

a critical review of modern life

kategoria

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Galileo

*In the 'science vs religion' debate,
Galileo is typically the scientific martyr
crushed by Christian dogmatism.*

But is it true?



DERRIDA AND DECONSTRUCTION

*The philosophy
of the past?*



POSTMODERN SCIENCE

*A new study
reviewed*



a critical review of modern life

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editorial

Religion and modern life

Our society thinks of itself—in public at least—as a rationalistic, scientific, atheistic (or perhaps agnostic) modern world. It's a well-kept secret that we are actually a very religious society. In an AGB McNair survey carried out over the past few years, 56% of Australians agreed that sins could be forgiven through belief in Jesus. This compares with 55% of the English, 45% of New Zealanders and 34% of the French, and a massive 88% of those in the United States. Add to that the large numbers of Moslems and the growing ranks of believers in the vague claims of New Age spirituality, and we see a picture of a very religious people. We are not a secular society.

In the public perception of twentieth-century culture, however, we do not receive this message. Religion in general is regarded as having little intellectual credibility, being at best an emotional response to life. In particular, the public Western world has largely forgotten that Christianity provides a coherent, comprehensive and convincing philosophy. Instead, it is seen as a personal faith for people with traditional views. Christians feel hesitant to put forward Christian ideas as part of public discussion, while newspapers cheerfully publish opinions which dismiss Christianity from a secularist point of view.

Christianity does have answers; it is an entirely respectable intellectual framework to hold, and rather better than most. We do not need to struggle to defend Christianity, as

if it is somehow lost and floundering in the new world. The answers are there. What we need to do is remind the modern world of the answers it has forgotten. Christianity has not been disproved by the modern intellectual estate, despite what the popular media would have us believe.

Why is it, then, that almost everywhere we look these days, Christianity is dismissed, disregarded, or simply ignored? History is being rewritten and language is changing to leach out the Christian contribution to our society. I noticed one example recently in the World Book Encyclopaedia entries for 'university' in 1988 and 1993. The 1988 version includes, in its brief history of universities, the comment, "Harvard University, the oldest institution of higher learning in the United States, was established chiefly to prepare men for the ministry". By 1993, however, we read, "The first [institution of higher learning in America] was Harvard, which was founded in 1636..." with only logistic details about dates and places following. Even the 1988 version, while describing the liberal arts curriculum of early universities, forgot to mention that the university movement grew out of a desire to better educate religious and lay churchmen.

If writing *about* universities has forgotten the Christian heritage, teaching *within* universities is not far behind. University English departments teach classic literature without teaching the Bible—as if the symbolism and themes of Western literature can be understood with no biblical knowledge. Major ideological struggles of history such as the Reformation are sadly misunderstood even in professional academic discourse. Students are coming through university basically uneducated in a huge part of our cultural heritage.

It is a pattern that is followed in most schools as well, perhaps unconsciously. I can remember, as a Year 12 Ancient History student, the time when a Catholic classmate asked why we did not study the Bible for examples of life in the ancient world. Our teacher replied, in quite an off-hand, non-polemical manner, that it was because the Bible was a religious book and had no real history in it. At the time I accepted his word unquestioningly; but a trained Ancient History teacher, regardless of his religious affilia-

tion, really should have realised that the New Testament contains reliable accounts of first-century life and customs.

The same ‘forgetfulness’ about Christianity extends beyond formal education to popular entertainment. The recent movie version of the classic *Little Women* managed to tell the story with all the Christian references removed—regardless of the fact that the book is based on Christian ideas and Christianity was a major part of the lives of the characters. The new *Jane Eyre* movie suffers from a similar extraction of Christian themes, which is quite remarkable considering the heroine’s preoccupation with Christian ideas in the book. The same could be said of the modern version of *Anne of Green Gables*. There is no particular argument against Christianity; it is just left out, as if it is not important to the development of the story. The strength of the characters is appropriated by a modern, secular philosophy instead of giving credit to the Christianity that produced it.

This is why we want to produce a journal like *kategoria*. It is partly born out of a frustration that the wealth of Christian thought and the importance of its message are being sidelined. *kategoria* is the beginning of an attempt to give this frustration a voice. The world needs to be reminded that Christianity is still here and is still a major intellectual force. The starting point is with Christians—bringing together trained minds to think critically about their field of expertise and the public perceptions it fosters. The Christian thinkers are out there. *kategoria* aims to be part of bringing Christian minds together, and bringing their ideas to the attention of more people.

You may be wondering where this outlandish word ‘kategoria’ came from. The explanation begins with the more familiar ‘apologetics’. In the ancient Athenian courts, the defendant made an *apologia* in reply to the charges against him. It was a reasoned case, answering the accusations and presenting a defense of his position. The word ‘apologetics’ has been part of Christianity from the early centuries, following this model. Christians reply to the accusations of the non-Christian world, defending their faith

against charges of irrationality, lack of evidence, or whatever it might be.

This century has seen many fine contributions to apologetics, as well as much writing about it. When we first began thinking about a new journal—what we thought of, originally, as an apologetics journal—we looked for the niche it would fill, or the tradition it would follow, in the wealth of apologetic writing that has developed in recent years. Yet in all the debate about presuppositionalists and evidentialists, Van Tilians and Schaefferians and noetic effects, something was not quite clicking. Gradually it became clear that the word ‘apologetics’ was being stretched to its limits, and in the end did not really describe what we wanted to do.

The fact is, we want to do more than just defend the faith. There is nothing wrong with defense; 1 Peter 3: 15 tells us always to be prepared to give an answer to those who question what we believe. In a world where Christianity is not attacked so much as ignored, however, we need a little more than that. We need to be a little more assertive. To extend a military metaphor, we need to come out of the bunker and mount a few attacks ourselves.

There is some precedent for this in the literature on apologetics. It is similar to Francis Schaeffer’s ‘taking the roof off’—in other words, exposing the weaknesses of secular philosophies as a prelude to explaining the Christian alternative. This moves beyond *apologia*; it is more outward-looking, less on the defensive. Yet in all the literature, there did not seem to be a word that captured this difference in approach. So I returned to ancient Greece. If *apologia* is the defense, what do we call the accusation—the accusation that we now want to level against the modern world?

The word I came across was ‘*kategoria*’. This is ‘speaking against’. It is a word found in poets and historians of ancient Greece (even more than *apologia*, which is only used in a narrow legal sense) to describe the critical activity which *apologia* answers. This captures exactly the aims of this journal. *kategoria* consists of asking serious questions, uncovering the weak points of an argument or challenging misinformation. It goes beyond apologetics to critique our society, its philosophies and

ideas. It will not always be negative, but it will try to be 'critical' in the best sense of that word. Sometimes that might involve reminding ourselves and others of the solid defenses we already have—the evidences, the arguments and replies that have formed part of traditional apologetics. It will also involve looking outwards critically at the philosophies of our society—a society which dismisses Christianity so blithely.

kategoria is not meant to be a specialist academic journal. You will not find the abstruse speculative theories of professors (though we have our share of eminent professors and other respected academics interested in the project). We aim to give a voice to young Christian thinkers—graduates, postgraduates, professionals—looking keenly at their field of study or profession with a Christian eye. While we will not publish anything lacking proper rigour, and we expect solid research to back up conclusions, this journal is not meant to be esoteric or exclusive.

In other words, *kategoria* is meant to be more than just an exchange of ideas. It is designed to be a resource to help Christians. Christians benefit from being involved in rigorous thought. When (for most of us) our education has been secular, it can take a considerable gear-shift to start thinking critically from a Christian point of view. We want to encourage Christians to apply their Christian mind to their work. This means not merely realising that it is possible to be Christian and a scientist/lawyer/teacher/doctor, but thinking critically about the current models of explanation used in these fields, and identifying where a secular philosophy has drawn conclusions which are not necessarily supported by the data. Having a Christian mind is more than just understanding current philosophies. It is having a little objectivity in assessing these philosophies and realising that they are not all necessarily true.

Such activities do not convert people. People are saved by the power of God revealed in the gospel of Christ, and intellectual critiques can never replace the power of preaching the gospel. To preach that gospel, however, is very difficult in a world where Christianity is not even given a hearing, and so

we hope *kategoria* will be a resource for those who are involved in evangelism (which, in one way or another, should be all of us). We hope that the arguments and critiques researched in *kategoria* can be directly useful as information for anyone who preaches the gospel, whether publicly to many or in an everyday conversation over the back fence.

In the long term, encouraging Christians to be more critical, and bringing Christianity back onto the public agenda, can only help evangelism. Talking about the gospel is that much easier when Christian concepts are already a part of everyday modern life. As far as the popular media is concerned at the moment, Christian concepts have been pushed out. We hope, by helping Christians to think critically about their professional lives and the world around them, and by encouraging Christians to take part in the discussions of modern life from a Christian perspective, that we are creating a foundation from which evangelism can build.

kategoria is critical in its approach, not to be dismissive or destructive of intellectual endeavour, but to take a discerning part in it. A great deal of what is accepted today as philosophically or morally without question is built on shaky foundations, and a great deal of misinformation exists about modern life and the place of Christianity within it. We hope that this journal will provide a forum for informed assessment of modern life. That depends on the subscribers, too—you are the thinking public who can write the papers in your field of expertise, with the background knowledge to make the telling statements. We hope you will support us in our endeavour to make public life a matter of critical discussion rather than passive acceptance.

Kirsten Birkett
Editor



Galileo Galilei

Galileo

history v. polemic

K. R. Birkett

In 1616, a board of theologians for the Roman Catholic Church discussed the new Copernican theory. The result of that deliberation was an official decree stating that to say the sun is at the centre of the world and immovable is 'foolish and absurd' and 'formally heretical'; and to say that the Earth moves is similarly foolish and 'erroneous in the faith'.

Sixteen years later Galileo Galilei faced the Inquisition on charges of heresy because of his belief in that same theory. He was ordered to abjure his heretical opinions—that is, to state that he firmly believed that the Earth did not move—and was sentenced to a prison term with penance.

Galileo, the symbol of free thought and the power of science, was brutally crushed by the blind stupidity which is the inevitable consequence of an institution based on revelation rather than discovery. It was a classic and poignant example of the irreconcilable clash between the two worlds. Galileo, threatened with torture and the might of the Catholic Church, recanted and stated through clenched teeth that he did not believe that which he knew to be true. Yet the spirit of free thought could not be suppressed. As he left the room with its instruments of torture, he muttered, "...and yet it turns".

It is a picture that suits propagandists of many types, but unfortunately it lacks a certain element—it is not true. Though non-historians may find this surprising, it is not a recent or innovative claim. For decades, historians of science and early modern Europe have recognised this glib picture as a caricature—yet the caricature refuses to die, held up by those whose propaganda it suits. The ‘Galileo incident’ as it has come to be known in the literature, can be described as any number of things, but to see it as an example of Church dogmatism *versus* free thought rather misses the point. It was a political battle between warring academics and academic traditions, fought over the issues of disciplinary boundaries and academic prestige; it was a clash between medieval and modern conceptions of knowledge; it was a matter of power politics. It was a time when the educational structure was changing and old-school academics fought hard to maintain their traditional privileges; and when, in a changing society, intellectual prestige was a stake in social hierarchies. Put this against the background of Reformation and counter-Reformation, after the Catholic Church had been shaken to the roots by Protestant demands for the individual’s right to personal access to the Bible, and it is not surprising that somewhere along the line, someone was charged with heresy. The fact that it was the Copernican system that precipitated the trial is (for the Catholic Church at least) historically unfortunate. Crises could have occurred over a range of other issues, given different circumstances; and had Galileo been a less abrasive character, had his involvement in academic politics been less prominent, and had the political situation been less volatile, it might not have happened at all.

Galileo’s career demonstrates what happens when old science is challenged by a new theory—many of those in the scientific establishment react with scepticism and dismiss the new challenger. Galileo’s story is really about Aristotelianism clashing with modern mathematical science. Galileo fought for a new science, against the entrenched conservatism of an intellectual system which had been accepted for centuries, and against individuals in the universities who were not at all willing to have their jobs and their professional reputations

challenged. Also, Galileo's career demonstrates how dangerous politics can be—for once Galileo became embroiled in the political scene of the seventeenth-century papal court, he was in a very risky position.

Galileo's enemy was not Christianity. He considered himself a devout Christian, and in any case many Protestant Christians had no problems with his work. Galileo had many enemies, most of them academics, and he played a dangerous political game. This essay is the story of how and why Galileo lost. It does not attempt to duplicate the already detailed original research on Galileo's life and trial. There is certainly no need to do so; the historical facts of the case have been well established for decades. Here is presented a summary of modern research, in an attempt to move behind the veils which have shrouded this fascinating historical story.

What first becomes obvious in looking at the Galileo events is that the battle was not 'science' against an outside foe, Christian or otherwise, so much as old science against new science.¹ It is a battle which has been repeated again and again throughout history. Newtonian physics seemed definitive until Einstein presented a new theory. Heat was explained as an accumulation of phlogiston until Lavoisier suggested his new chemical laws. In retrospect, it is easy to pick the winners, but at the time such debates are usually very confusing. There are always more bad guesses than good ones, so how does one tell if the new theory is actually better than the old? Should scientists merely extract the good bits from the new theory and incorporate them into the old? Should the old be overthrown entirely in favour of the new?

Such a competition was played out in the astronomy of

Old science
meets new in-
novations

1 The word 'science' is an anachronism for this era; it was not coined until the nineteenth century. It is used here merely for convenience. This is part of the problem for twentieth-century people studying Galileo. The separate disciplines of astronomy and physics, which we now happily group together under the one word 'science', did not enjoy the same conceptual unity in the late sixteenth and early seventeenth centuries.

the late sixteenth and early seventeenth centuries. The old theory was geocentrism, in which the Earth was at the centre of the universe, with planets (including the sun and moon) and stars revolving around it. All physics, dynamics and matter theory backed up the cosmology. The new theory was heliocentrism, with the sun at the centre of the universe and the Earth, one of the planets, revolving around it. We, of course, know which theory won. The heroes of the story for twentieth-century viewers are those who supported the heliocentric universe. At the beginning of the seventeenth century, however, the geocentric universe looked far more likely—and it was the scientists of the day who thought so.

In 1543, in the last year of his life, a modest Polish astronomer named Nicholas Copernicus published a speculative astronomical theory. It was in a work entitled *De revolutionibus orbium coelestium*—‘The revolution of the heavenly spheres’. It was different from the old Ptolemaic theory, in placing the sun rather than the Earth at the centre of the universe. It was *like* the old theory in that all the planets moved in circles around the centre.²

Any theory which postulates circular motion for the planets cannot possibly fit what we see in the sky (the planets actually move in ellipses). In the old Ptolemaic system many adjustments and additions to the circular model had to be made. Theoretically, with enough additions the model could fit observation exactly—but it was a very clumsy system. Copernicus, by putting the sun at the centre of the system, managed to reduce the number of additional adjustments necessary to make the theory work. Nevertheless, it was still a clumsy system. Copernicus’ theory was ‘better’ from a scientific point of view, in the sense that it was slightly simpler and explained a few astronomical events more satisfactorily, but it was by no means overwhelmingly convincing.

Copernicus’ work is important in putting the Galileo

2 For a summary of the Copernican system and the advantages it had over the Ptolemaic, see section I of Alexander Koyré’s *The Astronomical Revolution: Copernicus, Kepler, Borelli*, Hermann, Paris; Methuen, London; Cornell University Press, Ithaca, 1973.

debate in context. We speak of ‘The Copernican Revolution’ as a crucial moment in Western history, when Copernicus discovered after centuries of error that in fact the Earth moves around the sun. Yet it was not quite like that. Copernicus’ theory was, from a purely scientific point of view, only marginally better. Of course he was right, but how could people know that at the time? Besides, he was not completely ‘right’—his commitment to circular motion meant that his theory necessarily had problems.

This helps to explain the fairly luke-warm reaction to Copernican theory in the years following its publication. The unpopularity of the theory was not due to Church interference, or Christian dogma—the theory was a matter of technical astronomy, and only of real interest to fellow astronomers. On the whole, they were not much impressed. Of those who showed any interest, most merely made use of Copernicus’ improved calculating techniques but ignored or rejected the theory as a new way of understanding the universe. In England, for example, the first clear exposition of Copernican theory was not until 1576, in the only work that century which explicitly endorsed the theory. Even those astronomers who were mildly in favour of Copernicanism were inclined to regard it as an adaptation of the Ptolemaic system, and used a semi-Copernican theory in which the Earth rotated in the centre of the universe.³

By 1600 only ten astronomers can be identified who thought Copernicus was right.⁴ In other words, Copernican theory was not the great overnight revolution. It was a relatively unsuccessful addition to astronomical knowledge, which the majority of professional astronomers failed to take up. The Church decision to reject it in 1616, though in

3 John L. Russell ‘The Copernican system in Great Britain’, pp. 189-239 in Jerzy Dobrzycki (ed.), *The Reception of Copernicus’ Heliocentric Theory*, D. Reidel Publishing Company, Dordrecht and Boston, 1972. Reception of the theory in other European countries was similarly luke-warm; see the other essays in this volume for details.

4 Robert S. Westman, ‘The astronomer’s role in the sixteenth century: a preliminary study’, *History of Science*, 1980, 28, pp. 105-147, p. 106.

hindsight wrong and made for the wrong reasons, was not at the time so very irrational. Galileo was not defending the forward march of scientific free-thought against reactionary dogmatism; he defended a speculative theory with little corroborating evidence, in opposition to the majority of scholars of the day.

There is a deep and important reason why Copernican theory was not convincing as a new scientific theory. It had no physics to back it up. It is all very well to hypothesise that the Earth moves around the sun—and certain astronomical observations might thereby be better accounted for—but what makes the Earth move? Copernicus had no answers. He had no laws of motion, and no theory of gravity (that was to come two centuries later, when Isaac Newton finally developed his basic laws of physics). At the time, the only known physics was Aristotelian.

According to Aristotle, ‘earth’—regarded as an element in itself—does not fall ‘down’ but is attracted by nature to the centre of the universe. That is why the Earth is at the centre; it is the place where matter naturally congregates. The heavenly bodies—suns, planets, stars—are of an entirely different kind of matter, whose nature is to move in circles and which is not attracted to the centre of the universe.⁵ In such a physics there is no place for a moving Earth. The moving planets were, by definition, *not* earth. Copernicus’ theory did not fit into Aristotelian physics, and he did not have a new physics in which to embed a new astronomy. This was a serious lack. It was as if today someone proposed that the

5 Aristotle *De Coelo*. An English translation is available in Milton K. Munitz, *Theories of the Universe: from Babylonian Myth to Modern Science*, The Free Press, New York, 1957 (which also has excerpts from Copernicus and Ptolemy). For a summary of Aristotelian physics and cosmology, see Stephen Toulmin and June Goodfield, *The Fabric of the Heavens*, Penguin Books, Harmondsworth, 1961, ch. 3; or Thomas S. Kuhn, *The Copernican Revolution: Planetary Astronomy in the Development of Western Thought*, Harvard University Press, Cambridge, Massachusetts and London, 1957, ch. 3.

moon literally gets bigger and smaller every month—it fits what we see in the sky, but it makes no sense according to what we know about matter and the laws of gravity.

The theory was not worthless, by any means. It had a mathematical elegance that Ptolemaic theory lacked—enough to impress Galileo, who was a very competent mathematician. Without proper physical laws, however, it could not hope to gain widespread acceptance amongst the academic community; in particular, amongst the physicists, or natural philosophers as they were known.

This clash with Aristotelian thought is something we must take seriously. It is hard to imagine now just how immense a challenge Copernican theory was. If it were true, the entire body of received knowledge about physics—laws of motion, theories of matter, the most fundamental ideas about what the universe is made of and why it behaves the way it does—would have to change. When Galileo began championing Copernican theory, he was not merely suggesting an interesting new technical piece of astronomy. He was, implicitly at first and later explicitly, challenging centuries of accepted knowledge.

Aristotle's system of knowledge was remarkably satisfying and complete. He was regarded as having solved essentially all the problems of the physical universe.⁶ Aristotle's laws worked, they explained everything, and civilised humanity had recognised that for centuries. If there was to be any differing opinion, it could perhaps come from those who preferred Plato to Aristotle; but that an astronomer could come up with an entirely new theory was ridiculous, and that Galileo would actually defend such a theory and teach it to his students was very worrying. It was quite natural that his fellow academics opposed him. It was, after all, the duty of es-

6 Aristotelianism had embedded within it a different conception of the nature of knowledge. There was, it was assumed, a finite amount of knowledge to be gained about the universe, and Aristotle had (almost entirely) gathered it. There was very little of our modern concept of the progress of knowledge. See William R. Shea, *Galileo's Intellectual Revolution*, Macmillan, London and Basingstoke, p. 31.

tablished scholars to protect the young from dangerous ideas.

It is often quoted as a laughable example of blind dogmatism that some Aristotelian scholars refused to look through Galileo's telescope to see the moons of Jupiter. They insisted that even if they saw something, it must be a trick, and so refused even to look. Yet from a scientific point of view they had a point. They knew, from their knowledge of the established body of physics, that there could be no moons of Jupiter. What is more, Galileo was unable to explain satisfactorily how the telescope worked. Yet he expected the philosophers to overturn centuries of knowledge on the basis of this mysterious metal tube. There was some justification in their refusal to play his games. In their eyes it was Galileo who was ridiculous—even pitiable—for thinking he could teach anything to Aristotle.

Part of the Aristotelian world view was something which twentieth-century readers, particularly those with any scientific education, will find very hard to grasp. That is, *mathematics had no place in physics*. Natural philosophy did *not* use mathematics, because in general, mathematics was not thought of as something which described the real world. Although we take for granted in modern science that mathematics is the foundation of study of the physical world, this is a modern belief. In Galileo's time, it was a totally alien concept to most philosophers that mathematics might model nature. Indeed, it is not an obvious concept at all. Think about it for a minute. Why should a mathematical equation be the same as something that happens in the real world? Is there any reason for that? Even if one equation happens to correspond to physical reality, why should we expect all natural phenomena to have a mathematical basis?

In Galileo's day, nature was not thought of as mathematical. These days when we say we understand a natural phe-

7 For discussion of the clash between Aristotle's universe and the new science see Shea (*ibid.*) and Giorgio de Santillana, *The Crime of Galileo*, Heinemann, Melbourne, London and Toronto, 1958.

nomena scientifically, we generally mean we know the mathematics that describes it. We understand projectiles because we can describe the parabolic equations involved. In Aristotelian physics, however, to understand something was to know its inner essence, and the end towards which it moved. In broad terms, nature was thought of as teleological, moving towards its purpose, rather than a machine with specifications that can be described mathematically. For Galileo to present *mathematical* arguments for the superiority of his theories was regarded as entirely irrelevant. He was wasting people's time; it was as if he had failed to understand the basic premises of the problem. "[T]he propositions and the proofs of mathematics do not succeed in demonstrating the strength and the true causes of the operations of nature", one Aristotelian put it.⁸ Why should mathematics teach anything about physics? They were entirely different disciplines. You may as well study logic to find out about history. This was precisely the point made by one of Galileo's Aristotelian opponents, Vincenzo di Grazia.

Before we consider Galileo's demonstrations, it seems necessary to prove how far from the truth are those who wish to prove natural facts by means of mathematical reasoning, among whom, if I am not mistaken, is Galileo. All the sciences and all the arts have their own principles and their own causes by means of which they demonstrate the special properties of their own object. It follows that we are not allowed to use the principles of one science to prove the properties of another. Therefore anyone who thinks he can prove natural properties with mathematical arguments is simply demented, for the two sciences are very different.⁹

We can see how difficult it was for such scholars to accept

8 'The Unknown Academician', quoted in Shea (*ibid.*) p. 34 (He was actually Arturo Pannochieschi de' Conti d'Elci, the overseer of Pisa University.)

9 Quoted in Shea (*ibid.*) pp. 34-35. di Grazia was a professor in philosophy at Pisa.

Galileo's work. For them, not only did Galileo have bizarre theories, but his very means of defending them was unscholarly. Galileo replied vehemently, defending his methodology just as loudly as he defended his theories, but he had no justification which could be convincing. Until modern science was well established, mathematics had nothing to do with physical phenomena.

No debate is ever conducted entirely on the basis of high ideals. That is why to understand properly the opposition to Galileo we must delve into the murky waters of academic infighting. Galileo was not merely challenging ideas; he was challenging the people who held those ideas, and people in the sixteenth and seventeenth centuries were no less self-interested or status-conscious than they are now. This reality of human nature, though it takes some of the lofty ring out of the story, was probably one of the biggest obstacles to acceptance of Copernican theory. Astronomers in Galileo's day, no matter how clever, did not do physics.

Astronomers in the sixteenth century were regarded as 'mere mathematicians', and that was an insult. As we have seen, mathematics was not thought of as having anything to do with the real world. Consequently, astronomy was not about reality. It was about mathematical calculations. Astronomers created tables and star charts which would enable people to know where the planets were in the sky at any time, and draw up astrological predictions. In his lifetime, Copernicus was best known for his assistance in reforming the calendar. No-one thought that astronomers necessarily knew how the universe really worked. Imagine a computer programme which has dates of previous eclipses fed in, and an algorithm for calculating from that data when future eclipses will be. It can tell you the answer, but it tells you nothing about what is really happening in an eclipse. Astronomers were like that. They came up with answers—but they didn't decide what really happened in the physical universe. That was the domain of the natural philosophers. The disciplinary difference was reflected in position and salary, and astronomers consequently suffered in both areas. There

was no such thing as a doctorate in astronomy in Italian universities—it was only taught at an undergraduate level. In fact, most astronomers also studied medicine in the hope of gaining more money and status.¹⁰ Astronomers were mere calculators—not real intellectuals at all.¹¹

Galileo Galilei was one of this group. He was the son of a court musician, and though he studied medicine at his father's wish he never completed his degree. His interest was always mathematics, and he enrolled himself in private lessons outside the regular university curriculum. On his own he worked on physics and hydrostatic problems, and gave private lessons in maths. Amongst other things, he lectured on the geometry of Dante's hell before obtaining his first position as a lecturer in mathematics at the University of Pisa. He later moved to be Professor of Mathematics at the University of Padua. He continued giving private lessons, developing his own ideas based on Archimedes rather than Aristotle. He wrote a treatise on fortifications; invented a horse-driven pump, a military compass, and a thermometer; experimented with the pendulum, observed the supernova of 1604, and developed theories on hydrostatics and projectiles. Yet he remained, overall, a low-status intellectual on a comparatively low salary.

Galileo could not but be intensely irritated by this situation. He was a brilliant mathematician, with an international reputation for his observations and inventions. He had what he thought were sound theories about physics, yet he was still not allowed to be thought of, or called, a 'philosopher'. It was more than a title, as he well knew—without it, he was simply not allowed to contribute to discussions about the way the world actually is. He wanted to be taken seri-

10 A professor of medicine could earn twice as much as a professor of mathematics. Westman, *op. cit.*, p. 119.

11 Before Copernicus, there was some justification for being pessimistic about the capacity of mathematical astronomy to address reality—the Ptolemaic model was a mathematical labyrinth. Adjustments were made to fit observations of individual planets at the price of increasing complexity. It was not developed as a physical system. See Kuhn, *op. cit.*, ch. 2.

ously as a theorist and an intellectual. In other words, he wanted to change, single-handedly, the disciplinary boundaries that had been in place for centuries. It is some testimony to his force of personality and entrepreneurial ability that to a certain extent he succeeded—but at the cost of pushing people very hard, with disastrous consequences for himself.

Galileo created for himself what has been called “a new socio-political identity”.¹² In other words, he left his university job for the different world of the court. It was a very unusual move for a university academic, but to some extent enabled Galileo to solve his problems of prestige. As we have seen, Galileo’s battle was with Aristotelian philosophers who were highly offended that a mathematician would challenge them at all. Normally, this kind of academic battle would be dealt with internally, in the academic environment, through debate, publication, and so on. Galileo, however, refused to play on the establishment’s terms. He moved out of the university system and persuaded a powerful patron to create a position for him as a court philosopher.

It was a brilliant career move, making political capital from his scientific work. In 1608, with the use of the telescope for which was to become famous, Galileo discovered the moons of Jupiter. Though this is most often cited as the empirical vindication of Copernican theory¹³ (and certainly helped Galileo’s arguments for Copernicanism), at the time the main use Galileo made of his discovery was political. He dedicated the moons of Jupiter to Cosimo II, the Medici Grand-Duke of Florence. In beautiful prose he compared the moons to the four virtues, inescapably attached to Jupiter, who was symbolic of Cosimo I, founder of the heredi-

12 This is the basis of the thesis developed in Mario Biagioli, *Galileo, Courtier: The Practice of Science in the Culture of Absolutism*, The University of Chicago Press, Chicago and London, 1993.

13 It is actually inaccurate to say that the discovery of the moons of Jupiter ‘proved’ Copernican theory. It provided a strong argument against the Aristotelian cosmology in which everything in the heavens revolved around the earth, but it was still a long way from confirming a Copernican system.

tary Medici dynasty. Galileo's flattery paid off.¹⁴ In 1610 he was granted a position at the Medici court, with no teaching duties, at the staggering salary of 1000 scudi per year¹⁵ and with the coveted title of 'philosopher'.¹⁶

Court life had its drawbacks. Galileo was not required to teach, but he was expected to perform. Patrons such as Cosimo II enjoyed participating in intellectual life through hosting debates on interesting or controversial topics. The patron gained credit when his philosopher won debates, especially if the philosopher did so with wit and cleverness as well as profundity. This meant that Galileo was 'on call' to debate opposing positions or answer questions put by other nobles. He could be expected to answer detailed scientific questions with little time for preparation or for considering the wider implications (for instance, theological) of what he said. What is more, the court audience applauded satirical, biting wit—which Galileo was only too happy to provide, as this suited his rather acerbic personality.¹⁷

This combination of factors meant that Galileo was in a position to be highly offensive to university philosophers. He had deliberately rejected the university system and its status rankings. He had taken the title 'philosopher' even though he was 'only' an astronomer. He was encouraged to bypass the academic subtleties and niceties, instead approaching debates as a chance to score rhetorical points. It was not to be long before this potential to cause offense was realised.

Soon after his appointment as court philosopher, Galileo took part in a dispute with various leading Aristotelian phi-

14 For an analysis of the political rhetoric Galileo used to obtain his court position, see Biagioli *op.cit.* pp. 103-157 and also his 'Galileo the emblem-maker', *Isis*, 1990, 81, pp. 230-58.

15 Galileo's first salary as a mathematician at the university of Pisa was 160 scudi per year. The court salary of 1000 scudi was about three times that of any highly paid artist or engineer (Biagioli, *ibid.*, p. 104).

16 It was around the same time that one of the leading Aristotelian scholars, Lodovico delle Colombe, published *Against the Earth's motion* in opposition to Galileo's celestial discoveries.

17 See Biagioli *op.cit.* pp. 159-169 for a fuller description of Galileo's life and responsibilities at court.

losophers on the nature of floating bodies. It began at an informal meeting of professors and young Florentine gentlemen, at which Galileo put forward his own theory of why objects float (which was different from the established Aristotelian view). His views were, to say the least, in the minority; and it was claimed that the famous scholar Lodovico delle Colombe, who was not present at the time, would prove him wrong. It was a potentially volatile situation. Colombe was an old enemy of Galileo, a respected Aristotelian who had suffered under Galileo's sarcasm. They exchanged letters with increasing heat. At the same time, Galileo debated the question at court in the customary style before visiting cardinals. One of them, Cardinal Maffeo Barberini, sided with Galileo and was impressed by his wit and learning—an incident which was to have important consequences later.

Nevertheless Galileo's relationship with the Aristotelian establishment was degenerating. Under Cosimo's urging, he moved to official publication in 1612 with his forceful *Discourse on Floating Bodies*. A reply was published under the name 'The Unknown Academician' (actually the overseer of Pisa University), in a surprisingly mild and light-hearted manner considering the provocation Galileo had offered. This was followed by three Aristotelian attacks by Giorgio Coresio (a lecturer in Greek), Lodovico delle Colombe himself, and Vincenzo di Grazia, a professor in philosophy.¹⁸ These were by no means lighthearted; the authors' enmity was becoming quite obvious. It was a debate about physics, but there was much more at stake—Galileo was arguing for his own theories against Aristotle, against the academics who relied on Aristotle for their position, prestige and world view. What is more, Galileo's biting sarcasm thoroughly ridiculed his opponents. He made bitter personal enemies from what should have been a professional dispute.¹⁹

18 It was during this debate that the previously quoted comments on mathematics were made.

19 See Shea *op. cit.* ch. 2 and Biagioli *op. cit.* pp. 170-209 for analysis of this debate. The debate is interesting for its reflection of the opposing beliefs about nature as much as the detail of hydrostatics involved.

Galileo was by this time 48 years old, a highly paid and important court personage, and a world-famous astronomer whose telescopes were in demand from nobles all over Europe. He had made bitter enemies in the academic world by treading on disciplinary toes and treating established academics with scorn and personal ridicule—but won the debates, and won respect as a philosopher amongst the court literati. He had taken on the academic establishment and won. Not many Aristotelians had been convinced by his arguments, but they had been unable to silence him. At this stage, he had had no trouble with Church authorities; if anything, they respected him as a talented astronomer.²⁰ This raises an important question. If the battle was not really ‘religion *versus* science’ but ‘old science *versus* new science’, why did the Church get involved at all?

It is probably fair to say that Galileo’s enemies, unable to defeat him in logical argument or by social pressure, took the battleground to the Church.²¹ Galileo had not allowed his opponents to silence him in the normal ways, so they looked to silence him through creating theological trouble. There is evidence of a deliberate strategy used against Galileo. Certain of Galileo’s enemies formed the loosely organised group known as the ‘Liga’, apparently lead by Lodovico delle Colombe.²² The group also drew upon disgruntled clerics such as a certain Father Lorini who had received criticism from Galileo in the past, and the young Dominican Friar Tommaso Caccini (who may have simply delighted in stirring up trouble). These men openly accused Galileo of contradicting the Bible, and set about creating

20 Galileo had been given a banquet in his honour by the mathematicians at the Jesuit Collegio Romano in Rome in 1611.

21 For an account of the personalities and motivations involved in the 1616 incident, see Olaf Pederson, ‘Galileo and the Council of Trent: the Galileo affair revisited’, *Journal of the History of Astronomy*, 1983, 114, pp. 1–29; Jerome J. Langford, *Galileo, Science and the Church*, University of Michigan Press, 1976; Richard S. Westfall, *Essays on the Trial of Galileo*, Vatican University Publications, 1989; and Santillana, *op. cit.*

22 Olaf Pederson, *ibid.*, pp. 6–8.

popular suspicion against Galileo in order to catch the attention of the Church authorities.

It was an unfair move, and it is possible to speculate that without this deliberate opposition Galileo's trial may never have happened. Theologians had traditionally allowed philosophers space in which to develop ideas; the medieval Church was not Orwell's Big Brother. Philosophical speculation and discussion was the province and lifeblood of the universities, and though the Church secured the boundaries of admissible doctrine it did not normally dictate what could be discussed.²³ The Church was not out to silence Galileo. Indeed, Galileo's telescopic discoveries had been accepted and endorsed by Jesuit astronomers when he travelled to Rome in 1611: he was not without Church support.

The trouble began with one of the impromptu court debates in which the nobility delighted. At a lunchtime banquet, a university professor announced to the Grand-Duchess Christina (mother of Grand-Duke Cosimo II) that the idea of a moving Earth contradicted Scripture. Galileo was not present at the time, but an ex-pupil of his, Castelli, was; and Christina challenged him on the spot to defend Galileo against this charge. Castelli survived the ordeal as best he could, and immediately wrote to Galileo explaining what had happened. Galileo took up the challenge. Perhaps he had little choice; he had been challenged on a very serious matter before the Grand-Duchess, and probably had to respond in self-protection. He wrote back to Castelli knowing his letter would be circulated, explaining how he thought the Bible should best be interpreted on such matters.

Galileo was not allowed to leave it there. In what appears to be an effort to incite public opinion against him, Thomas Caccini preached publicly against Galileo in Florence. Then Father Lorini managed to get a copy of Galileo's letter to

23 Peter Dear, 'The church and the new philosophy', in Stephen Pumfrey (ed.), *Science, Culture and Popular Belief in Renaissance Europe*, Manchester University Press, Manchester and New York, 1991, pp. 119-139.

Castelli. He sent it, with a formal complaint, to the Inquisition.

It was not immediately a disaster. The letter itself was judged harmless. Caccini, however, not content with the lack of response to the letter, went to Rome personally and denounced Galileo to the Inquisition. It was time for Galileo to defend himself more publicly. He wrote a long treatise addressed to the Grand-Duchess Christina—a work of theology, explaining how the Bible should be interpreted, quoting from the Church fathers to back up his argument.

It appears he had gone too far. In writing this treatise, Galileo showed what can be characterised (depending on the slant of the writer) as pugnacious arrogance, selfless dedication to truth or political naivety, and was probably a bit of all three.²⁴ He certainly did not proceed with much humility. He may have been forced into this debate, but he carried it through with the same vigour he had used against the Aristotelians. Whatever the cause, Galileo produced a treatise telling theologians how they ought to do theology. Coming from an astronomer, with no theological training—however important his court position—this was not likely to be well accepted. It also brought him into direct conflict with Cardinal Bellarmine, one of the most influential cardinals in the Inquisition and indeed perhaps in the Church.

Cardinal Bellarmine,²⁵ a Jesuit, had spent his life fighting Protestantism. He was the professor of Controversial Theology at the Collegio Romano, one of the major univer-

24 With rather more sophistication, these types of interpretations of Galileo's actions have appeared in the historical literature. Westfall *op. cit.* and Langford *op. cit.* lean towards a pugnacious Galileo, Westfall's one-word description being 'insufferable'; Pederson *op. cit.*, and especially Stillman Drake (*Galileo*, Oxford University Press, Oxford, 1980) emphasise Galileo's commitment to his ideals of truth; Joseph Pitt's Galileo is merely a scientific opportunist who pushed his luck too far ('The heavens and earth: Bellarmine and Galileo', in Peter Barker and Roger Ariew (eds), *Revolution and Continuity: Essays in the History and Philosophy of Early Modern Science*, The Catholic University of America Press, Washington D. C., 1991, pp. 131-142).

25 This background information about Bellarmine is largely taken from Westfall, *op. cit.*, ch. 1.

30 | sities in Rome. He was a polemicist, not a speculative philosopher, and though he was intellectually quite capable of understanding Galileo's arguments he was more accustomed to the rigid sides of the 'life and death' battle against heresy. He had spent his life fighting Protestants who claimed freedom to interpret the Bible as they wished, and so would naturally be very wary of an individual with no Church authority, albeit a loyal Catholic, who wanted to reinterpret Scripture to accomodate his theories.²⁶

Bellarmino had lectured in astronomy early in his career. His lectures give some insight into his character and reveal why he could not possibly have agreed with Galileo. Bellarmine considered theology to be far above astronomy. Indeed, in the face of eternity he could not understand why men were so interested in the mere physical structure of this ephemeral universe. He was happy to let astronomers disagree over technical details, and considered it not the place of theologians to be involved in such disputes. This was not a statement in favour of intellectual autonomy for astronomers—on the contrary, it reflects how unimportant he thought astronomy really was. It meant that theologians were free “to select among them the one which best corresponds to the Sacred Scripture”.²⁷

Bellarmino had already given Galileo an indirect warning before Caccini's attack. A Carmelite Friar, Foscarini, had written a treatise on Copernicanism and very properly sent it to Bellarmine, as an influential scholar, for comment. Bellarmine had answered in a public letter which he probably intended Galileo to read. He warned Foscarini to be careful; the Copernican theory was just an hypothesis, and no-one should claim that any such theory was physically true, particularly if it required an alternative reading of Scripture. Galileo's letter to Christina can be seen as an

26 The Catholic church as a whole had put unprecedented restrictions on freedom to interpret the Bible in response to the Reformation schism. This was influential in the 1616 decision. See Westfall *ibid.*

27 Quoted in Westfall, *ibid.*, p. 9.

answer to this public warning.

It was an ambitious essay. Galileo's treatise challenged Bellarmine on his own ground, which was hardly tactful. Galileo quoted extensively from Augustine as part of his argument, in the confident tone of a professional. Bellarmine, a serious patristic scholar, would have known far more about Augustine's view of Scripture than Galileo, and would hardly have taken kindly to Galileo instructing him in what Augustine said.²⁸ To make it worse, Galileo could not, or did not, hold back his sarcastic wit. He lampooned theologians as narrow-minded—not a good idea when Bellarmine was one of them.

The matter had become official, and was dealt with quickly. Galileo came to Rome, and the matter of Copernican theory was considered by a panel of theologians (undoubtedly under Bellarmine's influence) for a brief three days. This is hardly long enough to consider a question of such importance, we would think; but the question is of far more importance to us than it would have been to the Church at the time. All that the theologians saw, it seems, was yet another challenge to Church authority by an isolated troublemaker. It would be nipped in the bud. Copernicus' book was condemned, and Galileo was told not to hold or defend the theory. Galileo himself was not officially mentioned in any condemnation, nor was he disciplined, probably due to his powerful court connections.

For the time being, it was over. Although Galileo was not discredited or humiliated, he had been silenced—a victory for his opponents. In the battle of new science against old science, old science had won this skirmish at least. The Aristotelians, who were not convinced about Copernicanism on scientific grounds, and who had failed (due to Galileo's clever tactics) to defeat it in academic circles, had finally seen it come to grief against Church power.

28 See Westfall *ibid.* An English translation of the letter can be found in Maurice A. Finocchiaro, *The Galileo Affair: A Documentary History*, University of California Press, Berkeley, Los Angeles and London, 1989.

So far, the story has yet to show much of a battle between Christianity and science. The Church was brought into the debate by others; there was no inevitable clash. In the end, Bellarmine, living in an old-world Aristotelian universe, was not about to accept the arguments of the new-world Galileo. Bellarmine saw no reason to change his belief that the Bible taught a stationary earth. At one point, he had asserted that given sufficient proof, he could change his mind about the Bible; but it was clear that he never considered an astronomer capable of giving proof weighty enough to challenge the Church fathers. (Remember, also, that Galileo did not have any proof for his theory.) The arguments were conducted on different terms. It so happened that Bellarmine held the power, so he won.

Papal Politics

Old science had achieved its purpose: Galileo was silenced. There was no need for a further trial. Why was it, then, that sixteen years later Galileo would personally appear before the Inquisition, facing charges of heresy?

In this second stage of his famous career, the conflict moved away from old science defending itself against new science. That battle was at least (more or less) clearly defined. Galileo's final downfall and condemnation, on the other hand, was the result of a very messy political situation in which Galileo believed the wrong promises, pushed the wrong people too hard and made the wrong enemies. It was not all his fault; he was let down and deserted by the people he trusted. It is hard to find one clear culprit, for there were many people involved in the political intrigues. Once again, the intellectual content of the Copernican theory was almost incidental, and the conflict was not Christian dogmatism out to stifle science. It was nothing so simple.

Papal Rome in the early seventeenth century was a very volatile place, in which the crucial qualifications for a career were patronage and favour as much as ability, and far more than genuine piety. Few Christians would defend the Catholic Church in this matter. The papal court was a mess of political alliances under the authority of the Pope. Galileo, for various reasons as we will see, entered the political games

of Rome. He was no novice at political manoeuvres; but in this case, he was not clever enough. It began with his re-entry into public scientific debate in the years following the 1616 prohibition.

In 1618, three comets appeared in the heavens. Grassi, a Jesuit astronomer, gave a public lecture on the comets, which was published. Galileo, in bed with illness and mindful of his prohibition, said nothing. To stay silent, however, was not so easy. For one, there was the matter of professional pride; Galileo, the famous astronomer, had not commented on this major astronomical event. Also, Archduke Leopold of Austria asked Galileo for an answer about the comets. Galileo, still with political obligations at court, had to give one. He wrote under the name of a pupil of his, and then later more fully in a work of his own. As well as presenting his own theory of comets he gave his devastating sarcasm free reign. Grassi was made to look a complete fool, and was none too happy about it. Galileo had created another enemy—and one who was an important Jesuit astronomer. Galileo had managed to alienate one of the most powerful orders within the Catholic Church.

Yet Galileo had won the debate, and with it gained a rising tide of popularity. His book on the comets, *The Assayer*, was loved by court culture.²⁹ At the same time, he received what must have seemed a great stroke of luck: Cardinal Maffeo Barberini, who had taken his side in the debate on floating bodies back in 1611, was elected Pope Urban VIII. Urban was renowned for his support of intellectualism and fine culture, and enjoyed giving patronage to those who would bring him credit with their brilliant and innovative ideas. Galileo found

29 As it turns out Galileo was mistaken about the nature of comets, perhaps because he did not have time for detailed observation. Galileo's theory was that comets were merely optical illusions produced by refraction of the sun's rays in the upper atmosphere. What made his book so popular was not the theory *per se* but the skill and wit with which he discussed it. For an English translation of the book, see Stillman Drake (trans. and ed.), *The Controversy on the Comets of 1618*, Pennsylvania University Press, Philadelphia, 1960.

34 | out about the election in time to dedicate his book on the comets to the new Pope. Urban was reported to like the book so much he had it read to him during meals.

Galileo's star was in the ascendant again. Travelling to Rome in 1624, he was granted no less than six audiences with the Pope, in which Urban was prepared to discuss Galileo's ideas. Encouraged, Galileo asked for permission to write a full treatise on the Copernican theory. Urban granted it—cautiously, with a strong condition: Galileo must include an argument which Urban framed himself. The argument ran that no physical system can be conclusively proven to be true, for that would limit the power and wisdom of God. God could have created the universe in such a way that man could never discover its secrets. Galileo agreed to the condition.

The result was, after six years, the *Dialogue on the Two Chief World Systems*, probably Galileo's most famous work.³⁰ The book is a dialogue between three friends—Salviati, the Copernican; Simplicio, the Aristotelian; and Sagredo, the unbiased layman who listens to both sides in order to make up his mind. In this way Galileo managed to present some fairly telling arguments against Aristotelianism as well as what he considered conclusive proof of the Earth's motion—his theory of the tides.³¹

There was great difficulty gaining a license to print the book. Riccardi, the Church official in charge of approving or forbidding the publication of books in Rome, was very cautious. He granted a provisional permission, on the condition that certain changes were made, in particular to the preface

30 There are innumerable analyses of this work. The most detailed would have to be Maurice A. Finocchiaro, *Foundations of Logic and Scientific Method*, D. Reidel Publishing Company, Dordrecht, Boston, and London, 1980. For an English translation of the book, see Galileo Galilei, *Dialogue Concerning the Two Chief World Systems, Ptolemaic and Copernican*, trans. Stillman Drake, University of California Press, Berkeley, 1967.

31 Johannes Kepler, the famous German astronomer who discovered the elliptical orbit of the planets, had already explained tides in terms of the moon's attraction, but Galileo rejected the notion. He instead attempted to explain tides purely in terms of the Earth's motion. He used the analogy of a barge; as the barge starts or stops, the water inside it sloshes to one side or the other. See Harold L. Burstyn, 'Galileo's attempt to prove that the Earth moves', *Isis*, 1962, 53, pp. 161-85.

and conclusion. The changes were made, but still Riccardi hesitated, and the negotiations dragged on for two years. Finally, under pressure from the Medici Grand-Duke, the license was granted. In February 1632, Galileo's book was printed. Then suddenly Galileo's star halted, and fell. Within a few months the book was banned and all copies seized. Galileo was summoned to Rome to face the Inquisition.

Galileo, it appears, had been fairly confident about the reception of the *Dialogue*. After all, had not the Pope loved *The Assayer*? Had Galileo not included the Pope's argument as requested? Yet Galileo, for whatever reason, had made a mistake. In *The Assayer*, he had been very careful to present Copernicanism as an interesting hypothesis, no more, and it was the intellectual playfulness of it as much as anything else that the Pope had liked. The *Dialogue* was different. Galileo was now showing his colours, and despite lip-service to the 'hypothesis' idea it was clear Galileo was arguing for Copernicanism as *real*. His wit and sarcasm were once again used at the expense of the Aristotelians—and naming the Aristotelian philosopher 'Simplicio' had no less impact than it does today.³² Moreover, though Galileo had included the Pope's argument, it was in the mouth of Simplicio, and right at the end of the book. The Pope was, reportedly, furious.

There have been many accounts of Galileo's final trial. Despite his sickness, he was commanded to travel to Rome in winter, and tried before the Inquisition. The main charge against him was that he had disobeyed the command of 1616 'not to defend or hold or teach in any way' Copernicanism. Galileo was surprised (as indeed were many at the trial); for as he remembered, he had only been commanded 'not to defend or hold', and had a signed certificate from Bellarmine with those words. Yet in what has been seen by some as evidence of conspiracy and by others simply as sloppy bookkeeping, the Inquisition had a record of the 1616 trial—unsigned—which

32 There was a real ancient Greek commentator on Aristotle called Simplicio, but the double meaning was hardly accidental.

36 had the extra words 'or teach in any way'.

Galileo's defence throughout the trial was that he had never believed that Copernican theory was *true*, and so was not in defiance of Bellarmine's certificate. It was claim difficult to uphold in the face of his publication, but for him necessary if he was to have any defence at all. It was not good enough, however, especially given the unsigned document that the Inquisition had unearthed. The judges, or at least a majority of them, were determined to prosecute. They were probably under pressure from the Pope.

Why was the Pope so determined to see Galileo fall? It may have been because he genuinely felt personally insulted by Galileo; or this may have been a front for the political pressure he felt himself under. Urban had been favouring France for some time, and his political bias had angered the Spanish court to the point where he was faced with the possibility of a rupture with Philip VI of Spain. The Spanish were the 'conservative party', strong advocates of the Counter-Reformation and not at all pleased with Urban's sponsoring of radical new intellectuals. Galileo's fall may have been to appease the Spanish; or it could have been that Galileo's enemies in Rome, knowing that the Pope was in an awkward situation any way he turned, worked on his personal vanities to anger him against Galileo. Such puzzles are the stuff that historians delight in;³³ whatever the exact mix of motivations, Galileo's fall appears more or less inevitable. It was inevitable because of the politics involved, *not* because of Christian antipathy to new learning. The Pope, the most powerful figure in Galileo's final downfall, had nothing against the new science; he celebrated it and pro-

33 Richard Westfall *op. cit.* blames the Pope's personal anger rather than political pressure, as, it seems, does Drake (*Galileo op. cit.*); Biagioli *op. cit.* considers the political problems dominant; William Wallace ('Galileo and the Church', in David C. Lindberg and Ronald L. Numbers, *God and Nature: Historical Essays on the Encounter between Christianity and Science*, University of California Press, Berkeley, Los Angeles and London, 1986, pp. 114-135) writes of the political situation with a Hermetic tinge, as do the rather more speculative E. A. Gosselin and L. S. Lerner, 'Galileo and the long shade of Bruno', *Archives Internationales d'Histoire des Sciences*,

moted it. What he objected to was that Galileo did not play the court game as he wanted him to.

Galileo was sentenced as suspected of heresy. This was in many respects an unfair decision; Copernicanism had never been infallibly pronounced heretical.³⁴ Galileo had actually been *disobedient* rather than heretical, in disobeying the request of 1616. To be ordered for this reason to deny publicly any belief in Copernicanism was harsh, when he could have merely been ordered never to write on the matter again. After all, the *Dialogue* had been licensed for publication. If it really was against the 1616 injunction, it should never have been allowed in print. Riccardi, who granted the licence, had bowed to Medici pressure and Galileo had payed the price. He was the victim of court, academic, and Papal politics.

Nevertheless, Galileo had played his own part in offensive politics over the years, so can hardly be thought of as an innocent victim. He had also disobeyed the request of 1616. Even if it had only been the more lenient ‘not to hold or defend’, his *Dialogue* clearly disobeyed the spirit of the command. Maybe it was a gamble he took; if so, he lost. He was declared ‘vehemently suspected of heresy’ and was commanded to ‘abjure, curse and detest’ his error—that is, he had to state that he did *not* believe that the Earth moved. His *Dialogue* was prohibited and he was sentenced to prison, with three years of a penance of repeating the seven penitential psalms weekly. Yet he never went to prison, and his daughter (a nun) was granted permission to say the penitential psalms in his

1975, 25, pp. 223-46; Santillana *op. cit.* thinks that the Jesuits, angered by Galileo, aroused the embattled Urban’s fury by claiming that Galileo’s book ridiculed him. Pietro Redondi caused a great stir by claiming that all previous theories were wrong, and in fact the trial was about Galileo being under suspicion of denying the doctrine of transubstantiation, and nothing to do with Copernicanism at all. This new reading has not been well accepted (see, for instance, Westfall’s review in *op. cit.* ch. 4; or Vincenzo Ferrone and Massimo Firpo, ‘From inquisitors to microhistorians: a critique of Pietro Redondi’s *Galileo Eretico*’ (review article), *The Journal of Modern History*, 1986, 58, pp. 485-524; the book in question is Pietro Redondi, *Galileo Heretic*, trans. Raymond Rosenthal, The Penguin Press, London, 1987).

34 See Langford, *op. cit.*, p. 155.

place. Was the Pope thereby admitting Galileo was not really guilty, just a scapegoat? Or were Galileo's court connections still at work? Whatever the reason, Galileo spent the rest of his life working at home, under a type of house arrest, producing solid scientific treatises, but never again enjoying the glittering celebrity he once had.

A few Galileo legends need to be laid to rest. Galileo was never tortured by the Inquisition. The Pope alone, in his official statement concerning Galileo, said that Galileo should be made to abjure on threat of torture; yet this was never part of the judges' sentence, and Galileo was never tortured nor shown the instruments of torture. Galileo needed no prompting to deny the reality of Copernican theory; as stated above, his very defence was that he had never since 1616 thought Copernican theory true. Neither is there any record of Galileo muttering, as he left the courtroom, "and yet it turns". It is unlikely that the clearly frightened Galileo would do anything so foolish—at least in anybody's hearing.

Christianity vs ...?

We have seen that Galileo's story is far more involved—and indeed more interesting—than most caricatures reveal. There is still one more element to add, which is frequently overlooked. At no point did Galileo's story involve *Christianity* opposing anything; it was the Catholic Church, egged on by Aristotelian scholars. What happened when Protestants came across the Copernican theory gives a wider context.

There was no widespread horror or outcry against Copernicanism in Protestant countries. It was accepted for what it was: an astronomical theory, of little interest to theologians, but with some technical points to recommend it to astronomers. There was not much in it to cause a great reaction. There is doubt about whether Calvin ever even heard of the theory.³⁵ It is unlikely he would have condemned it on

35 See Edward Rosen, 'Calvin's attitude toward Copernicus', *Journal of the History of Ideas*, 1960, pp. 431-441; Robert White 'Calvin and Copernicus: the problem considered' *Calvin Theological Journal*, 1980, 15, pp. 233-43; and Christopher B. Kaiser, 'Calvin, Copernicus and Castello', *Calvin Theological Journal*, 21, 1986, pp. 5-31.

biblical grounds. In his commentary on Psalm 136 he was of the opinion that the Holy Spirit “had no intention to teach astronomy”.³⁶ Luther made none but offhand comments about the theory.³⁷ Some influential Protestants who took the trouble to study Copernicanism were inclined to be mildly in favour of it, if anything. Melancthon, who was responsible for widespread educational reform in Protestant Germany, encouraged astronomy and lectured on Copernicanism. His approach was cautious, but not reactionary; he developed what is known as ‘The Wittenberg position’, which was influential in Protestant Universities for several decades.³⁸ While he was not prepared to take on Copernicanism wholeheartedly, he acknowledged its technical improvements over the Ptolemaic theory and was content for his students to study it. It was possible for a member of a Protestant country to be far more enthusiastic—as was Rheticus, the German scholar who was ‘converted’ to Copernicanism with as much zeal as he gave to religion. Though he did not have many followers, he was certainly not persecuted for his ideas, and indeed continued in a respectable academic career.

Protestant reaction to Copernican theory is a whole research topic in itself, with a considerable literature (though not as much as Galileo). This is not the place to present a comprehensive account. We do, however, need to widen our focus from Galileo and the Catholic Church if we are to make any conclusions about ‘Christianity and science’. The Protestant reaction provides a necessary counterpoint to Galileo’s condemnation. It is not that Protestantism necessarily had a

36 John Calvin, *Commentary on the Book of Psalms*, Vol. 5, James Anderson (ed. and trans.), Wm B. Eerdmans Publishing Company, Grand Rapids, 1949, p. 184.

37 The one famous comment is recorded in Luther, ‘Table Talk’, *Luther’s Works*, Vol. 54, Theodore G. Tappert (ed. and trans.), Fortress Press, Philadelphia, 1967, pp. 358-359; for discussion of the veracity of this record, see Wilhelm Norlind, ‘Copernicus and Luther: a critical study’, *Isis*, 1953, 44, pp. 273-276.

38 See Robert S. Westman, ‘The Melancthon circle, Rheticus, the Wittenberg Interpretation of the Copernican theory’, *Isis*, 1975, 66, pp. 165-93.

doctrinal bias towards believing that the earth moved; but if a Protestant did wish to accept and defend Copernican theory, he generally had freedom to do so. Without the strict censorship of the Catholic Church, information was more easily disseminated and new ideas more likely to find a hearing in Protestant countries. Protestantism, with its fundamental tenet of individual interpretation of the Bible, did not develop in its institutions the level of control that characterised the Catholic Church. Indeed, after Copernicanism had been suppressed by the Catholic Church, the story was spread far and wide in Protestant polemic against repressive Catholic institutions. All these factors gave Protestant countries an intellectual climate which could be more accepting of Copernicanism than otherwise.³⁹

Galileo today

It is now over three hundred and fifty years since Galileo's trial. Since then, his story has been used for its polemic value by groups of all shades of allegiance. A lot of this polemic has been anti-Christian. In response, Christian apologists, either dismissing the incident as 'unfortunate', or citing some of the real historical details behind the anti-Christian myth, have often overemphasised the alternative. In other words, it has been common for Christian apologists to draw morals from Galileo's trial that emphasise the true harmony between Christianity and science. Other historical episodes may be used to back this up: the emergence of science from a Christian world view, the numbers of scientists who have also been Christian, and so on. To a certain extent such apologetic is valid; there are many ways in which to demonstrate harmony between Christianity and science.

Yet at a deeper level such polemic has its dangers—as the real story behind Galileo's trial demonstrates. Christians should never allow Christianity to be tied to a secular system of thought. Aristotelianism was very attractive and con-

39 See John Hedley Brooks, *Science and Religion: Some Historical Perspectives*, Cambridge University Press, Cambridge, 1991, pp. 94-109, for discussion of these issues.

vincing as an intellectual system, and it gave Christianity a great intellectual boost when the two were 'reconciled'; but Aristotelianism was not Christian, and Christianity should never have been made to depend upon it. The great Aristotelian synthesis left medieval Christianity irrevocably tied to an ultimately faulty philosophy. By the time the flaws in the philosophy were demonstrated, the upholders of the system that was presumed to be Christian were so steeped in Aristotelianism they were unable to cope with the changes. The result was that Christianity was discredited for something that was nothing to do with it.

The same danger potentially lies before us with theories of modern science, if we are not careful. Modern empirical science is an excellent route to knowledge about our physical universe, and most likely a lot of what it promotes is true. Yet its very success lies in the contingent and revisable nature of its theories. Empirical science is a system which is only ever *probably* true—deliberately so—for by nature it must allow itself to be open to constant revision in the light of new evidence. Science advances by rejection of the old under scrutiny of the new. That is the strength and real value of scientific knowledge.

Christianity, if it really is based on infallible revelation from God, does not need to attach itself to that system and does so at its own peril. There is nothing wrong with demonstrating that any particular scientific theory is compatible with biblical revelation. Such demonstration, however, does not prove the Bible true and should never be made the grounds for accepting biblical truth. In time, the scientific theory will change. Christians must recognise the limits of revealed knowledge, and not connect it to knowledge which is constantly under revision. That is the path to ridicule and disillusionment, when the science moves on and Christians are left behind.

Galileo was not the victim of an anti-science religion. Christianity is not irrevocably tied to a geocentric universe and should never have been stretched to fit an intellectual system in which it appeared so. The Catholic Church

was wrong to condemn Galileo, and has certainly suffered in adverse publicity ever since. It is rather unfair, however, that religion *per se* is criticised for an incident which was about political necessities and personal grudges far more than it was anything to do with religious issues. The dogmatism which opposed Galileo's innovative science was the dogmatism of the universities, of Aristotelian philosophy which had reigned for centuries and bolstered the intellectual establishment. The theologians who condemned Copernicanism were wrong, but the inflexible opposition to freedom of thought was not theirs.

Yet now Galileo has become an icon of a modern dogmatism which insists on a war between science and religion, not for any sound intellectual reason but because it suits a modern ideology. If there are historical reasons to propose an inherent clash between science and Christianity, they are not found in Galileo's trial. It is to be hoped that as the mantle of propaganda is lifted from historical truth—as has been done in this century's scholarship on Galileo—that the debate will lose some of its partisan distortion. ☞

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Jacques Derrida

Taking the 'con' out of deconstruction

Greg Clarke

“When I use a word,” Humpty Dumpty told Alice, “it means just what I choose it to mean—neither more nor less.”

“The question is,” said Alice, “whether you can make words mean different things.”

“The question is,” said Humpty Dumpty, “which is to be master—that’s all.”¹

Deconstruction can be seen as a long commentary on this conversation between Alice and Humpty Dumpty. It represents a way of thinking about language, meaning, reading, politics, culture, institutions and the aims of scholarly endeavour. In this article, I hope to provide an introduction to

1 Lewis Carroll, *Through the Looking Glass*, The Folio Society, London, 1962, p.75.

deconstruction from the standpoint of literary criticism, with reference to philosophical linguistics. I will address some of the major themes in the work of Jacques Derrida, deconstruction's major exponent, and attempt to tease out some of the theological effects and implications of deconstruction. Finally, I will offer some thoughts on whether we ought to take deconstruction seriously. Is it a devastating assault on Western philosophy? Or is it merely a sophisticated intellectual con, leaving us with only a destructive form of nihilism?

Defining problems

Deconstruction has the usual problems of definition, and then some. It is associated with a range of mainly continental and American names, such as Derrida, Lyotard, Levinas, de Man, Hillis Miller, Taylor and Foucault. The breadth of academic fields, languages, cultures and political interests of these writers makes the use of an umbrella term such as 'deconstruction' questionable. Nevertheless, there are certain methodological and ideological similarities which link these thinkers together. These similarities provide a focus for defining the 'movement'.

Part of the problem with defining or describing deconstruction is that one of its claims is that definitions or descriptions are never correct. They are always deceptions—constructions of truth which can be shown to be deficient at certain points. I will, nevertheless, boldly offer some defining comments in the form of a number of descriptive sentences, which will be explored further.

1. Deconstruction is a way of reading or interpreting texts which seeks not to discover what they mean, but why they can't mean what we think they mean.
2. Deconstruction is an unusual form of rhetorical criticism which persuades the reader of the inadequacies of language to express anything true about the real world.
3. Deconstruction amounts to a denial that we can ever have a metaphysics. In other words, any dis-

course which is based upon a system (or an 'arché', in Derrida's terms) will fall short of its ambition, break down, and another system will rise out of its ruins.

4. Deconstruction is a criticism and an undermining of the Western tradition of philosophy and certain foundational rules which it employs.

These four statements take us into the sphere of deconstructive thought. But how does a scholar operate in this sphere? Jonathan Culler, a proponent of this approach, provides a succinct summary:

To deconstruct a discourse is to show how it undermines the philosophy it asserts, or the hierarchical oppositions on which it relies, by identifying in the text the rhetorical operations that produce the supposed ground of argument, the key concept or premise.²

In other words, the deconstructionist's claim is that the language we use to make distinctions never holds true—it is never powerful or precise enough. We see this by examining the language closely. Culler gives an example (which he has taken from Nietzsche) of this type of analysis.³ He considers the statement "A cause is something which produces an effect". The cause is considered logically and temporally prior to the effect. However, in our experience, the cause is only labelled as such after the effect. We sit on a pin; we feel pain; we look for the object which produced the pain. We say the pin has caused the pain, but on another level the pain caused us to discover the pin. We experience this cause-and-effect scenario in the opposite way to how we think about it. Deconstructionists call this a disruption of the rhetoric of causality.

It must be said that this analysis is almost completely

2 J. Culler, *On Deconstruction*, Routledge & Kegan Paul, London, 1983, p. 86.

3 *Ibid.*, pp. 86-88.

undisturbing. We can safely say that the physical processes of causality are not disrupted by our experience of them. The pin caused the pain, full stop. However, our rhetoric for discussing this incident does tend to buckle under interrogation. We use the language of cause to talk about effects (e.g. 'the pain made me cry out' or 'because of the pain, I stayed home from university').

It can be said that 'cause' and 'effect' as meaningful words are mutually dependent and not hierarchical. We understand them by each other, in connection with each other, and we use them to describe and explain each other. What can be drawn from this problematic example is that our language struggles to correspond with physical processes or things. It struggles even more to correspond with meta-physical processes or concepts.

This is how deconstructionists do their work. They endeavour to find the paradoxes and contradictions and tensions (what Derrida calls the 'aporia') in discourse and to 'deconstruct' them—to pull down the structure which we think holds the language together, and show that it is faulty. Other deconstructionists extend this type of analysis to areas of scientific knowledge (Lyotard⁴), psychology (Lacan⁵), politics (Deleuze & Guattari⁶), social institutions (Foucault) and the various arts. Deconstruction claims that all philosophical enquiry in every field of application is preceded by an enquiry into language; or, more precisely, all philosophical enquiries are deferred by the enquiry into texts.

4 e.g. J-F. Lyotard, *The Postmodern Condition: a Report on Knowledge*, G. Bennington & B. Massumi (trans.), Manchester University Press, Manchester, 1984.

5 e.g. J. Lacan, *The Four Fundamental Concepts of Psychoanalysis*, A. Sheridan (trans.), Hogarth Press, London, 1977.

6 e.g. G. Deleuze & F. Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, Viking Press, New York, 1977.

7 e.g. M. Foucault, *The Order of Things: an Archaeology of the Human Sciences*, Random House, New York, 1970.

The force of deconstruction in linguistic philosophy and literary criticism was first felt in 1966 when Jacques Derrida exploded something of a French bomb under the seas of American literary studies (although Derrida's seminal works were not published in English until the mid-70s). He presented a paper at a John Hopkins University Conference called "Structure, Sign and Play in the Discourse of the Human Sciences" which was an attack upon the Structuralism of Ferdinand de Saussure. (Ironically, the purpose of this conference had been to introduce European structuralism to US universities. Derrida put the nail in the coffin before the baby had been born!)

Where structuralists, such as linguist Ferdinand de Saussure and anthropologist Claude Levi-Strauss, see language and culture as possessing a grammar and a syntax in their organisation and formation, Derrida argues that all of these rules are merely *functional* and *provisional*.⁸ They are only ways of sharing common ground for sensible communication. They are not accurate constructions of the reality of language and culture. Every rule or set of relations can, according to Derrida, be shown to contain contradictions and confusions which undermine its foundations. Every opposition can be deconstructed. No structure of knowledge is a true expression of a corresponding reality.⁹

Derrida attacked Saussure's notion of the signified and

8 This idea was developed strongly in the discussion following Derrida's paper at the 1966 John Hopkins conference: "I didn't say that there was no center, that we could get along without the center. I believe that the center is a function, not a being—a reality, but a function. And this function is absolutely indispensable." See Macksey, R. & Donato, E. (eds.) *The Languages of Criticism and the Sciences of Man: The Structuralist Controversy*, John Hopkins University Press, Baltimore, 1970, which includes Derrida's 1966 John Hopkins conference paper 'Structure, Sign and Play in the Discourse of the Human Sciences'.

9 Somewhat ironically, Derrida's work is a sustained attack upon the law of non-contradiction. Western thinking has as one of its cornerstones the idea that something cannot be both A and not-A. What Derrida seeks to establish is that A and not-A are interdependent, and therefore the law of non-contradiction does not hold. (Derrida has derogatively been called 'the Zen master of Western philosophy'.)

the signifier. Saussure's theory of language explained linguistic 'signs' (that is, words) as a combination of two elements—the 'signifier' and the 'signified'. The signifier is the aspect of the sign which does the communicating—the combination of letters in a word, or the sound of the word when pronounced. Thus, the 'signifier' for a hairy four-legged creature which barks is probably 'dog'. The 'signified' is the idea which 'dog' represents (what 'dog' means—something that is a hairy four-legged creature which barks). Note, however, that the signified is not the dog itself, but the *concept* of dog. Saussure calls the dog itself the 'referent'.¹⁰

According to structuralism, the only way meaning is established is by difference. In other words, structuralists do analysis by uncovering distinctions (Levi-Strauss used the distinction between 'nature' and 'culture' as a basis for his anthropology).¹¹ Derrida says that these differences never amount to an opposition.¹² Rather, there is a constant play between signifiers (words), whereby words only ever mean anything in reference to other words. Apart from that, they are empty—they have no centre, no final definition. Signifiers that may seem to be opposed are actually interdependent in order to mean anything.

The meta- end

The Western world, according to Derrida, is built around this concept of a 'center'¹³—a fixed point of reference, something unmoving which becomes a rule or measure for everything else. In different traditions, this center is 'God' or 'man' or 'the meaning of life' or some such thing. Derrida calls it the 'transcendental signified'. It is the concept that holds all other concepts together.

10 Most of de Saussure's work was not published until after his death, when it was compiled by his students as *Course in General Linguistics*. These formative linguistic concepts come from the first part of the *Course*.

11 See C. Levi-Strauss, *Structural Anthropology*, C. Jacobson & B. G. Schoepf (trans.), Allen Lane, London, 1968.

12 Derrida deconstructed Saussure, Lévi-Strauss and Rousseau in his book *Dissemination*, University of Chicago Press, Chicago, 1981.

13 The spelling 'center' is used in this essay to refer to the Derridean idea.

In order to talk about the center, it has to have a signifier—like the word ‘god’. It has to exist in the world of language. The problem is that once it enters the world of signifiers, it ceases to stand ‘beyond’, to be outside the interplay of language. So to ask the question: “What do you signify by the word ‘god’?”, you can only reply by using other words, such as ‘power’, ‘truth’, ‘love’, ‘creator’, ‘not evil’ or ‘not mortal’. To turn from ‘god’ back to ‘dog’ for a moment, the word ‘dog’ can only be understood by its difference from other words—‘not a cat’, ‘hairy’, ‘four legs but not a horse’, and so on. Its meaning cannot be centralised; it has to be constructed from other signifiers. The difference between these signifiers is what enables meaning. Plato recognised as much, as did Saussure. But it was Derrida who pushed this idea to new heights.

Derrida claims that, because meaning in language is established by differences between signifiers, meaning is actually always deferred.¹⁴ (This is what is meant by his neologism *differance*, a play on the dual meaning of the French, *differ*—either to defer, or to differ.) One signifier always leads to another, and meaning is chased down pathways of words without ever settling: “The absence of the transcendental signified extends the domain and the play of signification infinitely.”¹⁵

The outcome of this observation is profound: Derrida sets about bringing an end to metaphysics—or ‘meta’ anything, for that matter. His is a programme of ‘decentering’. He is not, it must be noted, arguing that there is no center, nor could not be, but that because of the endless chain of signification, any center we nominate is conditional, because it can be deconstructed. So, to do deconstructive criticism, whether in philosophy or literature, is to ‘interrogate the center’. It involves discovering the implicit and

14 J. Derrida, ‘Différance’ in *Margins of Philosophy*, A. Bass, (trans.), University of Chicago Press, Chicago, 1982, pp.6ff.

15 J. Derrida, “Structure, Sign and Play” in Macksey and Donato, *op. cit.*, p.280.

explicit structures in a text and undermining ('decentering' them). It is, therefore, a task of negation.

The relationship between writing and speaking is of great interest to Derrida. He has written extensively on this subject,¹⁶ and it can be given only inadequate attention in this article. It is significant because in this area he makes bold and unusual claims. Traditionally, it has been claimed that speaking is real and meaning is 'fully present' in it. Think of the commonplace sayings "You had to hear her say it", "You really had to be there" or, more specifically, "If only I'd been a disciple and heard Jesus giving the sermon on the Mount, then I'd really understand it". In contrast, writing is one step removed from real meaning—it conceals meaning. Derrida reverses this tradition by deconstructing the relationship between writing and speaking and showing that they are interdependent.

In a very detailed study in *Dissemination*, Derrida attempts to show that writing is primary and meaning in speech is derived from meaning in text. He deconstructs Plato's *Phaedrus*, in which Socrates relates an encounter between an Egyptian King, Thamus and the god Theuth. Their encounter is a discussion of the issue of speech and writing, in which it is 'proven' that speech is superior. Writing is merely a re-presentation of something that has already been said. It is one step away from real; it is a copy. Derrida points out the irony that we become aware of the attack on writing through Plato's written dialogue. What's more, in denigrating writing, Socrates uses the rhetoric of writing: for example, he says that the spoken word is 'written on the soul'.¹⁷

16 e.g. J. Derrida, *Of Grammatology*, John Hopkins University Press, Baltimore, Fr. 1967, Eng. 1977; and *Writing and Difference*, Routledge & Kegan Paul, London, Fr. 1967, Eng. 1978. This is, perhaps, his most prevalent theme.

17 J. Derrida, J. "Plato's Pharmacy" in *Dissemination*. See also A. Jacobs, 'Deconstruction' in C. Walhout, & L. Ryken, (eds), *Contemporary Literary Theory: A Christian Appraisal*, Eerdmans, Grand Rapids, 1991, pp.179-182.

The discussion of speech and writing highlights the pervasive issue of the death of the author, as raised by Roland Barthes.¹⁸ When words are written and then disseminated, especially through mass publication, they leave the control of the author and become, arguably, subject to the whims of the reader. Authors might as well be dead when it comes to resolving issues of interpretation—they're not around for a question-and-answer session as you try to read what they have written. Furthermore, I suggest that in the technological age we can see that speech has the same problems of interpretation as does writing. The speaker is not always present—sometimes his voice is coming from a tape recorder, or a PA system. He cannot be interrogated as to his meaning. The speaker in these instances is just as dead as the author. There is nothing, therefore, that makes speech *per se* more true or verifiable or 'present' than writing.

In his prolonged analysis of speech and writing, Derrida is attacking the word-centredness (he calls it *logocentrism*) of Western thinking. He believes that Western philosophy has sought to keep speech primary and to consider writing 'contaminated', because this hierarchy preserves the idea that meaning can be made present. Derrida demonstrated that speech is a species of writing; the two cannot be so clearly distinguished. If writing is at the heart of language, then the lack of a presence (that is, the speaker) makes meaning elusive. The center has gone, the sense of presence, of authority.

It is not surprising, then, to discover that there is a basic lack of confidence within deconstruction that language can adequately represent the divine. The task, therefore, of the field of deconstructive theology is to demonstrate its own inadequacy—to show us that it is unable to speak

The Bible speaks

18 Roland Barthes moved from being a structuralist to a post-structuralist with his short essay 'The Death of the Author' (1968) in R. Barthes, *Image-Music-Text*, Fontana, London, 1977. This essay rejected the view that interpretation of a text is a matter of determining the author's intention in writing it. This view has echoed throughout academic circles ever since.

about God. For this reason, it is often called 'negative theology'. Among those who have endeavoured to work in this field are Thomas Altizer,¹⁹ Mark C. Taylor,²⁰ John Dominic Crossan²¹ and Stephen D. Moore.²²

Derrida only occasionally discusses the Bible,²³ but the relationship between speech and writing is of great importance to him and has many implications for our understanding of Scripture. In one essay,²⁴ Derrida compares the prologue of John with how we experience God through the Scriptures: "In the beginning was the Word [or *logos*], and the Word was with God, and the Word was God" (John 1:1) and "The letter kills, but the Spirit [breath] gives life" (2 Corinthians 3:6). These verses, says Derrida, describe the special place *speech* has attained in Western thought. The Word was present with God; the word was what created the world; speech makes the word of God and God's world present. We, however, do not hear the speech of God anymore; instead we have written words, in a book. "God no longer speaks to us," says Derrida, "he has interrupted himself: we must take words upon ourselves...we have ceased hearing the voice from within the proximity of the garden [of Eden]...The difference between speech and writing is sin...lost immediacy, work outside the garden."²⁵

Whilst suggestive, this analysis leaves too much of Scripture unconsidered. The Scriptures do not denigrate writing

19 e.g. T. J. J. Altizer *et al.*, *Deconstruction and Theology*, Crossroad, New York, 1982.

20 e.g. M. C. Taylor, *Deconstructing Theology*, Scholar's Press, New York, 1982.

21 e.g. J. D. Crossan, *Cliffs of Fall: Paradox and Polyvalence in the Parables of Jesus*, Seabury Press, New York, 1980.

22 e.g. S. D. Moore, *Postmodernism and the New Testament: Derrida and Foucault at the Foot of the Cross*, Fortress Press, Minneapolis, 1994.

23 Derrida's latest book, *The Gift of Death*, University of Chicago Press, Chicago, 1995, has not been considered in this article. According to the dust jacket, it is his "most sustained consideration of religion to date", with a major focus on the Old Testament.

24 J. Derrida, 'Edmond Jabès and the Question of the Book' in *Writing and Difference*, *op. cit.*

25 *Ibid.*, p. 68. For discussion of this point see Moore, *op. cit.*, pp. 25ff.

in this way. What of Moses's stone tablets containing the written commandments of God (Exodus 31:18), or of the Book of Life which contains the written names of the saints (Revelation 20:12), or God telling the scribe to "Write this down, for these words are trustworthy and true" (Revelation 21:5)? Or what of the comments in John's Gospel about the nature of the written account: "...these are written that you may believe that Jesus is the Christ, the Son of God, and that by believing you may have life in his name" (John 20:31)?

In Scripture, writing is explicitly granted the ability to be true and effective in generating belief, and life itself. There is a great deal of Scriptural data that challenges the view that writing is corrupted speech. Perhaps, at this point, Bible believers are in greater sympathy with Derrida than he himself realises. Nevertheless, Derrida's comments are suggestive of the value placed upon the *voice* and *presence* of God in the Scriptures. It is fascinating to consider that God himself *wrote* the commandments on the first tablets of Moses (the ones which Moses broke in his anger at the people's idolatry). Exodus 32:16 emphasizes that this writing is "the writing of God, engraved on the tablets". God was/is present in his written word.

Derrida has stimulated some potentially very useful work in this area: how do we experience the presence of God in his Word, the Bible? And how does our belief in the 'voice of God'-ness, of Scripture, affect our interpretation of it? Does it provide limits of interpretation and signification which differ from those for other texts?

Furthermore, Derrida's attacks upon binary opposites—claiming that they will always at some point depend upon each other, and therefore not be opposites—resonates quite strongly with some aspects of Christian theology. For instance, many of us would want to say that the mind and the body are not binary opposites, neither are transcendence and imminence, or form and content, or even presence and absence. At this point, deconstruction becomes very useful for theologians since, by its negative programme, it can operate to quash positivist errors and heresies. For example, in the famous church councils of the early centuries, where the

nature of Christ was debated, a deconstructionist approach to docetism—which argued that Christ’s sufferings were not real—could have demonstrated the problems with separating Christ’s divinity and humanity. In the Lord, these are not opposites. Deconstruction also brings about a healthy lowering of our confidence in systematics, which is not the essence of biblical revelation and can easily distort it.

The deconstructive programme has, however, become the staple diet for a whole spectrum of academic disciplines, as they set out to subvert opposites such as masculine/feminine, heterosexual/homosexual and right/wrong. Far from being used for the good of Christian theology, it has become an important weapon for those who wish to undermine ideas such as the authority of Scripture and the existence of a personal God.

Some evaluations

After Derrida presented his paper at the 1966 John Hopkins conference, he became an academic celebrity. He was quickly offered a chair at Yale. Critics there gathered around him, promoting and extending his work. By 1986, the honeymoon was over, deconstructionists had become part of the establishment, and time and distance began to work their magic as criticism of the movement entered a new phase. With the benefit of a further ten years of evaluation, some important assessments are emerging.

1. The ‘con’ of deconstruction

Deconstruction is far from the marching academic army that it might seem to be. According to the MLA CD-Rom Bibliography (which records publications in the humanities), in the last fourteen years of literary endeavour, less than one thousand of the books published were associated with deconstruction (this is a very small percentage—perhaps 1%). Hone in on a particular field and the figures are even smaller. In 19th century literature, out of the 16, 715 works listed on a major humanities database, only 75 of them were identifiably deconstructionist—0.5%. In 18th century literature, it is 0.3%.

The interesting question is, why did it gain such ground

in university faculties? One could point to the fact that certain influential deconstructionists gained positions of power on American literary boards (a fact not without its ironies—centralising power led to deconstruction's rise!) The more cynical commentators have said that a major reason for Derrida's popularity in the U.S.A. was that he gave literary studies the 'weightiness' of philosophy—literature was no longer the poor cousin. Suddenly, literature lecturers felt that they were doing more than discussing stories. Yet others have said that its popularity came from the general anti-authoritarian sense of society at large.

But there is also something of a con going on in literary circles. It is one thing to use new words to clarify difficult concepts; it is quite another to be as obscure as possible in order to seem profound. Deconstructionists are too often guilty of the latter. The con becomes perhaps more noticeable when deconstruction moves from the universities into the mainstream media. Beatrice Faust, the acerbic social critic, has rendered the experience of many people in sharp relief:

Whenever I came across it [French philosophy and deconstruction], I felt as if I had put my foot in a cowpat: my instinct was to shy away...Cow-pat theorists use appallingly convoluted language that is partly required by highly abstract thought but also expresses contempt for the uninitiate in the audience and a desire to set up an us/them division between the elect and the rest of us.²⁶

And Faust's comment on the role of deconstruction in the academy:

Deconstructionism is a job-creation scheme for the newly educated.²⁷

Deconstruction, in 1980, looked set to massacre literary study, but within five years it had become known as

26 B. Faust, 'Unthrifty writers', *Australian Rationalist*, June-Sept 1995, 38, p. 39.

27 B. Faust, *The Weekend Australian*, Jan 21-22, 1995.

'another interesting contribution to critical reading' and it is on the wane. In fact, there is now much more interest in historical and social approaches to literature than there is in deconstruction. It has been suggested by some that its apolitics is the most cogent reason for this demise (political correctness was just taking over); others, that it waned in order to let literary study survive its own attack!

At the level of public reception, deconstruction can appear to be, and indeed be, merely a trendy exercise in obfuscation. It has certainly suffered (and benefitted) from the claw-like grip of fashion. Whilst we ought not to assess the complex writings of certain postmodern thinkers by what other people have done with their work, there is a sense in which we know them by their fruits.

2. Deconstruction has its own metaphysics

While claiming to deny the whole field of metaphysics, deconstruction operates within a kind of deflated hedonism which is ethically and morally impotent. The critic M. H. Abrams puts it well:

And on this cheerless prospect of language and the cultural enterprise in ruins, Derrida bids us to try to gaze, not with Rousseauistic nostalgia for a lost security as to meaning which in fact we never possessed, but instead with 'a Nietzschean affirmation, the joyous affirmation of the play of the world and of the innocence of becoming, the affirmation of a world of signs without error, without truth, without origin...In absolute chance, affirmation also surrenders itself to genetic indeterminacy, to the seminal chanciness of the trace.'²⁸

Surely Derrida has here made a metaphysical statement. Deconstruction is an analytic method, but it is married to a worldview—nihilism—and one containing nothing which

28 Abrams, M. 'The Deconstructive Angel', *Critical Inquiry*, 1977, 3, p. 431.

compels me to believe in it. To be fair, Derrida recognises this problem (that he has to use metaphysics in order to debunk it). In fact, he builds this fact into his approach. It must be said then that his endeavour to escape metaphysics by turning its rhetoric against itself has thus far failed.

The problem is that, while your brain is still connected to its stem, it is impossible to escape the law of non-contradiction. Deconstruction uses the discovery of contradictions, in its breakdown of binary opposites, to argue against the concept of contradiction! Derrida is aware of this dilemma: "We cannot utter a single deconstructive proposition which has not already slipped into the form, the logic and the implicit postulations of precisely what it seeks to contest."²⁹ He claims that a kind of learned helplessness is the only honest alternative to philosophical silence; negative criticism is all that philosophy (and linguistics and literature) can provide. However, I can't take seriously an approach which denies oppositions and then seeks in its enquiries to find impasses which are in fact oppositions. Would not a blind faith in Linus's 'Great Pumpkin' be preferable?

There is something of an Utopian longing in the concept of 'the free-play of signifiers'. It's a Nietzschean Utopia, where nihilism is embraced and celebrated, but Utopia nonetheless. Here we see the Derridean metaphysic that he would never claim: life is pointless, language is trivial, let's all enjoy these games before we die. Strangely enough, people have taken Derrida and used him to generate a different metaphysic: life is pointless, language is political, let's make sure we have the most fun of anybody before we die. Hence, the use of deconstruction to buoy up feminism, marginalised cultures and radical philosophy. Destroy the foundations of patriarchy, and people will look towards feminism; feminism will gain the ascendancy. Attack white supremacy and colonialism and power won't be neutralised, but will instead shift towards minority groups and oppressed peoples. The drive

29 Derrida, J. "Structure, Sign and Play" in Macksey and Donato *op. cit.*, pp.280-81.

for logocentrism—to create a discourse of power—is strong.

Deconstruction as a method of philosophical enquiry has no moral dimension, since it avoids or defers any ‘center’. But by default, it establishes its own power structures. Such an attitude to authority seems to me irresponsible and likely to cause greater oppression than it relieves (as we are starting to see with the rise of political correctness in the universities).

In other words, deconstruction is empowering. Whilst claiming to be anti-authoritarian and anti-dogma, the proponents of deconstruction more often than not speak with the conviction of preachers and the authority of schoolmasters. Deconstruction is, in fact, a Nietzschean outworking of the will to power. It is about the power of criticism. Ironically, it means that as deconstruction succeeds in its task, it draws power to itself—makes itself a center. It must therefore, according to its own philosophy, undo itself.

Derrida recognises that deconstruction turns back upon itself. If your claim is that every philosophical assertion can be shown to contain contradictions, then you must realise that also applies to your own work. But Derrida is content with this—he seems to profess the slogan of the cartoonist Ashley Brilliant: “I’m feeling much better now that I have given up any hope.” That is post-structuralism in a nutshell.

3. Deconstruction is unnecessarily extreme in its conclusions about indeterminacy.

Deconstructive criticism claims to situate language within history, but in fact it ignores the effects of history upon language. Readers and authors have, over time and space, developed meanings for texts (be they not exhaustive) which they share. There seems to be no compelling reason to think that, just because language is more than merely referential, the only alternative is the unceasing play of undecidable, ever-deferring differences. It seems much more reasonable to recognise that we can find norms of discourse to approximate what we mean, all the while being aware of and open to reflection upon the wealth of meaning which

can be attributed to a text. We can recognise different genres and intentions, ‘readerly’ and ‘writerly’ texts.

If, in the ‘play of signifiers’, the constant deconstruction of concepts and the endless deferring of meaning, we are only ever getting it wrong, what is the point of doing any critical work? If we are never getting any closer to true understanding, then the critical task is worthless. It won’t do to simply say that meaning is always deferred: in practice, that amounts to epistemological nihilism. This kind of criticism is play of the worst kind—the kind which doesn’t even feel like fun, like the twelfth hour of Monopoly on a rainy afternoon. It makes you feel sick in the stomach. Perhaps Derrida would experience this nausea more acutely if his theory had not been so phenomenally popular.

Finally, I believe that deconstruction comes down on one side of a difficult theoretical issue: do we rule language or does it rule us? Derrida seems to support the view that we rule, yet the court is still out on the status of theories such as innate ideas and innate grammar. Derrida makes little room for language to act upon us, to change us, to give us ideas, to influence and mould our beliefs. Language is, for him, merely something to play with. However, as people who believe in the power of God’s Word, we do not expect to rule over language.

Deconstructionists, strangely enough, are in a good position to believe not in a ‘center’, but in a personal God who both embodies and writes what he speaks. Humpty Dumpty was on the right track. If, indeed, we are spoken to by a supreme Wordmaster when the word of God is preached or read, the challenges of deconstruction tend to diminish. How ‘being spoken to’ differs from ‘reading’ and ‘interpreting’ remains to be explained. That is a task for today’s Christian scholars. ❀

Who is
Wordmaster?

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Suggested introductory reading on deconstruction

Kamuf, P. *A Derrida Reader: Between the Blinds*, Columbia University Press, New York, 1990.

Selden, R. *A Reader's Guide to Contemporary Literary Theory*, Harvester Wheatsheaf, Hemel Hempstead, 1989, Ch. 4 'Poststructuralist theories'.

Walhout, C. & Ryken, L. *Contemporary Literary Theory*, Eerdmans, Grand Rapids, 1991, pp.172-198.

reviews

Postmodern science

Ross McKenzie

All knowledge is local, or “situated”, the product of interaction of a social class, rigidly circumscribed by its interests and prejudices...There is no knowledge, then; there are merely stories, “narratives”, devised to satisfy the human need to make sense of the world (p. 72).

This is the postmodern world view, as described by Gross and Levitt. In the past twenty years it has flourished in universities in departments of English, comparative literature and fine arts and has spread into sociology, history, social work, political science, anthropology, and philosophy. This is the world view that is being instilled in the present and next generation of school teachers, politicians, and public servants. In the words of a postmodernist, “Postmodern social theory vigorously rejects every key axiom

*Higher Superstition:
The Academic Left
and its Quarrels with
Science*

Paul R. Gross and
Norman Levitt
Johns Hopkins
University Press,
Baltimore, 1994.

of modern philosophy and sociology: it renounces foundationalism and representational epistemologies. Postmodernism stresses the relativity, instability and indeterminacy of meaning: it abandons all attempts to grasp totalities or construct Grand Theory” (Stephen Best, quoted on pp. 95-96).

In contrast to postmodernists, modernists embrace the Enlightenment. Basic to this is the idea that through reason and reason alone (so rejecting revelation), a reliable body of knowledge about the world can be assembled.

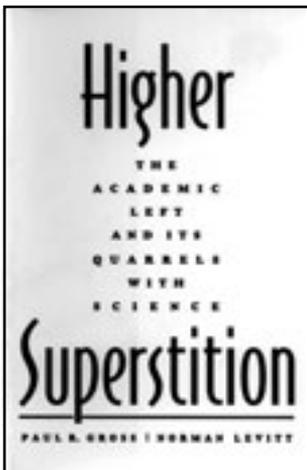
Much of this involves attempting to apply scientific methods to a broad range of fields. Postmodernists see “such a project as inherently futile, self-deceptive, and worst of all, *oppressive*” (p. 72).

Gross and Levitt point out that postmodernism is almost exclusively embraced by academics with left-wing views and is used in the classroom to proselytize passionately a feminist, homosexual, multicultural and radical environmental agenda. (At the same time, as the authors stress, many left-wing academics do not embrace postmodern views.) Postmodernism is used to attack everything Western or at least perceived as Western: literature (those “dead white males”), music, Christianity, capitalism and technology. Consequently it is natural that postmodernists should aim their sights

on science, since the technology it produces undergirds much of capitalism. Furthermore, the success of science is what made the Enlightenment seem so compelling. Science claims there is a reality, there is truth (some theories are wrong and some are right), and there is a reliable method of finding out what that truth is. Hence science stands in complete opposition to postmodern ideas.

This book presents a powerful critique of postmodernism and its quarrel with science. The authors argue from a strongly modernist perspective. Paul Gross holds an endowed chair in biology at the University of Virginia and Norman Levitt is a Professor of Mathematics at Rutgers University. Their methodology is to provide representative samples of writing about science by prominent advocates of postmodernism, and then carefully critique them. Their style is, to say the least, vigorous: “This work is deeply unsatisfactory...hopelessly naive and reductionistic...These perverse theories seem often to escape mere inaccuracy and rush hell-for-leather toward unalloyed twaddle...a wash of the authors pontifications...The confusions evident in this passage are comical...What takes place is the arrogance of the dogmatist...an irrelevant botch...a con game...conceptual freak show...megalomaniac pretension...”

Are such harsh words justified? After reading some of the excerpts of post-



modern writing, I can only say emphatically yes! Before reading this book I was quite unfamiliar with postmodern writings on science. After reading it, I felt what I think is quite justifiable anger. As a working scientist I naively thought any academic could not seriously write “twaddle” (to borrow one of Gross and Levitt’s descriptions), let alone, may I say, get it published! Yet precisely this point is made again and again by Gross and Levitt.

[Commenting on the book *Chaos Bound* by N. Katherine Hayles] All these strange pronouncements upon which we have focused occur, as we note, on one page. There is nothing particularly special about that page. This book is stuffed with similar solacisms, which makes reading it a painful experience. Yet the work is published by a distinguished university press [Cornell] and has garnered Hayles a substantial degree of recognition, including an endowed chair at a major university, a Guggenheim Fellowship, the presidency of the Association for Science and Literature, and the chairmanship of the literature and science committee of the Modern Language Association; so we ought not to conclude that this is some kind of crackpot tract of the New Age movement (although the word *crackpot* unkindly leaps to mind when one has to read it). This is very

much in the academic mainstream, as commandeered by the votaries of postmodernism (pp. 103-4).

I will try to demonstrate the nonsense (I use the word deliberately) that postmodernists write about science with three examples. As these concern physics, I can speak with some authority. Postmodernists are very eager to show that modern physics itself is in crisis: it is “played out...has lost its epistemological clarity...” and supports a postmodern world view. Yet I know of no physicist who would agree with this. Three examples—Heisenberg’s uncertainty principle, Einstein’s theory of relativity, and chaos theory—are commonly cited to justify this position. In every case the postmodern argument is based on a complete ignorance of the physics involved and hinges on assuming that certain words (for example, uncertainty, relative and nonlinear) have exactly the same meaning in physics that they do in literary criticism. (This is rather ironic when postmodernists claim that words have no absolute meaning.)

Heisenberg’s uncertainty principle

This states that it is impossible to determine simultaneously with 100% accuracy *both* the velocity and position

of a particle. Postmodernists (and many New Age tracts) claim that “since physics has discovered the uncertainty principle, it can no longer provide reliable information about the physical world, has lost its claim to objectivity, and is now embedded in the unstable hermeneutics of subject-object relations” (p. 51). I can only applaud Gross and Levitt’s response:

Once obscurantism has been stripped away, we recognize that the uncertainty principle is a tenet of physics, a predictive law about the behaviour of concrete phenomena that can be tested and confirmed like other physical principles. It is not some brooding metaphysical dictum about the Knower versus the Known, but rather a straightforward statement, mathematically quite simple, concerning the way in which the statistical outcomes of repeated observations of various phenomena must be interrelated. And, indeed, it has been triumphantly confirmed. It has been verified as fully and irrefutably as is possible for any empirical proposition. In other words, when viewed as a law of physics, the uncertainty principle is a very certain item indeed. *It is an objective truth about the world.* (If that were not so, there would never have been so much fuss about it!) (pp. 51-52).

Einstein’s special theory of relativity

Two observers who are moving relative to one another will make disparate observations of the time and length intervals associated with the same events. Einstein’s theory provides a mathematical prescription for relating these disparate observations. It is based on the fact that the speed of light is the same for *all* observers. Relativity theory does *not* support a position of philosophical relativism. Although length and time are not absolute, one can construct an invariant combination of them. Furthermore, like the uncertainty principle, it presents objective truth about the world that has been verified experimentally. Postmodernists claim that relativity supports their world view and use it to justify writing grand statements such as “The inner collapse of the bourgeois ego signalled an end to the fixity and systematic structure of the bourgeois cosmos. One privileged point of observation was replaced by the complex interaction of viewpoints” (p. 46). Jacques Derrida, the founder of deconstructionism, writes, “The Einsteinian constant is not a constant, not a center. It is the very concept of variability—it is, finally, the concept of the game. In other words, it is not the concept of some thing—of a center from which an observer could master the field—but the very concept of the game”

(p. 79). “The Einsteinian constant” he refers to is the speed of light. He reveals his profound ignorance by claiming that the speed of light is *not* a constant, in complete contradiction to the theory and numerous experiments.

Chaos theory

This involves the study of systems that change with time (dynamical systems theory) according to laws that are typically deterministic and simple. Given the initial condition of a system one can predict its future motion. However, often a small change in this initial condition will produce large changes in the future motion. Practically, this makes it difficult to predict the future and lead to bizarre notions such as that ‘a butterfly in Brazil can cause a tornado in Texas.’ The motion can be ‘chaotic’, in a well-defined mathematical sense. Yet the amazing thing is there is ‘order’ in this chaos and well-defined laws describing the transition from regular to chaotic motion have been discovered. Hence, as for quantum mechanics, chaos theory cannot be used to justify the postmodern notion that knowledge is unstable and unreliable. Postmodernists seem to be particularly infatuated with chaos theory because it involves nonlinear rather than *linear* equations. The difference between the two has a well-defined technical meaning but which is of absolutely no philosophical signifi-

cance. This point seems to be lost on postmodernists:

To be a paid-up member of the postmodern academic left, the word *linear*, for example, carries negative connotation. It suggests relentless sequentiality, unbending purposefulness, singlemindedness, the triumph of the instrumental...Inevitably, *non-linearity* is seen by contrast to have liberatory implications. It suggests many-sidedness, multiculturalism, diversity, polymorphism, the effacement of boundaries (pp. 104-5).

Again this shows how postmodernists completely misunderstand the science they write about and how their arguments are often based on the incorrect assumption that words used in physics have exactly the same meaning as they do in literary criticism.

In conclusion, what do we learn from this book? Postmodernism is on extremely shaky intellectual ground. The ridiculous nature of postmodern pontifications on science undermines the credibility of postmodernists to speak on other subjects, such as Christianity. Christians certainly need not feel worried by the claims of postmodernism. It is not academically profound, as this book points out. Beside the certainties of Enlightenment modernist science, postmodernism looks like a very poor cousin.

What the authors of this book do not acknowledge, however, is that postmodernism itself has arisen out of the *failure* of the Enlightenment. Science does not have all the answers. Fields such as sociology and psychology have not produced the reliable knowledge or social benefits promised by some of their advocates. A plethora of academic studies of poverty, sexuality, and educational theory have not stemmed the rise of crime, divorce and illiteracy in the USA. I contend that most of these failures result from using assumptions that contradict revealed truth, such as that men and women are sinful.

Modernist scholarship is flawed because it rejects revelation. This book

shows postmodern ‘scholarship’ is flawed because it rejects reason. Christians can learn from failures of both these philosophies which stand opposed to Christianity. The church has created problems for itself (including fuelling the Enlightenment) when it has thought that to embrace revelation it must reject reason. Christians need to embrace *both* reason and revelation. All truth is God’s truth. ☞

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Here's lookin' at me, kid

Dani Scarratt

Reading *Psychology as Religion* is something like watching *Casablanca* for the first time—you recognise the lines, but never before realised where they came from. After the film, you now know who's looking at whom, and why Sam is playing it again.

American psychologist, Paul Vitz, does the same sort of thing in his book. His critique of popular clinical psychology uncovers ideas and assumptions which are all too easy to recognise in our society and ourselves. He spells out the original contexts of these ideas and their fundamental opposition to Christianity. Here we see where lines such as 'believe in yourself', 'follow your heart', 'self-actualisation' and 'self-fulfilment' have come from.

The book explores what Vitz calls 'selfism' or 'the cult of self-worship'. Selfism is used as an umbrella term to cover many brands of psychotherapy ('talking' therapies)¹ which focus on

*Psychology as Religion:
The Cult of Self
Worship* (2nd Edn)
Paul C. Vitz
Eerdmans, Michigan &
Paternoster, UK, 1994

the client's 'self'—both the theories of self underlying the therapy, and these ideas as they have been taken up by popular culture. Carl Jung, Erich Fromm, and Carl Rogers are among those presented as the major original self-theorists, and their ideas are summarised briefly. These men were psychotherapists, and their clinical experience with psychologically disturbed clients provided the 'data' on which their theories were

1 Not all clinical psychologists or therapists employ selfist therapies. Cognitive Behavioural Therapy, in particular, has been shown to be effective for many specific psychological problems such as phobias and panic attacks.

based. This, the second edition of *Psychology as Religion*, updates the first by almost twenty years. As well as covering the same ground as the first edition, it discusses the more recent developments and effects of selfism, such as the rise of the New Age movement, as well as incorporating new work undertaken in the intervening period.

A godless, humanistic world-view, and an optimistic view of human capability and inclination form the common ground of the self-theories. People are seen as intrinsically good, innocent, and creative. Problems arise because our natural, good inclinations and desires are not fulfilled. The greatest good for a human, therefore, is to be self-actualised, that is, to “know and express thyself” (p. 3). The role of the therapist is, according to Jung, that of priest—the mentor and leader who helps dysfunctional selves to recognise and accept self-actualisation as their life’s goal, and live accordingly. The position traditionally held by God is taken by self. Self is where we now find meaning and purpose in life, it is the focus of our faith, and the thing that we worship and live for. This, Vitz claims, is psychology as religion. *Psychology as Religion* explains where theories of selfism have come from, the conditions that allowed them to flourish, and describes their effects on individuals, families, and society.

Vitz criticises self-theories from three perspectives: scientific,² philosophical, and christian. The scientific criticism focuses on evidence against the inherent goodness of humans. Philosophical problems discussed include the lack of definition of ‘the self’, and the unwarranted move from descriptive theories of client behaviour to the moral principles for how they should live. The christian critique begins by stating the fundamental rift between christianity and selfism: “for the Christian the self is the problem, not the potential paradise”(p. 126). Vitz goes on to contrast selfism and christianity on the topics of guilt and moral accountability, the origin of self-worth, love, creativity, and the meaning of suffering.

One of the more recent developments Vitz identifies is the New Age movement which, he argues, is an ex-

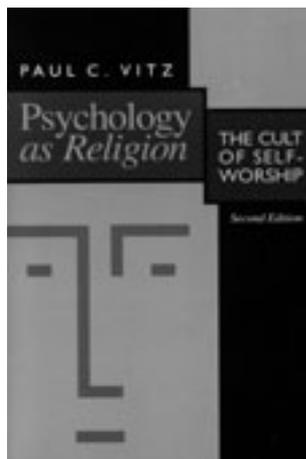
2 Ironically, much scientific evidence against selfism comes from experimental psychology and psychiatry. It is important to distinguish between psychology as science (experimental psychology), and psychology as religion (such as the above forms of psychotherapy). Part of the deception of self-theories (and other forms of non-scientific psychotherapy) is that they label themselves ‘psychology’—a term which carries connotations of scientific rigour, and therefore a truth value greater than is warranted in the case of self-theories which lack such rigour. Unfortunately, experimental psychology is suffering the backlash of this deception; as self-theories lose credence, so does experimental psychology by association.

tension of selfism that grew out of an increasing disillusionment with self-theories. When self-theory failed to satisfy, rather than abandoning the self as the place to find fulfilment, people simply looked further in, moving from self-psychology to self-spirituality. Here one can have ‘god’ and ‘spirituality’ without sacrificing the attractive quality of being justified in doing whatever one wants, that is, continuing in the cult of self-worship.

Is this the future of selfism? Not necessarily. Vitz identifies a disillusionment with selfism which may eventually lead to its decline. Although the principles of selfism are still rife, he believes that people are beginning to realise that it doesn’t have the answers it promised:

What does one tell a chronically overambitious man who learns at age forty that further advancement is over and that he has a serious, possibly fatal illness?... What does one tell a woman who is desperately alone inside an aging body and with a history of failed relationships? Does one advise such people to become more autonomous and independent? Does one say, “Go actualize yourself in creative activity”? For people in those circumstances, such advice is not just irrelevant, it is an insult (p.140)

Vitz sees a great opportunity here for Christianity to provide forgiveness, ac-



ceptance, love, purpose, and meaning that psychotherapy cannot deliver.

P *Psychology as Religion* provides a good outline of the self-theories that have been so influential in Western society over the last twenty or thirty years. One does not have to be a psychologist to understand either the theories or the criticisms thereof, although—as Vitz acknowledges—some of the ideas of the selfists are difficult to communicate clearly. The book is clearly addressing selfism in the American context, where the extent and conscious acceptance of selfist theories via psychotherapy is much greater than here in Australia. However, the more passive way in which Australians have absorbed selfist

notions makes it no easier to identify their opposition to Christianity—if anything, it is more difficult because the ideas are not in a form that is easy to question. For this reason, it is a helpful book in that it enables the reader to explicitly identify selfist ideas, such as there being a moral obligation to fulfil one's potential, and reject them.

The main disappointment of the book came in the chapter entitled 'A Christian Critique'—in particular, its lack of biblical reference. The criticisms of selfism presented are easy to agree with, and it is made very clear that Christianity is opposed to selfism. It is not always so easy to agree with the 'christian alternative' presented, for example, that suffering is meaningful to christians because it leads them to a higher spiritual life. Frequently Vitz's Christian comments are general enough to be widely acceptable; although Vitz is a professing Catholic, throughout most of the book there is little evangelicals would find to disagree with. Indeed, as he points out, most theistic religions would agree with his conclusions about selfism. The problem is more with his method. The 'christian views' presented are more often than not based on the writings of christian scholars rather than the Bible. As a result, the alternative 'Christianity' offers to selfism is sometimes not biblical. Different 'christian' points of view are presented as equally

valuable and right. For example, the discussion of christian versus selfist love presents St Bernard's "four-stage hierarchical model of the love of God" (p. 134) which culminates in the experience of losing oneself in the divine essence, as well as Luther's "less mystical, more Christ-centred, but equally moving" (p. 136) account of christian love.

A second, less serious problem in this chapter is found in the discussions of psychological disorders, such as depression, which selfism claims to explain and provide a solution for. Vitz attempts to develop a 'positive christian psychology' based on biblical assumptions such as humanity's sinfulness, as an alternative explanation and basis for therapy. The problem is not Vitz's theories themselves, but the fact that they are included as part of the christian critique of selfism. These explanations are plausible, and they may be true. However, they are theories, not scripture, and should be treated as such. This is not made clear in the presentation.

Vitz obviously has a deep concern for the effects selfism has had, and is having, on people at the level of the individual, the family, and society. The seductiveness as well as the emptiness and destructiveness of living according to selfist doctrine is clear, and his warning against it much needed. As christians it is important that we can

identify and reject these doctrines that are so opposed to a biblical view of human nature and purpose, and offer a christian alternative. *Psychology as Religion* enables us to do the former, and encourages us to the latter; however its

provision of a christian alternative is to be treated with caution. ❀

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Tasmanian tigers and the meaning of life

Bryson Smith

What does an extinct marsupial have in common with the meaning of life? No, they're not both the topics of a Monty Python movie. They have both been the focus of study by the zoologist Jeremy Griffith. Griffith's ideas about life have been attracting support from young university graduates and last year they received national coverage on the ABC Four Corners program.

Have you ever played *Taboo*? *Taboo* is a word game in which you help your partner guess a particular word but there are certain other words which you can't use while helping them. They are taboo words. For instance, your partner may have to guess the word 'science', but you are not allowed to prompt with words like 'experiment', 'laboratory', 'scientist' or 'chemistry'.

*Beyond the Human
Condition*

Jeremy Griffith

with a Foreword by Tim

Macartney-Snape

Foundation for Humanity's
Adulthood, Sydney, 1991

Reading Jeremy Griffith's book, *Beyond The Human Condition* is a bit like playing *Taboo*. It's a book all about sin, but you're not allowed to call it sin. It's a book all about God, but you're not allowed to call him God. It's a book all about humanity's need for salvation, but you're not allowed to say so. Instead, the book is full of terms like "integrative meaning", "resolution of upset", "love-indoctrination" and "unevasive holistic subjective introspection".

It all sounds very sophisticated but in the end it's just a game of *Taboo*. Griffith correctly observes that something is seriously wrong with humanity; however, rather than deal with

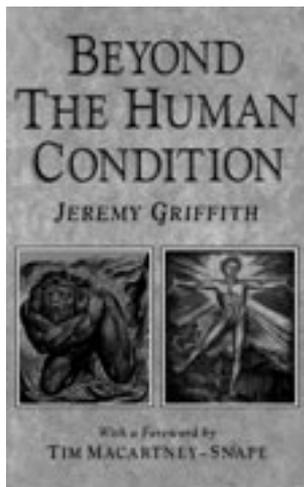
concepts like ‘God’, he redefines them out of existence.

Jeremy Griffith is a zoologist who first started to formulate his ideas during his study of the now-believed-extinct Tasmanian Tiger. Griffith became convinced that he had developed an insight into humanity which would enable mankind to “enter the peaceful maturity of adulthood” (p. 69). So convinced was he that Griffith established the Foundation For Humanity’s Adulthood to promote his ideas. The distinguished mountaineer Tim Macartney-Snape is one of the directors of the FHA.

Griffith’s ideas and the FHA became the topic of an ABC Four Corners program (24/4/95). The program was very dismissive of the FHA and raised the issue of the FHA being cult-like. Griffith has strongly criticised the programme as a biased presentation and claimed that the FHA was deliberately misled as to the direction of the documentary.

Griffith’s ideas are set out in his book, *Beyond The Human Condition*, which has been published by the FHA. The book is not particularly easy to read but it is intriguing. Its appeal is that it offers a very confident and comprehensive explanation of the nature of humanity. But is it correct?

Griffith’s ideas can be set out as five



main points:

1) Humanity is fundamentally in an ‘upset’ state. We have noble ideals yet we are consistently competitive, aggressive and selfish.

2) In the evolution of the fully conscious mind an inevitable internal tension developed between the intellect and the instinct.¹ Griffith explains this tension with an extended illustration about an imaginary bird called Adam Stork. Adam Stork’s intellect and instinct struggle over whether or not to leave the instinct controlled migratory

1 At the heart of this tension is the intellect’s desire to understand cause and effect, but the instinct’s unwillingness to deviate from genetically programmed orientations.

flight path in order to sample some fruit from a nearby island.

3) The result of this tension has been the unjustified criticism of the intellect by the instinctive mind. By trying to block out this criticism the intellect has caused mankind to become unavoidably 'upset'.

Upset was inescapable in the transition from an instinct-controlled state to an intellect-controlled state. His uncooperative or divisive aggression and his egocentric efforts to prove his worth and evade criticism became an unavoidable part of his personality (p. 32).

4) This internal upset has blinded humanity to the true essence of matter. Griffith contends that matter is essentially "integrative", that is, matter has a tendency to form more stable and more complex wholes. Humanity has evaded this truth because it served to heighten man's awareness of his own destructiveness resulting in further unjustified criticism of the intellect.

5) Now that we can understand the reason for our upset we can be released from the unjust guilt our intellect has experienced. The upset can now subside and we are free to recognise the integrative nature of matter. In particular we are freed to develop unconditional selflessness or love since love is the essence of the integrative process. "The essential ingre-

dient of integration or order is that the individuals or parts consider the welfare of the group or whole above their own welfare" (p. 83).

The centre piece of Griffith's ideas is the tension between the intellect and instinct. If such tension does not exist, every other idea logically fails like dominoes falling against each other.

Griffith's main argument for the struggle between intellect and instinct is by virtue of his extended illustration of Adam Stork. This illustration is fascinating but hardly compelling. It is a logical fallacy to think that a claim can ever be proved by means of an illustration. An equally possible illustration would be that Adam Stork's intellect totally overrides his instinct so that no internal upset whatsoever develops. Indeed, such an override system would be advantageous. An internally upset animal might be more vulnerable to external danger because its own inner turmoil may preoccupy its senses.

Griffith's notion of the integrative nature of matter is very poorly argued. Griffith seems content to simply give a handful of quotes from other scientists who also share this opinion. The scientific evidence which Griffith does use mainly comes from behavioural studies on primates. He uses these to develop an elaborate explanation as to how the

human instinct and intellect evolved.² Griffith's theories at this point are innovative but again unconvincing. The argument is based on a small sample size³ from which quite subjective conclusions about intelligence and consciousness are drawn. The result is that Griffith identifies a small number of primate behavioural traits that he feels are *consistent* with his ideas, but this is not the same as proving them.

Perhaps one of the most fascinating aspects of Griffith's theory is that he sees his ideas as compatible with religion. He writes "...religions aren't being threatened, they are being fulfilled" (p. 187). Indeed, Griffith's book is sprinkled with numerous quotations from the Bible which are then explained in terms of his theory. For example, Adam and Eve taking the fruit from the tree of knowledge of good and evil is a picture of the evolu-

tion of the self-conscious mind and the quest for knowledge.

This is intriguing reading but Griffith goes too far and his conclusions, rather than being a fulfilment of Christianity, become irreconcilable with Christianity. This can especially be seen in his conclusions about sin, God and Jesus Christ.

a) The nature of sin

Perhaps the most perceptive aspect of Griffith's book is that he identifies that something is profoundly wrong with humanity. The evidence of human evil is powerfully described by Griffith, but instead of concluding the obvious (for instance, that humanity is sinful), Griffith explains the problem as the unavoidable consequences of our intellect's search for knowledge. "Adam and Eve were heroes, not villains" (p. 38). Any sense of humanity's guilt is therefore unjustified. Man has never been bad, just ignorant of why he was "upset."

This is certainly an appealing idea. Humanity's dignity and self esteem are thereby elevated greatly, but the evidence of evil done by humans is not dealt with.

b) The nature of God

Griffith claims that he believes in god, but his god bears no resemblance to the personal God who reveals himself in the Bible. Griffith's god is the im-

2 The problem for Griffith is how to explain the development of an integrative instinct when integrative traits are actually self-eliminating in evolution. Griffith solves this with what he calls "love-indoctrination." This occurs when a primate is "tricked" into being integrative during a long period of nurture from its mother.

3 Griffith essentially confines his observations to comparisons between the pygmy chimpanzee, the common chimpanzee and the mountain gorilla.

personal law of integrative meaning. “God is negative entropy, the development of order of matter or, in a word, Development” (p. 46). Griffith’s god doesn’t have emotions or enter relationships. Griffith’s god is the laws of physics. It is a god stripped of what Griffith would probably regard as bad or unhelpful qualities (demanding moral accountability, condemning moral failure) but also without any of the ‘good’ qualities either (loving, merciful, willing to relate to humans).

c) The person of Jesus Christ

Griffith certainly admires Jesus Christ. He sees Jesus as an exceptionally innocent person who perceived the integrative meaning of life. Such a conclusion does no justice to the biblical Jesus, the God-man. In particular Griffith’s assessment of Christ fails to interact with Christ’s most significant act, his death and resurrection. This is, of course, not surprising. Griffith wants to argue away the moral seriousness of sin. In such a system, a death of atonement to

rescue humanity from the just punishment of sin has no place. All we need to set us free in this system are Griffith’s ideas.

From a Christian perspective, *Beyond The Human Condition* is a frustrating book. Griffith correctly discerns that mankind has a problem and that the key to relationships is self-giving love, but his explanations for these things are unsatisfying. It is as if his presuppositions stop him from declaring anything that would make us morally accountable. For Griffith ‘sin’, ‘moral responsibility’, ‘God’ and ‘Jesus Christ’ are all taboo. He does use them in this book but they are so redefined and manipulated that they are emptied of all meaning. That is why Griffith’s idea may well prove popular. ❀

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