular press, is less serious than might be imagined at first glance, and (b) some of the perceived problems boil down to finding

the protocols necessary for co-existing in an atmosphere of religious pluralism -- a problem that stands before us independent of any collisions between religion and science. The article will end with what I believe to be the bottom lines for what scientists and religious people must throw away in order for productive dialog to occur, and what they must keep to maintain their integrity .

Toward a Rapprochement of Religion and Science

I recently read a book review (Gopen, 2001) in which Dobzhansky's *Genetics and the Origin of the Species* (1937) and Schrodinger's *What is Life? The Physical Aspect of the living Cell* (1944) were put forward as examples of works that succeeded in leading scientists from warring camps to an appreciation and ultimately use of each others' methods. I would be delighted if someone would write a book that did the same for science and religion. However, in the wake of a failed attempt by Steven Jay Gould (1999) and a spectacularly failed attempt by E. O. Wilson (1998), I do not believe that the current states of either science or religion are ready for such a book. I do, however, think that some of the obstacles to such a book are ready to be breached, and that is my intention here (and the reason for "toward" in the title).

The last two books mentioned above were written with a popular audience in mind: so is this paper. Professional theologians and historians of religion concern themselves with finer points than those addressed here. I hope to convince the reader that (a) the apparent conflict between religion and science, as represented in the popular press, is less serious than might be imagined at first glance, and (b) some of the perceived problems boil down to finding the protocols necessary for co-existing in an atmosphere of religious pluralism -- a problem that stands before us independent of any collisions between religion and science.

Here is the program. To anchor the discussion in something real, I will sketch several currently popular viewpoints on the relationship be-

tween religion and science, all mutually (and dramatically) inconsistent. The next major goal will be to make it comprehensible that people living on the same planet could hold all these views, and to do it without putting down the holders of any of those views. Reaching this goal will be facilitated by the resources of Descriptive Psychology (DP), so the exposition will detour through a sketch of what DP is and why it is useful for the task at hand. Natural concerns about the neutrality and relevance of DP will arise for both scientists and religious people, so a section will be devoted to laying these to rest.

With the above (relatively value-free) analysis in hand, I will start putting some values back into the picture with the major goal of exploring the limits of religious pluralism (since this is a substantial political issue in the US these days). This will entail a brief discussion of some religious universals. The paper will end with what I believe to be the bottom lines for what scientists and religious people must throw away in order for productive dialog to occur, and what they must keep to maintain their integrity.

1. Five Positions

1.1 *Hard Determinist*

The essence of this position is that human beings are machines the motion of whose parts is determined entirely by deterministic (or probabilistic) physical laws, that free will is an illusion, and that the existence and sole value of religion -- as a set of beliefs and practices -- can be explained by its potential for enhancing survival. (Religion is just another product of persons as predetermined machines.) This position is well-explained in the chapters by Holbach (2002) and Honderich (2002) in *Reason and Responsibility* and by Richard Dawkins in *The Selfish Gene* (1998).

1.2 *Naturalist*

According to this view, pretty much everything that goes on in the world around us is determined by deterministic (or probabilistic) physical laws, but human beings somehow have freedom of choice and moral

responsibility. Furthermore this responsibility includes the crafting of religions to help them live good lives. Divine assistance in this crafting is excluded. These religions should take seriously the stories that science gives us concerning the origins of our universe and our species. (Religion and science are two of many important creations of freely responsible persons living in a natural world that includes them.). This position is put forward eloquently by Ursula Goodenough in *The Sacred Depths of Nature* (1998).

1.3 Non-Overlapping Magisteria

This position is taken in one book: *Rocks of Ages*, by Steven Jay Gould (1999). It holds that languages, concerns, and methods of religion and science are so disparate from each other that there is no possibility of either conflict or cooperation between them. (Religion and science are parallel and non-overlapping, totally different perspectives, neither of which trumps the other.) The main features of this separation will be discussed later.

1.4 Mainstream Western

I first heard this position given explicit description in a talk by Norbert Samuelson, a scholar of Judaism on the faculty of Arizona State University (Samuelson, 2001). He described it as the classical position taken by Judaism. I am identifying it as Mainstream Western because it seems to me nearest to consensus among Americans and Europeans. The ideas are: Much of the knowledge that is important to our behavior as moral human beings -- much of our guidance in right living -- does not come to us through science, but through other sources, including divine revelation, e.g. the Ten Commandments. The instruments of divine revelation are nevertheless fallible human beings. Science (and empirical methods in general) should be brought to bear as a check on the claims of those human beings. (Science provides a reality check on religion in the areas where their subjects do overlap, and may trump religious practice where there is a conflict.) Of course, this sort of check has been in operation for professional theologians for as long as theology has existed.

1.5 Fundamentalist

There are fundamentalists of many persuasions, but they have some characteristics in common. As source of the knowledge by which the fundamentalist lives, divine revelation, as preserved in scripture read literally, carries far heavier weight than the discoveries of science (or any other purely human process). Those discoveries are welcome as long as they do not conflict with scripture, but when they do, it is the discoveries of science and not the scripture that have to give way. (Scripture is the source of truth, and trumps science.) Furthermore some fundamentalists would redefine scientific method in such a way as to make their conclusions products of scientific method; more about this later.

2. What is Descriptive Psychology?

It would be possible to present all the arguments of this article without revealing the underlying logical resource that led me to many of them. But there is something to be gained by adding some length, and some exposition, in order to reveal portions of that resource. I hope that readers of this paper will be intrigued enough by the use of Descriptive Psychology here to look into some of its literature, and to use it in other contexts. Here is a teaser: The Descriptive Psychology maxims -- the basic rules for discourse among persons -- are presupposed by all philosophies. But each philosophy presupposes a great deal more, peculiar to itself, as well. Therefore Descriptive Psychology can provide a common basis for comparing philosophies.

Discussing philosophical positions as disparate as those listed above presents a substantial problem in finding a neutral place to stand. Professor Peter G. Ossorio (1966/1995) confronted a similar problem in the 1960s when comparing and contrasting available psychological theories. He found that each theory contained pre-empirical commitments that determined what would count as an empirical result, and which made the theory incommensurable empirically with other theories having different pre-empirical commitments. For example, Freudianism included concepts of id, ego, and superego as organizing principles for facts about human behavior, while Behaviorism started off with different basic con-

cepts -- stimulus-response, operant conditioning, etc. Ossorio's response to this situation was to separate the process of creating pre-empirical commitments from that of theorizing, and to create his own set of pre-empirical commitments, a sort of logical minimum, that would have to be presumed by *any* reasonable theory. These commitments took the form of "maxims", which look a little like mathematical axioms, but are better thought of as protocols or linguistic constraints on how we talk and write about human behavior (Ossorio, 1982/1998, Ossorio, 1971/1975/1978). For example, consider the very simple Maxim B2 from *Place* (Ossorio, 1982/1998): "If a person wants to do something, he has a reason to do it." This maxim constitutes a promise to provide some explanations ("reason") of behavior in terms of **motivations**("wants").

Descriptive Psychology (hereafter DP) refers to Ossorio's maxims, some related descriptive formats, and to the competence in using them that was developed by Ossorio, his students and colleagues, and scholars from disciplines where DP has been applied: computer science, applied linguistics, and theology. Part of Ossorio's genius was to see that the world and person's behavior was already coherent and that the task was making that coherence explicit and systematically related. In DP he accomplished this with the articulation of four fundamental concepts - *intentional action, individual persons, language, and the world* -all of which are essential for describing and understanding human behavior. In some respects, DP has the general flavor of common sense arranged in a tighter logical structure. I believe that this logical structure is tight enough for DP to play the same role for the social sciences that mathematics does for the physical sciences. DP is represented, albeit not very prominently, in the open literature. (Bergner, 1993, 1995; Shideler, 1985, 1988, 1992) I plan to use it here to give me that needed neutral place to stand in order to understand the five contrasting positions.

For the most part, I will not expound on DP, but simply use it. This is in line with the observation that protocols, in contrast with facts, are not eligible for truth value, but are valued according to their *usefulness*. Usually my use of DP will merge seamlessly into common sense arguments, but occasionally it will have a surprising impact. In those cases I

will offer an exposition or a pointer to the literature or both. The first of those expositions is coming up now.

Since the first priority for DP was the description of human behavior, it takes the words “person”, “intention”, “behavior”, “significance”, and many others, as logical primitives. They are not *defined* via simpler terms, but *articulated* by delineating their relationships to other terms, as wants and reasons are related in Maxim B2: “If a person wants to do something, he has a reason to do it.” (Ossorio, 1982/1998). This is similar to how primitives are dealt with in symbolic logic, and it is the reason why maxims play a role similar to mathematical axioms. This approach may not sit well with the physical scientist, who is accustomed to different and much smaller sets of logical primitives, for example Euclid’s axioms for plane geometry. But nothing is lost in descriptive power, since all the physical scientist’s primitive concepts are in there too (Ossorio, 1971/1975/1978, pp 38 - 70) although not all of them may be primitive in DP, and they may hold a different place in the logical structure than the physical scientist was expecting. The advantage for this exposition, and for behavioral science in general, is that with DP many things can be described much more succinctly and informatively and in language much closer to the vernacular. And, more importantly, useful descriptions can be given that have no practical translation into the language of physical science at all.

2.1 What difference does DP make?

Most experimental psychologists and quite a few philosophers take an approach to the pre-empirical commitments of behavior description very different from DP. They take it that the only legitimate forms of explanation are those imported from neurophysiology, cognitive structures, and perhaps behaviorism. For them, concepts like intention and significance inhabit a kind of limbo where they await precise definition in neurophysiological terms. This pre-empirically commits them to determinism, since the only forms of explanation available to them are in terms of deterministic processes. And this leads to all kinds of debates about whether freedom of choice could exist and if so how. Arguments over pre-empirical commitments are far more difficult to settle than those over empirical

results (which are either verified or falsified): disputants have to consider the whole frameworks of commitments, and appraise their relative worth on pragmatic grounds.

DP provides an alternative that preserves the necessity of having some clear set of pre-empirical commitments delineating the range of possible empirical facts, while avoiding the downside of a pre-empirical commitment to determinism. It widens the window on what constitutes an explanation to include explanations in purely non-physical terms, as one would naturally use to explain why, in Shakespeare's *Othello*, Iago, passed over for promotion in Othello's army, went to such lengths to turn Othello against his wife Desdemona. At the same time, it places no obstacles in the way of empirical investigation of any correlations between neurophysical events and behaviors commonly described non-physically (intentions, emotions, ...). In fact, it may make such research better focused by relieving it of the load of suggesting pre-empirical commitments (to get the non-physical concepts out of limbo), and leaving it entirely empirical -- showing the measured correlation is consistent with an existing DP articulation of, say, an intention or an emotion. In any case, an important reason for using DP in this article is to avoid committing to reductionism and determinism pre-empirically.

2.2 What Reservations Might Scientists and Religious People have about Descriptive Psychology?

For scientists, a main concern might be that DP is so person-oriented, while science is supposed to focus on what is "out there" beyond the personal. A mild-mannered answer, for the purposes of this article, is that we are not so much concerned about the *content* of science, but with the interactions of what scientists do with what other people do, and for this, DP is entirely appropriate. A more aggressive answer is that conventional scientific language is deficient in resources for talking about persons as a subject matter, about scientists (as persons), and about scientific principles as human creations, while DP has plenty of resources for talking about not only persons, and scientists as a special case of persons, but also what is out there beyond the person .

Religious people may have a reservation similar to the scientists about the person-orientation of DP. In this case the reaction might be: “My religion is about God. I don’t want the language used to be biased away from God and toward mere humans.” The answer here is roughly the same: we are concerned in this article less with theology and more with the relationships between different communities; for this DP is well-suited. And here too there is a more aggressive possible answer: Everything that we know about God comes through persons of one sort or another, and our language for talking about the impact of that knowledge better be rich in descriptive resources for human behavior and for the characters of those persons. Furthermore, DP provides ways of talking that are informative, yet neutral with respect to the various religions (and science).

3. How Can The Five Contrasting Views Exist?

There is an old teaching story about five blind men who approached an elephant. One, who felt the trunk, reported that an elephant is like a large, strong, snake; the second, feeling the tail, reported that it was like a broom; the third, feeling a leg, said it was like the pillar of a temple, while the fourth, feeling the side contended that it was like a slightly curved wall, and the fifth, who felt a tusk, said the elephant was like a stout spear. The homely wisdom embodied in this story is that your appraisal of a phenomenon depends on the angle from which you approach it, your perspective on it. So perhaps an examination of differences in perspective might shed light on how those five views could be so disparate. And we might look at different perspectives on the two parties to the relationship, religion and science. We start by driving a stake into the ground regarding each of those parties.

3.1 What is Science?

DP, with its roots in the description of human behavior, gives an immediate first step: Science is what scientists do: propose theories, design and conduct experiments, analyze data, publish papers, review papers, teach students, supervise graduate studies, attend conferences, engage in scientific arguments, and so on. But for most of us, this answer leaves more to be said, something like “but what are they doing by doing all

those things?” That leads us to another concept from DP, the significance series. The significance of an action is a different action: the answer to: “What am I doing by doing that?”. For example, I am sitting and typing at a keyboard, by doing that, I am writing an article on science and religion, by doing that I am trying to reach potential readers with some new ideas, and by doing that I am attempting to smooth the path toward a more productive dialog between science and religion. So what are scientists doing by doing all those things listed at the beginning of this paragraph? Some candidates for answers, like “seeking truth” fall short by being too narrow (excluding practices from the list above). Others, like “learning to predict and control more and more phenomena” fall short in some ways and cover too much in other ways -- e.g. the part of the domain of engineering, which is concerned with predicting and controlling practical matters of little interest to scientists as scientists .

My provisional proposal for what the scientists are doing is enhancing the collective knowledge and competence of the human race with respect to the natural world. I include competence as well as knowledge, because the advance of science produces not only knowledge embodied in books and papers, but laboratory procedures, ways of thinking about things, new approaches to problems, and many other items of competence embodied in scientists, technicians, and students. By “natural” I mean built up from the building blocks common in the scientific disciplines: quarks, electrons, protons, atoms, molecules, plasmas, chemical compounds, polymers, cells, branches leaves organs,

Now why “provisional”? Because I had to choose between a description that agreed with common usage (of both scientists and non-scientists) and one that included the behavioral sciences within science. I chose the former. The issue here is just that explored in section 2.1, where the first position described is the conventional one: behavioral science with pre-empirical commitments imported from neurophysiology, and the second position is science with DP as its pre-empirical base. The first position makes behavioral science unduly difficult (and a second-class citizen), the second avoids those problems but lacks consensus to say the least. I realize that in making this choice I am giving short shift

to the social sciences, especially history, but for the purpose of capturing the popular conception of science as it impacts religion, I think we can make do with this choice.

If I were to use the second position, I would instead propose that what the scientists are doing is enhancing the collective knowledge and competence of the human race with respect to the real world. Such a definition would include the social sciences. It would also force a perhaps lengthy discussion of the DP concept “real world”. For now, note that our real world contains all the states of affairs graced with the status of scientific truth, plus a lot more states of affairs upon which we act without questioning them (Shideler, 1988, pp 135 - 148, Zeiger, 2004).

3.2 What is Religion?

Just as we did with science, we can here make some simple connections with human behavior that turn out to have substantial implications. Without trying to give a comprehensive definition of religion, we can make headway simply by looking at the place of religion in the worlds of religious people. Religion is what people do to deal with the ultimates in their lives: ultimate cause, ultimate inclusion (i.e. all there is), and especially ultimate significance: what they do to terminate the significance series described above. (Shideler, 1985, 1988, 1992). Religious behaviors include *appreciating* the grand scheme of things (and particular elements, including God, prophets, great beings, and other people); perceiving and celebrating one’s place in that scheme, and recovering from degradations that may have damaged that place (confession and absolution, repentance, forgiveness, ...); finding guidance in right living; and finding support in coping with hard times. Please note that here I am proposing a working definition that attempts to catch the essence. Of course for many religious people there are many other considerations (such as dietary restrictions), but I would hold, along with Shideler (1985, 1988, 1992), that these considerations all derive from other considerations of higher significance.

3.3 A Closer Look at the Five positions

Now we are positioned to take a deeper look at the five positions. Lets start with the middle one: Non-Overlapping Magisteria. It is easy to see why there is a large area of non-overlap. In the American Heritage Dictionary (Second College Edition) “science” is defined as “The observation, identification, description, experimental investigation, and theoretical explanation of natural phenomena.” The words and their corresponding concepts in this definition are close to everyday experience and non-controversial with two exceptions: what constitutes a legitimate experiment and what constitutes an explanation. Consider the concept of *explanation* in two kinds of contexts. On the one hand there is the physical science context, the context that physicists and chemists use when speaking professionally. Their language features certain kinds of objects, processes, events, and states of affairs, but not persons, intentions, communities, or significance. Explanation in such contexts typically has a reductionistic flavor: if you ask a physicist “why” you will get an elaboration of the laws of physics applied to the case at hand to imply that the observed behavior was the only one possible. Contexts of this sort are Newtonian Physics, Relativity, Quantum Theory, and Evolution.

On the other hand, there are contexts in which human behavior takes center stage, as in the worlds of the politician, the businessman, the playwright, and the clergyman. In these worlds, person, intention, community, and significance all play leading roles. If you ask a playwright “why” you will get an explanation involving intention, community, and values that elucidates the significance of a certain action in the life of a character. In these contexts, deterministic explanations are rare: no matter how tight a spot a person gets himself into there are almost always several moves still available to him. Behavioral worlds include the possibility of creation. Only persons are eligible to create, and persons include homo sapiens (if you are not a determinist) and God (if you are a theist). On the face of it, there is little connection between the two kinds of worlds, and there are even linguistic and conceptual dangers in confusing the two different approaches to answering “why”.

Religion operates mostly in the behavioral worlds. *Science does not even have a concept of significance, so in the area of ultimate significance, a main concern of religions, religion has the field to itself.* Thus religion and science have nothing to say to one another: that's Non-Overlapping Magisteria -- first cut. Incidentally, **scientists** get to make their own choices regarding ultimate significance, just like the rest of us.

Now for the Hard Determinist position: for hard determinists, nothing is real unless it is built up from elementary particles. Concepts like intention and significance occupy a shadowy existence, embraced by the vernacular, but waiting in a kind of limbo for science to give them a characterization in terms of elementary particles. Existing vernacular definitions or articulations of these terms exist only in order to be replaced.

The Naturalist position is similar to the Hard Determinist except that the Naturalist's world starts from the Hard Determinist's world and makes some pre-empirical additions that include freedom of choice. Such an addition is spelled out in detail by Ossorio on the role of a person as Actor: (Ossorio, 1982/1998)

- “His behavior is spontaneous; he does what comes naturally. (What he does is an expression of his character and is not directly problematic.)”
- “His behavior is creative rather than reflective. His behavior and its products are a significant expression of himself and not merely a common or conventional response to a situation, though it may be that, too.”
- “His behavior is value-giving rather than value-finding. Creating the behavior involves creating a framework of interrelated statuses (and their corresponding values) of which mundane particulars are embodiments.”
- “His behavior is a before-the-fact phenomenon, since he creates it (he is not *finding out* what behavior he is engaged in -- he is *doing* it).” (pp.104-105)

This notion of person, common to all the positions except the Hard Determinist, includes the above commitments and with them the challenges of moral behavior. In other areas the Naturalist position retains the commitments of the Hard Determinist position regarding science and its empirical method as the ultimate arbiters of what is real.

The Mainstream Western position expands on the above two positions by admitting other knowledge, including that from divine revelation, to that from science and its empirical method. I will use here a distinction, made in everyday conversation and articulated in DP: true versus real. What is real for me is that which I am willing to act on, what is true for me is that which has been proven to me, or at least strongly enough supported, by adequate evidence. Both of these concepts vary with individual and culture, but there are two anchors for commonality: Science has very well agreed-upon standards for truth, even across cultures, and everyday language presumes, and DP articulates, there is one real world out there, regardless of how different our individual perspectives on it may be. The conceptual distinction between true and real is very important, and beyond the scope of this article, but we do need to go into one aspect of this distinction.

In DP, the concept of knowledge is carefully articulated to avoid any commitments with respect to its sources: science, divine revelation, or something else. In fact Ossorio observes that evidence is not marshaled in most of our judgments of what is real; the point is important, and I quote at length from Ossorio, 1982/1998:

(Maxim) A8 --A person takes it that things are as they seem unless he has reason enough to think otherwise.

“P takes it that X” is an evaluatively non-committal form of locution. It is applicable in cases where we ordinarily say “P knows that X” or “P believes that X” or “P has a gut-level feeling that X” or “P has the mistaken conviction that X” or “P perceives that X” or “P supposes that X,” and so on very nearly ad infinitum. All of these normal ways of talking reflect an appraisal of P’s assigning X the status of being the case. In

contrast, “P takes it that X” reflects no such appraisal. Specifically, nothing about the basis or the legitimacy of the status assignment is implied.

Without this principle or an equivalent one, knowledge, even of the most ordinary sort, would be impossible. There is potentially an infinite regress problem here. Suppose that I always need an extra something in addition to how things seem in order to conclude legitimately that things are as they seem. Presumably that extra something would be in the nature of proof, additional evidence, a successful test, or something of this general sort; since it doesn't matter what the extra something is, let us call it, simply, “X.” On a given occasion, then, it will not suffice that there seems to be a telephone on my desk. Rather, I will need an instance, XI, of that extra something, to give me the assurance that things *are* as they seem and there *Z's* a telephone on my desk. But then, I will have to admit that it only *seems* to be the case that I have XI, and I shall now need a new instance of X, call it X2, to give me the assurance that I really do have XI. But then, with respect to X2, I will have to admit that it only *seems* to be the case that I have X2, and I shall now need a new instance of X) call it X3, to give me the assurance that I really do have X2. However, with respect to X3, I will have to admit that it only *seems* to be the case that I have X3, and I shall now need....

Methodologically, one of the major consequences of this principle is that neither the intractable foundation problems which beset *dolce academica* nor the corresponding problems of skepticism are generated within Descriptive Psychology. Formulating this principle represents a refusal to deny, as philosophical and psychological theories often do, implicitly or explicitly, that knowledge is possible for persons and that the acquisition, testing, integration, and use of information by persons is a finite task which, paradigmatically, can be accomplished by persons. It does not, of course, offer any assurance that any

given thing that we take to be the case actually is the case.

Psychologically, a major implication is that the boundary condition (not foundation) for knowledge is competence, not some peculiar knowledge such as the indubitable deliverances of Experience or of Revelation or Intuition. How things seem to me will be an expression of my competence, and this will be the case whether it is the original matter at hand, some test or evidence, or a final review that is in question. At all points, what I take to be the case is governed by competence. And, of course, what qualifies as reason enough to reject or question an initial impression will be a matter of competence and other personal characteristics. (pp. 29-30)

So much for “real”. Regarding truth, it is worth noting that scientists constitute a very truth-oriented community, and its standards for truth are quite uniform across cultures and highly respected by other communities. It has not, however, entirely cornered the market on standards for truth: There are competing standards in at least the legal and political arenas.

And that brings us to the Fundamentalist position. It is like the Mainstream Western position except that it gives scientific truth a lower ranking, and scripture a higher ranking, in determining ultimate truth. (It remains in the cases of these last two positions to explain, in the light of the third--Non-Overlapping Magisteria--position, how the claims of religion and science could ever be enough about the same things to either agree or disagree. This will be taken up in the next section.)

To summarize: Five mutually inconsistent positions about the relationship of religion and science have been outlined, and the differences between them have been shown to lie almost entirely in the realm of pre-empirical commitments. *Thus we cannot expect arguments among these positions to be settled by any empirical discoveries, since the significant differences all lie in the area of what counts as empirical in the first place.* Differences among sets of pre-empirical commitments are critiqued on criteria other than experiment, namely utility and consistency.

3.4 Where Are the Clear Areas of Overlap and Non-Overlap of Science and Religion?

So where might we look for ways of resolving differences among these positions? Recall that pre-empirical commitments are like protocols: diplomatic protocols, business protocols, communication protocols. Protocols are supposed to give people of differing perspectives some ground rules under which they can interact safely and productively. Protocols can be critiqued on at least the two bases of consistency and utility. An inconsistent protocol clearly has something wrong with it, and, all other things being equal, the more useful of two competing protocols is to be preferred.

Let's start with position 3, Non-Overlapping Magisteria. For all its usefulness in pointing out the ways in which science and religion are independent of each other, this position goes too far. In the DP articulation of the common sense concept of person, the person has a body. (And the person has lots of other things, like a history of intentional actions, intentions, knowledge, competence, person characteristics, etc. DP remains neutral on the question of whether all these other things can be mapped into states of affairs in the body.) That body is subject to natural law, which places many constraints on intentional actions, including religious practices. We cannot flap our arms and fly to the moon, or even levitate, so those actions are not eligible to be religious practices. Physical constraints on the body provide a rich source of overlap between religion and science. Another source comes from critiquing the consistency of religious practices in the light of scientific discovery. For example, the moral teachings of most religions prohibit killing people. But what if some originally accepted religious practice is shown by scientific discovery to kill people? This happened to the indigenous people of Borneo, whose ritual eating of the brains of their dead spread Kuru, a fatal disease. In the face of this evidence, they replaced the religious practice with something less lethal.

So the magisteria overlap after all, DP provides a protocol in which facts from both science and religion can interact, and it is possible to

use scientific inquiry to test the reasonableness of religious stances, as anticipated by the Mainstream Western position. But there are limits to this interaction set by the fact that (physical) science has no concepts of intention, significance, etc., and hence nothing **ultimately** to say about religious principles. I like to put it this way:

*Science cannot be used to **generate** moral or religious principles, but it can be used to **critique** sets of moral or religious principles with respect to:*

- Feasibility for human bodies as currently understood, and
- Consistency of the principles with each other, and
- Costs and benefits of groups of people acting by the principles.

This observation has some consequences: The Naturalists have no **source** for, say, moral principles within their own domain, but they can astutely appraise principles imported from traditional religions. (For a beautiful example of this, see Goodenough and Woodruff, 2001) The critiques generated via science come down to appraising religious principles with respect to other religious principles, never on an absolute basis. For example, any critique, with an absolute moral conclusion, of a conventional religion by a Hard Determinist must be grounded in some accepted principle from outside the domain of the Hard Determinist.

The above considerations might give some comfort to religious people: when pressed by some argument from the sciences, they could always respond by asking what moral or religious principle from outside science grounds the argument. This, though, is hardly ever enough for the Fundamentalists: they look to scripture for facts from the material world and natural history that others are happy to leave in the realm of science. This is a case of relativism of worlds: what is real in the world of the Fundamentalist is different from what is real in the world of the Naturalist. And the differences are not to be resolved empirically because they originate in different notions of what qualifies as empirical. The Fundamentalists are not alone: what is real in the worlds of politics and jurisprudence also differ from what is real in the world of science. *These differences are not to*

be settled by the pursuit of truth, but by public negotiation and bargaining. That brings us to the next topic.

4. Where Do the Limits on Religious Pluralism Lie?

Early in the history of the USA, the founding fathers made, after much hot debate, the decision to avoid a state religion and to provide as much latitude as possible for each citizen to participate in the religion of his or her choice (Gaustad, 1993). There were dissenters to this decision at the time who did not believe that this degree of separation of church and state was possible or desirable, and there are many countries today following the same path as those dissenters. Nevertheless the USA has been fairly successful in the separation of church and state, even as boundary disputes continue over creationism, school prayer, polygamy, and the teaching of moral principles. What can the methods of this article bring to the respectful conduct of those boundary disputes?

4.1 There Definitely Are Some Limits

To my knowledge, no religion practiced today is permitted rituals involving human sacrifice. It is generally accepted that the state can impose ground rules necessary for people to live together in the same political entity and conduct peaceable relationships with one another. In this case the rules of the state take precedence by constraining the range of religious practices available (Lubuguin, 1998). On the other hand, since one's religion is about ultimates, for the individual, religious moral considerations trump the dictates of the state. This point was made eloquently by Mahatma Gandhi in his practice of nonviolent resistance. This involved disobeying unjust laws while hewing to his principle of nonviolence by submitting to the state's punishment for the disobedience (a delicate balancing act, rarely achieved since Gandhi).

4.2 The Role of the State

For a multi-cultural, multi-religious society, the findings of science are an important anchor because they represent the most culture-free large body of fact and practice available. Now any society needs some laws regulating the interaction of its members, and these laws have the gen-

eral form of moral principles. But by the argument made here, science is powerless to create moral laws; it can only critique those that come from somewhere else, and one obvious somewhere else is the world's religions. So it would be helpful to the multi-religious state if there were a core of moral principles common to all religions. With this core as the fulcrum and the lever of science, a legal system might be created or elaborated.

4.3 Some Religious Universals

There is some hope for such a program. If we look at what distinguishes the religions, three parameters stand out: their choice principles (morals), practices (prayer, contemplation worship, etc.), and stories. The greatest variation from religion to religion is in the stories, and these are of the least (but not zero) consequence to the laws of the land. Furthermore, a good story is often smoothly portable from religion to religion; I have heard one of my favorites from the Hindu Mahabharata told in Christian guise from a Christian pulpit. The next greatest variation is in the practices, and these impinge to some degree on the laws of the land (in choice of holidays, what can happen in private versus in public, etc.) but this impingement has been successfully worked around by many societies. The place of greatest overlap with the laws of the land, morals, is also the area of greatest agreement across religions. It is also the area where disagreements, when they occur at all, are the most hard-fought: consider abortion, gay marriage, etc. And this is where we see the greatest differences in the laws of the land between principalities having different religious compositions.

The state has a stake in morality. Murder, cheating, stealing, lying, all interfere with the smooth operation of the state, so the law of the land, in agreement with the major religions, prohibits them. But the multi-religious state faces a delicate tradeoff: the more morality embodied in the law of the land, the smoother the operation of society, but also the narrower the range of religions that are going to be welcome. As you expand beyond the small core of agreed-upon morals, the more variation among religions you run into. Thus lively debate is to be expected among the various religions concerning whose moral principles are to play what role

in the law of the land. And although science may be brought into play in such debates to critique different religious positions, as already discussed, these battles are never between science and religion, but between different religious or moral positions, with science appearing as an expert witness.

For example, the political scientist Sandy Muir (2001) has pointed out that a critical element in the functioning of the state is the limiting of the coercive power of individuals and groups. When these limits are absent or weak, you have the situation of remote California towns during the gold rush, inner cities today, and rural Afghanistan over most of its recent history. Muir pointed out the vicious cycles by which unbridled coercion reduces the humanity (in DP *behavior potential*) of both victims and perpetrators. Thus the rules necessary to restrain coercion are attractive candidates as part of a core from which to build up the law of the land, especially since these laws are implied by the ethical principles of many religions.

5. Value Judgments Regarding Religion (and Science)

The state also has a stake in the enhancing the collective knowledge and competence of its citizens with respect to the natural world, and therefore science is an important component of universal education. But some religious people have contended that science as taught in the schools, especially evolution, constitutes a state religion. What of this? Could science legitimately be construed as a form of religion? On the one hand science does consider some ultimates and totalities: ultimate cause, totality of the physical universe. Cosmologists, for example, are eager to take their calculations closer and closer to the big bang. On the other hand, approaching an ultimate while remaining within the regress is qualitatively different from ending the regress (Shideler, 1985, pp301-302). Evolution addresses the place of human bodies among the other creatures of the physical world. But then what about other ultimates: ultimate responsibility, ultimate significance, ultimate love? or the totalities of feelings and emotions? Religions are rightly expected to address these, and science doesn't. Religions have huge bodies of stories featuring fascinating moral dilemmas and exciting emotional challenges: science has

few of these. And as pointed out before, science does not generate moral principles, it can only be used to critique them. Anyone faced with an apparent impact of science on religion, whether in favor of the impact, as many Naturalists are, or opposed, as many Fundamentalists are, needs to dissect the logic of the apparent impact very carefully to determine what facts and relationships science is bringing to the table, and what parts of the picture are logically independent of anything science could possibly contribute.

Still, many people feel their religious freedom crowded by the science taught in schools. Part of this feeling may spring from a mistaken notion that the theory of evolution has moral implications. There was an effort a while back to draw moral principles out of evolution (“Social Darwinism”) based on the premise that what our bodies are wired up to do is what we ought to do. But it foundered on the fact the we often had best not do what any particular (biological) theory says. Indeed, a large part of many conventional moralities is about when to go against the inclines of the flesh. Science has brought to this discussion information about the costs and benefits of going with or against the inclinations of the flesh, and that is an important part of its role as critical tool in hammering out moral and legal principles.

More of the contention against evolution in the schools, I think, comes from a desire to protect the stories of some religions. The position of the contenders is: “We have a perfectly good story about the origins of the human race and we don’t want anybody else messing with it.” Other citizens may not care much about which stories are true, but are sensitive to the rights of minorities to believe as they please. Here and in many similar situations there is a need for real public debate. Again, science is not one of the contenders: the contenders on one side are people in the Naturalist or Mainstream Western positions who accept science as a critical tool in appraising religious and moral principles, and the contenders on the other side are those who feel that treating their religious stories as historically critiquable or metaphorical is giving away the farm -- the certainty of literal scripture.

I want to be careful not to underestimate the importance of stories in the world of persons and their ways. Stories present to the listener a community's world, with special emphasis on values and choice principles. In this educational role they complement science, which does not speak to those things. Stories can also aid persons in developing competence in practices in which they have little opportunity to engage directly--losing themselves in the story can allow them to practice vicariously. Stories also speak to the significance of the actions of their characters, and encourage the listener to contemplate that significance. Given these important functions, it is not surprising that religious people might be resentful of scientists, especially cosmologists and historians, coming around and messing with their stories. I have three suggestions for reducing this tension:

For scientists: Treat people's stories with more respect: not just as myths to be explained or debunked, but as important social and educational resources that are separate from, and complementary to, science.

For religious people: Take a hard look at how relevant to their role in your community is the historical accuracy of your stories: it may not be particularly relevant. Presumably this advice will be anathema to fundamentalists but at least worthy of consideration to all others.

For both sides: Consider appraising stories for more than one kind of truth. Historical truth = closeness of correspondence with what actually happened as best we can figure it out; cultural truth = represents accurately and engagingly the values, choice principles, or practices of a culture. For assessing historical truth, you need some kind of scientist (historian, geologist, paleontologist, etc.). For assessing cultural truth, you need a wise person of the culture (statesman, religious leader, etc.). Achieving cultural truth with respect to the community of all persons generally earns a writer high regard--consider Shakespeare.

Much of the unproductiveness of the debates about what is being taught in the schools stems from the inexperience of the combatants with negotiating over conflicting sets of pre-empirical commitments as contrasted with determining what is true. A good slogan is: *Confront the*

political issues head on, don't try to hide behind science. For example, Creationists have argued for the presentation of Creation Science with equal status alongside Evolution in the schools. If both were theories vying for empirical support, this might make some sense. But they are both sets of pre-empirical protocols that create the frameworks inside of which the facts are to fit. As protocols for holding facts, they are analogous to languages, and asking the schools to explain natural history in both Evolution and Creation Science terms is roughly analogous to asking them to explain chemistry in both English and Vietnamese: not crazy, but subject to vigorous political debate. And this debate rests not on evidence of truth or falsity, but on the relative populations and statuses of the different linguistic communities, and upon on the expressive power and utility of each of the two languages. In an area heavily populated with Creationist families, it might make sense to teach the two protocols side by side, but not with identical status: Evolution would need to be identified as the lingua franca, and Creationism as the foreign language, freely usable in your own home or homogeneous community, but not for general commerce. (Note the similarity of these issues to those raised in the context of bilingual education.)

Another slogan: *Do not attempt to advance your cause by attacking the **statuses** of your opponents (even accidentally).* This is what destroyed Wilson's *Consilience* and Dawkins' *The Selfish Gene* as productive contributions to the religion-science dialog. Dawkins even went so far as to embody the put-down in the title: "You may think you are something special, but you are really just a gene's way of making more, similar genes". I presume the insult was intended, to shake people up; it also got Dawkins a perhaps deserved reputation as a fundamentalist of Scientism. The same put-down in slightly less blatant form runs through *Consilience*, and I think this accounts for the outraged responses it got from, e.g., Wendell Berry (2000) and Huston Smith (2001). It is certainly possible vigorously to attack someone's ideas, claims, or theories without attacking the person's status, and to do so is normal practice inside the scientific community. For some reason, scientists writing in the popular press have been less successful at following this model outside the scientific community.

6. We are all in it together

To some degree, each of us is a scientist, if only in using empirical methods to make sense of our everyday surroundings, and each of us is a religious person, if only in deciding to embrace Atheism or Agnosticism. Furthermore, each of us is a citizen of some country. Therefore it is of interest to each of us to consider how these three different domains in our lives might contribute to each other, both at a personal level and at a social level. Let's review some of the possible contributions.

6.1 From Science to Public Education

Knowledge of the world around us is an important part of the education of each citizen, so various sciences are taught in the schools. Some, like biology (with evolution) are controversial, others, like mathematics, are not. As we have seen, the controversies often spring from differing pre-empirical commitments, analogous to differences in languages. Three cases arise: If there is consensus between the scientific community and the electorate, no problem; the subject gets taught (so long as it is relevant to citizenship). If there is disagreement even within the scientific community, no problem either; the various sides of the debate can be presented in class without the state taking sides. That leaves the case where there is consensus within the scientific community, but dissent from a significant portion of the electorate. This boils down to the example given above of teaching chemistry in the Vietnamese language. Such cases need to be settled by normal democratic process, including appropriate consideration to the rights of minorities.

6.2 From Science to Religion

Science can be useful to religion in understanding the characteristics of our bodies, and in understanding the interaction of religious and moral principles with those bodies. At the level of a society, it can help us understand the costs and benefits of the application of various religious and moral principles and practices. In some cases, this may motivate us to change our religious behavior, as in the case of the indigenous people of Borneo. In such cases it is not that science is dictating any religious be-

havior or belief; it is merely revealing formerly unsuspected relationships (sometimes conflicts) among our existing religious or moral principles, and letting us make our choices.

Science can also serve religion by providing a rich source of metaphors. For example, the unimaginable deep reaches of the universe, available to anyone in the form of the night sky, may be invoked to inspire humility. Similar metaphors have been heavily used throughout history by religious writers. (“Consider the lilies of the field ...” [Matthew 6:28]) These are very useful metaphors, and they are powerful, because the material world is right there in our faces. Their use, however, is not without risk, because they are vulnerable to changes in our understanding of the material world between the time of writing and the time of reading.

Finally, science does shed a certain kind of light on certain ultimates and totalities, specifically ultimate cause and totality of the material universe. This is the one place where science can impact directly knowledge that at least for some religions has historically been the province of religion.

6.3 From Religion to the State

The state has a need for principles and laws. Astute and creative statesmen may be able to create them out of whole cloth. (There is evidence of this in the US constitution.) Or, the statesman can look to the world’s religions and try to tease out some common moral themes that would also serve the state (always being mindful of the rights of minorities).

The state, and especially its legal system, need a solid concept of “person”. Although the soundest exposition of this concept that I know of is articulated in DP, it also is implicit in many religions and in jurisprudence, but not, I believe, in “hard” science.

6.4 From Religion to Science

What might religion have to offer science? As pointed out by Norbert Samuelson (2000), one of the reasons for the flowering of Jewish science in the first millennium was that science as a career was explicitly encour-

aged by the Talmud. Our religions speak to what is most significant for us, and if science ranks high in significance for lots of people, that is good for science.

Similarly, religion speaks to the places in our larger world of our various possible activities, including science, and as such may guide us in choosing which scientific endeavors are best to pursue. There has been some controversy over the possibility that proposed scientific explorations might be scuttled on moral grounds. Note that there is no possibility of avoiding this. Every funding decision for a scientific project, whether done by the government or the individual scientist, involves judgment calls about the best use of resources in the light of potential gains in enhancing the collective knowledge and competence of the human race with respect to the natural world. **In the absence of moral input to such judgments, we are left with only economic considerations, and here in the 21st century USA we know only too well what that looks like.**

6.5 From Religion to Religion

Throughout this paper there have been references to the value, to individuals, principalities, and even to science, of principles and practices that share wide support among the world's religions. That can be read as a call to ecumenical activity, and to negotiation toward common positions within the various wings of each religion. The more religions can agree on (and there is much agreement to start with), the more they can expect their views to be honored by governments and individuals.

There is another reason for ecumenism. Religions are similarly challenged by current events, from societal trends to scientific discoveries. In many cases the logic of an appropriate response is similar from religion to religion, so different religions may be able to support each other in responding to these challenges.

For an example comfortably far from home, let's reconsider the case of the tribesmen in Borneo who found out that their ritual of eating the brains of their deceased ancestor was transmitting Kuru, a fatal neurological disease related to Mad Cow. We can imagine their logic: Killing

people, especially ourselves, is wrong; this ritual leads to that; is there some other ritual we could substitute? What is the ritual doing for us (its significance)? Reminding us that we carry the legacy, in strengths, knowledge, and skills, of the deceased. Perhaps we can come up with a different ritual, having this same significance, to replace the one that had unintended, fatal, side effects.

The details are made up, but they suggest a useful pattern: Discover an undesirable consequence of an existing practice or belief. Trace upward in the significance series from that practice or belief until you get to an action, probably more abstract, that is free of the undesired consequence. Create new ways of enacting the action (moving down the significance series) until you get to something concretely doable and still free of the undesired consequences. Interested readers, as an exercise, might try this pattern out on the principles and practices of current religions surrounding human sexuality and reproduction. For example: The Abrahamic religions tend to prohibit all sexual practices that do not lead to reproduction. But reproduction is less desirable today than in Biblical times. And a sexual practice may have a significance other than reproduction that is still desirable from spiritual point of view, like bonding a husband and wife in a loving relationship. So one might make even a spiritual case for certain sexual practices other than unprotected intercourse.

7. What to Throw Away?

What might need to be thrown away, by scientists or religious people, in order to reap the greatest benefits from the synergies put forward here. Surprisingly little. For scientists: the pre-empirical commitment that the world of “hard” science is co-extensive with the real world, (DP provides a graceful and harmless way of backing away from that commitment.) and the bias against treating stories as a serious component of a community’s education. For religious people: the reluctance to travel up the significance series from an existing principle or practice as a step in creating a new and more satisfactory one, (Of course, it takes some depth of understanding of your religion to pull that off.) and their tight grip on historical accuracy as a validator of their stories.

In the light of all this, the more extreme positions have the least room for participating in dialog. The hard determinist is short on vocabulary and conceptual structure for addressing the big issues in the human condition. Those devoted to literal scripture as ultimate truth are denied give and take over the nature of reality with those of other persuasions, and are reduced to political bargaining over the laws of the land. The good news, though, is that for everyone else there is ample room for productive dialog, and for growth in understanding and agreement, both as persons and communities.

Summary

I have here attempted to show (a) how apparent conflicts between science and religion can spring from pre-empirical rather than factual differences, (b) that some important conflicts are not between science and religion, but between different religious (or at least philosophical) positions, and (c) that negotiating and bargaining around these conflicts is more a matter of political action taken in good faith than it is a matter of right and wrong. I have further suggested where those of various religious persuasions do and do not have bargaining room, and have provided some hints about how that bargaining room might be well used. I hope that this article contributes in some small way to more productive dialogue among scientists and religious persons of various faiths.

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