Institute for the Study of Christianity in an Age of Science and Technology

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Great are the works of the LORD: they are studied by all who delight in them. Ps 111:2 (NASB)

Editorial

2001 - an ISCAST Odyssey?

Watching the famous Kubrik and Clarke film 2001, a space odyssey was a defining moment in the cinematographic experience of many in the late 60's and early 70's. This epoch making film not only raised the look of the science fiction movie to a level which has, in many ways, not been surpassed, it also framed the combination of anxiety and hope with which many viewed the coming millennium.

Now that 2001 is here, it is perhaps appropriate for us to reflect on ways that the human imagination has regarded the far reaches of space. It gives us ISCASTians the opportunity to show that we don't just read "serious" books, but also indulge in speculative fiction. Science fiction has been called the mythology of our age. As Christians interested in science, this mythology needs to be faced and also used for, as the pieces by Andrew Sloane and Ian Barns in this bulletin show, there are opportunities for Christian reflection and witness. Zenna Henderson and C.S. Lewis showed what can be done by Christians with literary skill and baptised imaginations in this field. So if there are any budding authors out there, be encouraged to persevere.

Whether or not there are actually intelligent aliens "out there" is a question that raises important theological questions, not least in the area of Christology. Three articles by Mark Worthing, based on his address to ISCAST Victoria last year, and a fourth by Lewis Jones, examine different perspectives on these implications.

Finally, I am pleased to announce that the third Conference on Science and Christianity, COSAC2001, will be held in Adelaide on July 13-15th. Further details are on the last page of the Bulletin.

OBITUARY

Ian Burnard 1933-2000

Ian Burnard passed to be with his Lord last October. He was one of the "founding fathers" of ISCAST ‹ his name appears in our Memorandum of Association as one of the five founders back in December 1987.

Ian grew up in Adelaide. His father was a Methodist and a teacher while his mother was an accomplished milliner from a Free Presbyterian Scots family. He completed a BSc, majoring in pure mathematics and maintained a lifelong passion for science.

Ian was influential in several areas of Christian work in Australia. For many years in the 60's and 70's he was General Secretary of the IVF in Australia (now the AFES). In that position he influenced many young lives, mine included. I recall being on the organising committee for an IVF Conference at Southport, Queensland, in the mid 60's. Although I think we had a "manual" on how to organise such events, it was always a great comfort to have Ian in the background as a source of sound advice and inspiration (I suspect he wrote the manual anyway!).

Prior to that Ian had been a staff worker with IVF in Melbourne and in Sydney and was a model for students who wished to share their faith. Another staffworker said 'Ian's intelligence looked you straight in the eyes and it was a cheerful look, very friendly, but always challenging, extending you...' Alan Gjisbers was a student at the time and remembers Ian's approach to student leadership. "The key thing about Ian's contribution was his trust of student leadership and the freedom and initiative that gave us. That represented a trust in us and in the Holy Spirit ‹ a bit different from other models of leadership where leadership is synonymous with control."

Ian was also involved with the Overseas Christian Fellowship, even from the late 50's. Dante Thé tells the story of a cryptic message Ian received from his Lord. "Feed my sheep", the Lord said. Wanting to make sure that he understood this clearly, Ian asked his Master whether this included the coloured ones, the brown and spotty ones as well. "Yes," came the answer, "They are the imported ones". "The important ones?" Ian echoed, puzzled. "No, no," came the reply again, the imported ones. But all are equally important ‹ the white ones as well as the coloured ones." So Ian obeyed and did as he was instructed, and the Lord was well pleased that Ian did the right thing.

In 1976 Ian left the AFES and started work as Joint Executive Officer at the Alexander Mackie CAE. From there he moved to the Sydney CAE, continuing his interest in educational research. In 1986 he was seconded to the New South Wales Police Service where he worked as a consultant on the Police Education Advisory Council. His work there contributed to a Police Recruit Education Program which won world-wide acclaim

and resulted in his appointment as an Honorary Fellow of the Police Academy. John Avery writes 'One of Ian's interesting personal facets was his curiosity. Now we need to make a distinction here. I have observed that those who are curious about erudite matters are researchers and those who are curious about mundane matters are stickybeaks. Ian was emphatically a researcher and we benefited. His enthusiasm was in spite of his suffering at times."

A family member writes 'Yet above all this was Ian Burnard's great faith. He lists his most exciting discovery as "...faith as essentially associated with personal relationships, history, physical reality, and the search for knowing and that faith in Jesus Christ is the fulfilment of knowing". He also lists among his interests, "...issues in faith and science".'

I recall attending one of the earliest meetings of ISCAST in Sydney. The speaker sailed through such lofty heights of theological philosophy that I hadn't a clue what it was about. Yet Ian was able to engage the speaker in close questioning at the end.

Many have spoken of Ian's role as encourager. As recently as January last year I received a letter from him offering advice about ISCAST's search for a doctrinal statement and giving encouragement. Ken Smith at the University of Queensland writes:

"I was one of those who returned to academic life in the rapid expansion which took place in the mid-1960s. Most of us didn't have PhDs in those days, so not only were we trying to juggle family life and new lecturing commitments but were trying to find time (over a period of seven or eight years) to do some concentrated reading and research. It was, to put it mildly, a bit of a strain. I remember talking to Ian when he was in Brisbane once about the problems of academic life. He suggested that I should get involved with the EU on campus, for mutual help. I took his advice, and found that, far from being an additional load, it was most refreshing to be with a group of people whose faith was in some respects naive and simple, but who were, like me, finding their feet in academic life and trying to witness at the same time as study."

For more than ten years at the end of his life Ian struggled with prostate cancer. During this time he wrote "The fact that 'things are not expected to get any better' is one which takes a bit of getting used to. It is not that it is difficult to accept cognitively, just difficult in the weariness that attends it. But there are so many others that are worse off; the matter should never really be raised."

Ian's association with ISCAST will live on into the future as his wife, Alison, has graciously donated his considerable library of books on science and faith. Robert Banks has agreed to house these at the Macquarie Christian Studies Institute so that they will be appreciated more widely.

ISCAST is indeed fortunate to have had a person like Ian as one of its founders and members.

Robert Stening, with acknowledgment for contributions from the Burnard family, Tony McCarthy, John Avery and Dante Thé.

WHAT IS LIFE?

A multi-disciplinary exploration of the question led by A/Prof Alastair Richardson (biologist), Dr. Charles Sherlock (theologian) and Dr. Bruce Langtry (philosopher) sponsored by ISCAST(Vic).

8 pm May 19, St Jude's Anglican Church Hall Carlton. Registration: $10 (Conc. $7.50).

ALL WELCOME

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ARTICLES

History of the Extraterrestrial Life Debate

Mark Worthing, Luther Seminary, Adelaide

In the 5th century B.C. the founders of the atomist school, Democritus and Leucippus, are credited with advocating the existence of a plurality of worlds. The atomist Epicurus, in the fourth century B.C., said "There are infinite worlds both like and unlike this world of ours."

Not all the ancient philosophers, however, shared this view. Plato, in his *Timaeus*, wrote that: "To the end that this world may be like the complete and living Creature in respect of its uniqueness, for that reason its maker did not make two worlds nor yet an indefinite number, but the Heaven has come to be and is and shall be hereafter one and unique."

Discussions in succeeding centuries and through the Christian middle ages followed the speculative lines of the Greek philosophers, with the Aristotelian view becoming eventually the more dominant. An increased interest in astronomy, the writings of Copernicus, Galileo, and Kepler, and the discovery of the telescope, however, saw the speculative tide of the extraterrestrial life debate shift decisively beginning in the late 16th century.

Among the first to rekindle the debate was the Dominican friar Giordano Bruno. In his 1584 book, *On the Infinite Universe and World*s, he wrote: "There is not merely one world, one earth, one sun, but as many worlds as we see bright lights around us." And in answer to the question, "Are the other worlds inhabited like our own?" Bruno responded: "If not exactly like our own, and if not more nobly, at least no less inhabited and no less nobly. For it is impossible that a rational being fairly vigilant, can imagine that these innumerable worlds, manifest as like to our own or yet more magnificent, should be destitute of similar or even superior inhabitants." For an assortment of heresies Bruno

was imprisoned by the Italian Inquisition and eventually burned at the stake on 17 February, 1600.

The 17th century Dutch astronomer and physicist Christiaan Huygens, beyond the reach of the Inquisition, fared much better. His posthumously published work, *Cosmotheoros*, typified a new period in the discussion of extraterrestrial life. Huygens, like many who would follow, argued for the existence of intelligent extraterrestrial life on the basis of divine and creative necessity. He argued: "For all this Furniture and Beauty the Planets are stock'd with seem to have been made in vain, without any Design or End, unless there were some in them that might at the same time enjoy the Fruits, and adore the wise Creator of them."

While such speculations became numerous in the following century among both scientists and theologians, not everyone was convinced that the supposed existence of such extraterrestrial beings pointed to the admirable providence of the Christian God. The deist Thomas Paine, in his *Age of Reason*, published at the end of the 18th century, contended that a plurality of inhabited worlds argued against the Christian idea of humanity as a central focus of divine creation.

Responses to Paine and his school of thought were not long in coming. Of the multitude of these responses none was more influential than that of the Scottish preacher and mathematician Thomas Chalmers. In his 1817 work, *Astronomical Discourses*, consisting of a series of seven sermons, Chalmers sought to alleviate the tension between the then popular idea of a plurality of inhabited worlds, and the doctrines of Christianity, thus blending, as Crowe observed, "Enlightenment ideas of extraterrestrial astronomy with evangelical sentiments." The other planets, he reasoned, "must be the mansions of life and of intelligence." And our little planet must be humbled before the magnitude of God's works. Chalmers wrote: "The universe at large would suffer as little, in its splendour and variety, by the destruction of our planet, as the verdure and sublime magnitude of a forest would suffer by the fall of a single leaf." But would this imply that the events of this earth, especially the Incarnation, are of no special significance in the grand scheme of things? Not at all. For if the inhabitants of other worlds are in need of salvation, then, argued Chalmers, we must consider that "the plan of redemption may have its influences and bearings on those creatures of God who people other regions. Š To argue, therefore, on this plan being instituted for the single benefit of Š the species to which we belong, is a mere presumption Š" On the other hand, Chalmers was not prepared to dismiss the possibility that within the vast family of worlds, ours is the only one that strayed. Such a possibility, he contended, should call us to repentance.

While the debate on the compatibility of the plurality of worlds with Christian faith continued, changes were occurring which were soon to make the entire debate a non-issue. On the scientific side, increasingly powerful telescopes combined with increased knowledge of chemical processes and the effects of extremes of temperature were casting doubt on whether any of the other planets in our solar system ‹ upon which most of the suspected extraterrestrials were thought to live ‹ were capable of sustaining any kind of advanced life forms. By the late 19th century there was a general consensus that the other

planets and moons in the solar system were, due to extremes of heat or cold, lack of atmosphere, poisonous gases, or too great a gravity, inhospitable to life as we know it.

On the theological side, there arose a rejection of extraterrestrial life based upon philosophical and theological grounds. Leading the campaign was the British philosopher and natural theologian, William Whewell. In his 1853 book, *Of the Plurality of Worlds*, Whewell argued that there are no compelling scientific or theological reasons for supposing that intelligent beings inhabit planets other than our earth. The dispute over Whewell's views raged for some years, but by the end of the century, few could be found who seriously supported the concept of a plurality of inhabited worlds.

In the 20th century the subject was mainly relegated to the realm of science fiction. Among Christian writers of science fiction one thinks of C. S. Lewis's novels *Out of the Hidden Planet* [1938], and *Perelandra* [1943], in which he seeks to put humanity and the human situation in perspective through the experiences of the fictional space traveller Ransom on the planets Mars and Venus. When asked, however, of noted theologians of our century who have broached the issue, we are at an embarrassing loss. Until recent years Bishop Earnest Barnes' Gifford lectures of 1927 and 1929 stood as a lonely theological reflection on the topic.

The contrast to the situation a century earlier could not be more pronounced. Yet slowly, in the generation that has grown up with 'Lost in Space,' 'My favourite Martian,' 'Star Trek,' and a never-ending flow of UFO sightings, the tide has begun to turn again. It is no longer so difficult to conceive of a universe in which we might not be alone. Arrhenius's once discredited theory of 'Panspermia' has found new life in the version of prominent biologists Francis Crick and Leslie Orgel, who suggest that alien beings may have seeded life across the galaxy through use of an interstellar spaceship. Even ambitious SETI programs such as Project Phoenix, which search distant stars for alien radio signals, are taken with increasing seriousness by fellow scientists and various funding agencies. And only recently, Professor Paul Davies, of Adelaide University, published one of the first serious philosophical treatises on the subject of extraterrestrial life in his book: *Are We Alone? Implications of the Discovery of Extraterrestrial Life.*

And now, in the light of recent discoveries, we must ask: Have we come full circle again in humanity's millennia-old debate about extraterrestrials? Not quite. This time around, there are some distinct differences. In the first place, the scientific information undergirding the discussions is vastly more reliable and detailed than that of even a century ago. And secondly, no one is seriously speculating about the cultural, political, and sexual lives of extraterrestrials, which, if they do indeed exist, must exist within planetary systems separated from our own by very great distances, and not on neighbouring planets as was once firmly believed.

Ethics, philosophy and science fiction - some musings

Andrew Sloane, Ridley College, Melbourne

Science fiction, amongst other things, is the art of possible futures, extrapolating trends in society and technology and imagining their implications for human persons and society. As such it addresses interesting and important philosophical and ethical issues that we as Christians should reflect upon, which is what I intend to do in this short piece. So let me muse, somewhat at random, on science fiction as a resource for Christian ethics and philosophy.

I first came across Larry Niven's "Gil the Arm" about 20 years ago, at a time when transplant surgery was, if not in its infancy, then still only toddling along. In stories such as *The Patchwork Girl*, Niven projects a world in which transplantation has become a commonplace. In this world, if someone damages his arm severely (as indeed happens to the main character), rather than trying to save it, or provide a prosthetic, he receives a new transplanted arm to replace it. And similarly with organ failure. No need for dialysis or cardiac medication when a new kidney or heart can be pulled off the shelf. Of course, this means that the demand for "spare parts" is next to limitless. But most of them cannot be harvested from living humans (it's rather difficult, after all, to conduct a meaningful human existence without a heart, and most people, despite the saying, are not willing to give their right arm for anything‹certainly not a careless person they've never met). The result? The death penalty is meted out for the most trivial offences‹in one story a man is sentenced to death for three parking fines. And all with public sanction‹for after all, such draconian penalties maintain public order‹and ensure that there will be a spare part available when I need it. This is taken even further in Robert Heinlein's *Time Enough for Love*, in which cloned (& brain wiped) people are "grown" for "harvesting" for what is, in effect, whole body transplants for the select few. Appalling.

Niven does it deliberately, Heinlein accidentally. But what both authors show is the way that technologies which were originally developed for the benefit of human persons and society *shape and even control* social systems‹to the detriment of many. The technology develops, not only its own momentum, but also a positive imperative that overrides even the demands of morality and common sense. And so we are left with a society in which the lives of some persons are treated as less significant than the *comfort and well being* of others. Now why does that world seem all too familiar?

Shifting focus somewhat (I told you they were random musings) it's worth mentioning Greg Bear and his Eon series. In those novels, indeed, in all the novels of his that I've read, Bear explores, even delights, in the possibilities of technology shaping not only human society, but also the nature of human existence. In *Eon* he projects a world in which people are able to re-design their own bodies and mentalities at will‹even to the extent that they are scarcely recognisable as human. Here we have a world in which the post-modern fabrication of the self is given technological embodiment (so to speak). But it is also a world in which these (dare I say) humans cannot exist without the right technological environment. It is, one might say, a cyborg culture.

Now, let me say that I'm no Luddite, resisting technological change for the sake of a real (or imagined) status quo. Nor would I want to claim that these "possible worlds" are technically or socially feasible. But I do think that these "possible worlds" raise important philosophical questions. What does it mean to be a human person? And if a person is no longer recognisably human either physically or psychologically, no matter what her physical and psychological history, is she still a human person? Assuming they are possible, are such changes wise? Are they godly? What are the ethical implications of bringing into being a new elite of designer *übermenschen* and along with it the, dare I say, inevitable undesigned underclass? Shades of *GATTACA*, with sexier technology.

Science fiction is fun. It also raises important questions that we, as Christians interested in the interface between science and Christian faith, ought to consider. There are many other issues I could have addressed. The relevance of these particular questions in an age of biotechnology is clear. Let me invite those of you who share my fascination with these possible worlds to engage with this rich literature as thoughtful Christians.

Implications of Extraterrestrial Life for Christian Faith

Mark Worthing, Luther Seminary, Adelaide

At this point it is important to point out that there are two kinds of questions that the existence of extraterrestrial life would raise for theology. The most prominent in the history of the debate have been those questions concerning extraterrestrial intelligence. More fundamentally, however, and much more likely to be verified, is the possibility of non-intelligent extraterrestrial life. Access to Mars and the moons of Jupiter certainly mean that if life in any form, even microscopic life, does or did exist in our solar system, it is possible that within our lifetimes this could be confirmed. While bacteria and other microscopic life may provide thin pickings for science-fiction films there are nonetheless profound theological implications that would also hold true for extraterrestrial intelligence.

Since Christian theology has no biblical or theological basis upon which to reject out of hand the possibility of extraterrestrial life we must seriously consider what the theological implications of such a discovery would be. This is especially important in light of suggestions by Paul Davies, among others, that the discovery of any extraterrestrial life would present profound difficulties for Christian faith and would "demand a serious reappraisal of religious doctrine." My own view is that if Christian theology takes seriously its confession that God created the universe, then it ought to welcome any and all new knowledge about the universe ‹ including the possible verification of extraterrestrial life. With this in mind there would seem to be several implications of the discovery of extraterrestrial life in any form, whether intelligent or not, for Christian thought.

1. The verification of the existence of extraterrestrial life would tell us more about the universe and its creator. Although often disagreeing about its relative worth, Christian thought has generally accepted a natural or general revelation in which God reveals Godself to us through and in the created order. The verification of even the simplest of

life forms on another planet would open up an entire new door to our natural knowledge of God.

2. The verification of the existence of extraterrestrial life would indicate a greater diversity and complexity of creation than before imagined. Our sense of awe and wonder as we look into the night sky could only increase.

3. The verification of the existence of extraterrestrial life would increase our understanding of the scope of God's providence. Such a discovery would be a potent reminder that God's providential care and governance of all things living, may be as spatially unbounded as it is unbounded by time. And if we follow Hegel's insights on universal history, then Christian thought may well be inclined to view God's providential care of the various extraterrestrial species as one with his care of terrestrial species, and their histories ultimately as one with ours, participating in one great, providential scheme, and moving inevitably toward a common end or goal.

4. The verification of the existence of extraterrestrial life would shift the centre of focus away from earth and humanity. Earth would no longer be viewed as the only planet containing living creatures under God's care. The Physicist Sir James Jeans wrote in 1942, "so long as the earth was believed to be the centre of the universe the question of life on other worlds could hardly arise." Today we must also affirm the inverse to be true. Namely, so long as life is believed to exist on other worlds, the earth's place, at least metaphorically, as the centre of the universe, can hardly avoid coming into question. Despite the Copernican revolution and the vast discoveries opened up to us through the telescope and the microscope, we human beings remain stubbornly anthropocentric ‹ even in our thinking about God. We have become rather accustomed to imagining God and God's work as being solely focused upon humanity. Even God's care for the flora and other fauna of our earth must, we imagine, be carried out ultimately for our benefit. But what possible benefit could Martian bacteria have for humanity? We would have to adjust our thinking to accept the fact that not everything God does revolves around us. We would read with new understanding the words of the Psalmist, "When I consider your heavens, the work of your fingers, the moon and the stars, which you have set in place, what are human beings that you are mindful of them? Š You made them a little lower than the heavenly beings, and crowned them with glory and honour." (Psalm 8:3,4).

5. Any extraterrestrial life, if it exists, must be seen as a part of God's good creation. As such it has its origin in God's creation out of nothing and is contingent upon God for its very being. One might also conceivably argue that it was necessarily subject to the effects of the human fall, which plunged all creation into bondage though this point is very much open to dispute. If it were the case, however, then the promise of Romans 8:19ff must also apply. Namely, that the "creation which waits in eager expectation for the children of God to be revealed" and that was "subjected to frustration, Š will be liberated from its bondage to decay and brought into the glorious freedom of the children of God."

The questions we ask about extraterrestrial intelligence, and even the SETI program itself, reveal a great deal about the nature, values, and assumptions of humanity. An affirmative answer to the question of whether there is other intelligent life in the universe

immediately challenges the anthropocentric view we have of the universe and its purpose. It would challenge and expose centuries of philosophical and theological hubris concerning our own place in the universe. Asking speculative questions about how a post-contact theology might look could well show us how a more humble pre-contact theology should look.

If the existence of extraterrestrial life were to be verified it would forever alter our view of humanity's place in the universe. We could no longer look into the night sky and view some distant star, believing its sole purpose to be to serve in some small way as a navigational guide for the inhabitants of our planet. Instead, we would have to seriously consider that that same distant star could very well be the life-sustaining energy source of life on a distant planet ‹ life that would be just as much a part of God's good creation as that on our earth. But it would be just as certain, however, that we would be no less special in God's sight, that we would be no less objects of God's redeeming love, and that God's promises would be no less valid than if we found ourselves to be ultimately alone in the universe.

Live like an Alien!

Lewis Jones

In David Wilkinson's "Alone in the Universe?" he asks the question, "Does God take on little green flesh to save the Martians?" I thought, for the sake of our discussion, I would answer it. No.

From the book of Hebrews, I've picked three points to support my conclusion. First, and perhaps most central, is that the sacrificial death of Jesus does away with sin (Hebrews 9:26). The sacrifice is both unique and sufficient. God's anger is fully exhausted on Jesus, so while the little green men may well have rejected God as we have, there is no sin remaining for a little green "Jesus" (LGJ) to die for. Therefore the death of LGJ would not be effective in taking away little green sins.

Second, Jesus is exalted because of the cross (Hebrews 2:9). Jesus has now been given the name above all names and everything in heaven and on earth is being brought under his feet. So, first of all, Jesus, the man who walked this Earth, is the one above all others in creation, and second, the path to his glorification is through the cross outside Jerusalem about two thousand years ago. This leaves no room at the top for LGJ's.

Third, Jesus is the mediator of the new covenant (Hebrews 9:15, 8:6, 7:23-25). Because Jesus has been raised from the dead and lives forever, he is the intercessor before God, so that only those who come to God through Jesus can be saved. This centrality and exclusivity of the man Jesus in God's universal plan of salvation again suggests LGJ's have no biblical room to manoeuvre.

Of course, following the arguments of Hebrews, the above conclusion will lead you to say that only human beings will be saved when you see that Jesus had to be human in

order to save humans (Hebrews 2, 9, and 10). This pushes me to ponder on God's elective purposes, and then possibly to say that there are no aliens out there at all.

However, as Christians, the search for aliens should be brief because, of course, we are the true aliens in this universe. We are the ones who should be strangers in our own land, longing for a better country, the home of righteousness. We are the ones who should have our eyes fixed on Jesus, remembering the salvation he has won and what he suffered for us, so that we will not grow weary and lose heart in our own struggles and temptations. Yet, I wonder if you're like me, so enmeshed in this world that you've become indistinguishable from it. If so, don't lose heart. Remember Jesus, and live like an alien!

Christ and ET

Mark Worthing, Luther Seminary, Adelaide

The questions we ask about extraterrestrial intelligence, and even the SETI program itself, reveal a great deal about the nature, values, and assumptions of humanity. An affirmative answer to the question of whether there is other intelligent life in the universe immediately challenges the anthropocentric view we have of the universe and its purpose. It would challenge and expose centuries of philosophical and theological hubris concerning our own place in the universe. Asking speculative questions about how a post-contact theology might look could well show us how a more humble pre-contact theology should look. This point poses the most serious difficulties and challenges for traditional Christian thought. What kind of relationship might extraterrestrial intelligent life forms have with God? Would the event of God's Incarnation need to be repeated on each of a myriad of planets? If so, would this undermine the uniqueness of the death and resurrection of Christ?

If we begin with the orthodox Christian assumption that there is a triune God who is sovereign over all creation, we must next settle the question of whether the second person of the trinity is necessary for a relationship with this God. If so, we must further ask whether only an incarnate second person of the trinity can fulfil this function. Only then do we come to the question of whether the earthly incarnation is sufficient for the whole universe or whether multiple incarnations would be necessary. The debates that have so far taken place have tended to focus on the question of the incarnation.

Over the centuries several possible models for dealing with this question of the incarnation have been suggested. The first three we will look at come under the category of a unique incarnation that occurred only on our planet. The differences between these views is in how they choose to defend the cosmic uniqueness of the incarnation. The fourth model advocates a multiple incarnations view as most sensible.

The first model is that put forward by Timothy Dwight, grandson of Jonathan Edwards and president of Yale University from 1795 until his death in 1817. Dwight, who shared the belief in a plurality of inhabited worlds with many of his contemporaries, also saw the necessity of safeguarding the uniqueness of the Incarnation. His solution was to suggest

that the fall was unique to our planet, and therefore the incarnation and atoning death of Christ were also unique to earth.

The weakness of Dwight's model, of course, is that there is no compelling reason to suppose that other intelligent species would not have rebelled against God. In fact, one could argue just the opposite, that if a certain degree of genuine moral freedom belongs to intelligence, then there would be every reason to suppose that such other beings, if they exist, would have at some point have misused their freedom in the same way that we did ours.

The next model is that of the French pluralist, Comte Joseph de Maistre (1754-1821). De Maistre draws upon the insights of the 3rd century theologian Origen, who seems to have held to something at least similar to a plurality of inhabited worlds. De Maistre, in the vein of Chalmers, develops a more attractive model than does Dwight, inasmuch as he does not claim to know whether the inhabitants of other worlds are in a state of original grace or in a fallen state. If, however, they are in a fallen state, then the unique Incarnation and Atonement of Christ is also sufficient for them. He writes: "If the inhabitants of the other planets are not like us guilty of sin, they have no need of the same remedy, and if, on the contrary, the same remedy is necessary for them, are the theologians Š then to fear that the power of the sacrifice which has saved us is unable to extend to the moon? The insight of Origen is much more penetrating and comprehensive when he writes: 'The altar was at Jerusalem, but the blood of the victim bathed the universe.'"

The physicist E. A. Milne proposed a variation of de Maistre's model that might well be called the 'missionary' model. In his 1952 book, *Modern Cosmology and the Christian Idea of God*, Milne comes to the problem of the radio waves apparently issuing from the Milky Way. What if these were shown to be genuine signals from other intelligent life in the universe? Milne argues that for the Christian, both the Christ event and our planet are unique and that "the Son of God suffering vicariously on a myriad of planets" could not be imagined. The way out of the dilemma, Milne suggests, is in the possibility of communication between distant solar systems and even galaxies via advanced radio signals that may some day be possible, allowing communication between all planets with intelligent life and making them, in a sense, part of a single system. If that were the case, writes Milne, "there is no *prima facie* impossibility in the expectation that first of all the whole solar system, secondly our own group of galaxies, may by inter-communication become one system. In that case there would be no difficulty in the uniqueness of the historical event of the Incarnation. For knowledge of it would be capable of being transmitted by signals to other planets and the re-enactment of the tragedy of the crucifixion in other planets would be unnecessary."

The weaknesses of Milne's model are more theological than technological. In the first place, his model seems to assume that any other intelligent creatures in the universe must be in a fallen state. Secondly, it assumes that the Christ event is only effective for such beings if they actually receive news of it. Some might also question whether humanity would have a right to seek to persuade other intelligent life forms to adopt our religious

beliefs. This, they suggest, would be violating something akin to the 'prime directive' of *Star Trek* fame.

There is, on the other hand, a certain attraction to the idea that if God chose the humblest of stables in the least important of towns, why not the smallest and least important of inhabited planets for the miracle of the Incarnation? The importance of earth and humanity would then not be based upon some theological theory of geocentricity, but upon the fact that we are anything but the centre of the universe! In fact, to insist that the Incarnation was only for us, would be the height of anthropocentric hubris.

A final model is the multiple incarnations model. A classic example of such a model is that of the philosopher and priest, E. L. Mascall, who responded to Milne's views in his 1956 Bampton Lectures. Mascall, departing from the uniqueness of the Incarnation theme of the models we have previously considered, suggests that multiple Incarnations would be possible. He writes: "The suggestion which I wish to make Š is that there are no conclusive *theological* reasons for rejecting the notion that, if there are, in some other part or parts of the universe, rational corporeal beings who have sinned and are in need of redemption, for those beings and for their salvation the Son of God has united (or one day will unite) to his divine Person their nature, as he has united it to ours."

This model, however, would seem inevitably to raise more difficulties than it would solve, in making the Incarnation, on a galactic scale, a non-unique event.

Our little exercise in theological thought experiment demonstrates, if nothing else, that should intelligent, extraterrestrial life one day be discovered, developing a cogent response with regard to the Christian doctrine of the Incarnation will not pose an insurmountable difficulty. Agreeing upon which response or model to adopt, however, is a different story.

I would suggest that if there is other intelligent life in the universe then God relates to it through Christ the same Christ through whom God reconciles us to Godself. I do not believe Christian theology can posit a multiplicity of Christs and remain Christian theology. This does not necessarily settle the question of multiple incarnations of the same Christ, although I admit that I am not comfortable with the argument that the problem of space and time require such multiple incarnations. At what point is the time and distance too great a factor. If we reject the Mormon claim that the Americas had to have their own manifestation of Christ, on what basis do we argue that even greater distances require precisely this? Nevertheless, however we decide the multiple incarnations issue I do believe that the manner in which God would relate to possible extraterrestrial creatures through Christ cannot simply be deduced from our experience of human sinfulness. At least one result of our theological thought experiment is a shift of focus in our Christological thinking away from anthropology and back to Christ. The theological refrain: 'apart from Christ there is no salvation' remains valid ‹ even for ET.

Reviews

CONTACT: The Movie

Jonathan Clarke

The movie adaptation of Carl Sagan's novel "*Contact*" differs from the original in many ways. The changes will of course only matter to people familiar with the novel, and it is better to consider the film and novel as related but independent explorations of the same idea. The original novel developed three themes dear to Sagan; the numinous mysteries of the universe, the ability of science to discover the ways of the universe, and extraterrestrial intelligence, linked together by the quest for communication in the personal journey of the scientist. These remain in the film, although the problem of communication, whether interpersonal, between individuals and organisations, of humans and aliens, or God to humanity, becomes more overt.

The movie portrays various responses to science and faith and the effect that receiving a message from space has on these. The central character Ellie Arroway is a scientific triumphalist, highly sceptical of revealed religion, and agnostic about God. Her foil is Palmer Ross, spiritual adviser to the president, and (unlike in the novel) Arroway's lover. Palmer Joss is convinced of the reality of God, open minded about pure science, sceptical of its application, and hostile to its deification. Minor characters generally regard religion as a political factor to be used or appeased, or show the full range of religious nuttiness that Americans seem so adept at developing from fundamentalist terrorists to alien worshippers and conspiracy theorists.

The climax of the book is Ellie's journey through space and time in the Machine, leaving her with an experience that is real, but unverifiable. It must be accepted or rejected by faith. At journey's end only Palmer Joss will accept her tale. The movie, like the book, suggests that faith and science have much common ground. This is a view familiar to fellows and friends of ISCAST, but probably novel to most moviegoers!

Ellie resembles Sagan in many ways, sceptical of the inability of many Christians to deal with his questions and often offended by their scientific naivety. I concluded my earlier review of the novel by observing that on the basis of his openness towards the numinous and the possibility of purpose Sagan was "surely not far from the Kingdom of God". He died before the film was released, but the issues portrayed in the film live on. ISCAST exists to help such people to bridge the apparent gap between the perspectives of science and Christian theology, to see their common heritage, and respond with personal faith.

Essay Review: *Solaris*

Ian Barns

As modern science deepens our knowledge of the universe, from the large and complex to the small and simple, there seems to be a convergence of scientific and spiritual interest in making sense of the human person. From a scientific perspective, the

advancing neuro-sciences are confronted by the mysteries of the human person. It may be that the irreducible 'personal-ness' of human life (language, relationships, love, and conscience) poses the greatest paradigmatic challenge so far to the worldview of science. Perhaps 'person-hood' will require a deep re-thinking of the basic categories in terms of which we understand the whole of reality. What kind of universe is it that produces personal existence?

On the other hand, our spiritual task is to find our moral bearings in this amazing universe. This wasn't so much of a problem for a confident enlightenment humanism in which the human self was somehow transcendent, able to stand apart from the world of nature. In these postmodern times we are much more aware that we are part of the natural world and our 'self-hood' depends on sources outside of ourselves. Modern science cosmology, evolutionary biology, genetics and biochemistry isn't enough. Surely there is more to it than this there must be a deeper source to make sense of our moral lives.

This convergence of scientific and spiritual concerns is explored in various science fiction films such as Contact. A lesser known, but I think more profound, exploration of these issues is Adrei Tarkovsky's *Solaris* (1972). Based on a novel by Stanislaw Lem, *Solaris* tells the story of a research program investigating a mysterious ocean on a planet in a far away galaxy. After many years and little success, this research had reached a crisis point with the administrators deciding to carry out one last inquiry before closing it down. Kris Kelvin a psychologist and expert in Solaristics is sent to Solaris to review the situation. Before he leaves, we see him at his parent's dacha. He is an aloof and self-absorbed man.

When Kelvin arrives at the research station (which is positioned above the ocean) he discovers it to be in disarray. Of the three scientists remaining he discovers that Gibarian (a close friend) has committed suicide. The other two have hidden themselves away. As he investigates, Kelvin discovers that each of the researchers have been troubled by 'visitors', incarnations of figures from their past. When he awakes from sleep, Kelvin too has a 'visitor', his dead wife Hari. Like the others, Kelvin finds it difficult to rid himself of this apparition.

These visitors are of course the result of their interaction with the ocean on Solaris. The ocean has the capacity to enter into their minds and to reproduce buried aspects of their past. Unfortunately the ocean itself remains inaccessible to the scientists. The other two scientists suggest various means of analysis, including bombardment with neutrinos. In the end they decide to beam Kelvin's encephalogram. When he awakes from sleep he discovers that even deeper memories of his mother, running water in a basin ‹ have been re-materialised.

The film ends with Kelvin seemingly back on earth, once again at his parents dacha. This time, his attitude is not one of cold indifference, but rather seeking forgiveness and reconciliation. When his old father appears he kneels at his feet. However, the scene is not back on earth. It is on an island in the ocean.

There are obvious similarities with the story in Contact. The scientist goes to outer space in the search for extra-terrestrial intelligence, makes contact in the form of the lost father. Both films reflect the convergence of scientific and existential interests mentioned above. Yet there are significant differences. In Contact, the encounter simply moves the search one step further back. Yes, says the Vegan, there are many forms of intelligent life in the universe, but there is no deeper source. All we have is each other.

In *Solaris*, however, the image of the ocean suggests that there is a deeper source for our personal being. Perhaps a metaphor for 'nature alive', a rich world of quality and purpose which modern science with its empirical, objectivist modes of observation completely misses. Or maybe, as Lem's novel suggests, a kind of evolving divinity.

How do we think Christianly about the scientific/spiritual quest that these films depict? Scripture claims that the One who is the source of our personal life and hope in Jesus is also the creator and sustainer of the cosmos. Making this claim involved an imaginative re-construction of the cosmologies of the dominant cultures in which the people of God found themselves. For example the creation accounts in Genesis involved a radical de-mythologising of Babylonian cosmology. Similarly in the New Testament the apostles make the startling claim that the man Jesus was the incarnation of the very logos through whom the universe was created. In him the 'scientific' and the spiritual find their connection.

Since then, Christians have continually faced the same creative task of making the same claim that the God and Father of our Lord Jesus Christ who sustains our lives as persons is also the source, guide and goal of all that is. To do this we need a rich theology of creation based on a vision of the overflowing love of the triune God, whose holiness and 'person-hood' is dimly reflected in the ocean of Solaris and the disguised life form on Vega.

Letters

More on miracles

Two responses to my brief article, "Towards a Theory of Miraculous Beginnings", have now been published in the Bulletin ‹ Alan Gijsbers' editorial comment immediately following my article and Ken Smith's letter in the last Bulletin. I had hoped that my proposals with regard to a mediating position between evolutionism and Biblical literalism might have been considered in their own terms, but the responses by Dr Gijsbers and Dr Smith do not even begin to consider my proposals because they reject my basic starting point that miracles have occurred. Both of them deny that "natural" and "supernatural", or "normal" and "miraculous", may be distinguished. Rather, they affirm that any event which is seen as a "miracle" may also be seen as a "mechanism" or as "part of the normal working of the physical universe".

As you write in your editorial, this discussion reveals some differing theological assumptions. It seems that these assumptions must be discussed directly before any non-evolutionist theories will be considered by my respondents. The question which concerns

me is this: If all events are "natural" or "normal", what is the empirical basis for believing in a "God" who "works through supernatural means" or who has "miraculous dealings with this universe"? Indeed, what is the evidence that there is a "God" who "acts in the world"?

Ken Smith says, "'The strong east wind' of Exodus 14.21 was seen as a miracle only by the Israelites", implying that anyone else would have seen it as a normal event. However, what of the water being "divided" with "a wall of water on their right and on their left"? If this happened as described, would this have been seen as a miracle only by the Israelites? Consider another paradigmatic miracle. What of Jesus walking on the water? Does anyone question that the only question is whether this happened at all? Does anyone suggest that if they had seen this happen, they would have seen it as a normal event?

The fundamental question is, then, whether miracles have occurred. Without the evidence which the Bible provides that miracles have occurred within human history, the belief that God exists has no empirical basis. Without an empirical basis for belief that God exists, "Christianity" is an elaborate fantasy which is no more worthy of study than other comparable fantasies.

Yours sincerely
(Mr) Vivian Bounds

COSAC2001

3rd Conference on Science and Christianity

Keynote Speaker: Professor Owen Gingerich
Professor of Astronomy and the History of Science, Harvard University; Senior Astronomer,
Smithsonian Astrophysical Observatory

Venue: The Monastery, Adelaide, 15 Cross Road (cnr Glen Osmond Road) Urrbrae SA

Dates: July 1315 2001, Registration: Friday 35 pm, Conference concludes after lunch on Sunday.

COSAC2001 will feature lectures by Professor Gingerich as well as workshop presentations by ISCAST Fellows, Associates and interested friends.

Those who are interested in giving a presentation should contact the Conference Director, Rev Dr Mark Worthing, with a brief description of their proposed workshop presentation.

Contact details: Rev. Dr. Mark Worthing, Luther Seminary, 104 Jeffcott St., North Adelaide, SA 5006. Email: worthing.mark@luthersem.edu.au

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