

# Astrology and Cosmology in the World's Religions

## Nicholas Campion

### Chapter 1

#### Cosmology and Religion: Measurement and Meaning

*It has long been known that the first systems of representation that man made of the world and of himself were of religious origin. There is no religion that is not both a cosmology and a speculation about the divine.*<sup>1</sup>

*We are a way for the cosmos to know itself. We are creatures of the cosmos and always hunger to know our origins, to understand our connection with the universe.*<sup>2</sup>

There is no human society which does not somehow, in some way, relate its fears, concerns, hopes and wishes to the sky, and to the organizing principle behind it, the cosmos. Neither is there any society which does not express at least some fascination with the sky and its mysteries. This is as true of modern culture as ancient, witness the media attention given to recent revelations, via the Hubble and Herschel telescopes, of strange and wonderful visions of far-distant parts of the universe, millions of light-years from our own planet. As Joel Primack and Nancy Abrams wrote, 'Like every earlier culture, we need to know our place in the universe. Where we are in time, space, and size is part of situating ourselves in the epic of cosmic evolution'.<sup>3</sup> And witness the rise, in tandem with twentieth century cosmology, of beliefs in alien visitation and abduction, and of contact with spiritually-superior beings from other worlds.

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<sup>1</sup> Emile Durkheim, *The Elementary Forms of Religious Life*, trans. Karen E. Fields, (New York: Free Press 1995 [1st edn., *Les Formes élémentaires de la vie religieuse*, Paris; F. Alcan 1912]), p. 8.

<sup>2</sup> Carl Sagan, 'Who Speaks for Planet Earth', Transcript for the final programme in the 'Cosmos' series, PBS, (1980),  
[http://www.cooperativeindividualism.org/sagan\\_cosmos\\_who\\_speaks\\_for\\_earth.html](http://www.cooperativeindividualism.org/sagan_cosmos_who_speaks_for_earth.html).

<sup>3</sup> Nancy Ellen Abrams and Joel R. Primack, 'Views from the Centre of the Universe', in José Alberto Rubiño-Martín, Juan Antonio Belmonte, Francisco Prada and Anxton Alberdi, (eds.), *Cosmologies Across Cultures*, San Francisco: Astronomical Society of the Pacific, 2009, p.13.

The twentieth-century saw a revolution in our understanding of cosmology comparable to that which took place between Copernicus and Galileo, although it may be too early to say what the political and social consequences might be. The first photographs of the earth from the moon, for example, are often said to be partly responsible for the idea that we are all members of a single 'global village', an idea which in turn has had a large impact on the environmental movement, and so on such religious currents as Christian environmentalism and ecopaganism. The cultural implications are as yet unclear, though: while many astronomers believe that cosmology's automatic conclusion is atheism, the non existence of God, some astronauts experienced profound religious experiences as a result of their space flights.

Astronomical theory feeds through into political and religious thought in the modern world, exactly as it did in the ancient, when the Sun, the king of heaven, was the celestial counterpart of the emperor on earth.<sup>4</sup> Such notions were challenged when eighteenth-century radicals seized on Isaac Newton's demonstration that the whole universe was governed by one natural law – gravity – to argue the consequence – that all human society, being an integral part of the cosmos, must also be governed by one law, kings included. By the end of the century Newtonians, flushed by the discovery that planetary orbits could be explained by mathematics alone, with no need for divine intervention, began to promote scientific arguments for atheism. And so, the notions of the rule of law, taken for granted in western-style democracy, and a world without a supernatural creator can be seen, in part, as functions of astronomical-political theory. More recently, Einsteinian relativity, from which it can be argued that there is no fixed centre to the universe, only an infinite series of observers, trapped for ever in their own reference points, has encouraged the onward march of cultural relativity, the ultra-liberal belief that, as no one culture is 'central', all cultural perspectives and practices must be respected on their own terms. All such views conform to what I have termed the 'Cosmic State', the application of cosmological theory to political ideology and the management of society.

We might call such political opinions cosmic, or cosmological, a description which endows them with a power that other classical word, 'universe' completely lacks; if we describe something as universal we know it is

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<sup>4</sup> Nicholas Campion, *A History of Western Astrology*, 2 Vols, (London: Continuum, 2009), Vol, 1, ch. 3,6,16, Vol. 2, ch. 12, 13.

everywhere but if we describe it as cosmological it has depth. *Universus* is the primary Latin word which replaced the Greek *Kosmos* for Latin writers. *Unus verto* - is literally 'changing into one', and is closer in meaning to the Greek *panta* - everything - than to *cosmos*. Given Latin's legalistic nature (it was the language of law and civic matters) as opposed to Greek's continued use as the language of philosophy, *universus* represents the Roman view of the world - as a unified collection of people subject to Roman law. The Greeks, however, were thinking in terms of metaphysics including all 'worlds' or realms of beings celestial and terrestrial - not that metaphysics doesn't often cross into the social. Universe, we might say, is a matter of quantity, but *cosmos* is concerned with quality.

The questions I pose of cosmology in this book are, firstly, how does it tell stories, secondly, how does it assign meaning and, thirdly, how is such meaning manifested in the detailed activities which are its primary functions, such as managing time, understanding the self, pursuing salvation and predicting the future, all of which can be gathered together under the heading of astrology? Each chapter has a different emphasis. Some, particularly those which concern the Mediterranean and Near Eastern worlds and their intellectual descendants, contain obvious overlaps. Some have more of a historical emphasis, some modern and, in others, the distinction is irrelevant. All, though, I argue contain common ways of seeing the *cosmos* as an integrated, interdependent whole, in which the sky and earth are reflections of each other, and the movements of the heavenly bodies function simultaneously as a demonstration of universal order and constant variety, indicating a dialectical and symbiotic relationship between repetitive constancy and endless change and revealing, as it does so, messages and meaning to those who care to look and listen. Order and permanence, variety and change are, as Seneca wrote, at odds. His view, common amongst many cultures which value social order was that the latter undermine the former: 'Deviation by nature from her established order in the world', he argued, 'suffices for the destruction of the race'.<sup>5</sup>

Most cultures share the notion of the sky as a theatrical device, a stage on which celestial dramas are played out. As Xiaochun Sun put it, describing Chinese astrology 'the sky was like the setting of a stage on which all kinds

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<sup>5</sup> Seneca, *Naturales Questiones*, trans. T.H. Corcoran, 2 Vols, (Cambridge Mass.: Harvard University Press 1971), 111.xxvii.4, p. 46.

of events were happening’.<sup>6</sup> For the Maya David Friedel, Linda Schele and Joy Parker wrote, ‘The sky is a great pageant that replays creation in the pattern of its yearly movements’.<sup>7</sup> Many cultures also assume the relativity of time and space. For the Aztecs, as Anthony Aveni wrote, ‘time and space were naturally juxtaposed’.<sup>8</sup> They moved in step with each other, and were inseparable, and one could not be understood or perceived without the other.

But, what exactly is cosmology? My concern in this book is with cultures from around the world, but the discussion what cosmology is happens to be a concern of western scholars, so the following discussion necessarily draws on a limited range of sources. In one sense, cosmology is, as Norris Hetherington, something of an authority in the field, put it, ‘the science, theory or study of the universe as an orderly system, and of the laws that govern it; in particular, a branch of astronomy that deals with the structure and evolution of the universe’.<sup>9</sup> This, of course, is a modern view, emphasizing the *logos* of cosmology as a study, as the detached, scientific, investigation of the cosmos. In a different context the *logos* might be the word, which is how it is translated in the famous opening passage of John’s Gospel, suggesting that the cosmos is an entity which speaks to us. This is the standard pre-modern perspective. Where Hetherington finds common cause with classical thought, though, is in the notion of order. Cosmos is a Greek word which translates roughly as ‘beautiful order’, a meaning probably used first by one of the fifth and sixth century BCE philosophers, Parmenides or Pythagoras. In the Greek conception, as expressed through such influential schools of thought as the Platonic and Stoic, the cosmos is, simply, beautiful. It may be an ‘order’ but is also an ‘adornment’. The Romans converted Cosmos into their word Mundus, which for us means mundane, or worldly. As Pliny (23/4 – 79 CE) wrote:

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<sup>6</sup> Xiaochun Sun, ‘Crossing the Boundaries between Heaven and Man: Astronomy in Ancient China’, Helaine Selin (ed.), *Astronomy Across Cultures: the History of Non-Western Astronomy*, (Dordrecht: Kluwer Academic Publishers, 2000), p. 425.

<sup>7</sup> David Friedel, Linda Schele, Joy Parker, *Maya Cosmos: Three Thousand Years on the Shaman’s Path*, (New York: William Morrow and Company, 1993), pp. XX.

<sup>8</sup> Anthony Aveni, *Empires of Time, Calendars, Clocks and Cultures*, (London: Tauris Parkes Paperbacks, 2000), pp. XX.

<sup>9</sup> Norris D. Hetherington, *The Encyclopaedia of Cosmology: Historical, Philosophical and Scientific Foundations of Modern Cosmology*, (New York: PUBLISHER, 1993), p. 116.

The Greeks have designated the world by a word that means 'ornament', and we have given it the name of mundus, because of its perfect finish and grace. For what could be more beautiful than the heavens which contain all beautiful things? Their very names make this clear: Caelum (heavens) by naming that which is beautifully carved; and Mundus (world), purity and elegance.<sup>10</sup>

Some classicists actually use 'world' as a translation for Greek cosmos.<sup>11</sup> The leap from 'heavens' into 'world' is a useful one, challenging the general modern distinction between what is down here from what is up there. Cosmology is therefore not just a matter of exploring the far reaches of the universe, but of recognizing that we are an integral part of it and that our environments, our houses, feelings, families, communities, towns and cities are part of the cosmos as much as is are the sky and stars. This is why, in pre-modern cultures, kinship structures could have correlates with the heavens: as Denise Arnold has pointed out,

It has been proposed that kinship itself constructs social systems according to cultural rules. Different Kinship systems may transform notions of personhood, gender, the transmission of ancestral substance to offspring, metaphysics and cosmology.<sup>12</sup>

Great cities, such as Baghdad might be founded when the planets were in an auspicious alignment and designed in accord with the principles which, it was thought, underlay the cosmic order, but nothing in traditional cosmology is ever permanent. Writing on the north American Lakota people, William Powers commented that 'Far from being a static entity, cosmology is dynamic, changing and moving through time as ritual moves through space'.<sup>13</sup> The most immediate exemplars of cosmic power are heat from the

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<sup>10</sup> Pliny, *Natural History*, Vol. 1, Book II, trans H. Rackham, Cambridge Mass. (London: Harvard University Press 1929), Book 2, III, 8.

<sup>11</sup> See Diogenes Laertius, 'Zeno' in *Lives of Eminent Philosophers*, trans. R.D. Hicks, (London: William Heinemann, 1925), Vol. 2, p. 243.

<sup>12</sup> Denise Arnold, 'Kinship as Cosmology: Potatoes as Offspring among the Aymara of Highland Bolivia', in Don McCaskill, *Amerindian Cosmology*, (Brandon and Edinburgh: Canadian Journal of Native Studies and the Traditional Cosmology Society, 1988), p. 323.

<sup>13</sup> William K. Powers, 'Cosmology and the Reinvention of Culture: the Lakota Case', in Don McCaskill, *Amerindian Cosmology*, (Brandon and Edinburgh: Canadian Journal of Native Studies and the Traditional Cosmology Society, 1988), pp. 165.

sun, light from both the sun and moon, but also wind, rain and the change of weather through the day and the seasons. When Nathan Sivin uses 'nature' as a 'convenient synonym for cosmos', he is very much in tune with the premodern way.<sup>14</sup>

A cosmology is also a conception of the cosmos, a thought takes us back to the notion of cosmos not of something which encompasses us, but to an idea which we create. We can identify different cosmologies, many of which may share common features, but which are all the products of their own cultures. Freya Matthews' words are apposite here. She considered that,

Cosmologies... are conditioned by many and various historical, environmental, technological, psychological and social factors. A flourishing community is likely to evolve a bright, self-affirming cosmology, and a languishing community is likely to see the world in darker shades... A good cosmology... is good for its adherents.<sup>15</sup>

She adds though, that, having been constructed, a cosmology achieves a life of its own, like any other ideology, becoming an active force. As an example, we might point to millenarian beliefs that the cosmos is heading towards cataclysmic destruction – and perhaps rebirth – as a force in revolutionary politics, as well as more harmless activities such as radical art movements.<sup>16</sup> We may also point to astrology, which, dependent on evidence which is experiential and anecdotal, flourishes, innovates and thrives, crossing cultures, periods and continents.

As the Traditional Cosmology Society, whose name makes their interests clear, cosmology deals with the way in which humans orient their culture, their buildings and rituals to the cosmos. The Society's remit is suitably broad, as described on its website:

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<sup>14</sup> Sivin, [Nathan](#), 'State, Cosmos, and Body in the Last Three Centuries B. C.', *Harvard Journal of Asiatic Studies*, vol. 55, no. 1, (Jun. 1995), p. 5.

<sup>15</sup> Freya Matthews, *The Ecological Self*, (Savage, MD: Barnes and Noble, 1991), p. 109.

<sup>16</sup> Nicholas Campion, *The Great Year: Astrology, Millenarianism and History in the Western Tradition*, (London: Penguin, 1994).

The society is concerned with exploring myth, religion and cosmology across cultural and disciplinary boundaries and with increasing understanding of world views in the past and present.<sup>17</sup>

There is little, in this understanding of the term, which is not cosmological. Hans Jonas summed up one similarly broad version of the classical approach well made in his study of the Gnostics, whose cosmology he described as follows:

By a long tradition this term [cosmos] had to the Greek mind become invested with the highest religious dignity. The very word by its literal meaning expresses a positive evaluation of the object - any object - to which it is accorded as a descriptive term. For *cosmos* means "order" in general, whether of the world or a household, of a commonwealth, of a life: it is a term of praise and even admiration.<sup>18</sup>

The 2<sup>nd</sup> c CE Stoic philosopher, Cleomedes, acknowledged the variety of uses of the term:

‘Cosmos’ is used in many senses, but our present discussion concerns it with reference to its final arrangement, which is defined as follows: a cosmos is a construct formed from the heavens, the Earth, and the natural substances within them. This [cosmos] encompasses all bodies, since, as is demonstrated elsewhere, there is, without qualification, no body existing outside the cosmos... And that the cosmos has Nature as that which administers it is evident from the following: the ordering of the parts within it; the orderly succession of what comes into existence, the sympathy of the parts in it for one another; the fact that all individual entities are created in relation to something else; and, finally, the fact that everything in the cosmos renders very beneficial services.<sup>19</sup>

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<sup>17</sup> The Traditional Cosmology Society, <http://www.tradcos.co.uk/>, accessed 4 Feb. 2010.

<sup>18</sup> Hans Jonas, *The Gnostic Religion: The Message of the Alien God and the Beginnings of Christianity*, 2nd ed., (Boston: Beacon Press, 1963), p. 241.

<sup>19</sup> Cleomedes, ‘On the Heavens’, in *Cleomedes’ Lectures on Astronomy*, trans. Alan C. Bowen and Robert B. Todd, (Berkeley, Los Angeles: University of California Press, 2004), 1.3.3, 1.3.11.

For the classical Stoics, the cosmos was interior as much as exterior, it was inside us as much as outside us. The implications of such a view have considerable implications for what it is to be human and take us towards the traditional view of the Biblical cosmology, in which God made man in his own image; humanity is then reflective of the creative force from which the cosmos is engendered. There are many other variations on this theme. In Classical astronomy, for example, the parts of the body were tied to the planets and zodiac signs, laying the foundation for medieval maps of 'zodiac man, in which the head was an embodiment of Aries and the signs descended the body in order until they reached the feet, which were Piscean. Such correspondences could be remarkably intricate. 'Saturn is lord', wrote the Alexandrian polymath Claudius Ptolemy in the second century, 'of the right ear, the spleen, the bladder, the phlegm and the bones'.<sup>20</sup> The individual, both in mind and body, then becomes a replica of the cosmos, expressing hopes, fears, desires and expectations which follow an order evident in the motion of the celestial bodies. In China, Nathan Sivin wrote, 'state, and the body were so interdependent that they are best considered a single complex'.<sup>21</sup> In this sense the body itself becomes an expression of cosmology, or even, as Deborah Kaspin said of traditional African philosophy, a cosmology in itself.<sup>22</sup>

Modern cosmology is not confined to scientific views, at least, not if we include as modern everything which exists in the modern world. Contemporary cosmology can include divine intervention - obviously Christian cosmologists must reserve a place for God in their thinking. A notable example is the physicist John Polkinghorne, for whom there is no difficulty in imaging a Christian God who allows his creation to operate via the laws of physics.<sup>23</sup> From a non-Christian perspective, Joel Primack, distinguished as one of the team responsible for the idea of Cold Dark

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<sup>20</sup> Ptolemy, Claudius, *Tetrabiblos*, trans. F.E. Robbins, (Cambridge Mass., London: Harvard University Press, 1940), II.12.147-8.

<sup>21</sup> Sivin, [Nathan](#), 'State, Cosmos, and Body in the Last Three Centuries B. C.', *Harvard Journal of Asiatic Studies*, vol. 55, no. 1, (Jun. 1995), pp. 5-37, p. 5.

<sup>22</sup> Deborah Kaspin, 'A Chewa Cosmology of the Body', *American Ethnologist*, vol. 23, no. 3, (Aug. 1996), pp. 561-78.

<sup>23</sup> John Polkinghorne, *Faith, Science and Understanding*, (London: Society for Promoting Christian Knowledge, 2000).

Matter, sees a reciprocity between physics and the intuitive and symbolic characteristics of religious thought. In his view,

There is no way to describe scientifically the origin of the universe without treading upon territory held for millennia to be sacred. Beliefs about the origin of the universe are at the root of our consciousness as human beings. This is a place where science, willingly or unwillingly, encounters concerns traditionally associated with a spiritual dimension.<sup>24</sup>

Generally, if scientific cosmologists believe in a God, then he, she or it, is the God of Aristotle who sets the universe in motion and then lets mathematics control the rest. In such cases religion accepts modern scientific cosmology. In others it requires an accommodation, notably in the USA where, due to the strength of fundamentalist Christianity, we have seen the rise of a fusion of modern astronomy and belief in the literal truth of Genesis known as 'creationist science'. This, though is almost uniquely an American phenomenon: far more people attend church in the USA than in other western countries; although the figures are uncertain they hover around 60% in the US compared to around 5% in the UK. Creationist science, meanwhile, has also co-opted the theory 'Intelligent Design' in an attempt to challenge Darwinianism from an apparently scientific, rather than scriptural, basis. Intelligent Design's critics regard it as a new phenomenon, when it has had a consistent role as a central part of western philosophy in Platonism. In some cultures, such as Japan and India the tension between traditional and modern knowledge is far less intense as there is no concept of the exclusivity – of one truth being absolutely right and all others being completely wrong – which is characteristic of the Abrahamic faiths (although not in their liberal forms) and, to an extent, modern science.

Such considerations aside, modern cosmology requires mainly mathematics, but also metaphors such as the Big Bang, in order to communicate. Indeed much of it exists as mathematical theory with no experimental proof. Cosmologists may labour to explain that the Big Bang was not an almighty explanation, but was rather an 'inflation', but their efforts are largely in vain as the image of the universe erupting in a huge fire-ball is far more in accord with humanity's mythical heritage.

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<sup>24</sup> Joel Primack, 'Cosmology and Culture', [http://physics.ucsc.edu/cosmo/primack\\_abrams/COSMO.HTM](http://physics.ucsc.edu/cosmo/primack_abrams/COSMO.HTM), accessed 10 Oct. 2010.

From a safe distance, scholars for whom science is one means of analysing the world (rather than the only way) if a particularly effective one, can see similarities between traditional and modern cosmologies. Steve McCluskey is persuasive on the matter. Writing of Native American cosmologies, he argued that they

Display those general characteristics of 'traditional' understandings of nature: conservatism, resistance to change and a close interconnectness with society, myth, and ritual. This should not be taken as a defining characteristic, however for in this regard they differ only in degree from modern scientific cosmologies. Like modern cosmologies they are tied to empirical observations of celestial phenomena, to theoretical models that render those observations intelligible, and to general explanatory themata that guide a whole range of a culture's intellectual, political, and artistic endeavors, including those theoretical models themselves.<sup>25</sup>

If we can find a simple way to distinguish modern scientific cosmology from traditional, pre-modern cosmologies, it is that the modern focuses on the external world – 'anything that's out there' – whereas in the traditional sense, the cosmos is everything, including us. We in our turn are an integral part of the 'everything'. In the modern sense cosmos, as a 'meaning-ful' concept, has been replaced by universe as a 'meaning-less' arena. The geneticist, Richard Dawkins, though, paradoxically finds meaning in meaninglessness: 'I believe', he wrote, 'that an orderly universe, one indifferent to human preoccupations, in which everything has an explanation even if we still have a long way to go before we find it, is a more beautiful, more wonderful place than a universe tricked out with capricious ad hoc magic'.<sup>26</sup>

However, equally paradoxically, even scientific cosmology can only exclude humanity from its theories by drawing arbitrary distinctions. Even then, such models as the 'deep' anthropic principle consider that the universe is only

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<sup>25</sup> McCluskey, Stephen, 'Native American Cosmologies' in Norris Hetherington (ed.), *Encyclopaedia of Cosmology*, (New York and London: Garland Publishing 1993), p. 427.

<sup>26</sup> Richard Dawkins, *Unweaving the Rainbow, Science, Delusion and the Appetite for Wonder*, (New York: Mariner Books, 2000), p. xi.

the way it is because we are the way that we are.<sup>27</sup> John Wheeler, one of the most influential of modern theoretical physicists and a late collaborator of Albert Einstein, pondered the implications of a cosmos which includes everything, the participatory relationship of humanity and the environment in constructing a system of meaning. He argued that,

The system of shared experience that we call the world is viewed as building itself out of elementary quantum phenomena, elementary acts of observer-participancy. In other words, the questions that the participants put – and the answers they get – by their observing devices, plus their communication of their findings, take part in creating the impressions which we call the system: that whole great system which to a superficial look is time and space, particles and fields.<sup>28</sup>

The philosopher Mary Midgely, inspired by views such as Wheeler's moved to blur the distinction between scientific and pre-scientific world views. After decades of writing on the matter, she came to the following conclusion:

In looking at the way people have expressed themselves in the course of these attempts [to replace religion with science], I am struck by the strong intellectual need there is to have some view of the cosmos as a whole. It does seem to me that the prospect of entirely depersonalising this view may not be a possible one.<sup>29</sup>

The modern and the ancient, the scientific, the magical and the religious merge when we consider the two main components of any cosmology. One is the explanatory, an attempt to create models according to which the existence of the world can be explained and the other participatory, a desire to act within the world in accord with a view of humanity's proper relationship with the cosmos. Within this simple two-fold typology we can identify significant variations. Origin myths divide into different schemes.

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<sup>27</sup> John D. Barrow and Frank J. Tipler, *The Anthropic Cosmological Principle*, (Oxford: Oxford University Press, 1997 [1986]).

<sup>28</sup> John Wheeler, quoted in Martin Rees, *Before the Beginning*, (London: The Free Press, 2002 [1997]), p. 257.

<sup>29</sup> Mary Midgely, *Evolution as Religion*, (London: Routledge, 2002 [1985]), pp. 159-60.

Some, such as Genesis, assume a single point of creation in which an external deity constructs a cosmos outside himself: he can enter it, but he is not part of it. Others, familiar from India and from classical Platonism, have the material world emanating out of the divine, which then pervades the physical world. Variations on emanationism, as in Mesopotamia, begin the process with emergence out of matter, rather than a transcendent consciousness. This model provides a favourable rationale for magic, the psychic manipulation of the world, precisely because soul, consciousness and matter are interlinked and interdependent. Some philosophies, on the other hand, lack any notion of an origin. The third century BCE Greek thinker Aristotle assumed that eternity was a feature of a world without either beginning or end, enveloped in an infinity of time. Some cosmologies, such as the Chinese and Japanese have only a slight concern with problems of origin. Even creationist models, such as Christianity, can assume a kind of eternity in which God exists for ever even if the physical world has a limited existence. Another useful distinction, one favoured by Mircea Eliade, is between ‘cosmic’ origins, which assume a single creation and a world marked by an underlying mathematical order, often represented in the precise motions of the heavens, and ‘chaotic’ systems, as in the cosmogonies of Egypt, Mesopotamia and Mexico, in which the physical world emerges through a series of random events as natural forces personified as gods and goddesses, make love, struggle, and form relationships which are every bit as capricious as those of the humans they eventually create – effectively in their own image.<sup>30</sup> The deities sometimes emerge out of a preexisting Nothing, which could be imagined, equally, as a type of ill-defined, formless, Something. In Greece this Nothing/Something was the original chaos, in the island of Nias, off Sumatra, it was a fog. In most cosmologies the universe was gendered, and in many, it evolved as a series of family relationships.

This discussion leads us somewhat neatly to the impossible question, ‘what exactly is a religion?’ Impossible it may be, but we cannot write a book on religion without some idea of what we mean. The popular understanding of the term requires, as Frazer put it, is ‘a propitiation or conciliation of powers superior to man which are believed to direct and control the course of nature

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<sup>30</sup> Eliade, Mircea, *The Sacred and the Profane: the Nature of Religion* (New York: Harcourt, Brace Jovanovich, 1959), pp. 29-32.

and of human life'.<sup>31</sup> Such a view, while it still has considerable currency, is out of favour with scholars in the field who understand the problems of coping with the variety of religious traditions in the world. I am not unsympathetic to sociological definitions, derived from Emile Durkheim's opinion that 'Religious beliefs proper are always shared by a definite group that professes them and that practices the corresponding rites. Not only are they individually accepted by all members of that group, but they also belong to the group and unify it'.<sup>32</sup> However, to insist that religion is only a matter of social relationships ignores the profound sense of engagement with the cosmos, and the numinous, which can be so inspirational. Exclusively supernatural definitions also ignore the debate as to whether a religion requires a divine being or can be atheist (as in Marxism). The only reasonable modern response is to take a balanced view and I am happy to follow J. Milton Yinger, undoubtedly one of the most influential figures in the debate. He concluded that, we find religion wherever,

one finds awareness of an interest in the continuing, recurrent, "permanent" problems of human existence - the human condition itself, as contrasted with specific problems; where one finds rites and shared beliefs relevant to that awareness which define the strategy of an ultimate victory; and where one has groups organized to heighten that awareness and to teach and maintain those rites and beliefs.<sup>33</sup>

Yinger relies inclusivity (he regarded atheist Marxism as a religion): any ritual approach to the problem of human existence can be religious, ritual itself, in my definition, being action designed to achieve an effect above and beyond the act itself. Ninian Smart's seven dimensions of religion – or of 'worldviews', the term he preferred for its neutrality and lack of historical baggage – flesh out Yinger's broad-based approach. Smart identified the following components which are more or less present in all religions: the ritual or practical, including 'worship, meditation, pilgrimage, sacrifice, sacramental rites and healing activities', the doctrinal or philosophical, the

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<sup>31</sup> J.G. Frazer, *The Golden Bough: A Study in Magic and Religion*, abridged edition, (London: MacMillan, 1971 [1922]), I, I:221-222.

<sup>32</sup> Emile Durkheim, *The Elementary Forms of Religious Life*, trans. Karen E. Fields, (New York: The Free Press, 1995 [1912]), p. 41.

<sup>33</sup> J. Milton Yinger, 'A Structural Examination of Religion', *Journal for the Scientific Study of Religion*, Vol. 8, (Spring 1969), p. 91.

mythic or narrative, the experiential or emotional, the ethical or legal, the organisational or social and the material or artistic.<sup>34</sup>

Smart's is really the best solution to the problem of definition of religion so far, allowing for different components, rather than a single formula. I have not laboured to relate Smart's seven dimensions in every chapter, but they remain a guiding framework for the content I have selected, and can be applied in various ways to different cultures. Hinduism might emphasise the performance of a ritual as an end in itself, whereas most forms of Christianity promote the experiential and emotional underpinning of ritual, rather than the mechanical act itself. Some religions, notably the three world-dominating monotheisms, Judaism, Christianity and Islam place extraordinary reliance on their written texts and resort to slaughter over the details of doctrine, whereas the Native Americans have neither sacred books nor complex notions of sin and salvation, but a direct relationship with deity manifested through nature. In some religions, such as classical Gnosticism, the cosmos itself can become an object of veneration. One might even identify in some forms of religious cosmology a species of what Festugière called cosmic piety.<sup>35</sup> And, against the pietists and cosmophiles, who believe that the cosmos is essentially good, we might pose the cosmophobes, for whom it is essentially threatening and has to be escaped from (as in the case of the most pessimistic Gnostics) or dominated (as by those well-funded modern scientists who depend on research grants to avert the threat of future collision with rogue asteroids or comets). The cosmophiles, meanwhile, are represented by Blaise Pascal's often quoted infinite dread of the endless, silent eternity of the universe.

Ultimately, attempts to define religion disintegrate to the point where we need to find an alternative. One solution is to abandon the word altogether in favour of the secular-sounding 'world view', which finds support in certain quarters; at Bath Spa University, where once I was privileged to be a part of the Study of Religions Department, regular public seminars were arranged under general auspices of the 'World View Society'. There, as in other similar fora, the term was designed to signify inclusivity and to send a message that the still widespread western assumption that religions are

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<sup>34</sup> Ninian Smart, *Dimensions of the Sacred: An Anatomy of the World's Beliefs*, (Berkeley and Los Angeles: University of California Press, 1996), pp. 10-12.

<sup>35</sup> André Jean Festugière, *Personal religion among the Greeks*, (London: Cambridge University Press, 1954).

defined by Christianity, Judaism and Islam (as the worship of a God) is a barrier to understanding the phenomenon of religion as a whole. The term finds its origin in the German *Weltanschauung*, as in Malinowski's statement that 'what really interests me... is the (native's) outlook on things, his *Weltanschauung*'; every human culture', he continued 'gives its members a definite vision of the world'.<sup>36</sup> The fundamental statement of the nature of a 'worldview' was made by Robert Redfield in 1951. A 'world view', he wrote, is

that outlook upon the universe that is characteristic of a people... which allows us to describe a way of life and to compare ways of life with one another... World view differs from culture, ethos, mode of thought, and national character. It is the picture the members of a society have of the properties and characters upon their stage of action. Worldview attends especially to the way a man in a particular society sees himself in relation to all else. It is the properties of existence as distinguished from and related to the self. It is in short, a man's idea of the universe. It is that organization of ideas which answers to a man the questions: Where am I? Among what do I move? What are my relations to these things?<sup>37</sup>

In 1972 W.T. Jones produced a slightly simpler definition: 'the dynamic... complex of motivations (and) perceptions that animates' a culture.'<sup>38</sup> True, the discussion of what a world view is then lapses into precisely the same problems that afflict the definition of religion, witness the tortured and convoluted conversations at the 1968 Conference on World Views and reported by Jones. There was a kind of cognitive drift away from the understanding of a 'world view' as a useful descriptive phrase into an apparent belief that it has an objective existence with a set of measurable characteristics which exist, like the laws of physics, independently of any cultural analysis. In a variant on Weber's disenchantment thesis, Redfield, like others, slipped into the assumption that there was an original, prehistoric

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<sup>36</sup> Bronislaw Malinowski, *Argonauts of the Western Pacific*, (New York: E.P. Dutton, 1922), p. 517.

<sup>37</sup> Robert Redfield, 'The Primitive World View', *Proceedings of the American Philosophical Society*, vol. 96, (1952), p. 30.

<sup>38</sup> W.T. Jones, 'World Views: Their Nature and Their Function', *Current Anthropology*, vol. 13, no. 1, (Feb 1972), p. 79.

pure world view, what the esotericists would call a *prisca theologia*, a primal religion, from which all modern world views are degenerate forms representing humanities progressive alienation from the universe.<sup>39</sup>

However, as cultural historians, we can observe these anthropologists' desire to find an original, universal religion, as part of our narrative, existing in a direct relationship with that belief in a single origin lost in antiquity which motivates many modern, western astrologers. I am therefore applying the term 'world view' in its simplest form: it allows us to be inclusive by looking at 'belief systems', the interpretative systems which allow humans to organise their societies in a manner which abandons conventional notions of 'religion' as a discreet entity which requires a God, a church and an act of submissive worship and challenge the cosy modern myth of the secular as necessarily distinct from the religious. As Alan Dundes argued, back in 1969, the concept of a 'western' or 'modern' worldview as necessarily distinct from a 'non-western' or (in previous anthropological terminology), 'primitive', one, is a non-starter: in what way are birthday rituals, for example, amongst modern Americans, different to such time-based anniversaries amongst, say, Malinowski's Trobriand Islanders.<sup>40</sup>

Redfield, then, offers the simple and, for this book, very useful, statement that a worldview is 'the way a people characteristically look outward upon the universe'.<sup>41</sup> For my present purposes, the answer to Redfield's question 'where am I' is answered by a location in time, space and, sometimes, as in India, social customs intended to institutionalise cosmic relations. In terms of my current remit, the question, 'Among what do I move?' is answered by 'the stars', and the supplementary question 'what are my relation to these things?' concerns such matters as whether the stars are, for example, signs or causes and, in each case, the steps that one can take to interact with them, whether through mental processes, behavioural changes, magical acts, ritual participation, initiatory processes. A cosmological world view, simply, is

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<sup>39</sup> Robert Redfield, 'The Primitive World View', *Proceedings of the American Philosophical Society*, vol. 96, (1952), p. 30.

<sup>40</sup> Alan Dundes, 'Thinking Ahead: A Folkloristic Reflection of the Future Orientation in American World View', *Anthropological Quarterly*, vol. 42, no. 2, (Apr. 1969), pp. 53-72; Bronislaw Malinowski, *Bronislaw, Magic, Science and Religion*, New York: Doubleday 1954 [1948], pp. 173-181.

<sup>41</sup> Robert Redfield, 'Primitive world view and civilisations', in *The primitive world and its transformation*, (Ithaca: Cornell University Press, 1953), p. 85.

that set of ideas about the cosmos which reinforces, explains or motivates cultural forms or processes and an astrological one is that complex of notions about the stars which form, shape, meaning and guidance to certain human activities and theories about the purpose of life.

In the following chapters then, I take a fairly conventional Fraser-esque definition of religion as the use of ritual to engage with higher, usually unseen, forces. However, religion is just one application of the worldview which any people holds and which enables them to articulate, explain and engage with the cosmos, the totality of everything

This book is partly about cosmology and cosmology, traditionally understood, concerns the earth as much as the sky. It may require such signifiers as sacred streams and forest groves, Islamic minarets, Buddhist stupas or North American medicine wheels, all of which can engage with the sky, but do not have to. In the Chinese practice of Feng Shui, a temple may be aligned towards a distant mountain rather than to the rising sun. However, my emphasis, through astrology, is to the sky, so some words about astronomy, the measurement of celestial positions, are necessary.

The first point I need to stress is that there is a predictability in celestial patterns – some more so than others – which is so obvious that it would have been apparent to the earliest conscious humans. Of these the most noticeable are the sun's rapid transit through the daily sky and its regular, nightly, disappearance, and the moon's dramatic alternation from new, slender, delicate crescent to its full, brilliant climax, followed by a progressive return to complete invisibility. As Anthony Aveni, who has done much to alert us to the intricacies of ancient astronomy, put it, 'Of all nature's periodicities, those that come from the sky are the most reliable and regular, the least inconstant'.<sup>42</sup> The key feature of such celestial periodicities is their rhythmic, cyclical, nature. They neither stop nor even pause; they just continue for ever. Certain phenomena are particularly distinctive, in addition to the sun and moon. For example, the further one moves from the equator another pattern becomes obvious: over a period of some 365 days the sun alternates between periods when it is high in the sky at midday, and low, sometimes, at the extremes of habitable latitudes, either hardly setting or barely rising at all. Such observations are not those of the disinterested astronomer, but

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<sup>42</sup> Anthony Aveni, 'Introduction: Making Time', in *The Sky in Mayan Literature*, (Oxford: Oxford University Press, 1992), p. 4.

rather a matter of life and death, as the consequences of such astronomical patterns may be either warm, light and benevolent, or cold, dark and a threat to survival.

The ancient observer who spent the night watching the stars would have noticed another phenomenon which becomes more apparent the further one moves from the equator: the stars appear to revolve around a central point, the celestial pole. There are two of these poles, north and south, and the former is more important for the culture of astronomy, precisely because, of the great pre-modern civilisations, only that of the Inca extended south of the equator. All the others would have observed that, when they faced north, the night-time stars moved in a great circle around a central focus. Just a little way from the equator, this central point hugs the horizon, and the further one travels northwards, the higher it becomes. The ancient Egyptians were fascinated by the fact that some of those circling stars, those closest to the central point, unlike most of their companions, never set. For a star to set below the horizon suggested death or, at least a struggle with the possibility of death, so the stars which were always in the sky represented immortality – they were known by a word we translate as the ‘immortals’ or, perhaps, the ‘imperishables’. The Egyptians were not alone in revering north, and throughout India and southeast Asia we find temples aligned with the cardinal points – north, south, east and west. In northern Europe, a group of these ‘immortals’ were recognised as the constellation of the bear – Ursa Major – perhaps several tens of thousands of years before our era, and were embodied in myths and rituals concerning the bear. such practices come down to us in legend and astronomy; in myth, king Arthur is the Celtic Artos, the bear, while the third-brightest of the fixed stars, Arcturus, in the constellation Bootes, follows Ursa Major through the sky and is named after the Greek Arktouros, the Guardian of the bear.

Planetary patterns would also have become apparent to any persistent stone-age observer. The most obvious, and the first to be noticed, would almost certainly have been those of Venus, due to its prominence; after the sun and moon, Venus is by far the most notable of the celestial bodies. At its greatest elongation – when it is at its furthest extreme from the Sun – it shines brilliantly either before dawn as herald of day, preparing the way for the rising sun, or at dusk, as herald of night, warning of the approach of darkness. So brilliant is it that, if the sun and moon are both below the horizon, it is the brightest object in the sky. Venus has a series of cycles which are recognised by most astronomically literate cultures. The shortest

is the sidereal period of 225 days, which takes the planet back to its starting position in relation to the stars. The middle period is the synodic cycle, the 584 day period which measures the time between Venus' conjunctions with the sun. The longest commonly recognised figure is the period of five synodic cycles, a time-span regarded as important in a number of cultures because it is completed in eight years of 365 days. In other words, every eight years, Venus falls in the same degree of the same sign of the zodiac on, almost, the same day of the year. This is easy enough to check. As the clock struck midnight, welcoming in the New Year in London on 1 January 2001 Venus was at  $27^0$  Aquarius and on 1 January 2009, eight years later to the day, it had returned to the exact same degree. Any ancient sky watcher who observed the planet for more than a few of these cycles would have observed this simple fact. Every eight years, Venus' period of greatest brightness, as well as its period disappearance from the sky (when it is too close to the sun to be visible) and its reappearance, fall on the same day. There is strong circumstantial evidence that this cycle was understood in Mesopotamia, where Ishtar, the goddess associated with the planet, was represented by an eight-pointed star in the third millennium BCE. It is also widely assumed that the pentacle, the five-pointed star, has its origins in reverence for the five moments that Venus meets the sun in the completion of its eight-year cycle. Quite aside from the significance of such facts about Venus' motion for our understanding of the history of astronomy, the planet's mathematical regularity has somewhat devastating consequences for common notions of ancient deities as capricious, wilful entities. The simple and inescapable conclusion is that astral deities, however powerful – Ishtar was Queen of Heaven – have little freewill, but can only act as instruments of a deep mathematical order, deciding, perhaps, on the details of each phase of time, but not the broad sweep. The same point applies to stellar and planetary deities across civilisations of the pre-modern world, from the Aztecs and the Inca to the Chinese, Indians and Egyptians: one of the key features of most religion is therefore a reverence for time, whether articulated as a force or entity in itself, or as a vehicle for the unfolding of God's plan, heavenly intentions or divine order.

I am not claiming, like eighteenth-century French enlightenment radicals, or nineteenth century evangelists of the sun-myth school, such as the orientalist

Max Muller, that astronomy is the basis of all religion.<sup>43</sup> We obviously cannot ignore psychology or sociology – religion’s role in creating identity, providing security, or reinforcing community. Neither, as advocates of methodological agnosticism, should we rule out the possibility that either a single God, or a plethora of gods and goddesses, saints and demons really exist. Such judgments are not part of the scholar’s agenda at least, not in the humanities. However, to attempt a study of religion’s origins, history and rituals without an understanding of astronomy is to ignore a vital part of its function and rationale. After all the association of the sky with divinity is archaic. As Diogenes Laertius wrote in the third century, drawing on previous poetry, it is ‘God’s canopy’.<sup>44</sup>

Methodologically, I have great sympathy for that version of phenomenology which argues that if we are to understand a practice we should, within reason, participate in it. This is not always possible for historians, who may deal with the distant past, but is necessary for anthropologists. Helmut Wagner argued that phenomenology's 'starting point is given in the experiences of the conscious human being who lives and acts in a "world" which he apperceives and interprets, and which makes sense to him'.<sup>45</sup> I would argue, for example, that it is possible, within a modern perspective, to understand the actual experience of fifth century astrologers when faced with the awesome sight of a dramatic pre-dawn sky, especially one containing a prominent Venus.<sup>46</sup> After all, cognitively we are not so very different from our ancestors. Philip Lieberman agreed: 'Although there is a risk in assuming that the basic emotional needs of thinking human beings has been similar for a span of 100,000 years, the alternative hypothesis - that profound differences exist - is even less likely. The continuity of evolution

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<sup>43</sup> Nicholas Campion, 'Prophecy, Cosmology and the New Age Movement: the extent and nature of contemporary belief in astrology', PhD thesis, University of the West of England, 2004, ch. 3.

<sup>44</sup> Diogenes Laertius, 'Zeno' in *Lives of Eminent Philosophers*, trans. R.D. Hicks, (London: William Heinemann, 1925), Vol. 2, VII.60.

<sup>45</sup> Helmut R. Wagner, 'Introduction', in Alfred Schutz, Helmut R. Wagner (eds.), *On Phenomenology and Social Relations*, (Chicago: University of Chicago Press 1979), p. 5.

<sup>46</sup> For a useful discussion of phenomenology as applied to questions of landscape and sacred space, see Christopher Tilley, *A Phenomenology of Landscape*, (Oxford: Berg, 1994).

argues for the existence of similar emotional needs'.<sup>47</sup> This is, perhaps, why they appear to be certain universals in the way in which humans give form to the comsos. The division of time and space into four, for example, which appears to be an (almost) universal feature of human culture occurs across the Americas. This is hardly surprising. When one constructs any building, sacred or otherwise, the simplest shapes are round and square. Thus we have stone circles and pyramids with rectangular bases.

This model, that we can see, feel and hear as our ancestor saw felt and heard tens of thousands of years ago, is finding its way into archaeological thought. For example Tim Robinson claimed, in his account of a Bronze age site in the west of Ireland, that he was able to understand its purpose and function better by experiencing a particularly brilliant setting sun in the same landscape.<sup>48</sup> This approach has recently been championed by Clive Ruggles in relation to the study of archaeoastronomy, citing Ed Krupp, Director of the Griffith Observatory in Los Angeles on the experience of the solstice at Stonehenge. Krupp wrote,

One should make a point of being there. Celestial events take place in context. When you see what actually happens in the landscape, you learn a great deal more about it. It is, of course, possible to determine the alignment of a building with instruments, but nuances of light and shadow details of the horizon, difficulties in practical observation, and many more subjective aspects of a site can only be appreciated in person.<sup>49</sup>

Ruggles himself added, 'Similarly, by walking in the modern landscape we can try to appreciate patterns of relationship between monuments and the topographic elements of the landscape as experienced by people living in

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<sup>47</sup> Philip Lieberman, *Uniquely Human: the evolution of speech, thought and human selfless behavior*, (Harvard: Harvard University Press, 1993), p. 164.

<sup>48</sup> Tim Robinson, *Setting Foot on the Shores of Connemara and other Writings*, (Dublin: The Lilliput Press, 1996), p. 201.

<sup>49</sup> Ed Krupp, HASTRO History of Astronomy e mail list 8 Aug. 1995, cited in Clive Ruggles, *Astronomy in Prehistoric Britain and Ireland*, (New Haven and London: Yale University Press, 1999), p. 151.

that landscape in prehistoric times'.<sup>50</sup> He concedes that we can never exactly know that we experience the same feelings when watching an especially bright full moon as did a prehistoric observer, but he does argue that 'the idea deserves serious consideration in contextual interpretations'.<sup>51</sup> Celestial cosmologies, though, are about more than observation of the sky. Societies which develop interpretative astrology construct meanings for astronomical events which might not be apparent in the simple act of observation, and those cultures which create a complex, theoretical astrology develop abstract frameworks which may never be revealed by observation alone, but require familiarity with the texts. Further, from a phenomenological perspective, they require an extension of Krupp's principle that 'one should make a point of being there'. The historian or anthropologist of celestial cosmology who wishes to 'be there' has therefore no choice but to visit the local astrologer, or astral-diviner, or calendar shaman, be they in the villages of the Yucatan, the temples of Varansi, or the suburbs of Los Angeles. Further, as modern anthropology now requires, any in-depth fieldwork requires that the researcher become a practitioner. The anthropologist who studies traditional house building will be expected to become a traditional house-builder. The same applies to traditional cosmology. Just as students of ancient history should engage with metal working if they are to understand the achievements of the bronze-age, so the student of classical cosmology should know how to cast and read a Greek horoscope. The true phenomenologist both becomes engaged and does so with an open mind and non-judgmentally, adopting what Ninian Smart called 'methodological agnosticism', and putting aside any sense that cosmological rituals, astrological practices and stellar religions are in any way strange, primitive, bizarre or inexplicable.<sup>52</sup> Such a feat may still be more difficult for a historian than an anthropologist, but is necessary.

We also need to be constantly aware of the radical critique of anthropology as more concerned with the student rather than the object of study. In this respect, Maxwell Owusu's scepticism is framed in particularly trenchant

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<sup>50</sup> Clive Ruggles, *Astronomy in Prehistoric Britain and Ireland*, (New Haven and London: Yale University Press, 1999), p. 151.

<sup>51</sup> Clive Ruggles, *Astronomy in Prehistoric Britain and Ireland*, (New Haven and London: Yale University Press, 1999), p. 151.

<sup>52</sup> Ninian Smart, *The Science of Religion and the Sociology of Knowledge: Some Methodological Questions*, (Princeton: Princeton University Press, 1973).

terms: speaking of western ethnographies of African culture, he wrote, 'frequently it is not clear whether the accounts so brilliantly presented are about native realities at all, or whether they are about informants, about scientific models and imaginative speculations, or about the anthropologists themselves and their fantasies'.<sup>53</sup> We may imagine that the situation is changing, yet western anthropologists have received a western education in which certain ways of viewing the world are to be admired and certain treated with distaste. The word 'astrology', which is controversial for western scientists, is therefore widely avoided. Those astronomers who have tackled non-western astrology generally prefer the term 'cultural astronomy', which spares any risk of engagement with a practice which for many educated western people, is taboo. Patrick Curry referred to such delicacy as 'the historiographical problem', although he was specifically referring to those historians of western astrology who first treated their topic as if it is somehow primitive, and then failed to notice its significance.<sup>54</sup>

A further familiar error of western scholarship is to assume that all modern western cosmology is what we might term Newtonian and Euclidean, by which is meant mechanical, materialistic, linear and devoid of quality or meaning, as opposed to non western and non-modern cosmology, which then becomes exotic and colourful, by contrast.<sup>55</sup> This is manifestly not the case, as the flourishing status of religious cosmologies, from evangelical Christianity to New Age spirituality indicates. The average westerner may actually inhabit a world which is much closer to the Premodern American than modernist propaganda allows. As an addition, linguistic problems shouldn't need to be mentioned, as they afflict all studies which cross languages, but should still always be bone in mind.<sup>56</sup>

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<sup>53</sup> Maxwell Owusu, 'Ethnography of Africa: the Usefulness of the Useless', *American Anthropologist*, New Series, vol. 80, no. 2, (Jun. 1978), p. 312.

<sup>54</sup> Patrick Curry, 'Astrology on Trial, and Its Historians: Reflections on the Historiography of "Superstition"', *Culture and Cosmos*, vol. 4, no. 2, (2000), p. 52.

<sup>55</sup> As an example, Benjamin Lee Whorf, 'An American Model of the Universe', in Dennis Tedlock and Barbara Tedlock (eds.), *Teachings from the American Earth: Indian Religion and Philosophy*, (New York: Liveright, 1975), p. 122.

<sup>56</sup> Dorothy Lee, 'Linguistic Reflection of Wintu Thought', in Dennis Tedlock and Barbara Tedlock (eds.), *Teachings from the American Earth: Indian Religion and Philosophy*, (New York: Liveright, 1975), pp. 130-140.

Another of the great methodological problems is universalism, which is now out of fashion, but pervades the literature of the 1960s and earlier: can we assume that people in geographically-diverse cultures share certain fundamental conceptions of the cosmos? One who followed this line was the anthropologist and structuralist, Claude Lévi-Strauss. He viewed calendar rituals and star stories as containing encoded information about such matters as fertility, both of the land and of people, and sexual relationships, both on earth and in the sky, and which revealed common ways of thinking in multiple cultures.<sup>57</sup> There is a simple problem with Lévi-Strauss's work. His attempt to identify underlying, hidden patterns in myths relied on the unproven notion that they correspond to a structure that is both universal and can be expressed through mathematical formulae. He could only achieve such precision by incorporating anomalies and contradictions as mathematically precise reversals.<sup>58</sup> If we have to accept some form of essentialism, of an underlying essential reality, then C.G. Jung's version of Platonic archetypes, innate Ideas which inhabit the universal, collective unconscious, and which look for general themes rather than exact precision, is more useful precisely because it's less precise.<sup>59</sup> In the final analysis, though, essentialism is only useful model: the existence of an underlying reality can no more be proved than that other favourite of the modern scientific cosmologist, the parallel universe.

Sometimes, though, scholars who have no appreciation of the sky fail to notice the significance of celestial events. Allen Roberts complained that 'Anthropologists often ignore ephemeral phenomena, especially irregular ones, such as comets, regarding their infrequency as a sign of irrelevance'.<sup>60</sup> Indeed, those scholars who have paid attention to African culture in general, and they are not many, have often been ignorant of celestial matters. This is not a special area of weakness in African studies – most western historians,

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<sup>57</sup> Claude Lévi-Strauss, *The Raw and the Cooked: Introduction to a Science of Mythology*, (London: Harper and Row and Jonathan Cape, 1969), p. 168.

<sup>58</sup> Claude Lévi-Strauss, *The Raw and the Cooked: Introduction to a Science of Mythology*, (London: Harper and Row and Jonathan Cape, 1969), p. XX.

<sup>59</sup> Jung, C.G., *The Archetypes and the Collective Unconscious*, trans. R.F.C Hull, (London: Routledge and Kegan Paul, 1968), Vol. 9, Part 1 of *Collected Works*.

<sup>60</sup> Allen F. Roberts, "Comets Importing Change of Times and States": Ephemerae and Process among the Tabwa of Zaire', *American Ethnologist*, vol. 9, no. 4, Symbolism and Cognition LL, (Nov. 1982), p. 712.

anthropologists and students of culture behave as if the sky has never played any part in religion, ritual, calendar construction, politics or magic. The most probable reason (it certainly accounts for archaeologists' resistance to archaeoastronomy) is that, for westerners, astronomy is seen as a highly specialised subject which is both beyond their comprehension and that of indigenous peoples. Yet, surely in societies without artificial, light the night sky is a dramatic feature of life and for people who live mainly outside, the day sky is of profound importance. Calendars, especially, concern those premodern societies, such as the Chinese, or Maya, or Egyptian, which pay a high value on cosmically-ordained order. Calendars are always problematic, due to simple fact that an odd number of lunations fall in a solar year, so it is impossible to arrive at a solution which fits all eventualities. However, without calendars there is no means to protect society by locking it into celestial cycles.

Academic fashions come and go and, with them, attitudes to generalising. There are areas which I am covering, such as Mesopotamian culture, in which the kind of sweeping generalisations once made by such luminaries as Thorkild Jacobsen in his *Treasures of Darkness*, are now definitely frowned upon. Argue only from the texts, goes the cry and, if it is not in the texts, don't speculate. True, the speculative position has its problems, and an excessive enthusiasm for the historical broad sweep led some of the first wave of cuneiform scholars, in the late nineteenth-century, to embrace Pan-Babylonianism, the notion that Babylonian astral religion was the origin of *all* religion. Yet, without succumbing to such obvious fantasies, the historian still needs to generalise to some extent, in the act of interpreting the evidence. I have tried to stick closely to the evidence, whatever kind of text it comes from – whether literature, landscape, oral testimony or the sky itself. But I still offer one huge generalisation – or hypothesis if preferred: the sky plays a pivotal part in the origins of all religion. Furthermore, histories of ideas which ignore astronomy and astrology, archaeology which describes the terrestrial context but not the celestial, anthropology which omits the sky from its view of nature, and religious studies which have no concept of the sacred calendar, are missing an ingredient without which, ultimately, their conclusions can never be more than partial and preliminary.