

Does Science Undermine Religion?

In this paper I first explain the difference between three kinds of questions (purely scientific, purely religious, and mixed). Second, I try to show that historical conflicts between religion and science were not accidental; there is an inherent logic that forces religion to make empirical claims, putting it on a collision course with science. Third, I argue that the defeat of religion in its conflict with science over a number of empirical issues eventually undermines the credibility of “purely religious” beliefs as well. Fourth, I discuss some consequences of these views for the relation between science and religion.

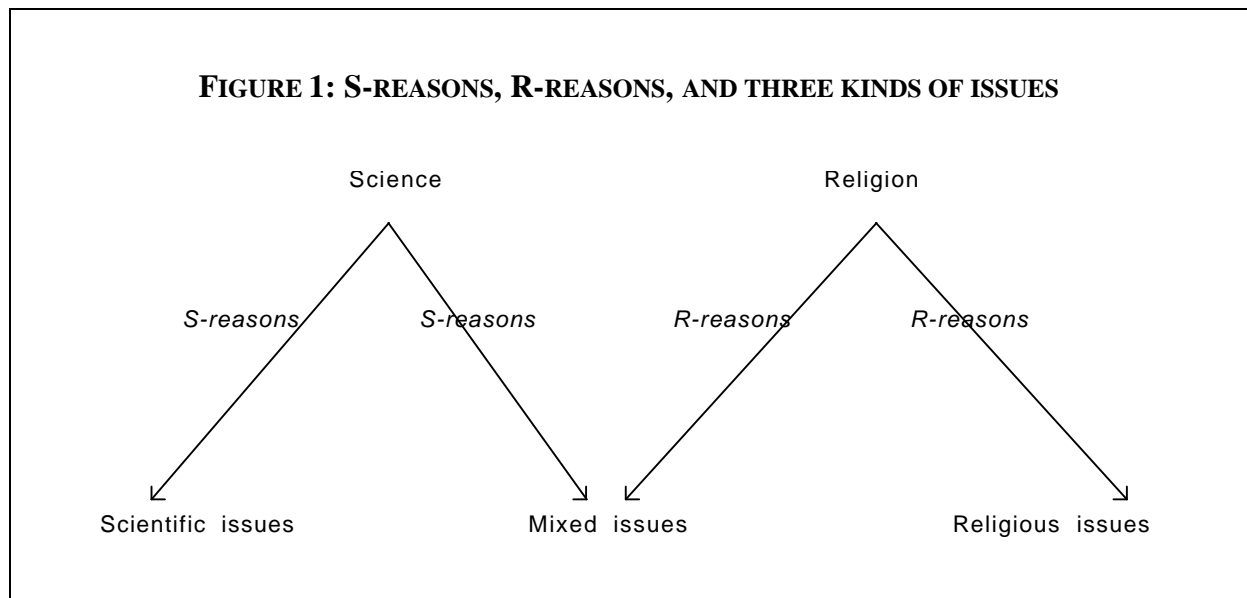
1 THREE KINDS OF ISSUES

I take it as non-controversial that there are both purely scientific issues and purely religious issues. For instance, surely no religion would want to decide about the truth-value of propositions like “The melting point of ethyl alcohol is 78 degrees Centigrade.” Again, no science would ever consider ruling on propositions like “Humans are sinful” or “God’s nature springs from the Holy Trinity.” But there are also notorious examples of “mixed” issues that have divided religion and science in the past (the existence of antipodes, the age of the earth, the heliocentric system, the theory of evolution, etc.)

If we call all considerations that happen to influence people in forming their beliefs *doxastic* reasons, we can say that a conflict often arose between two fundamentally different types of doxastic reasons. The use of *scientific* doxastic reasons (S-reasons) is governed by an expectation that observation has a crucial role in resolving the epistemic conflict between the rival hypotheses. Needless to say, this observational route to truth will, as a rule, be much more complex than the picture suggested by a simplistic verificationism or falsificationism. On the other hand, *religious* reasons (R-reasons) typically rely on things like revelation, authority of sacred writings, infallibility of church leaders or on the personal experience of God’s commanding presence. Admittedly, this way of describing the difference between S-reasons and

R-reasons is not too precise and articulate, but it is impossible to go into a more detailed discussion of that distinction here. Fortunately, this may not be a problem at all, because for the purposes of my argument it is entirely sufficient if you just concede (as I hope you will) that scientific and religious doxastic reasons are essentially different, in whatever way that difference be eventually explained.

The relation between S-reasons and R-reasons is shown in the following picture:



Obviously, what makes a conflict between science and religion possible are the “mixed issues.”

2 THE CURSE OF PARTICULARITY

Why does religion not avoid these embarrassing clashes with science once and for all simply by limiting itself to strictly religious issues and by cautiously keeping its R-reasons away from all mixed issues? It is pretty obvious why such an isolationist strategy would not do. Historical religions like Christianity teach that God is present in *this* world, and that his spectacular and very real interventions at particular times are actually the most important

episodes in the history of our universe (e.g., the creation of the world, original sin, miracles, Christ's resurrection, etc.).

In other words, it is not just some kind of coincidence that most creeds happen to contain doctrinal segments with some statements about empirical reality. There is an inherent logic that absolutely mandates such commitments: the very credibility of religious beliefs is at stake here. Namely, if a religious dogma is stripped of all immanent traces of God's actions in this world, and if God is consequently transferred to completely inaccessible regions of a mysterious trans-empirical reality, in which way then is this so thoroughly emptied existence to be distinguished from a pure figment of our imagination?

In theological literature the fact that the human relation to God essentially depends on something that happened in Palestine about two thousand years ago is sometimes called "the scandal of particularity" (Hebblethwaite 1980, p.106). I would rather call it "the curse of particularity." For, to be taken seriously, religion needs a God that is at least to a certain extent *empirically* engaged in this world. Of course, it does not have to be such an everyday interference in ephemeral human conflicts as, say, the passionate participation of Homeric gods in the Trojan war; but on the other hand it may be very difficult to nurture deep religious feelings toward gods, like those in Epicurean philosophy, who withdraw themselves completely to distant ethereal regions, showing no interest whatsoever for human affairs. Authentic faith appears to need desperately *some* sign, however meagre, of God's involvement in specific events with determinate spatio-temporal co-ordinates. For this reason, it is even nowadays when physics, biology and cosmology have drastically narrowed down the possibilities for naturalistic manifestations of God's existence that religion is still compelled by its internal logic to look for the most appropriate place in the austere science-driven *Weltanschauung* to interject its alleged signs of otherworldly influences. The search just has to continue despite the fact that it obviously carries a high risk that the new foothold will also soon be lost for religion, and that church authority will only suffer another intellectual defeat.

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In recapitulation, the situation looks as follows. On the one hand, a religion purged of all empirical content has the advantage that it cannot be threatened by new scientific knowledge; but the trouble is that its talk about God starts to ring hollow, and too easily comes to resemble a mere fantasy. On the other hand, a religion with empirically described effects from the supernatural domain has the advantage that its God does not suffer conceptually from a deficit of reality or, so to speak, from ontological anemia; but for this very reason the development of science can put into doubt the purported signs of his presence in the world.

Typically, being driven by the inherent apologetic need that God should have some connection with this world--that *Deus* be not entirely *absconditus*--religion is drawn into making certain statements about empirical reality. Later, when in the light of new knowledge these statements come to be regarded as highly implausible, religious authorities are in the end forced to abandon them and make necessary doctrinal reconstructions in order to accommodate the tenor of new scientific theories. A very condensed but good historical summary of this protracted process is given by Peirce:

[R]eligion has found herself compelled to define her position; and, in doing so, has inevitably committed herself to sundry propositions, which, one by one, have been, first questioned, then assailed, and finally overthrown by advancing science. Seeing such a chasm open before her feet, religion has at first violently recoiled, and at last has leapt it, satisfying herself as best as she might with an altered creed. In most cases the leap has not seemed to hurt her; yet internal injuries may have been sustained. (Peirce 1893, pp.351-352)

One particular “internal injury” for religion that I shall here consider is the impotence of R-reasons.

3 THE IMPOTENCE OF R-REASONS

The long conflict between science and religion over a number of mixed issues has finally resulted in a plain defeat of religious pretensions to knowledge in that domain. Consequently, the sphere of operation of R-reasons has become extremely restricted. They are today invoked

mainly in the context of purely religious issues. True, the arrow of R-reasons is still occasionally being directed to some of the mixed issues, but as a rule only when science leaves the respective questions without answer, or when it is concluded (be it prematurely) that a given topic will forever remain inaccessible to scientific knowledge. It is understandable that, after its inglorious record of confrontations with science, religion least of all wants new conflicts, and that it therefore promptly retreats from mixed issues, especially when an unfriendly scientific consensus is in the offing.

It might perhaps seem that by such a careful strategy of avoiding the dangerous ground of mixed issues altogether religion could hope to preserve the integrity of its beliefs about the main thing, *i.e.*, about purely religious issues. But this is not so. I shall try to show that the final surrender of religion in the battle over mixed issues seriously undermines the credibility of R-reasons in their proper field as well. Briefly, the historical fact that R-reasons have been so spectacularly and fundamentally discredited in their attempts to encroach on the territory of mixed issues must give rise to some doubt whether they are then, after all, good reasons for believing *anything*.

If doxastic reasons are to cut any ice, they must at least to a certain extent influence cognitive deliberations about topics where they are considered relevant; they need not be decisive factors, but they have to be *one* of the inputs affecting the final outcome. However, when the two fundamentally different doxastic reasons (S-reasons and R-reasons) clashed in the past, these conflicts were usually resolved by an all-out capitulation of R-reasons: at one point or other they have been completely withdrawn from the “zone of combat,” and religion just stopped using them to impose its view on a given mixed issue. It should be specially emphasized that this cognitive abdication of R-reasons was never prompted by an autonomous and independent indication of their irrelevance for the question at hand, but always and exclusively by the unrelenting and in the end unbearable pressure of S-reasons.

What typically happens is the following: when S-reasons reach a certain force that we can call the degree of dangerous plausibility those who had up to that time tenaciously insisted on the supreme authority of R-reasons suddenly make an about-face. Realizing that their original belief crumbles under the tremendous weight of S-reasons, but being unable to admit the defeat of R-reasons (God's word cannot be wrong!), they begin to claim that R-reasons had *never* supported that discredited view in the first place. The truth is only, they now say, that people *mistakenly* believed that R-reasons had supported that view. The message is clear: in each particular case the error is not to be blamed on the wrong information coming through revelation but merely on the human misunderstanding of the "true" meaning of revelation.

There is a crucial question to be asked here: if there was so much confusion about revelation in those sections of the Bible where, in the most natural interpretation, it appeared to have been unambiguously describing empirical reality, how can one be so sure, then, that one well understands those sections that speak about purely religious issues? Put differently, if those who had let themselves be guided by R-reasons in the past ended up by being so colossally wrong about the world, is it then reasonable, after the whole series of such cognitive miscarriages, to continue with undiminished and unlimited confidence to follow these same R-reasons in the search for purely religious truths?

An analogy may help drive the point home. Imagine a person, let us call him Professor Heidenberg, who is universally recognized as a supreme expert in both physics and philosophy. You happen to know virtually nothing about either of these fields, and out of curiosity you start to read Heidenberg's two famous introductory textbooks, *Physics Without Tears* and *Philosophy For Beginners*. You find the content of these books clear and straightforward; therefore, relying on the author's unimpeachable authority, you accept everything that he says there is true. However, studying physics in more depth you come to realize that some of the things you have learnt from Heidenberg are actually incorrect. Nevertheless, since it seems inconceivable that such a first-rate scholar could go astray about the basics in his own field of

competence, you conclude that you must have misunderstood him. For instance, although there is an explicit claim in his brief account of classical mechanics that *weight* is a scalar quantity that remains invariant with respect to location, you reject an absurd suggestion that Professor Heidenberg should not know that weight is in fact a vector quantity whose value varies with the position of a body in a gravitational field. Hence you decide that by “weight” he actually must have meant *mass*, and that he was deliberately expressing himself a bit loosely (perhaps because he thought that insisting on a full conceptual rigor would be ill-advised at the level of such an elementary introduction to physics).

Imagine, however, that you soon discover with bewilderment that *Physics Without Tears* is in fact full of similar sections that are simply false in their literal and most natural interpretation. Nevertheless, with the help of your independently acquired knowledge of physics and with some exegetical acrobatics, you manage to reinterpret all these embarrassing passages so that in the end they come out as saying something quite different and something quite true. In this way you can perhaps convince yourself that Heidenberg’s credibility as a scientist is not damaged at all, despite the incontrovertible fact that those who learned physics solely from his textbook systematically acquired a number of erroneous or even silly beliefs.

Very well. But given all this, what should be your attitude toward Heidenberg’s second masterpiece, *Philosophy for Beginners*? Remember, Heidenberg is equally highly respected among philosophers as among physicists. Suppose, however, that unlike the case of physics, you have not gained any collateral knowledge in philosophy that could enable you to reconstruct the “real” meaning of the author’s words in this new domain. Your interpretative task becomes truly formidable here because you have every reason to believe that Heidenberg, having remained faithful to his enigmatic style, had again expressed himself equivocally, and that therefore, most probably, many of his central statements (you do not know which!) are false, taken literally. Now you are left with absolutely no clue how to interpret his assertions non-literally in order to “correct” them. But then you are bound to ask yourself: is there anything at

all that you can learn about philosophy from that book if, given its Pythian pronouncements, you know that any sentence in it might have been easily intended in a completely different sense from the one that forces itself upon you as its far most natural interpretation?

The moral of this analogy should be obvious: the allegorical interpretation of Scripture is a double-edged sword. On the one hand it does save God's message from being wrong, but on the other hand it makes the message vague to the point of unintelligibility. To spell it out: if those sections in the Bible that looked like direct and unambiguous descriptions of empirical reality had to be subjected to a major hermeneutical surgery in order to bring them in accordance with the truth, how then in the light of such stunning interpretative reversals can anyone pretend to understand well the sections about purely religious issues? Maybe *they* are also grotesquely false in their most natural interpretation; maybe they, *too*, have to be understood in a completely different way in order to reveal some hidden and profound truth. For indeed, if a seemingly simple sentence from the book of *Genesis* like "God created man" is semantically so stretchable that it can even survive the discovery that *Homo sapiens* is the product of a gradual, several billion years long evolution of organisms from the primeval soup, perhaps in view of such tectonic shifts of meaning a reasonable believer ought to have some doubts about how much he then really understands those incomparably more cryptic biblical sentences about faith mysteries.

Briefly, if to preserve the credibility of Scripture you insist on far-fetched reinterpretations of many *prima facie* transparent sentences (because you can no longer accept them in their manifest sense), the price you pay is that you cover the whole text with a thick fog of ambiguity. The integrity of the message is undermined not so much by its having been disproved as by the fact that it now becomes entirely unclear what the very content of the message is.

If R-reasons have been so thoroughly demolished in one section of their field of operation (where they had been defeated by S-reasons), it seems that our confidence in R-reasons must also be shaken, at least to some degree, in that domain where (fortunately for them?) their force

had not been tested by any alternative type of doxastic reasons. The blade of R-reasons was blunted by their repeatedly but unsuccessfully having been used to impose solutions on mixed issues. With time that seriously damaged instrument therefore became useless for resolving even the purely religious issues. Essentially, what happened had been anticipated a long time ago by Kepler in his truly prophetic warning:

Acies dolabrae in ferrum illisa, postea nec in lignum valet amplius. Capiat hoc cujus interest. "If you will try to chop iron, the axe becomes unable to cut even wood. I warn those whom it concerns." (Quoted in: Whewell 1847, vol. I, p.693)

4 WHAT IS TO BE DONE?

If I am right that science undermines faith, what follows? There are three possible responses.

(i) Atheist science

Some conclude that if science and religion are really in conflict, then obviously something has to give. In case you accept science, and you are coherent, your faith has to go. In particular it is scientists who should have most troubles retaining religious beliefs. If, for psychological reasons, they cannot break off from their commitment to faith, it seems that they at least ought to take care not to permit religion to influence them *qua* scientists. In a brutal formulation of William Provine: "Scientists should check [their] brains at the church house door." (Quoted in: Scott 1996, p.25)

(ii) Christian science

The second opinion is that in thinking about apparent conflicts between science and religion one should take into account *both* scientific *and* religious considerations. For instance, if the book of *Genesis* is in its most natural interpretation incompatible with the theory of evolution, why should we be so sure in advance that it is the meaning of the biblical text that has to be reinterpreted? Who says that this conflict is perhaps not best resolved by rejecting or at least modifying the theory of evolution? Note that this line of argument does not have to be

committed to a fundamentalist claim that every single biblical statement is true in its most literal interpretation. In a much subtler version (see especially Plantinga 1991-2) it is merely argued that the passages in Scripture that ostensibly speak about some mixed issues should carry at least *some* weight for Christians when they form beliefs about these topics. Occasionally, some of these passages will have to be reinterpreted in the face of overwhelming scientific evidence against what they seem to say. Again, at other times one may be perfectly entitled not to give up one's belief so easily. It all depends on weighing the strength of reasons that pull in opposite directions.

The basic point is that any believer understands the Bible in a certain way, and if he takes his faith at all seriously he will then take his reading of the sacred text as a *prima facie* reason for believing some things about the world. He may be non-dogmatic about it in that he may be quite ready to modify his religiously inspired empirical belief if the circumstances so require; but before changing his mind he seems to be fully within his rights to ask to be presented with a contrary reason that is *better* than the R-reason that is currently guiding his belief. In this picture, R-reasons are in principle defeasible and sometimes defeated, but it is argued that they should still be recognized as doxastic reasons with *some* force.

The main problem with this view is how to integrate the two fundamentally different kinds of reasons into a unified system of beliefs. As yet no one has given any hint whatsoever about how to devise a common metric for S-reasons and R-reasons which would enable Christians to compare these two types of doxastic reasons. No one has shown how to distill out of them a synoptic and all-inclusive perspective that would transcend both "biases," as it were.

Despite much talk about being guided by both kinds of reasons, what this strategy actually comes down to is the following. R-reasons are only used at the first stage when they merely serve to mark those segments in scientific theories that are in friction with one's religious views. Next, this strongly stimulates one to look for weaknesses, objections, and counter-arguments that would justify withholding assent to the embarrassing scientific claims, and that would ease

one's cognitive dissonance. After that moment, however, the standard S-reasons completely take over: one tries now to show, *by invoking only ordinary scientific considerations*, that the currently accepted view in science should be modified in a way that, gratifyingly, just happens to coincide with one's initial, religiously motivated beliefs about the issue.

Basically, R-reasons set a doxastic destination (*terminus ad quem*), and from that point onwards one's task is, by using only S-reasons, to find a way to get there. A good illustration of how this works in practice comes from a leading creationist, Henry Morris. Troubled by empirical objections to the biblical story about the flood and Noah's ark he decided to explore the issue himself--by taking up graduate studies in hydraulics (major) and geology (minor) at the University of Minnesota. He said: "I was convinced that this was the best combination with which to develop a sound system of deluge geology." (Quoted in: Webb 1994, p.159) Quite predictably, everything went according to plan and the new system was soon in place; but somehow this biblically inspired "hydraulic geology" failed to convince (others).

Although it is at the intellectual level incomparably more sophisticated, Plantinga's idea of Christian Science suffers from the same shortcoming. He starts by proclaiming, not implausibly, that one should form belief on the basis of *all* reasons one has concerning a given issue. Therefore, the argument continues, since Christians believe some things on the basis of their reading of Scripture, these reasons should count for something in their cognitive deliberations. That is, why should their opinion on some mixed issues be determined by only a part of what they regard as relevant? Instead of relying exclusively on S-reasons, would it not be more reasonable for Christians to form belief on the basis of *all* things considered (*i.e.*, by taking into account R-reasons as well, since they are *also* their doxastic reasons)?

Unfortunately, Plantinga never comes close to showing how such an all-encompassing picture of reality is to be obtained from the two allegedly one-sided perspectives (scientific and religious). Rather, he again singles out some universally accepted Darwinian claims that he finds objectionable on religious grounds, and he then criticizes them by invoking *only* S-reasons (like

the incompleteness of the fossil record, the supposed impossibility of observing speciation, supposed problems with the molecular evidence for evolution, etc.). So, instead of delivering even the barest outline of a promised synthetic view that would *combine* R-reasons and S-reasons Plantinga actually tries to prove that, properly evaluated, S-reasons *already by themselves* undermine an opinion that, as a matter of fact, currently represents the scientific consensus. But then his contribution has nothing to do with religion at all. If it is based exclusively on S-reasons, it should be judged on its scientific merits. And, to put it mildly, the prospects for his revolutionary ideas being taken seriously by biologists are not good.

(iii) *Keeping the skeleton in the closet*

If science and religion clash, but if you are not happy with either atheist science or Christian Science, the only remaining alternative is an attitude that presently dominates anyway: suppressing awareness about the conflict. Although logic forbids contradictions, psychology allows plenty of room for them: it even supplies different ways for a person to continue to live comfortably while nurturing incompatible beliefs. One of these mental mechanisms is to keep the conflicting beliefs in different compartments of the mind, and simply never to bring them in contact. My guess is that this must account for most cases of *truly* religious scientists.

What does “truly religious” mean here? Well, what certainly should *not* count as a truly religious attitude is the famous Einsteinian talk of God, which has confused many but which is merely a *façon de parler* serving to express the physicist’s awe for the simplicity and beauty of the laws of nature. Another thing that should not count, either, is a religious affiliation that is just a way of showing one’s identification with a given community or subculture. A good operationalization of “truly religious” is “believing in a God to whom one may pray in expectation of receiving an answer.” This definition was used by James Leuba in his famous survey of scientists’ attitude toward religion, and again in a recent poll replicated in the same format by Larson & Witham (1997).

Both sources come out with the same figure of about 40% of scientists who are religious in the just explained sense. Larson and Witham seem to revel in the outcome because, as they say, “religious Americans will doubtless be pleased to know that as many as 40 per cent of scientists agree with them about God and immortality” (p.435). In a similar vein, they add that nowadays when the US scientific enterprise fights “a battle for federal funding” and wants to “promote the cause of science to taxpayers” the fact that more than one-third of scientists hold beliefs “dear to many conservative Americans” may “evoke a sympathetic response,” showing that scientists are “just like us” (*ibid.*). I wonder, however, whether it is really appropriate to try to endear scientists to the man in the street by urging him to identify with the *minority* of scientists who may indeed be “just like us,” but only in the sense that, when it comes to matters of deep personal commitment, they (like most of their fellow citizens) balk at accepting the disturbing consequences of their own beliefs. Besides, this attempt to boost the public esteem of science has a serious problem with the remaining 60% of scientists, who are supposedly “not like us.” By the logic of Larson and Witham these scientists without faith would make science look “alien” or even “inhuman,” and to make things worse they would obviously better represent the views of the scientific community than their starry-eyed brethren. Moreover, since there is evidence that great scientists are significantly less likely to be religious than ordinary scientists the proposal to seek religious comfort and reassurance by looking only at scientists-believers would misrepresent the general import of scientific opinion both quantitatively and qualitatively.

In order to understand fully the relation between religion and science it is extremely important to note that it is not in the interest of either institution to emphasize the conflict. On the one hand, given the prestige that science currently enjoys the church cannot afford a further erosion of its reputation that would follow from the widespread awareness of the incompatibility of its dogma with contemporary scientific theories. On the other hand, in the light of the fact that nowadays most people are still religious (in one way or another), scientists should expect

that a wider recognition of the atheistic implications of their views would damage the public image of science, and that it could even adversely affect the funding of science. As William Provine says (Provine 1988, p.69), there is much intellectual dishonesty in these discussions.

To pick a quite recent example, consider an article from the prestigious journal *Sciences* (published by the New York Academy of Sciences) in which Eugenie C. Scott, executive director of the National Center for Science Education, rebukes those who pit science against faith: “Clearly, [some] writers agree with creationists that there can be no middle ground between science and religion. To them I can only say: Most Americans have already made their choice to be religious. Now you must choose which you prefer--a religious population that accepts evolution or a religious population that rejects it--and decide what you can do to make that choice a reality.” (Scott 1996, p.25) Although it has become quite common today for people to woo public opinion by hiding the unwelcome consequences of their own views, rarely do we hear such an open call to the whole profession to be “economical with the truth” about those aspects of its enterprise that run counter to the strongly held views of the majority. Passing over that glaring corruption of intellectual standards by political opportunism, it must be conceded, though, that Scott may well be right about something. Perhaps, the fact of human religiosity is indeed a fixed point that is unlikely ever to be altered, and in view of this persistence of faith maybe it is mainly science that would be harmed by the broader recognition of their mutual antagonism. It is possible, therefore, that for the purpose of making public opinion more favorably disposed toward science it really would be better not to spread the word about its conflict with faith. But then again, however obstinately a given fact be denied or brushed under the carpet, it will not thereby cease to be a fact.

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