

MICHAEL WARD**Science and Religion in the Writings of C.S. Lewis¹**

Although he was a literary historian, not a scientist, C.S. Lewis has much to say of interest regarding the interface between science and religion because of his scholarly study of the sixteenth century and, in particular, of the imaginative effects of the Copernican revolution. He regards science, properly speaking, as a subset of religion. He believes science to be a fundamentally imaginative enterprise. He argues that scientific statements, because they tend to be univocal and strive to be verifiable, are actually rather small statements, all things considered. He argues that there is always a mythology that follows in the wake of science and that both scientists and non-scientists should take care not to put excessive weight on particular scientific metaphors. We should hold our scientific paradigms with a due provisionality, because new evidence may always turn up to overthrow those paradigms. Even the best and most long-lasting paradigm is merely a lens or linguistic stencil laid over reality, not reality itself.

Key words: C.S. Lewis, science, religion, Copernicus, reason, imagination, language, Middle Ages, meaning, mythology

C.S. Lewis was not a scientist; he was, nonetheless, a vastly well-read literary and intellectual historian, and his reflections from that perspective upon the nature of scientific language and the Copernican revolution are very thought-provoking and valuable.

Although it is right to acknowledge at the outset that Lewis was not a scientist, we ought not to overstate the poverty of his scientific education for, as well as having that philological and historical perspective which will be the main subject of my remarks, Lewis was fairly well acquainted with some areas of modern science, chiefly physics and cosmology. For example, he was reasonably au fait with the works of figures such as Sir James Jeans and Sir Arthur Eddington² and he makes occasional refer-

1 A lecture given at The Faraday Institute, St Edmund's College, Cambridge, Tuesday 29 May 2012.

2 Sir James Jeans (1877–1946), mathematician, astronomer and theoretical physicist who taught at Princeton University (1905–1909) and Cambridge University (1904–1905, 1910–1912), and Sir Arthur Eddington (1882–1944), father of modern theoretical astrophysics. Lewis refers to them frequently: see, e.g. Lewis, C.S. *Mere Christianity*, Glasgow: Collins (1990), p. 54; 'Dante's similes', in Hooper, W. (ed.) *Studies in Medieval and Renaissance Literature*, Cambridge: Cambridge University Press (1966), p. 75; 'Historicism', in Walmsley, W. (ed.) *Essay Collection*, London: HarperCollins (2000), p. 631; letter to Margaret Sackville Hamilton, 23 September 1952 and letter to Dorothy L. Sayers, 25 June 1957, in Hooper, W. (ed.) *Collected Letters, Volume III*, London: HarperCollins (2006); *The Problem of Pain*, Glasgow: Collins (1990), p. 74.

ences to figures like Sir Fred Hoyle,³ indicating that he kept a watching brief from an admittedly amateur point of view on developments in astronomy. He also of course had scientists among his colleagues at both Oxford and Cambridge and evidently picked up insights piecemeal from them. Erwin Schrödinger was his colleague at Magdalen, Oxford, for five years in the 1930s and he even makes a brief appearance in Lewis's first science fiction novel, *Out of the Silent Planet*.⁴

That explains why we're looking at this subject. But I ought also to apologise for the title of my article because it runs the risk of misrepresenting Lewis's thought. By putting 'science' and 'religion' alongside each other in this way, one might suppose that they are two distinct and perhaps discontinuous disciplines, but, as far as Lewis was concerned, that would be a mistake. He once said, in his book on prayer, *Letters to Malcolm*, that

there is danger in the very concept of religion. It carries the suggestion that this is one more department of life, an extra department added to the economic, the social, the intellectual, the recreational, and all the rest. But that whose claims are infinite can have no standing as a department. Either it is on illusion or else our whole life falls under it. We have no non-religious activities; only religious and irreligious.⁵

In other words, *religion* – which means the effort to find the unity of all things, to tie every single thing back into a oneness, to 're-ligament' or 're-ligature' – is in this sense the set, if we're thinking of Venn diagrams. Religion is the set and science is a subset.

It would therefore be fair to speak about 'Religion and Irreligion in the Writings of C.S. Lewis', but not about 'Religion and Science', unless you equate Science with Irreligion, which Lewis did not. He sometimes attacks what he calls *scientism*, by which he means 'a certain outlook on the world which is casually connected with the popularisation of the sciences, though it is much less common among real scientists than among their readers'.⁶ Scientism is 'the belief that the supreme moral end of humankind is the perpetuation of our own species, and that this is to be pursued even if, in the process of being fitted for survival, our species has to be stripped of all those things for which we value it – of pity, of happiness, and of freedom'.⁷ But scientism is not science. Science, in Lewis's lexicon, is a

3 Sir Fred Hoyle (1915–2001), Plumian Professor of Astronomy, Cambridge University, 1958–1972: see letter to Genia Goetz, 15 May 1952; 'Religion and rocketry', in Walmsley (ed.) *op. cit.*, (2), p. 231; 'The seeing eye', in Walmsley (ed.) *op. cit.*, p. 64.

4 Erwin Schrödinger (1887–1961), Nobel Prize-winning physicist and colleague of Lewis's at Magdalen College, Oxford, 1933–1938: see Lewis, C.S. *Out of the Silent Planet*, London: Pan (1983), p. 12.

5 Lewis, C.S. *Letters to Malcolm*, London: Collins (1983), pp. 32–33.

6 'A reply to Professor Haldane', in Hooper, W. (ed.) *Of This and Other Worlds*, London: Collins (1982), p. 100.

7 *ibid.*

noble pursuit and part of the religious life, properly understood. If religion (and specifically the Christian religion) is true, then it 'must be cosmic'⁸, encompassing everything, including science. Science therefore cannot be non-religious, though it might become irreligious, either through degenerating into scientism or through other possible corruptions, one of which we will have cause to look at in a few moments.

If the Science/Religion dichotomy is a false one in Lewis's mind, so is another which has some bearing on our topic, that between reason and imagination. Often you will find people talking about reason and imagination as if they are opposed, facing each other across a divide, eyeing each other respectfully if warily, with the one never transgressing onto the other's territory. According to this way of thinking, science proceeds by means of the exercise of reason, while non-scientific disciplines are less fully rational and therefore less trustworthy. This opposition of reason and imagination is so firmly embedded in our language that it is very difficult to escape and I often have quite a job to drill into my students' minds the idea that, in Lewis's view, reason and imagination are not only not opposed, they are very intimately, albeit asymmetrically, related.

In Lewis's view, reason could only operate if it was first supplied with materials to reason about, and it was imagination's task to supply those materials. Therefore, science was necessarily and foundationally imaginative.

In order to provide an easy – and I hope amusing – introduction to Lewis's thinking on this subject, let me relate the following (untrue) story.

One day I took my car into the repair garage for its annual overhaul. At the end of the repair job, I collected the car and, as I was driving it out of the garage forecourt, realised I had forgotten to check on something, so I stopped and rolled down my window and called over my shoulder to the car mechanic (let's call him Billy), and asked, 'Is my rear indicator light working?' To which he replied, 'Yes. No. Yes. No. Yes. No. Yes.'

This little exchange neatly encapsulates Lewis's definition of imagination. 'Imagination' is a notoriously slippery term and different thinkers and writers define it in very different ways. According to Lewis, imagination is simply 'the organ of meaning'⁹, and Billy the car mechanic's 'organ of meaning' was sadly deficient. A flashing phenomenon, as far as he was concerned, could have only one possible meaning: electrical failure. He was able to see the raw data – light on, light off, light on – but was unable to discover the correct meaning of those brute facts. He had sight, but no insight. He focused on externals and failed to perceive their inner

8 'Unreal estates', in Walmsley (ed.) *op. cit.*,(2), p. 533.

9 'Bluspels and flansferes: a semantic nightmare', in Hooper, W. (ed.) *Selected Literary Essays*, Cambridge: Cambridge University Press, p. 265.

significance.

Not that Billy was entirely without the capacity to perceive meaning. He knew the basic meaning of electrical circuits. He knew that when a light shines a connection has been made and when a light goes out a connection has been broken. But he was unable to find a meaning in the *relationship* between a completed and a broken electrical circuit, imaginatively incapable of perceiving that, in this case, an intermittent light means 'indicator', not 'insecure connection'.

Lewis's definition of imagination as 'the organ of meaning' appears in an important but much overlooked essay called 'Bluspels and Flalansferes: A Semantic Nightmare', which was first published in 1939. Mainly concerned with how metaphors are created and used, the essay also contains some larger scale epistemological observations. As well as defining imagination as the organ of meaning, Lewis defines the opposite of meaning as not error but nonsense. Things must rise up out of the swamp of nonsense into the realm of meaning if the imagination is to get any handle on them. Only then can we begin to judge whether their meanings are true or false. Before something can be either true or false it must have meaning. Even a lie means something and a lie understood as a lie can be most instructive. Only nonsensical things mean nothing.

Back to Billy and the car. Not every flashing light on a car is meaningful. Sometimes there really are loose connections, whose occasional bursts of luminosity, flickering on and off in no particular rhythm, we should best describe as nonsensical: the connections are arbitrary, random, meaningless. If the connections were regular or patterned, however, we would be inclined to conclude that they were significant, meaningful. But what kind of meaning would they have: a true one, showing that the driver was about to make a turning, or a false one, showing that the driver had forgotten to cancel the lever? It is human reason, in Lewis's view, that judges between meanings, helping us to differentiate those meanings that are true and illuminating from those that are false and deceptive.

To summarise his definitions: reason is 'the natural organ of truth'; imagination is 'the organ of meaning' and meaning itself is 'the antecedent condition of both truth and falsehood'.¹⁰ Imagination is therefore, for Lewis, 'the prius of truth'¹¹: before something can be either true or false, it must have meaning.

Meaning appears to mean the relation between the physical and the psychic or psychological, 'the psycho-physical parallelism (or more)¹² which

10 Hooper (ed.) *op. cit.*, (9), p. 265.

11 Letter to Owen Barfield, 27 May 1928, in Hooper, W. (ed.) *Collected Letters, Volume I*, London:HarperCollins (2000).

12 Hooper (ed.) *op. cit.*, (9), p. 265.

characterises the universe, linking bodies in space and time with spiritual realities ('spiritual' meaning not just psychological, but also rational and, ultimately, pneumatological). A true meaning would be a complete, unimpaired, healthy, fruitful psycho-physical relationship.

So, we should not think of reason and imagination as related like two people facing each other from either side of a window, but (if you will pardon the analogy) like a man and a woman making love in the missionary position. Reason (the man, in our mental picture) rests upon, indeed relies upon, imagination (the woman). Take imagination away and reason will just be left floating in mid-air, so to speak, spinning its wheels, unable to get traction on any meaningful stuff, incapable of fertilising any meaningful eggs. Reason can't work without imagination. Imagination can, however, work without reason for it does not rest upon reason but is perfectly able to go on producing its meaningful eggs without rational input. If you take reason away, imagination remains lying where it was, but it is now, as it were, released from the role of having to report its findings to anyone. It is now simply laid-back imagination, unrelated to rational investigation. In Lewis's terminology, this sort of imagination is no longer 'imaginative', but merely 'imaginary'¹³. What it works with will be a miasma of meaningful images, such as flood through our dreams at night, but questions of truth or falsehood will never arise.

Now, it will be obvious, how, working with these definitions, Lewis viewed science as necessarily and foundationally imaginative, for science works with meaningful things that it then reasons about. One of his many sources for this idea of imagination as the sine qua non of knowledge, was his close friend Owen Barfield, who had written in *Poetic Diction*, an important book which influenced Lewis considerably:

Science deals with the world which it perceives but, seeking more and more to penetrate the veil of naive perception, progresses only towards the goal of nothing, because it still does not accept in practice (whatever it may admit theoretically) that the mind first creates what it perceives as objects, including the instruments which Science uses for that very penetration. It insists on dealing with 'data,' but there shall no data be given, save the bare percept. The rest is imagination. Only by imagination therefore can the world be known. And what is needed is, not only that larger and larger telescopes should be constructed, but that the human mind should become increasingly aware of its own creative activity.¹⁴

13 See, e.g., letter to Eliza Butler, 25 September 1940, in Hooper, W. (ed.) *Collected Letters, Volume II*, London: HarperCollins (2004).

14 Barfield, O. *Poetic Diction, A Study in Meaning*, Hanover, NH: Wesleyan University Press (1984), p. 28.

Barfield goes on to argue that Newton with his 'gravity' (originally 'weight') and Kepler with his 'focus' (originally 'hearth') were developing meaning, not discovering 'fact.' These linguistic terms were as much part of their 'instruments' as the material instruments themselves; they were concepts applied to percepts in new ways which were judged to be illuminating, but which were functions of the imagination rather than 'objective' tools. Scientific and religious knowledge are therefore indistinguishable in kind. The scientific method does not give us a new way of knowing, only a new way of testing.

The next issue to investigate is what are the things that science characteristically finds meaningful. And to help us in this investigation I turn to another of Lewis's essays, this one called 'The Language of Religion',¹⁵ which opens with him listing three different sentences, as follows:

- (1) It was very cold.
- (2) There were 13 degrees of frost.
- (3) 'Ah, bitter chill it was!
The owl, for all his feathers was a-cold;
The hare limped trembling through the frozen grass,
And silent was the flock in woolly fold:
Numb were the Beadsman's fingers...'¹⁶

Lewis describes the first as Ordinary language, the second as Scientific language and the third as Poetic language (it is a quotation from Keats's 'The Eve of St Agnes'). Scientific and Poetic language are two different artificial perfections of Ordinary language, in Lewis's view: by 'artificial' he simply means that Scientific and Poetic language both depend on certain skills – the skills of inventing, using, and reading a thermometer in the case of Scientific language; the skills of metre, rhyme, alliteration, assonance, allusion, connotation and so forth in the case of Poetic language.

Lewis notes that Ordinary language could advance a little towards either of the other two kinds so that you could pass by degrees into Scientific or Poetic. For 'very cold' you could use instead 'freezing hard' and for 'freezing hard' you could use 'freezing harder than last night'. By such tweaks your Ordinary language would be getting nearer to the Scientific. Alternatively, you could say 'bitterly cold' instead of 'very cold' and then you would be getting nearer to Poetic language. In fact you would have anticipated one of the terms used in Keats's poem.

Having made these general observations about different kinds of language, Lewis then proceeds to draw the following conclusions:

15 'The language of religion', written for the Twelfth Symposium of the Colston Research Society of the University of Bristol in March 1960.

16 'The language of religion', in Walmsley (ed.) *op. cit.*, (2), p. 255.

The superiority of the Scientific description clearly consists in giving for the coldness of the night a precise quantitative estimate which can be tested by an instrument. The test ends all disputes. If the statement survives the test, then various inferences can be drawn from it with certainty: e.g., various effects on vegetable and animal life can be predicted. It is therefore of use in what Francis Bacon called 'operation'. We can take action on it. On the other hand it does not, of itself, give us any information about the quality of a cold night, does not tell us what we shall be feeling if we go out of doors. If, having lived all our lives in the tropics, we didn't know what a hard frost was like, the thermometer reading would not of itself inform us. Ordinary language would do that better 'Your ears will ache' – 'You'll lose the feeling in your fingers' – 'You'll feel as if your ears were coming off.'¹⁷

Turning to Poetic language, Lewis says that its superiority to Ordinary language is a much more troublesome affair than the superiority of Scientific language. He says that he feels fairly sure what this example of Poetic language does not consist in: it does not consist either in discharging or arousing mere emotion. It may do one of these things or both, but he doesn't think that is its *differentia*:

I don't think our bit of Keats differs from the Ordinary 'It was very cold' primarily or solely by getting off Keats's chest mere dislike of cold nights, nor by arousing mere dislike in me. There is, no doubt, some mere 'getting off the chest' in the exclamation 'Ah' and the catachresis 'bitter'. Personally, I don't feel the emotion to be either Keats's or mine. It is for me the imagined people in the story who are saying 'Ah' and 'bitter'; not with the result of making me share their discomfort, but of making me imagine how very cold it was. And the rest is all taken up with pictures of what might have been observed on such a night. The invitation is not to my emotions but to my senses. Keats seems to me to be simply conveying the quality of a cold night... He is in fact giving me all that concrete, qualitative information which the Scientific statement leaves out. But then, of course, he is not verifiable, nor precise, nor of much use for operation.¹⁸

That reference to the qualitative nature of the information provided by Poetic language implies the kind of things that Science finds meaningful. Science finds quantitative things meaningful, things that are quantifiable, measurable and instrumentalisable – that is, useful in 'operation'. And it is for this reason that scientific statements are so verifiable or falsifiable; they are, as Lewis puts it, 'far more easily "cashed"' than statements made in either Ordinary language or Poetic language. 'But the poet might of course reply that it always will be easier to cash a cheque for 30 shillings

¹⁷ *ibid.*, p. 256.

¹⁸ *ibid.*, pp. 256-257.

than one for 1,000 pounds, that the scientific statements are cheques, in one sense, for very small amounts, giving us, out of the teeming complexity of every concrete reality only “the common measurable features”.¹⁹

The smallness of scientific statements is often obscured by their successfulness. Scientific statements succeed in defining and predicting certain pockets of the natural world, definition and predictions which can then be put to use, in curing small-pox, or building the internal combustion engine, or devising the microchip. The magnificence of such scientific achievements is so huge that it can mislead us into thinking that they have said a great deal, when actually they have said relatively little, but said it very well. A true scientific statement has to be relatively small, because it is only relatively small things that can be said with sufficient univocality to be empirically verifiable or falsifiable. You might think it preposterous to describe the mapping of the human genome as a ‘small statement’, but genetics is only one department of biology and biology is only one department of science and science is only one department of human knowledge. Seen in context of all that there could possibly be said about a human being – socially, psychologically, spiritually, economically, historically, geographically, emotionally, visually, audibly, tangibly, olfactorally, racially, anthropologically, dermatologically, psephologically (you get the picture!), any genetic statement, however marvellously correct, is still a minuscule fraction of the total. When you start trying to make larger statements you move into the language of the humanities and then into the arts and then into religion. Religious statements, by saying things which attempt to explain life in the round, use language which is very hard to quantify, to measure, to test. But that is because they are trying to say a very great deal; they are trying to find the unity, the oneness, the heart of all reality. Here the stake is not a mere thirty shillings, but every penny you have, your life, your soul.

So far have seen from *Letters to Malcolm* that, for Lewis, science is a subset of that set which is the religious life in all its fullness. We have seen from ‘Bluspels and Flalansferes’ that science is fundamentally imaginative. And we have seen from ‘The Language of Religion’ that science makes statements that are small but tremendously useful. Small scientific statements are more easily cashed than large religious ones.

I want now to focus in on one particular scientific statement, or scientific development, that Lewis paid particular attention to. The biggest book Lewis ever wrote was his 700-page discussion of *English Literature in the Sixteenth Century Excluding Drama*. It was his contribution to a multi-volume series called *The Oxford History of English Literature* – or ‘O Hell!’ as he nicknamed it. And this is where we come to Lewis’s interactions with science as a literary and intellectual historian.

¹⁹ *ibid.*, p. 260.

I needn't remind you how, in the middle of the sixteenth century, Nicolaus Copernicus revolutionised astronomy with his theory of a heliocentric cosmos. His epoch-making work *De Revolutionibus Orbium Coelestium* ('On the Revolutions of the Heavenly Spheres'), published in 1546, has been described as the biggest shift there has ever been in the history of human thought, because Copernicus in a sense relocated earth. Until Copernicus everyone thought that Earth was at the centre; after Copernicus we realised that Earth was at the edge, the circumference, and the Sun was at the centre. Single-handedly Copernicus moved us from the middle of things to the periphery. And of course his theory was later proved correct by Kepler and Galileo when the telescope was invented early in the seventeenth century.

Lewis was interested in the imaginative effects of the Copernican revolution. As a literary critic and historian he wanted to see how the new heliocentric cosmos affected the sort of literature that people would write. As it happened, the new Copernican cosmos did not immediately seep into the public consciousness in the sixteenth century. Shakespeare, who died in the first half of the seventeenth century, wrote all his plays almost exclusively from the presupposition of Ptolemaic cosmology.

However, in due course, the Copernican revolution did trickle down to affect writers and, through them, the general populace. Indeed, Copernicus would eventually become a kind of hurrah word for writers who wished to caricature the Middle Ages as a bad period from which humanity did well to escape. Such lazy, journalistic thinking Lewis humorously satirised in his inaugural lecture as Professor of Medieval and Renaissance Literature at Cambridge, when he invited his audience to re-read the first chapter of J. M. Berdan's *Early Tudor Poetry*:

It is still in many ways a useful book; but it is now difficult to read that chapter without a smile. We begin with twenty-nine pages... of unrelieved gloom about grossness, superstition, and cruelty to children, and on the twenty-ninth comes the sentence, 'The first rift in this darkness is the Copernican doctrine'; as if a new hypothesis in astronomy would naturally make a man stop hitting his daughter about the head.²⁰

That is one effect that the Copernican revolution had, it allowed lazy writers to start hitting the Middle Ages about the head. But obviously, it was not a very important effect, and Lewis includes it simply to amuse his audience at the start of his lecture. The more serious effects of the Copernican revolution on human imagination relate to what Lewis calls the 'mythology which follows in the wake of science'²¹. The cosmology that a given generation accepts has immense consequences for its thoughts and

²⁰ 'De descriptione temporum', in Hooper (ed.) *op. cit.*, (9), pp. 1-2.

²¹ Lewis *op. cit.*, (4), p. 35.

emotions, and in every generation there is this 'mythology which follows in the wake of science,' a mythology that feeds into our understanding of ourselves and the way we imaginatively interpret the world and our place in it. Garrett Green makes the point well:

From Galileo and Newton to Einstein and Stephen Hawking, the reigning scientific models of the cosmos have provided the larger culture with powerful analogies and metaphors that shape its epistemology, its poetry, its politics, and its religion... many of the leading postmodernist ideas borrow much of their imagery and not a little of their social prestige from scientific notions of relativity, uncertainty, and incommensurability.²²

Lewis was particularly alive to the cultural consequences of scientific paradigm shifts because of his intimate scholarly acquaintance with the Copernican revolution. His volume on the sixteenth century begins with a fourteen-page treatment of 'the new astronomy' which was pioneered by Nicolas of Cusa, theorised by Copernicus and verified by Kepler and Galileo. He concludes that what proved important about the new astronomy was not the mere alteration in our map of space but the methodological revolution which verified it:

By reducing Nature to her mathematical elements it substituted a mechanical for a genial or animistic conception of the universe. The world was emptied, first of her indwelling spirits, then of her occult sympathies and antipathies, finally of her colours, smells, and tastes. (Kepler at the beginning of his career explained the motion of the planets by their *anima motrices*; before he died, he explained it mechanically.)²³

A mechanical paradigm has now become the operative paradigm, and the older view of nature as teeming with humours, influences and the four elements disposed in particular realms or homes was overthrown. Hence the title of Lewis's last book, *The Discarded Image*. But these developments were not necessary or logical consequences of Copernicus's theory: they were the unscientific or non-scientific collateral effects caused by his scientific advance.

Similar non-scientific or unscientific effects follow every major scientific paradigm shift, as Lewis points out in a pair of lectures he gave to an audience of scientists at the Zoological Laboratory, Cambridge, in 1956. Take, for instance, the Newtonian revolution with respect to gravity. Medieval people of course never talked of gravitation. "Their way of describing it is to say that every natural object has a native or "proper" place and is always

22 Green, G. *Theology, Hermeneutics, and Imagination*, Cambridge: Cambridge University Press (2000), p. 15.

23 Lewis, C.S. *English Literature in the Sixteenth Century Excluding Drama*, Oxford: Clarendon Press (1954), pp. 3–4.

“trying” or “desiring” to get there. When unimpeded, flame moves upwards and solid bodies move downwards because they want to go you may call it, “home”.²⁴ This wasn’t animism, Lewis says. They didn’t really think that all matter was sentient. ‘They will distinguish animate and inanimate as clearly as we do; will say that stones, for example, have only being; vegetables being and life; animals, being, life and sense; man, being, life, sense and reason.’²⁵ The truth is that the language of inanimate bodies ‘seeking home’ used in the Middle Ages was the same kind of language that the modern man uses when speaking about ‘laws of nature’. As Lewis writes:

When a modern says that the stone fell ‘in obedience to the law of gravitation’, he does not really think there is literally a law or literal obedience; that the stone, on being released, whips out a little book of statutes, finds the chapter and paragraph relevant to its predicament, and decides it had better be a law-abiding stone and ‘come quiet’. Nor did the medieval man believe that the stone really felt homesick, or felt at all. Both ways of putting it are analogical; neither speaker would usually know any way of expressing the facts except by an analogy.

But of course it makes a great difference to the tone of your mind which analogy you adopt – whether you fill your universe with phantom police-courts and traffic regulations, or with phantom longings and endeavours.²⁶

The *machine*, the *laws* of nature (it was Francis Bacon, Lewis says, who first started to talk of ‘laws’ of nature, by analogy with jurisprudence) were terms that began to affect the attitudes people had to the world, they began to make people suppose that things are regular, impersonal, essentially lifeless. And this tendency was soon reinforced by another new term that arrived in the wake of the Copernican revolution, namely ‘space’. It was first coined probably not by a scientist but, as Lewis points out in *The Discarded Image*, by the poet John Milton sometime in the seventeenth century: ‘space may produce new worlds’ (*Paradise Lost*, i, 650).²⁷ The fact that it was a poet, not a scientist, emphasises Lewis’s point about the effects of science often being unscientific or non-scientific. New scientific language feeds out into the wider culture, and is taken up and put to all sorts of uses, with all sorts of implications, which have nothing to do with whether the earth goes round the sun or not. But to think of the firmament above our heads as ‘space’, rather than as ‘the heavens’, as was commonly the term used before the time of Copernicus, is to introduce a whole new quality of emptiness or hollowness into the universe. Earth is now adrift in a void, rather than the focus of a network of planetary relationships. Look

24 ‘Imagination and thought in the Middle Ages’, in Hooper (ed.) *Studies, op. cit.*,(2), p. 49.

25 *ibid.*, pp. 49-50.

26 *ibid.*, p. 50.

27 Lewis, C.S. *The Discarded Image*, Cambridge: Cambridge University Press (1964), p. 100.

up into the night sky these days, Lewis suggests in *The Discarded Image*, and you will find, if you are a typically modern person with a typically modern imagination, that it is the blackness and the vacuity that strike you: the sense of a trackless waste will have replaced the sense of a vast, lighted concavity, filled with purposes, homes, desires and signifiers.

What I think Lewis is suggesting in these passages is that we need to be careful about the knock-on effects of scientific language and to ask whether all the apparent implications of a new term need be embraced. As a literary critic, literary historian, philologist and man of letters generally, he had a great concern to ‘purify the dialect of the tribe’ (in T.S. Eliot’s phrase). One only needs to read his fascinating book *Studies in Words* to see how minutely Lewis inspected every ramification and connotation of certain words. (Many contributors to religion-versus-science debates would benefit, I suspect, from reading his chapters on ‘Nature’, ‘World’, and ‘Life’.) There can be diseases in language, and there can certainly be fashions, and we need to be on our watch against these if we are to think clearly and to speak wisely. As Lewis’s friend Owen Barfield once said, ‘of all devices for dragooning the human spirit, the least clumsy is to procure its abortion in the womb of language’.²⁸ And although scientists of course cannot be held responsible for every use or misuse that their characteristic metaphors are put to, scientists may themselves begin to put too much weight on particular paradigms, mistaking their linguistic symbols for the things symbolised. This is a subject Lewis touches on in his epilogue to *The Discarded Image*, a fascinatingly provocative chapter which we probably could have spent the whole of our time on. But let me finish by quoting the final two paragraphs of that epilogue and by then showing its relevance to Lewis’s perspective on Christianity:

I hope no one will think that I am recommending a return to the Medieval Model. I am only suggesting considerations that may induce us to regard all Models in the right way, respecting each and idolising none. We are all, very properly, familiar with the idea that in every age the human mind is deeply influenced by the accepted Model of the universe. But there is a two-way traffic; the Model is also influenced by the prevailing temper of mind. We must recognise that what has been called ‘a taste in universes’ is not only pardonable but inevitable. We can no longer dismiss the change of Models as a simple progress from error to truth. No Model is a catalogue of ultimate realities, and none is a mere fantasy. Each is a serious attempt to get in all the phenomena known at a given period, and each succeeds in getting in a great many. But also, no less surely, each reflects the prevalent psychology of an age almost as much as it reflects the state of that age’s knowledge. Hardly any battery of new facts could have persuaded a Greek that the

²⁸ Barfield, O. *op. cit.*, (14), p. 23.

universe had an attribute so repugnant to him as infinity; hardly any such battery could persuade a modern that it is hierarchical.

It is not impossible that our own Model will die a violent death, ruthlessly smashed by an unprovoked assault of new facts – unprovoked as the nova of 1572 [which showed the translunary realm to be mutable]. But I think it is more likely to change when, and because, far-reaching changes in the mental temper of our descendants demand that it should. The new Model will not be set up without evidence, but the evidence will turn up when the inner need for it becomes sufficiently great. It will be true evidence. But nature gives most of her evidence in answer to the questions we ask her. Here, as in the courts, the character of the evidence depends on the shape of the examination, and a good cross-examiner can do wonders. He will not indeed elicit falsehoods from an honest witness. But, in relation to the total truth in the witness's mind, the structure of the examination is like a stencil. It determines how much of that total truth will appear and what pattern it will suggest.²⁹

Lewis is urging scientists to hold their metaphors and their overall paradigms with a due provisionality,³⁰ reminding them that an image of the cosmos, like an image of the divine, can become a graven image, an idol. Religion and science both need a degree of humility and ought not to suppose that they can fully capture reality in their own terminology.

In Lewis's view, an image of Christ, even a scriptural image of Christ (such as shepherd, king, judge, bridegroom, etc.) cannot in itself contain the entirety of that which it refers to. It 'is only a symbol, like the reality in some respects, but unlike it in others, and therefore needs correction from the different symbols'.³¹ To that extent it is just the same as an image of the cosmos. The Einsteinian view of the cosmos has not completely supplanted the Newtonian model; nor did the Newtonian model improve upon the Ptolemaic model in absolutely every respect. At any rate, Lewis suggests, as we have seen, that the Newtonian model with its metaphors of 'laws' and physical bodies 'obeying rules' is a good deal more anthropomorphic than the pre-Copernican model with its characteristic metaphor of 'kindly enclyning'. Cosmologies, no less than Christologies, are fallible human constructs, and both must therefore be approached with a certain tentativeness. The Lewis who wrote, 'My idea of God is not a divine idea,'³² could also write, and from much the same perspective, 'No Model [of the

²⁹ Lewis *op. cit.*, (27), pp. 222-223.

³⁰ *The Discarded Image* (1964) appeared the year after Lewis's death in 1963. Based on lectures that Lewis gave throughout his career, it chimes remarkably well with a landmark work in the literature of the philosophy of science published about the same time by Thomas Kuhn: Kuhn, T.S. *The Structure of Scientific Revolutions*, Chicago: Chicago University Press (1962).

³¹ 'The weight of glory', in Walmsley (ed.) *op. cit.*, (2), p. 101.

³² Lewis, C.S. *A Grief Observed*, London: Faber & Faber (1961), p. 55.

universe] is a catalogue of ultimate realities.' In so far as an image of God becomes divine it becomes demonic and then the true God, in mercy, shatters it: 'He is the great iconoclast.'³³ Likewise, 'it is not impossible that our own [Einsteinian] Model will die a violent death, ruthlessly smashed by an unprovoked assault of new facts'. Therefore let us continually bear in mind those 'considerations that may induce us to regard all Models in the right way, respecting each and idolising none'. For mere words cannot contain the Word, nor even the things the Word has made.

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33. *ibid.*



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