Origins of Religion

A talk to the Melbourne group of Sea of Faith in Australia
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I am going to start with a song. You may not like the music so I will read some bits of the text. The song is called, ‘Laughing With’ and it’s by Regina Spektor. This song was at the top of the 3RRR alternative music chart a couple of years ago.

No one laughs at God in a hospital
No one laughs at God in a war
No one’s laughing at God
When they’re starving or freezing or so very poor

No one laughs at God
When the doctor calls after some routine tests
No one’s laughing at God
When it’s gotten real late
And their kid’s not back from the party yet

No one laughs at God
When their airplane start to uncontrollably shake
No one’s laughing at God
When they see the one they love, hand in hand with someone else
And they hope that they’re mistaken

No one laughs at God
When the cops knock on their door
And they say we got some bad news, sir
No one’s laughing at God
When there’s a famine or fire or flood

I present this to you to show that the religious urge is alive and well in the younger generation. The religious urge persists in the next generation, and exists in all cultures, because, I suggest, it is hard-wired into the brain. Well, sort of. More in a minute. The tendency to form beliefs about ‘the Beyond’ is also holding up well, perhaps due to the same hard-wiring. Nicholas Humphrey¹ argues that despite widespread education in science, and despite the failure to find evidence of paranormal phenomena, we are still faithful to what he calls ‘earlier ways of thinking’ (p.3). He reports that US Census data in the 1980s showed “that 95% of the population still believe in an active God, 88% in a human soul, and 71% in the survival of the soul after bodily death.” In Europe, 75% believe in God, 61% in a soul, and 43% in survival after death.” (p.3) His own survey in 1987 in Reading, England, that 71% of respondents believed that ‘dreams can foretell the future’; 54% believed ‘some people can remember past lives’; 37% believed ‘it is possible to get messages from the dead’ (p.4).

Now, hard-wiring: I am going to put forward the idea of a religious, or in fact a mystical, temperament in some people. Evidence to support this idea comes from neuropsychology. Neuropsychology looks scientifically at various sort of brain activity, such as electrical activity, chemical changes, and changes in blood flow to different parts of the brain. Then you correlate the brain activity with whatever mental activity the person is doing at the time. So if you are doing a Sudoku puzzle, and a particular part of your brain becomes very active, then that part of your brain is probably your Sudoku-solving area.

¹ Humphrey, N. Leaps of Faith Copernicus New York 1999
Later on, I am going to explore a second question. If not everyone has the kind of brain that seems to produce a mystical temperament, how did religion come to be so central to societies down the millennia? How and why was religion accepted by people who did not have a mystical temperament? What is its value for them?

Some preliminaries. First, I want to say that this field of study neither confirms nor denies the existence of God. You can say, ‘God is only a spot in the brain, and we now know better’ if you have that sort of agenda. Or you can say, ‘Of course we have an organ of perception for God, otherwise religion wouldn’t have persisted throughout all of human existence’, if you have that sort of an agenda.

Second, I need to define my terms. For simplicity, I am going to try and avoid the term ‘spiritual’ altogether and stick to the words ‘mysticism’ and ‘religion’. By ‘religion’ I mean organised religion, and by ‘mysticism’ I mean an individual experience. In religious language it is an experience of union with God. In non-religious language, it is an experience beyond time and space. I have made this distinction on the basis of a fascinating little study – from sociology, not neuropsychology. Levin took results from the General Social Survey in the US in 1988 and in 1973, and found that mystical experience inversely related to organisational religiosity. In other words, those who are inclined to mysticism and those who prefer organised religion are two fairly distinct groups. By the way, Levin also found that déjà vu, clairvoyance and ‘composite mysticism’ were becoming more common among successively younger age cohorts. In other words, younger people were tending more towards mysticism, and less towards organised religion.

Mystical experience is not rare, it seems, and so mystics are not the lunatic fringe. The sociologist Andrew Greeley for the US National Opinion Research Centre in 1975 asked, ‘Have you ever felt you were very close to a spiritual force that seemed to lift you out of yourself?’ 35% of the respondents said yes.

Turning to the idea of a mystical temperament, I promised you evidence from neuropsychology. Much evidence supports the general hypothesis that mystical experience occurs with transient spikes in electrical activity – or as Persinger calls them, ‘microseizures’ - within deep structures of the temporal lobe (Persinger, *ibid.*). The temporal lobe is the major focus of research on mysticism. You will know that major spike in the brain’s electrical activity produces epileptic seizures. This lesser pattern of momentary peaks in electrical activity is called temporal lobe lability. It is not clear whether genetic or biochemical factors produce temporal lobe lability.

The most direct evidence comes from Persinger², who reports two instances where temporal lobe activity was directly connected with mystical experience. A ten-second temporal lobe seizure was recorded in a Transcendental Meditation teacher who was having a peak experience at that moment. The other incident involved a member of a Pentecostal sect, who sometimes had spikes of temporal lobe activity while speaking in tongues. Naturally we cannot regard only two results as definitive proof.

As you can imagine, it is very hard to get definitive proof of the connection between temporal lobe activity and mystical experience. Obviously you would have to wait around for an awfully long time to capture the brain’s activity while someone is having a mystical experience. So researchers have generally taken a more indirect approach.

Ramachandran at the University of San Diego got around the problem by measuring galvanic skin responses of temporal lobe epileptics to words associated with religion, with sex and ‘neutral’ words, such as ‘wheel’. The subjects’ results were compared with those of non-epileptic controls, in religious and non-religious subgroups. The epileptics responded most to the religious words, the non-religious controls to the sexual words, and the non-epileptic but religious subgroup responded to both sexual and religious words. Ramachandran concluded that temporal lobe seizures strengthened interest in religion.³

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² Persinger, MA “Striking EEG profiles from single episodes of glossolalia and transcendental meditation” Percept Mot Skills, 1984 Feb;58 (1) pp.127-33
³Eguae-Obazee, I. ‘Seizures and the Sight of God’ serendip.brynmawr.edu / neuro/neuro01
MacDonald and Holland found that scores on an Expressions of Spirituality Inventory were significantly predictive of complex partial epileptic-like signs, especially the paranormal belief, experiential and existential well-being subscales. These results remained the same when age, sex and involvement in organised religion were controlled.

In a study of university students, Persinger\(^4\) found significant correlations between reports of mystical experiences and temporal lobe symptomatology (his word). Persinger\(^5\) also found 0.6 to 0.7 correlations between the students’ tendency to report paranormal experiences and temporal lobe signs. This is not strong, but above chance levels. He\(^6\) also found that women in psychic development groups were more likely to have temporal lobe signs, compared with controls.

I have to mention that Persinger \(^7\)is most famous for his experiments on the ‘sensed presence’. He puts a very weak magnetic field across the brain and up to 80% of his subjects sense the presence of another being in the room. Unfortunately his results have not been successfully replicated by Granqvist et al\(^8\), who found no evidence for the effects of magnetic fields, and believe that suggestibility among the experimental subjects might account for Persinger’s results.

Although the temporal lobe may be what popular journalism calls the “God Spot”, other areas of the brain also contribute to a mystical experience. First comes an experiment that was reported in the newspaper a couple of years ago. Beauregard and Paquette\(^9\) found that when nuns from the contemplative Carmelite order were asked to remember and relive the most intense mystical experience ever felt in their lives, their brains were activated in specific areas: mainly in the left and right caudate nucleus and areas of cortex around them, including prefrontal cortex, middle temporal cortex, inferior and superior parietal lobules – plus the left brainstem. Obviously it had to be remembered mystical experience, since as the nuns said, ‘God cannot be summoned at will’. In prayer, different areas were active, namely inferior frontal, prefrontal cortex and the inferior parietal lobule, rather than caudate structures. The authors note that other studies have found an association between activation of the caudate nucleus and subjective feelings of joy and of romantic or maternal love. Feelings of love and joy can be part of the mystical experience, but are probably not the main element in prayer. Of course, the main limitation of this study was that it examined remembered mystical experience rather than the real thing.

Sayers\(^10\) notes that the same areas of the brain involved in dreaming seem also to be involved in mystical and religious experience. Certainly I was taught in my Jungian training to treat visions as waking dreams.

Another religious activity, other than mysticism, is meditation. Newberg and d’Aquili\(^11\) found that in meditators the reticular system is intensely activated as the meditators concentrate, but the dorsal superior parietal lobe was deactivated. This is the place where the distinction between self and other originates. The left side provides body image, and the right side provides the space/time context for the self. Presumably the meditators have learned how to make the brain do this shutdown. When

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\(^4\) Persinger, MA “People who report religious experience may also display enhanced temporal-lobe signs” Percept Mot. Skills 1984 Jun; 58 (3) pp.963-75

\(^5\) Persinger, MA “Propensity to report paranormal experiences is correlated with temporal lobe signs” Percept. Mot. Skills 1984 Oct; 59 (2) pp.583-6


\(^8\) Granqvist et al “Sensed presence and mystical experiences are predicted by suggestibility” Neurosci. Letters 2005 Apr. 29 ;3791 pp.1-6


\(^10\) Sayers, J. “Divine Therapy?” The Psychologist Vol 16 No. 9 pp.466-7

these areas shut down, the meditator feels the boundary between self and other begin to dissolve into eternity. Obviously, the dissolving of time/space boundaries is a main element in the mystical experience also. So meditation can facilitate mystical experience. If you had a temporal lobe microseizure while you were meditating, you would probably have a very powerful mystical experience.

Persinger\(^\text{12}\) reports that specific electrical stimulation of the amygdaloid-hippocampal structures evokes paranormal out-of-body experiences, space-time distortions, intense meaningfulness and dreamy scenes.

Another religious activity is ritual. Saver and Rabin\(^\text{13}\) suggest that the temporo-limbic system tags stimuli as significant, depersonalised, joyous, numinous, etc. The limbic system is also stimulated by music, chanting and rhythm, such as drumming,\(^\text{14}\) which are of course widely used in non-Western religions. So you stay up all night dancing to rhythmic and repetitive music – either at a corroboree or a rave party – because it feels deeply meaningful.

So what does all this mean? So far I have mentioned various parts of the brain that have been associated with various kinds of mystical experience, such as meditation, visions and paranormal experiences. Some people may tend to have brief peaks or spikes of electrical activity in their temporal lobes, which may be associated with mystical experiences. If you have this kind of temporal lobe, you may therefore have what I have loosely called ‘a mystical temperament’. The evidence for mysticism being hardwired into some people’s brains is indirect and incomplete. But it’s also intriguing, I find.

This has been a very brief and incomplete survey of literature.

However, mystical experience is not necessarily religious. Grandqvist and Larsson\(^\text{15}\) found that if subjects already had religious affiliations, they were more likely to have mystical experiences with a religious flavour during the sensory deprivation experiment. However they were not more likely than other subjects to have non-religious mystical experiences. In other words, the mystical experiences activated religious schemata of interpretation in those subjects who had them. But mystical experience could also be interpreted in non-religious ways. The authors aren’t specific, but I imagine they could mean a sort of grandeur of nature and the cosmos experience.

Now we begin Part 2 of my talk, which puts the mystical temperament into a social context. First I will look at the survival value of the mystical temperament for the individual. The discipline of sociobiology asks why have certain patterns been passed on down the millennia? How can a capacity for mysticism enhance an individual’s capacity for survival? Here is one answer. Britton and Bootzin studied the effects of transcendental near-death experiences. ‘Transcendental’ here means the kind of near-death experience where fate seems to play a hand. “My son fastened his seat belt literally one second before the crash”; if we’d locked the door as we normally do, we would have been burned to death in the fire”. The experiences did not produce the usual dysfunctional stress or trauma reactions, but instead were associated with positive coping styles. Somehow people were able to cope. I suggest that a capacity for mysticism turns such a life-threatening experience into a transcendental one, which results in more positive coping styles. I would even speculate that the hyper-religiosity that is sometimes seen in psychosis just might be an attempt by the psyche to transcend the terror in psychotic anxieties.

As to this pattern of turning life-threatening experiences into transcendental ones, with the result of more positive coping capacities – doesn’t this remind you of the process of initiation? Such rituals typically begin by giving the young person some frightening, ostensibly near-death experiences. At the end of the ritual the young person is expected to have achieved the coping capacity of an adult.

\(^\text{12}\) Persinger, MA “Religious and mystical experiences as artifacts of temporal lobe function: a general hypothesis” Percept. Motor Skills 1983 Dec; 57 (3 Pt.2) pp.1255-62


\(^\text{14}\) New Scientist 21 April, 2001 pp.24-8

\(^\text{15}\) Grandqvist, P. & Larsson, M. J. “Contribution of religiousness in the prediction and interpretation of mystical experiences” J. Psychol. 2006 Jul; 140 (4), pp.319-27
Similarly, an adult being initiated into a cult generally underwent various harrowing experiences. In the mystery cult of Orpheus in ancient Greece, I think, the candidates were buried up to their necks for three days. That one certainly gives me the shudders. All this was so that the initiate gained superior wisdom, a favoured relationship with the divine— which is religious language for enhanced coping style. Very obviously, the initiate’s belief in the eternal life of the soul helps them to cope with physical death.

By the way, here is another idea on the survival value of mysticism, or in particular the temporal lobe lability that produces it. Thalbourne et al\textsuperscript{16} found that measures of temporal lobe lability correlated strongly (0.72) with measures of transliminality. I apologise for the jargon. Transliminality is defined as a tendency for psychological material to cross threshold into or out of consciousness. It may be an index of neurological connectedness, both within the temporal lobe and with other areas of the brain. The transliminal brain would be better able to make connections between new information and old memories, to problem-solve creatively, to contextualise, to understand, to make associative links through metaphor, to invent. All of these have considerable survival value.

I have been looking at the survival value of a mystical temperament for the individual; now I will look at its survival value for the group.

The group, tribe or society also will integrate the mystic’s experience into more cognitive ‘schemata of understanding’—usually these schemata have been beliefs about the supernatural, the transcendent, the Beyond. At the start of this talk I contrasted mysticism with organised religion. We are now of course talking about the latter.

Earlier I mentioned Nicholas Humphrey\textsuperscript{17}, who argues that despite widespread education in science, and despite the failure to find evidence of paranormal phenomena, we are still faithful to what he calls ‘earlier ways of thinking’ (p.3) That suggests to me that there is a widespread human tendency to form beliefs about the Beyond. As a Jungian, I would see this as a form of the universal urge to find transpersonal meaning in life. It’s what Jung calls the religious urge.

So far I have argued that there may be a physiological basis for a mystical temperament, and from Humphrey’s statistics it seems that it may be quite common, at least in a mild form. I have said that there is also a human tendency to construct what are called ‘schemata of understanding’, which collectively will form the basis of an organised religion. The religion, too, has its survival value. The anthropologists and sociologists like to define the value of organised religion in terms of anxiety reduction. For Burkert\textsuperscript{18}, the explanations provided by organised religion bring a sense of ‘coherence, stability and control within this world.’ Yinger\textsuperscript{19} points out that in religion, surrender and sacrifice are positive values. ‘Religion is an organised effort to make a virtue of our ultimate necessities.’ Burkert also notes that religion increases our resilience by ‘providing a heightened endurance in the face of catastrophe.’\textsuperscript{20}

I don’t actually like the term ‘schemata of understanding’ because it’s too cognitive. Obviously religion is not just a series of explanations. I’d like to correct this now, by mentioning Mark Turner’s book, ‘The Literary Mind’\textsuperscript{21}, if you will follow me down this sidetrack for a minute. In his view, story is a basic principle of mind, and narrative imagining—story—is the fundamental instrument of thought. Basic stories are small events in space: the wind blows through the trees, a child throws a ball. These small stories are interpretations of otherwise chaotic experience. We often superimpose one small story on to another. We see the small story of a leaf floating down a gutter and superimpose the story of a boat on a river—thereby creating a metaphor for the small leaf. Superimposing one small story on to another is one of our most important processes for constructing meaning. It also allows us to predict, to evaluate, to plan and to explain. As Tilley says, ‘all human beings think metaphorically with an

\textsuperscript{16} Thalbourne, MA, Crawley, S, & Houran, J “Temporal lobe lability in the highly transliminal mind” Personality and Individual Differences 2003; 35 pp. 1965-74
\textsuperscript{17} Humphrey, N. Leaps of Faith Copernicus New York 1999
\textsuperscript{18} Burkert, W Creation of the Sacred Harvard U.P. Cambridge Mass. 1996 (p.177)
\textsuperscript{19} Yinger, J. Religion, Society and the Individual Macmillan New York 1957 (p.12)
\textsuperscript{20} Burkert, W. op.cit. p.16
embodied mind’. A very basic superimposition or projection of one story on to another is to interpret events as physical actions. As an example of this, Persinger reports on his website that most people who experience a sensed presence in his laboratory attribute it to gods or deceased persons. In mythology, the events of nature are often interpreted as the activities of gods. Lightning strikes, and is interpreted as Zeus or Thor or whoever, throwing thunderbolts down to earth. Death is not understood as an event, but an act of departure to another place. So I hope you can see how myths would develop. When anomalous events occur, e.g. the birth of twins, the annual flooding of the Nile River, the eruption of a volcano, they are explained as divine actions – and explained with a story.

So when someone in your group or society with temporal lobe lability reports a mystical experience, fellow members of the group will probably interpret it as an action by someone, namely, a supernatural being. Thus, myths develop.

Each culture produces different stories or myths. However, there are also broad and more fundamental similarities. You will always find a malevolent deity of some kind in the society’s myth. This is partly because there are certain basic anomalies or existential problems that the myths of a society have to explain. For example, there is an anomaly between the supernatural powers of the gods, and catastrophe. The people feel, ‘After all the worship we have done, the gods still send us disaster’. One explanation of this anomaly is that there is a malevolent deity. Each society will have a slightly different explanation, and the deities will vary, reflecting the local social attitudes, but each society will probably have an evil deity of some kind. The point I am trying to make here is of course about archetypes. Do I need to say more about archetypes?

To summarise: the small stories that build up into myths explain events such as individual mystical experience, which perhaps cannot be otherwise understood by non-mystics. Such coherent explanations, and people’s faith in them, reduce anxiety and promote resilience in individuals, and foster order and stability in society. And that, in turn, enhances both the individual’s and the group’s capacity for survival. Myth is of course the basis of organised religion and ritual.

Jungians like to do cross-cultural comparisons of images from myth and religion and find common themes. There is a lot of this literature about: I recommend Mircea Eliade, Joseph Campbell and Vol. 5 of Jung’s own works as a starting point. However, I am going to go in a slightly different direction.

So, We’ve got our mythic stories, now let’s work with the gods to make our world a safer, happier place. Which brings me to ritual.

I think there are some archetypal ideas, as opposed to images, which underpin ritual. I am going to look at three archetypal ideas, which I formulate as three questions. One is, how can humans approach the divine? Next is, how can humans get stuff from the divine? And the third is, how can humans get away from, separate, or protect themselves from the divine, especially when it turns nasty?

Generally you have to approach the divine in a state of ritual purity. So approaching the divine involves purifying yourself – physically for example by washing yourself. A couple of examples are the Jewish mikveh or ritual bath, the Shinto ritual on entering a temple of washing your hands and face, before approaching the sacred area. Removing your grubby shoes has the same aim. In ancient Thrace, you would spend the night in a mountain cave, before dawn you would dress in new white clothes, put gold pins in your hair, and then walk up carved steps to the top of the mountain escarpment. As the dawn broke you would commune with the divinity of the sun. The African Dinka tribe hammer a post into the ground, and draw a circle from it, which then becomes the boundary of the sacred space.

The Dinka also express the second archetypal idea about approaching the divine – sacrifice. Having marked out a sacred space, which is pure because it is set apart, the animal to be sacrificed is tethered to the post in the centre. A classic work by the anthropologists Hubert and Mauss explains that in the ritual of sacrifice, divine energy is believed to flow into the person who offers the sacrifice, but also the animal or whatever is offered. This is why the animal is ritually eaten afterwards. The

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22 Tilley, C. Metaphor and Material Culture Blackwell Oxford 1999 p.263
23 Hubert, H. & Mauss, M. Sacrifice: its nature and function Cohen & West London 1964
Christian beliefs regarding the bread and wine of the Eucharist are the same. So sacrifice establishes a communion, a flow of energy from the divine to the human worlds.

In Jungian terms, sacrifice requires the ego temporarily to give up its efforts to control the environment, and to allow something beyond itself into conscious awareness. What we imagine as the flow of divine energy into the world, that purification and sacrifice bring, is in fact the flow of psychic energy from the unconscious into consciousness. But there’s nothing unholy about that.

There are a couple of extensions of this basic idea of connecting with the transpersonal. One is that humanity needs to re-connect regularly or periodically with divine energies in order to refresh the world – this is the idea behind New Year rituals. As New Year approaches, there are ceremonies to cast out the old, the decayed and the accumulation of impurity. Mircea Eliade on Sacred Time explains this concept in depth.

Another extension of the idea of purification is this. The goal of achieving purity in order to become closer to divine worlds can become a life purpose, it can govern the whole society of the believers. Food taboos, dress codes, restrictions regarding work and socialising, as well as intense moral prohibitions all have purity as their goal. Generally a religious group sets itself apart from the mainstream in order to achieve greater purity – from the Essenes in early Christianity, to the Amish in Pennsylvania. They want to have close communication with God. Closely associated with the achievement of earthly purity is the archetypal idea of salvation or redemption, of course. If you make purity your life purpose, you probably expect salvation.

The second aspect of the human relationship with the divine is: how can humans get stuff from the gods? - Divine benefits may be obtained through praising the gods, through sacrifice, by asking through prayer. Sacrifice, etc. can become a business transaction with the gods. Jane Harrison, in her studies of classical Greek religion, calls this do ut des, ’I give in order that you give’. A specific benefit that some people want is to know the future, through omens, auguries, etc. The gods may also provide divine benefit as a result of fertility rituals, which channel divine energy into crops, herds or the wombs of women. A third benefit is healing – through taking the waters in Lourdes in France, for example. The shaman communicates with the Beyond, and discovers what is wrong in the relations between the supernatural and human worlds. The shaman brings back information and healing energy to the patient.

This brings me to the third aspect of the human relationship with the divine: how can humans avoid the unwanted intrusion of the supernatural? Actually, setting apart – a space such as a church or temple, a time – for ceremony, or choosing some people as especially holy - is one of the most basic religious gestures. When setting apart is done formally and ritually it establishes sacredness – sacred space, sacred time, sacred people (such as priests). That separateness must be maintained. But implicitly, if you have sacred time, place or people, you also have times places and people who are not sacred. What if the divine intrudes into the non-sacred? This is where the powerful concept of pollution comes in – and in this case the divine is seen as a malevolent force, a demon or evil spirit. Pollution leads to all sorts cleansing rituals (including sacrifice again). You may know of the Christian rite, the ‘Churching’ of Women. For forty days after giving birth, women were considered polluted, and had to be purified before they could attend church again. An ongoing fear of pollution by divine negativity extends to daily life and produces tightly held taboos. Guardian statues are put at the doorway of the home, and gargoyles are placed on the cathedral and city walls, to scare off evil spirits. People wear amulets, and recite magic charms to ward off ‘the evil eye’. If you are interested in this theme, I recommend a book by the anthropologist Mary Douglas, called ‘Purity and Danger’.

This is a brief outline of three archetypal ideas about humanity’s relationship to the divine. I have tried to suggest this evening that a substantial minority of humans have a mystical temperament, which is based in temporal lobe physiology. Within a society, mystical experience of a realm beyond daily life has everywhere been understood as an experience of divinity. In turn this has created answers for society to basic questions about human existence. Such answers were cognitively understood and imaginatively expressed through story, i.e. myth. Ritual and custom developed from the myths. Ritual is the society’s way of interacting with the divine. The religion thus provides coherence and stability – and hence resilience - for both the individual and society.