

The Liturgy of the Hours— Are we Biologically Programmed?

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By the venerable tradition of the universal Church, Lauds as morning prayer and Vespers as evening prayer are the two hinges on which the daily Office turns: hence they are to be considered as the chief hours and celebrated as such.¹

Lauds is designed and structured to sanctify the morning ... This Hour, recited as the light of a new day dawns, recalls the resurrection of the Lord Jesus, the true light enlightening every man.²

Vespers is celebrated in the evening when the day is drawing to a close ... we join with the Eastern Churches and invoke 'blessed Jesus Christ, the Light of our Heavenly Father's sacred and eternal glory; as the sun sets we behold the evening light and sing to God, Father, Son and Holy Spirit'.³

These passages from the conciliar and post-conciliar documents of Vatican II make emphatically clear the Church's tradition of prayer at the beginning and ending of the day⁴, and connect this tradition with dawn, the rising light of the new day, and dusk, the waning light of the evening. In the Church's tradition of prayer, these two Hours are given a Christological significance: Lauds recalls the resurrection of Jesus from the dead⁵, and Vespers commemorates his death and burial⁶. This paper looks at the biological as well as the liturgical rhythms involved in praying at dawn and dusk, and invokes a sacramental understanding of time, which was common throughout earlier ages, but has been lost in more recent times⁷. It then examines the custom of prayer at dawn and dusk in other religious traditions besides Christianity and collates all this evidence to ask if there is any justification for arguing that human beings are biologically programmed for such activity.

We will first of all summarise the discovery of biological rhythms in plants, birds and mammals in a brief over-view. It had been noted since at least the fourth century B.C. that plants and animals have observable daily rhythms. Androstheneas, a scribe of Alexander the Great, noticed that the leaves of certain trees closed at night and opened during the day⁸. The first known experiment on biological rhythms was conducted by the French astronomer, Jean Jacques d'Ortous de Mairan observing his heliotrope. A

similar observation was made by the taxonomist Carolus Linnaeus watching the flowers in his garden, and in the early 1900's Karl von Frisch discovered the existence in bees of an 'internal clock'. The existence of a 'biological clock' in birds was definitively proved by Gustav Kramer and Klaus Hoffman in the 1950's, when they showed that starlings used the sun as a compass by which to migrate. Another significant discovery was made in the 1950's when Colin Pittendrigh showed that biological clocks, contrary to most metabolic activities, are temperature compensated (that is the period of the biological clock remains the same even when the temperature alters).

These, and other, early experiments established chronobiology (the study of biological rhythms) as an interdisciplinary field within biology. The main field of research for chronobiologists is that of circadian rhythms, which are defined as endogenous cycles of behaviour or biological activity within a period of approximately twenty four hours. These circadian rhythms, which are the main focus of our interest in this context, are generated by an internal clock which is synchronised to light-dark cycles in the environment. It is this biological clock, in human beings located within the hypothalamus and regulated by the secretion or release of the hormone melatonin which in turn is activated by light-dark cycles, that is responsible for the cycle of circadian rhythms⁹. So it can be seen that the daily rhythms of the human body such as sleeping and waking, regular temperature fluctuations, activity of the immune system, other hormonal levels, among others, are closely connected with and regulated by the amount of light in the environment¹⁰. The human system is thus conditioned to respond at its most fundamental biological level to the cycles of light and darkness. This is the first fundamental premise of this paper.

We next investigate the sacramental understanding of time mentioned above. Speaking of the pre-Christian inhabitants of Ireland, Wales and Cornwall, but acknowledging possible links with Gaul, and further afield with India and the Far East, Alwyn and Brindley Rees say:

The alternation of day and night, light and darkness, had a profound meaning for the Celts as it did for many other peoples. It manifested a fundamental duality which had a variety of other expressions ... The dividing lines between the contrasting periods of time are haunted by a mysterious power which has a propensity both for good and for evil. Certain acts were forbidden at sunrise and sunset because these were moments of danger; on the other hand, morning dew and morning water had a particular virtue, and cures could be effected by remedies sought at sunset ... Midday and midnight, like sunrise and sunset, were moments when the veil between this world and the unseen world was very thin.¹¹

So even in pre-Christian times, the hours of dawn and dusk had particular

significance and were seen as times when the other world was either particularly close or particularly easy of access.

Robert Taft comments:

In primitive, natural religious systems the past was seen as cyclic, as an ever-repeating pattern of natural seasons. Rituals were celebrations of this cycle of autumn, winter, spring, harvest – of natural death and rebirth. But even at this primitive stage men and women came to see these natural rhythms as symbols of higher realities, of death and resurrection, of the perdurance of human existence beyond natural death.

So even natural religious ritual is not just an interpretation of experience, but implies a reaching for the beyond, for an ultimate meaning in the cycle of life that seemed to be an ever-recurring circle closed by death.¹²

This became explicit very early in the Christian era, when time was understood sacramentally, and one of the effects of this sacramentalising vision was to see the natural rhythms of time as pointing to the resurrection of Christ, and thus also, to that of the believer. Clement of Rome, writing during the last decade of the first century C.E., describes day and night as making the resurrection visible:

Let us consider, dear friends, how the Master continually points out to us that there will be a future resurrection. Of this he made the Lord Jesus the first fruits by raising him from the dead. Let us take note, dear friends, of the resurrection at the natural seasons. Day and night demonstrate resurrection. Night passes and day comes. Day departs and night returns¹³

According to this view, time was seen as a sacrament, a visible sign of an invisible reality and revealing the Christian message. John Allyn Melloh says: 'For Christians the rhythms of the day become lenses for seeing the reality of the Christian life; prayer becomes an experience of union with God'¹⁴. Thus the first moments of the day and of the night became special times for prayer. The *Didache* prescribed that the Our Father should be said three times daily, probably morning, noon and night¹⁵. O'Loughlin says of the *Didache*:

Unlike Acts which has a theological vision of what the Church should be in contrast to its actual defects, the *Didache* is not a theological work; but in so far as it proposes rules to a community to be followed, it can reveal to us the operative theology of its compilers and the communities which used it.¹⁶

Tertullian says: '... the prescribed prayers (*legitimae orationes*) are, of course, an exception. Without any admonition they are obligatory (*debenter*) at the approach of day and night'¹⁷. So also Ambrose: 'With psalms daybreak resounds, nightfall echoes back its psalmody'¹⁸; Augustine: 'My mother went to church twice a day, morning and evening

and never allowed anything to keep her away, and she went ... so she might hear you in your words and so that you might hear her in her prayers'¹⁹, and Cyprian: 'We must also pray in the morning to celebrate the Lord's resurrection by morning prayer'²⁰, among many other early Fathers, testify to the hours of morning and evening as times of special prayer in the early centuries of the Church, The theology underpinning this understanding has close affinities with the theme of Christ as the Light of the World²¹, which idea goes back to the earliest days of Christianity²². Cyprian ²³ said:

Likewise at the setting of the sun and at the end of the day it is necessary that we should pray again. For, since Christ is the true sun and the true day, when we pray as the sun and the day of the world recede and ask that the light may come upon us again, we are asking for the coming of Christ, which will grant us the grace of eternal light²⁴

Basil writing in the fourth century says of the hymn '*Phos Hilaron*', sung every evening in the Church's worship, that it was so old then that no-one knew when it had been written.

It seemed fitting to our fathers not to receive the gift of the evening light in silence, but to give thanks immediately upon its appearance. We can't say who was the father of the words of the thanksgiving for the light. But the people utter the ancient formula, and those that say "We praise the Father, and the Son and the Holy Spirit of God" were never thought impious by anyone...²⁵

Writing probably less than a hundred years later²⁶, Patrick has a very graphic reference to Christ the true sun in his *Confessio*²⁷.

A significant early medieval²⁸ text which has only recently begun to receive due recognition for its value in the disciplines of theology, liturgy and monastic spirituality²⁹ is the anonymous *Nauigatio sancti Brendani abbatis*, which combines a sacramental view of the world as good and holy (the Other World is reached through and by this world, not by rejecting it³⁰) with a strongly liturgical spirituality which gives great emphasis to the liturgy of the hours.³¹ Thomas O'Loughlin describes this sacramental quality as follows:

The universe is divided into two levels of heaven and earth. Taken together they are opposites and they are understood in terms of binary opposition. The lower is material, temporal, transitory, and but a poor reflection of the higher realm. It points upward to the higher as that which is truly important, more real and the place of goodness and holiness³².

So, from its earliest days, Christianity has seen creation, and in this context specifically time, as sacramentally revealing the presence and work of God, and has acknowledged this by the tradition of prayer at morning and evening.

So far, this paper has examined the premise of the existence of a deep seated tendency within human beings to turn to God at morning and evening in the context of Christianity. We will now broaden the horizon and see whether this is a characteristic of other religious beliefs.

Christianity received its pattern of prayer at morning and evening from Judaism³³; these were the hours prescribed in the Old Testament for sacrifice and the offering of incense in the Temple³⁴.

Three quotations from the Pentateuch (Deut. 6:4-9; 11:11-21; Num 15:37-41) form even today the central part of the morning and evening prayers. They declare God's unity (*Sh'ma Israel* – 'Hear, Israel, the Lord our God, the Lord is one') and the duty to love him and to follow his commandments. Before and after these recitals God is praised as the Master of the Universe 'who creates the light' (morning prayer); 'who lets the night follow the day' (evening prayer); who gave his Law to Israel and who is the Redeemer of his people in past and future.

Many more prayers and petitions were added in the course of time, above all the 'Eighteen Prayers' (*sh'mone esre*) which are said three times a day ... Not only does the Jew say prayers turning in the direction of Jerusalem, the prayer-times were fixed to correspond with the former daily morning and afternoon-sacrifices. Prayers are said at morning, afternoon and evening ...³⁵

The central act of Muslims' worship is the ritual prayer. This is offered five times a day by the orthodox Muslim, and it is the discipline and rhythm of Islamic worship which has been a unifying and appealing factor in Islamic history.³⁶

These five times for prayer are: *Fajr*, *Zuhr*, *Asr*, *Maghrib* and *Isha*. The precise timing of these five prayers varies from place to place and from day to day, but is connected with the rising and setting of the sun. *Fajr* takes place approximately two hours before actual sunrise, corresponding to dawn and paralleling Lauds in the Christian liturgy of the hours. *Maghrib* takes place at sunset, thus paralleling Christian Vespers. For Muslims, the exact timing and observance of these prayers is of the greatest importance³⁷.

While it can be argued that Christianity and Islam both have their roots in Judaism and thus are heirs to a common source, whence this tradition may have come³⁸, the custom of prayer at morning and evening can be found also in Buddhism and Hinduism and therefore outside the Judaeo-Christian-Muslim tradition. Prayer in common in the early morning and the evening is practised in Buddhism³⁹. Although the content is very different from the Christian liturgy, the timing is similar, and there are references to the light:

Great Kanzeon⁴⁰ views all the world in Truth:
He is a Light pure, — spotless, like the sun,
With wisdom does he darkness all dispel,

subverting all effects of wind and fire;
His all-illuming light fills all the world.⁴¹

In Hinduism, prayer at sunrise and in the evening is common:

“There is nothing more exalted than the Gayatri”. It is the most renowned mantra of the Vedas. It is addressed to the divine life-giver as supreme God, symbolised in Savitr, the Sun. For this reason this prayer is also called Savitri. It is recited daily at sunrise and at sunset, usually at the moment of the ritual bath ... Daily, the student of sacred lore should stand at dawn and recite the Savitri (as the Gayatri is often called) until he sees the rising sun, and at dusk, seated, recites it until he catches sight of the emerging stars. Another Sastra adds that while facing the East at the morning twilight and the West in the evening, one may control his breath while reciting the Savitri a hundred times. These and other injunctions tend to harmonize one’s heart and mind with the cosmic powers. The chanting of the Gayatri at dawn purifies from the sins of the previous night, and the evening prayer of the mantra purifies from the sins committed during that day.

The Gayatri is a complete symbol of light. It is certainly much more than the epiphany of light; it is light itself when the recitation is a real prayer, an assimilation to and identification with that which is prayed. Each line emphasizes one aspect of light: the glorious splendour of the Ultimate, his own internal radiance, that is, the uncreatedness of light (line 1); the creating light, the communicative brightness of the uncreated Sun, Savit, the brilliance of the living God who illumines everything (line 2); and, finally, the incidence of this divine light in our beings, and especially in our minds, making us refulgent ourselves and transmitters of the same refulgence and converting us into light: light from light, splendour from splendour, oneness with the source of light, not in a ponderous ontological identity but in a “lightsome” identity of luminosity, totally transparent – *atman-brahman* (line 3).⁴²

If it can be argued that all these are ancient traditions stemming from a world view which is radically different from that current today, then one can take a contemporary example from the New Age movement. Many people feeling a spiritual void are attracted to New Age ‘because so much of what it offers meets hunger often left unsatisfied by the established institutions. ... People feel the Christian religion no longer offers them — or perhaps never gave them – something they really need’⁴³. Thus it is significant that people who experience ‘a genuine yearning for a deeper spirituality, for something that will touch their hearts, and for a way of making sense of a confusing and alienating world’⁴⁴, are encouraged to follow a practice as traditional and orthodox as prayer at morning and evening:

My first thoughts on awakening before I open my eyes are to be grateful for everything I can think of ... I spend about ten minutes just being thankful for all the good in my life ... This is before I get up and do my morning meditation and prayers ... As I go to bed, I collect my thoughts. I go over the events of the day and bless each activity ...⁴⁵

Although not Christological, this passage assumes the existence of a Supreme Being, to whom gratitude is expressed, and the last sentence bears a striking resemblance to the explanation of Vespers in *The Long Rules* of St Basil:

When the day is ended, thanksgiving should be offered for what has been granted us or for what we have done right during it ...⁴⁶

Perhaps this desire to turn to some all-powerful Being in the morning and in the evening can be seen as a need to return to a more sacramental understanding of life, the loss of which was lamented by Odo Casel: '...nature is no longer a symbol, a transparency of higher realities...' ⁴⁷. Possibly, even 'the trends present in many New Age and neopagan cults where the earth itself becomes the object of worship and is believed to be the source of spiritual power'⁴⁸ may be a symptom of a muddled desire to reattain this sacramental understanding of creation.

This paper began with a brief overview of the discovery of the evidence and function of circadian rhythms in animals. It went on to examine a sacramental understanding of creation which, although not originally aware of scientific evidence for the existence of these rhythms in human beings, was very sensitive to the (sacramental) quality of life, of time, and of the cyclical rhythms of the day, the week⁴⁹ and the year, and the effect of all this on the human spirit, and its significance for prayer. Although in Christian understanding this is linked in the context of the daily cycle to the death, burial and resurrection of Christ, and thus to a specifically Christian theology, other ancient religious traditions, as also more modern expressions of spirituality, also see morning and evening as significant times for prayer, suggesting that the first light of morning and the waning light of evening have a universal religious significance. Thus when during Lauds and Vespers we pray such prayers as:

Almighty ever-living God,
we make our prayer to you at morning, noon and evening;
dispel from our hearts the darkness of sin,
and bring us to the true light, Christ your Son,
who lives and reigns with you and the Holy Spirit,
God, for ever and ever.⁵⁰

Let the splendour of the resurrection
light up our hearts and minds, Lord,

scattering the shadows of death,
and bringing us to the radiance of eternity.⁵¹

Yours is the day and yours the night, Lord God;
let the Sun of Justice shine so steadily in our hearts
that we may come at length
to that light where you dwell eternally.⁵²

Lord God,
it is our bounden duty to proclaim you as the Light
with whom there is no alteration or shadow of change:
enlighten our darkness as we reach the close of this day,
and in your mercy forgive us our sins.⁵³

we may be responding to a deep need within the human system, activated by the dawning light of the new day, or by the waning of light in the evening⁵⁴, as a sacramental indication of the divinity, to turn to whatever deity the individual worshipper believes in, to express gratitude, thanksgiving, and contrition. Pelikan would go even further than this. He says:

Behind the imagery of the light and the sun in the religions of the Near East was the attempt to find meaning and hope for human life in the daily victory of light over darkness: the dawn was the harbinger of divine rescue and of eternal salvation. Indeed, the power of the light to bring hope is much older and deeper than mere human history. In responding as they did to the power of the light, the religions of the Near East gave liturgical expression to the yearnings and the stirrings of the protoplasm, the nameless need in the very stuff of life to be sustained by light.⁵⁵

A more conclusive study of this question would necessitate a fuller examination in detail of the world's religions but enough evidence has been set forth above to initiate such a debate.

- 1 *Sacrosanctum Concilium* #89, a.
- 2 *General Instruction on the Liturgy of the Hours*, #38.
- 3 *Ibid.* #39.
- 4 For a full discussion see: C.W. Dugmore, 'Canonical Hours' in J.G. Davies, (ed.), *A Dictionary of Liturgy and Worship*, (London, SCM Press, 1972), pp. 113-120.
- 5 'We must also pray in the morning, to celebrate the Lord's resurrection by morning prayer', Cyprian, *On the Lord's Prayer*, 35. Quoted by William G. Storey, 'The Liturgy of the Hours: Cathedral versus Monastery', *Worship* 50, (1976), pp. 50-70.
- 6 'For it was at this hour that the water and blood flowed from the pierced side of Christ and that (the Lord) gave light to the declining day and brought it to evening. Thus by beginning a new day at the hour when he began to fall asleep, he gave us an image of the resurrection.' Hippolytus of Rome, *The Apostolic Tradition* 35, c. 215 C.E., quoted in L.Deiss, *Early Sources of the*

- Liturgy*, (London, Geoffrey Chapman, 1967), p.71.
- 7 '....all pre-modern Christianity was fundamentally sacramentalist'. T. O'Loughlin, *Journeys on the Edges*, (London, DLT, 1999), p. 47. For a fuller examination of this whole topic, see Chapter 2, A Walk in Two Worlds, pp. 34-48.
 - 8 All the following biological information is taken from the *Annual Review of Physiology*, Vol 55, Annual Reviews Inc. 1993, unless otherwise noted.
 - 9 'Repeated late nights under electric light can disrupt a woman's hormonal balance by depleting her supplies of the brain-signalling chemical melatonin, making some breast tumours more likely to develop, the research says..... A new theory is now suggesting that melatonin, the brain hormone that helps the body to set its internal clock, may be to blame. The effect hinges on melatonin's influence over the female hormone oestrogen...Melatonin levels are known to be highest during nighttime darkness, and lowest during the bright light of the middle of the day.....' 'Extra risk of breast cancer for night staff', *The Times*, Saturday, February 15th 2003, p.9.
 - 10 'Light is an important controlling agent of recurrent daily physiological alterations (circadian rhythms) in many animals and probably man. Lighting cycles have been shown to be important in regulating several types of endocrine function.....' *Encyclopaedia Britannica*, 15:391, Radiation Effects of.
 - 11 Alwyn Rees and Brindley Rees, *Celtic Heritage*, (London, Thames and Hudson, 1961, repr, 1998), pp.83, 89, 92.
 - 12 Robert Taft, "'Thanksgiving for the Light": Towards a Theology of Vespers', *Diakonia* 13, (1978), pp. 27-50.
 - 13 I Clement, 24, quoted in Hamman, *How to Read the Church Fathers*, (London, SCM Press, 1993), p.7.
 - 14 'Litururgical Time, Theology of' in *The New Dictionary of Sacramental Worship*, ed. Peter Fink sj, (Gill and Macmillan, Dublin), 1990, p.738.
 - 15 *Didache* 8;3.
 - 16 Thomas O'Loughlin, 'The *Didache* as a Source for Picturing the Earliest Christian Communities: The Case for the Practice of Fasting', *Christian Origins, Worship, Belief and Society*, The Milltown Institute and the Irish Biblical Association Millennium Conference, Kieran O'Mahoney (ed.) *Journal for the Study of the New Testament Supplement Series* 241, (Sheffield Academic Press, 2003), pp.83 – 112.
 - 17 *De Oratione*, 25, 1-3, ed. *Corpus Christianorum, series Latina* 1, Turnhout, Belgium, 272.
 - 18 *Explanatio in Psalmum* 1,9 in *Corpus Scriptorum ecclesiasticorum latinorum* 64.8.
 - 19 *Confessions*, 5.9.17.
 - 20 *On the Lord's Prayer*, 35
 - 21 Jn 8:12.
 - 22 See Taft, "'Thanksgiving for the Light": Towards a Theology of Vespers'
 - 23 C.E..257.
 - 24 *De Oratione Dominica*, 35: PL 4, 560.
 - 25 *On the Holy Spirit*, 29, 73, PG 32, 205. Quoted in Taft, op.cit., p. 40.

- 26 For a full discussion of the dating of Patrick's life and writing, see O'Loughlin, *St Patrick, the Man and his Works*, (London, Triangle, 1999), p. 15-19 and references.
- 27 *Ibid.* '.....on the day we shall arise in the brightness of the sun, this is in the glory of Christ Jesus our redeemer, we shall be 'sons of the living God' and fellow heirs with Christ' and 'conformed to his image'; for 'from him and through him and in him' we shall reign. But this sun which we see, rising each day for us by God's command, it shall never reign, nor shall its splendour last.....We, on the other hand, are those who believe in Christ and adore him who is the true sun. He is the sun which does not perish and so we too, 'who do his will', shall not perish.' p. 88 and notes.
- 28 For a discussion of the date of the *Nauigatio*, see Dumville, 'Two Approaches to the dating of the *Nauigatio*', in Wooding, *The Otherworld Voyage*, (Dublin, Four Courts Press, 2000), pp.120-132; Wooding, 'The Latin Version', *The Voyage of St Brendan*, trans. John J. O'Meara, (Colin Smythe), p.18.
- 29 Bourgealt, Cynthia, 'The Monastic Archetype in the *Nauigatio* of St Brendan', *Monastic Studies* 14, (1983), pp.109-122. O'Loughlin, Thomas, 'Distant Islands: The Topography of Holiness in the *Nauigatio sancti Brendani*', (ed.) M. Glasscoe, *The Medieval Mystical Tradition: England, Ireland, Wales*, [Exeter Symposium VI], (Woodbridge, 1999), pp.1-20. O'Loughlin, Thomas, 'The Monastic Liturgy of the Hours in the *Nauigatio sancti Brendani: A Preliminary Investigation*, (Forthcoming. I wish to thank Dr O'Loughlin for letting me read this in typescript.)
- 30 In this, the *Nauigatio* moves away from the traditional monastic *fuga mundi* mentality into a strongly world-affirming view.
- 31 See the articles referred to above; also the present writer's 'St Brendan the Abbot celebrates Easter: Scriptural and Liturgical Paschal Allusions in the *Nauigatio sancti Brendani abbatis*', forthcoming.
- 32 O'Loughlin, 'Distant Islands: the Topography of Holiness in the *Nauigatio sancti Brendani*'.
- 33 See Taft, "'Thanksgiving for the Light'", p.32.
- 34 Ex 29:38-42; 30:7-8; Num 28:1-8. All quoted by Taft, *op. cit.*
- 35 Posen, Jacob, 'Jewish Worship', in Davies, J.G., (ed.) *A Dictionary of Liturgy and Worship*, (London, SCM Press Ltd. 1972), p.207.
- 36 Taylor, J., 'Islamic Worship' in Davies, J., (ed.) *A Dictionary of Liturgy and Worship*, (London, SCM Press Ltd., 1972), pp. 205-206.
- 37 <http://www.ummah.org.uk/software/ptc/>
- 38 See Baumstark, *Comparative Liturgy*, (London, Mowbray, 1958), p.4
- 39 *The Liturgy of the Order of Buddhist Contemplatives for the Laity*, (California, Shasta Abbey Press, 1990), pp. 47-54, 55-70, 71-76, 108-111.
- 40 Kanzeon was a bodhisattva; one who having achieved enlightenment himself chose, through compassion, to forgo nirvana until the 'last blade of grass' had achieved enlightenment, thus introducing a redemptive element which echoes that of the redeeming work of Christ. For a fuller account of the bodhisattva with comparisons with Christianity see Ozaniec, Naomi, *Meditation*, (London, Hodder Headline, 1997), pp. 68-70, *The Way of the Bodhisattva*.
- 41 *The Liturgy of the Order of Buddhist Contemplatives for the Laity*, Pre- Dawn

- Office; Avalokiteshwara (Kanzeon) Ceremony, p.47.
- 42 Raimundo Panikkar, *The Vedic Experience*, (London, DLT, 1979), pp. 38-43.
- 43 *Jesus Christ the Bearer of the Water of Life: a reflection on the "New Age"*, published by the Pontifical Council for Culture and the Pontifical Council for Interreligious Dialogue, 2003. Reported in *The Tablet*, February 8th, 2003.
- 44 Ibid.
- 45 Hay, Louise L., *You Can Heal Your Life* (Eden Grove Editions, 1988), pp.89, 90.
- 46 PG 31,1014. Quoted in Taft, op. cit., p. 34.
- 47 Casel, *The Mystery of Christian Worship*, (London, DLT, 1962), p. 1-8.
- 48 O'Loughlin, *Journeys on the Edges*, p. 48.
- 49 That the human system is biologically programmed to respond to the seven day week is suggested by the fact that when, during both the French and the Russian revolutions the seven day cycle based on the Judaeo-Christian idea of a Sabbath/Sunday holy day of worship and rest, was abolished and replaced by a more secular arrangement, this latter proved to be impossible to maintain and in both cases was eventually abandoned. For the French revolution see Wells, N M., *Time*, (Harper Collins, 1999), pp.54,55; for the Russian see Meyer, Hans Bernard, 'Time and the Liturgy: Anthropological Notes on Liturgical Time' in (eds.) Vos and Wainwright, *Liturgical Time: Papers Read at the 1981 Congress of Societas Liturgica*, (Liturgical Ecumenical Center Trust, 1982).
- 50 Concluding prayer, Lauds, Thursday Week 1, The Divine Office, Vol 1, p.[107].
- 51 Concluding prayer, Lauds, Saturday Week 1, The Divine Office, Vol 1, p.[147].
- 52 Concluding prayer, Vespers, Tuesday Week 2, The Divine Office, Vol 1, p. [218].
- 53 Concluding prayer, Vespers, Monday Week 3, The Divine Office, Vol 1, p. [338].
- 54 Margot Fassler, 'Sermons, Sacramentaries, and early Sources for the Office in the Latin West' in *The Divine Office in the Latin Middle Ages*, (eds.) Fassler and Baltzer, (Oxford University Press, 2000), defines the Office as '....daily prayer, rooted in the cyclical changing of light marking out the steady passage of day to night and back again', p. 15.
- 55 Pelikan, J., *The Light of the World. A Basic Image in Early Christian Thought*, (New York, Harper and Brothers, 1962), p.13.