

# Psychologising about God and Religion

Malcolm Jeeves

## (1) A Topical Issue

The headline in part one of The Times on August 1st this year read, "Therapy is re-placing religion says Carey". (By therapy Archbishop Carey was referring to psychotherapy). The same day an even bigger headline in part two reporting an interview with the radio and television psychiatrist Anthony Clare was headed "Why I have lost faith in God". And to cap it all the widely read author Maeve Bichy was reported by Clare's interviewer as having said of her loss of belief in God, "I woke one morning and suddenly he wasn't there, It was like not believing any more in Santa Claus". Which all shows that popular and media interest in psychologising about God and religion is alive and well.

These reports recall and illustrate how psychologist's interests in the origins and functions of religious beliefs and practices re-occur in modern dress from time to time. Anthony Clare also said, "Part of the appeal is that religion helps with a sense of loneliness. It's as though you are part of a wider community, and it gives people the kind of ecstatic feeling they might find at a football match or a rock concert".

You will notice how this reference to the comforting aspect of belief in God echoes what Freud said ninety years ago when he described it as a comforting illusion. Professor Clare's likening of religion to "the kind of ecstatic feeling you get at a football match or a rock concert", and Bichy's account of the suddenness of her loss of faith, recall the debates fifty years ago, led by the psychiatrist William Sargant, drawing attention to the emotionalism and sudden conversions at some large evangelistic meetings.

## (2) The historical background

These reports also nicely illustrate how some of the long established specialist fields in psychology such as psychopathology, social psychology and physiological psychology, continue to enter into discussions of the origins and functions of religious beliefs and practices. Some have claimed that the accounts given have challenged the status of religious beliefs and/or questioned traditional views of some religious practices. In this way they have reminded us of the "warfare" metaphor used in the past to describe the interactions between science and religion. Although largely discredited by historians of science it surfaces again from time to time and in the present context this is illustrated by the views of Freud at the beginning of the 20th-century, of Skinner in the middle of that century, and of Crick at the end.

At the end of the nineteenth century there were four significant influences which provided the basis for later studies of the relationship between religion and psychology. These were (1) Francis Galton's studies of the manifestations of religion, (e.g. prayer); (2) studies of comparative religion and the origins of religion by anthropologists such as James Frazer; (3) the writings of theologians such as W.R.Inge on mysticism and religious experiences; and (4) the beginnings of a systematic psychology of religion (e.g. E.G.Starbuck, The Psychology of Religion, 1899), culminating in William James's classic, The Varieties of Religious Experience, (1902). None of these studies implied a warfare between psychology and religion. Certainly for William James the relationship between the two was a strongly positive one and he sought to explore how psychology could deepen understanding of the roots and fruits of religion.

As we move into 20th-century the picture changes. Despite Freud's own disclaimers, he is widely seen as explaining away religious beliefs and exposing religious practice as nothing but the persistence of an interim social neurosis. The fact that his views on the origins of religion had been repeatedly and severely criticised by professional anthropologists, on the ground that many of the 'facts' upon which he based his theories were incorrect, has done little in the popular mind to bring his views into disrepute (e.g. Malinowski 1927;1936). Freud produced a good story and it persists long after his views were widely discredited by scholars in related disciplines.

Another major figure of the early part of the 20th-century was Carl Jung who was both a psychologist and a psychoanalyst. For a time Jung was a close collaborator of Freud, but they came to differ radically in their views of both psychology and religion. For Freud, psychology pointed to religion as a neurosis which could be dispelled and the patient (the human race?) cured, while for Jung religion was an essential human activity, and the task of psychology was to try and understand how human nature reacts to situations normally described as religious. As G.S. Spink's wrote, "For Freud religion was an obsessional neurosis and at no time did he modify that judgement." For Jung it was the absence of religion that was the chief cause of adult psychological disorders, (1963).

While Freud and Jung captured the headlines in talking about the psychology and religion interface in the first half 20th-century, there were others who wrote on the topic. R.H.Thouless was one of these. His approach was highly constructive and a complete contrast with the warfare metaphor. He represents a tradition, which has continued since the second world war, with several noteworthy attempts to offer new insights into religion through the eyes of psychology. Notable among these have been G. W. Allport's The Individual and His Religion (1951), Michael Argyle's several books including Religious Behaviour and, with Beit Hallahmi, The Social Psychology of Religion. There are thus many excellent books on the psychology of religion which are not infused with any notion of conflict, but while they are read by psychologists and others interested in deepening our understanding of the part played by religion in our thoughts and feelings, there are not newsworthy because there are not confrontational. Such, however, was not the case with B.F. Skinner's views on religion.

In the mid-20th-century, Skinner's views were the most widely publicised of the 'warfare' genre. This is understandable because of his well-deserved reputation as the leading behavioural psychologist at that time. Having achieved considerable success with techniques for shaping and modifying behaviour, Skinner went on to speculate about how such techniques might be harnessed to influence the future of society. He believed that similar principles, based on the effects of rewards and punishments, could explain how religious practice functions psychologically. "The religious agency", he said, "is a special form of government under which 'good' and 'bad' becomes 'pious' and 'sinful'". He argued that good things, personified as a god, are reinforcing, whereas the threat of hell is an aversive stimulus; and that both these shape behaviour. Underlying Skinner's approach is a reductionist assumption. He speaks of concepts of god being 'reduced to' what we find positively reinforcing. Skinner's views were challenged by an equally distinguished psychologist and neuroscientist Roger Sperry, who became a Nobel laureate. He criticised the bankruptcy of some forms of behaviourism and accepted the benefits of a positive relationship between psychology and religion as allies engaged in a common task. Having spent his career studying brain mechanisms, Sperry wrote that he detected amongst neuroscientists "a move away from the mechanistic, deterministic and reductionistic doctrines of pre-1965 science to the more humanistic interpretations of the 1970's. He argued that it was simplistic try to reduce humans to 'nothing but' physico- chemical machines. As we shall see in a moment this is an entirely different view from that of Francis Crick, a fellow Nobel laureate. Crick argued that the idea of the soul is now redundant and discredited by his interpretation of neuroscience, and that religious belief in the soul was meaningless.

This very brief backwards glance is sufficient to alert to two enduring and recurring issues. The first highlights the need to scrutinise carefully the nature of the explanations offered by psychologists of religious beliefs, experiences and behaviour. Some like James, Thouless, Allport and Argyle, saw themselves as providing fresh glimpses into the mechanisms involved in the origins and maintenance of religious beliefs and behaviour. Others, like Freud and Skinner, believed that the explanations they offered were competitors with, and alternatives to, the accounts traditionally given in religious language. The

approach was, at times, unashamedly reductionistic and materialistic, for example, when Freud wrote at the end of his psychological study of Leonardo da Vinci he said “Psychoanalysis ... has taught us that the personal God is psychologically nothing other than a magnified father; ... “Elsewhere he wrote that religion is “nothing other than psychological processes projected into the outer world.“

However, as a little thought indicates, regardless of whether the explanations are couched in psychoanalytic terms, or of reinforcement theory, or Pavlovian conditioning, such explanations cannot, by their nature, explain away the meaningfulness or otherwise of the ‘God talk’ any more than the computer engineers description, in electronic terms, of how the computer solves mathematical equations makes redundant the mathematician’s reference to the mathematical equations. The psychological account can no more be presented as the refutation of the reality of the God whom the religious person claims to know, than can the electronic account be presented as demonstrating that mathematical concepts are now redundant and superseded.

The second recurring issue that this brief review underlines is the importance of being aware, as far as possible of the pre-suppositions which any investigator brings to his task. If, as in the case of Freud and Skinner, you bring reductionist and materialist pre-suppositions you will understandably couch your accounts and explanations to be consistent with these pre-suppositions.

### **The Impact of Psychological Research on Christian Beliefs and Practices - a source of challenges, insights and reminders**

#### **(1) Two illustrative examples from long established specialist fields:**

##### **(a) Social/personality psychologists views of (i) action and faith and (ii) behaviour and attitudes**

I am sure you will realise that any attempt to study religion by psychologists or anyone else, immediately raises the question of how to define religion? And more specifically it’s Christian expression. In the past church attendance was the commonest index of interest in religion. However, since many people who take little or no part in institutional religion nevertheless still describe themselves as religious, it is evident that such a definition is inadequate and for research purposes one needs a more subtle measure of religiosity. In the 1950s researchers proposed a distinction between ‘intrinsic’ and ‘extrinsic’ religious attitudes. An ‘intrinsic’ attitude is characterised by, for example, religion being an end in itself (not instrumental); an ‘extrinsic’ attitude finds churchgoing as supporting non-religious ends, such as providing comfort and social support. This distinction was taken up by other researchers who began to refer to “committed” religion versus “consensual” religion. These were attempts to fractionate religiosity in a rather more subtle way and to begin to do justice to the widely different manifestations of the religious quest.

The need to distinguish between intrinsic and extrinsic beliefs was underlined when correlational studies in the USA showed clearly that those who were more involved in religion also tended to be more neurotic, more racially prejudiced, more anti-semitic, and more anti-black. When, however an attempt was made to distinguish between those who held intrinsic beliefs versus those who held extrinsic beliefs it turned out that the intrinsic believers were regular church goers and also tended to be less prejudiced, less anti-Semitic, less anti-black and less neurotic. These findings also called for a rethink of the general assumption that our beliefs and attitudes determine our actions. If social psychology has taught us anything over last thirty years, it is that the reverse is also true. We are as likely to act ourselves into a way of thinking, as to think ourselves into a way of acting. The way the social psychologist puts it is to say that it is now a fundamental rule of social psychology that behaviour and attitude generate one another in an endless spiral, like chicken and egg. This principle, as we all realise, affirms the biblical understanding of action and faith, or what Bonhoeffer called obedience and belief.

Much as conventional wisdom has insisted that our attitudes determine our behaviour, Christian thinking has at times, unduly emphasised faith as the sole cause of action. What this research has shown is that it is important to remember the complementary view that faith is a consequence of action. In both the Old and

New Testaments we are told that full knowledge of God comes through actively doing the Word. Faith is nurtured by obedience. Faith grows as we act on what little faith we have. Faith, said John Calvin, "Is born of obedience". "The proof of Christianity really consists in `following'" declared Kiekergaard. Karl Barth agreed: "Only the doer of the word is its real hearer". The outworking of this in the life of the church is all too obvious. Those churches that make their members active participants and not mere spectators are the ones that seem to be growing all the time. In this as in everything else the principle has its limits. It is possible to become so preoccupied with doing things that there's no time left quietly to receive God's word or God's gracious direction of our lives. It is clear that here biblical and psychological perspectives join together in reminding us that faith is like love. If we hoard it, it will shrivel. If we use it, exercise it, and express it, we will have it more abundantly. God comes through actively doing the Word. Faith is nurtured by obedience.

***(b) Perceptual/cognitive psychologists views on interpreting our experience and the power of pre-suppositions.***

(1) Over many decades research in visual perception has demonstrated how what we perceive depends upon where our attention is focused, what is our prior experience, and what are our expectations. What is true of perception applies to experience generally, including what we label as religious experience. When you view the heavens you may or may not see them as declaring God's glory. To report religious experience is to assign to sense experience a spiritual significance. It is to interpret phenomena with an awareness of the presence of God. What Jesus said and did was interpreted differently by different onlookers and continues to be so today. We shall see later how different pre-suppositions lead equally competent scientists to give different interpretations after reviewing the same field of research. No surprises here for the psychologist studying perceptual processes.

(2) In some instances pre-suppositions take the form of the values we bring to any situation. In 1985, there was a considerable stir within psychology when Allen Bergin published a paper in the American Psychological Association's clinical psychology journal setting out his Judeo-Christian values and contrasting them with the values assumed or declared by other psychotherapists. As the co-editor of the influential Handbook of Psychotherapy and Behaviour Change his paper provoked a vigorous response. Psychotherapists of whatever persuasion generally agreed that their values were important and should be acknowledged more openly. Some, however, complained that religious dogmatism and inhibitions are anything but healthy, and claimed that their clinical-humanistic values were more fully humanizing. To this Bergin responded that indeed religion is diverse and not always benevolent, and yes, as a religious person he strongly supported the human values of love, freedom of choice, and honesty. His point, however, remained, values do permeate psychotherapy and should be openly declared. Bergin's point was amplified specifically two years later when Paul Vitz exposed the anti-religious assumptions of some secular psychologies. These, he said, included atheism or agnosticism, naturalism, reductionism, individualism, relativism, subjectivism and gnosticism. Vitz point was taken up more recently by Dawes in his widely acclaimed book House of Cards. Commenting on the intrusion of non-psychological influences into psychotherapy, Dawes argued that such influences are well illustrated by the contemporary influence of the New Age movement. Noting its great emphasis on self-esteem, Dawes writes that according to the movement's proponents, "we all suffer from deficiencies in self-esteem, and the deficiencies are responsible for our problems, definitely not vice versa". In view of the contemporary importance of these New Age influences it's worth quoting Dawes at greater length on this issue. He goes on: "Poor self-esteem is often cited as the root cause for everything from failing to learn in elementary schools, to failure in business, to over achievement, to divorce or even to `sexual co-dependency'". He later comments: "Let me state categorically that there is no scientific evidence that people who have deep insecurities and self-doubts have nothing to contribute to the world. The most casual reading of biographies indicates that many admirable people, like Abraham Lincoln, often suffered from deep insecurities and self-doubts, and that many less admirable people suffered no self-doubts whatsoever, at least until they were caught or disgraced".

***(c) Some reactions to past challenges***

If the first reaction of religious people to these challenges to some of their cherished beliefs was to seek to deny them, a more considered view, on further reflection, was to realise that they might provide new insights into the nature and function of religious beliefs and practices. Seen in this way they might provide a catalyst for a re-examination of both our beliefs and practices. Could it be, for example, that our beliefs were being subtly adjusted more to meet our felt needs than to face up to the claims of a sovereign God? Perhaps it was time to re-examine the biblical basis of some of our beliefs. Indeed, to believe in a god of our own creating and to give that god the characteristics that would prove most comforting, could be seen as yet another form of the idolatry of which we are warned so often throughout scripture. The result, at times, has become that the gospel of grace, mercy, and peace, becomes marketed as the idolatrous, counterfeit gospel of health, happiness, and prosperity, as portrayed by some tele-evangelists. I shall return to these issues later but I want now to move on and ask whether developments in psychology in the second half of the last century provided any fresh challenges to our traditional understanding of religious beliefs and practices. I shall limit myself to those within the Christian tradition since those are the ones with which I am most familiar.

### **The Impact of Psychological Research on Christian Beliefs and Practices - a source of challenges, insights and reminders**

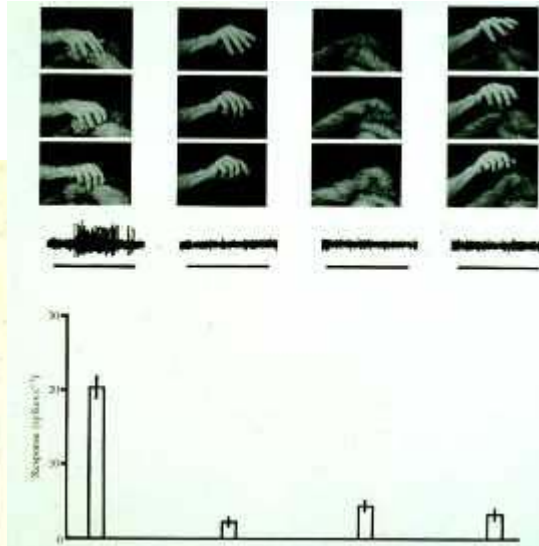
#### **(2) Two examples from more recently developed specialist fields**

##### **(a) Cognitive Psychology**

In North America in the 1950s it seemed that the only way for psychologists to smuggle in the concept of mind was to call it something else. Jerome Bruner one of the architects of the so-called "cognitive revolution" in psychology tells how Professor George Miller, a fellow architect, commented "you're supposed to get at the mind through the eye, ear, nose and throat if you are a real psychologist". Bruner noted how, at that time, to talk about thinking, for example, was considered to be "too mentalistic, too subjective, too shifty", to be truly scientific. It was left to Bruner and his collaborators to begin to return the study of thinking to mainstream psychology. The earlier reticence to research into cognition was further documented by Bruner by noting how the standard reference work in experimental psychology used in the 1950s, namely, Stevens Handbook of Experimental Psychology devoted only 27 pages out of a total of 1,362 to a chapter on cognitive processes. This seems almost unbelievable now when cognitive psychology is so dominant.

It is only fairly recently that a few psychologists have begun to ask whether some of the things we are beginning to learn from cognitive psychology about perceiving, thinking, remembering and knowing are relevant to some long-standing questions about religious knowing? For example, what if any thing is special about religious knowing? Are there similarities between religious knowing and some other forms of everyday knowing? How do we acquire knowledge about the things of God? What about roles traditionally assigned to reason and to faith in this knowing process? Dr Fraser Watts, who has written most helpfully on these topics, argues that cognitive psychology has shown that the faith-reason dichotomy is misleading. He writes (on page 53), "the sharp cleavage between rational demonstration and voluntary faith that is assumed in much discussion of religious belief from Aquinas to the present-day does violence to the actual nature of cognitive processes". It fails to recognise how what we perceive is inextricably intertwined with our assumptions, hypotheses and preoccupations. Watt's follows Kellenberger (The Cognitively of Religion) in commending serious consideration of a third perspective to be added to the over-simple dichotomy of faith and reason. Kellenberger calls it the way of discovery which he believes has a long tradition in Judeo-Christian thought, and is seen clearly in the Psalms. The psalmist sees evidence of God all around him but it is not merely the neutral evidence of rational argument or scientific data. It is certainly not evidence that stares everyone in the face. Kellenberger believes such knowledge is available only to those who "open their hearts" and he traces what he calls this discovery tradition through a number of Christian writers. There is much that could be disputed and debated here. Watts recognises this and himself poses the question (page 59) "if religious experience is so unusual and uncertain, how can we claim that it is based on everyday cognitive processes?" In tracing out possible answers to this question he suggests that aesthetic cognition is a helpful analogue of religious cognition. I commend the book The Psychology of Religious

Knowing, written by Fraser Watts with Mark Williams, a professor of clinical psychology. Together they explore a series of insights from cognitive psychology which they believe help to understand the emotional component in religious knowing, the part played by self-knowledge as revealed in some forms of psychotherapy, the nature of prayer and a fresh analysis of some of our concepts of God. My reason for including it this evening is to indicate that within psychology not only traditional religious beliefs but at insights into their nature and however, as we turn to neuropsychology we do face developments which, some at least, have seen as providing a direct challenge to what they understand to be long and deeply held religious beliefs about our own nature.



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**(b) Neuropsychology**

The Decade of the Brain. The decision of the US Senate to pour substantial extra funding into brain research followed from what had

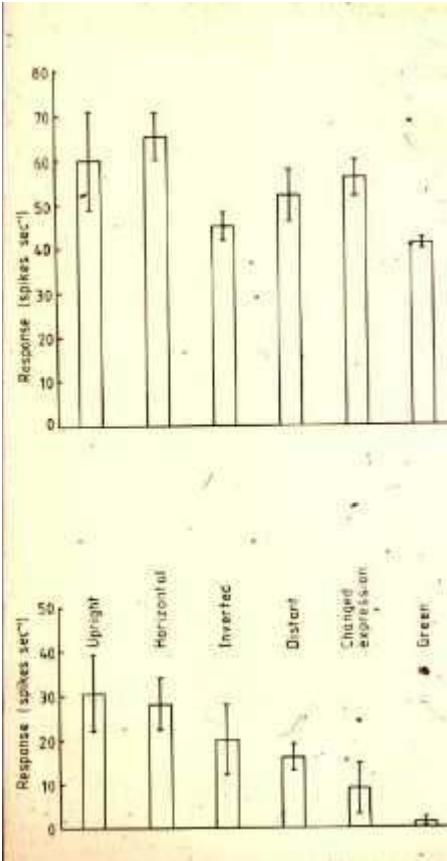
been happening in the previous decade in terms of developments in techniques for studying brain function. Developments which Susan Greenfield has suggested should prompt us to label the current decade The Decade of the Mind. But why did the rapid advances in brain science occur when they did?

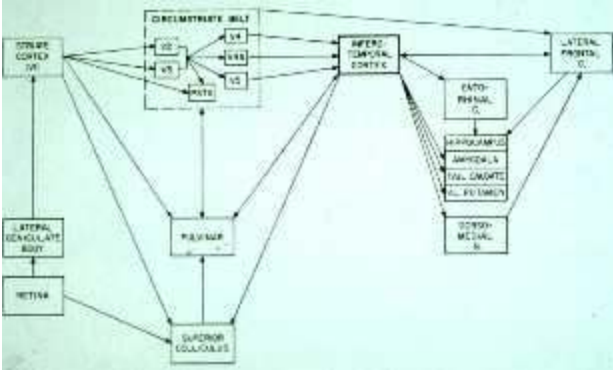
Most commentators on this area of science agree that it was the convergence of developments in three, hitherto relatively-unconnected areas of science, which provided the impetus for the significant leaps forward. First were developments in experimental psychology. New techniques were developed using computer-assisted methods. These were applied to non-human as well as human subjects and this, in turn, opened up new ways to address old questions. The second development was the so-called cognitive revolution I referred to earlier resulting in rapid developments in cognitive neuro-psychology. It is interesting, as an aside, to remember that many trace the beginnings of the cognitive revolution to the work of the Cambridge psychologist Sir Frederick Bartlett. The third major development was due, as is the case in so many

advances in science, to the basic researches of physical scientists. Thanks to their work we witnessed exciting developments in brain-imaging techniques. When these three lines of research were brought together, it made possible the study of how, when undertaking a particular cognitive task, it selectively mobilises specific areas or networks in the brain. Let me now very quickly try to give you a feel for how recent advances point increasingly to the tightening links between mind, brain and behaviour.

**Advances in understanding sensory processing.**

Forty years ago we were excited when Hubel and Wiesel demonstrated that there were cells in the visual cortex of cats which responded selectively to the orientation of bars of light. Not all cells were the same. Today we know that there is a remarkable specificity for even the initial registration and processing of sensory information. Almost two decades ago David Perrett and his co-workers in St Andrews reported that there were cells in the visual cortex of monkeys which not only responded selectively to faces but also in some instances to particular orientations of those faces. We had known about such regional localisation for some time from reports of patients who, following strokes, reported they could no longer recognise faces, including their own and those of close relatives, even though they had no difficulty recognising houses, cars, dogs, cats and so on. The then available scanning techniques (CT scans) enabled us to localise such damage to a particular region of the visual cortex.

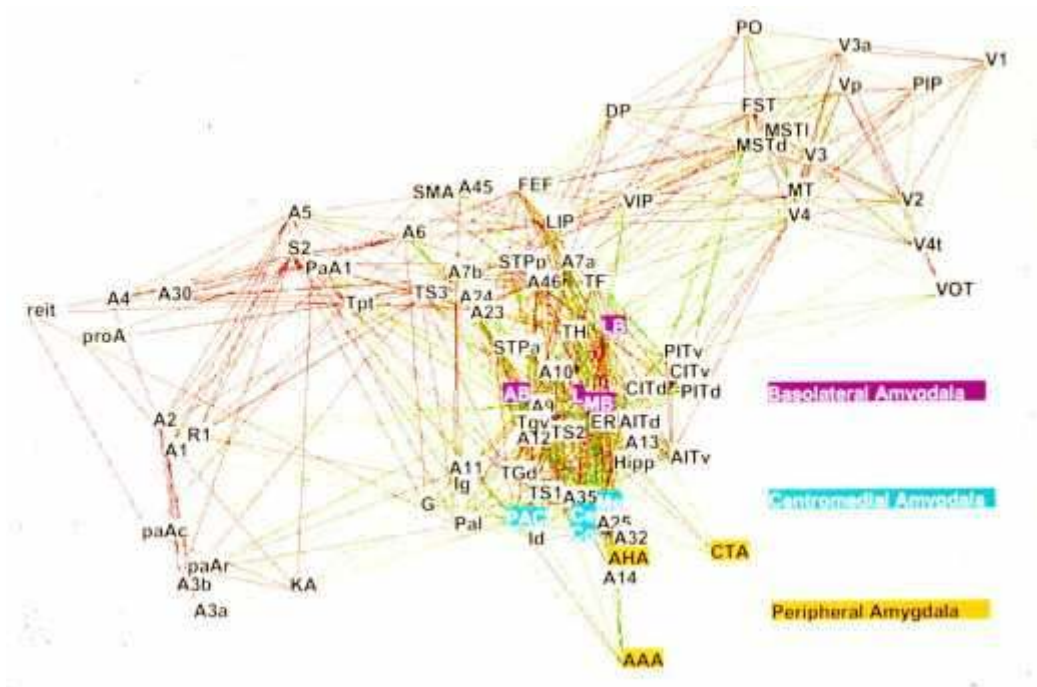




In 1972 Charlie Gross, recording from cells in alert monkeys, identified cells which responded selectively to hands. Subsequently David Perrett (1984) and his group have identified cells in monkeys that respond selectively to movement and to body parts such as hands. The specificity of some cells is such that they only respond if the hands cause the substrate to move (shown left). Thus there is a remarkable

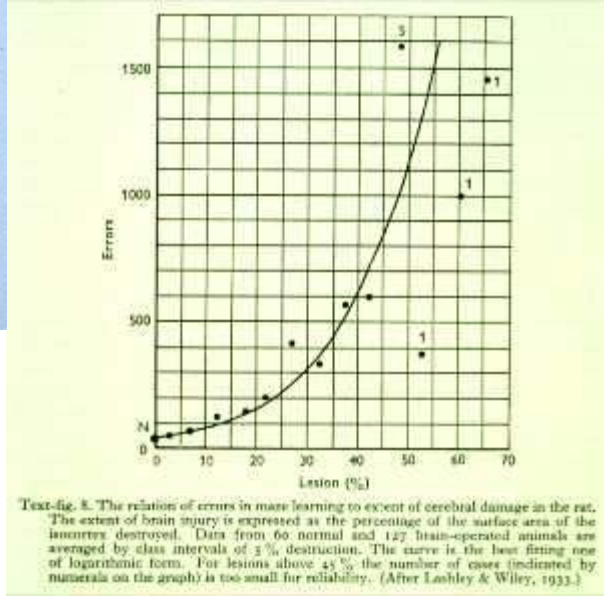
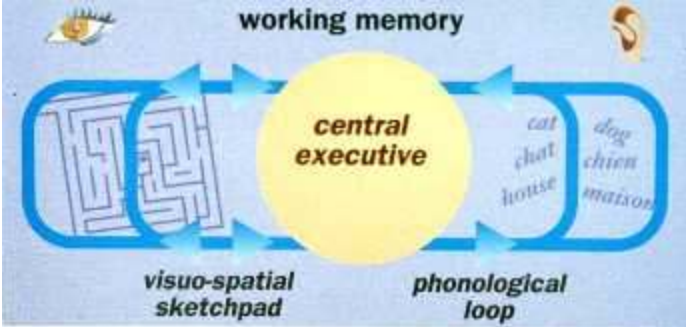
specificity in the registration and storage of sensory information.

It is also evident that the interconnections between different areas and systems in the brain are almost bewilderingly complex. On the right is a diagram published in 1975 indicating what we then knew about how different parts of the visual system were interconnected. The diagram below is from a presentation by Perrett this year summarising our present understanding. The change in our understanding of the complexity of interconnecting pathways is self-evident.

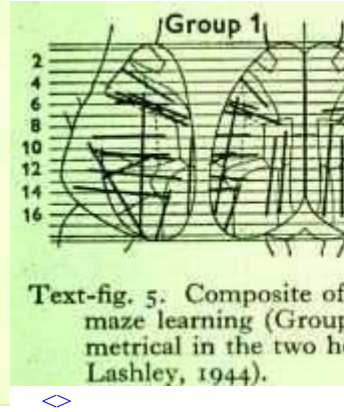


**Advances in understanding memory**

Fifty years ago as students we were taught, as a result of the pioneering researches of Karl Lashley at Harvard University, that learning, and the retention of what had been learned, did not depend upon specific areas of the brain. Rather, that how the learning of a particular task was affected by brain damage depended on the extent of damage to the brain, not the specific areas damaged. This was Lashley's famous law of mass action presented in his classic paper "In search of the Engram".



Text-fig. 8. The relation of errors in maze learning to extent of cerebral damage in the rat. The extent of brain injury is expressed as the percentage of the surface area of the isocortex destroyed. Data from 60 normal and 127 brain-operated animals are averaged by class intervals of 5% destruction. The curve is the best fitting one of logarithmic form. For lesions above 45% the number of cases (indicated by numerals on the graph) is too small for reliability. (After Lashley & Wiley, 1933.)



Text-fig. 5. Composite of maze learning (Group 1) metrical in the two hemispheres. (Lashley, 1944.)

As the above illustration indicates, Lashley, using rats as his subjects, systematically lesioned widely differing areas of the brain in order to study the effect of these lesions on learning a maze task as well as in retaining the task once learned. The diagram, taken from Lashley's paper (right), shows that what mattered was not what particular area was damaged but how much was damaged. In a way this seems strange because, a century earlier, neurologists had been able to localise specific human abilities to particular areas of the brain. The neurologist Broca, for example, noticed that a patient who had damage in an area in the left frontal part of the brain could understand language but was unable to speak. Not long afterwards Wernicke reported that he had observed patients with damage in a more posterior part of the left hemisphere which resulted in his patients being able to speak but not to understand language spoken to them. But what has happened to change our views so radically from Lashley's time?

Fifty years ago it was the custom to speak of remembering or of memory. Thanks to a considerable extent to research carried out here at the APU by Alan Baddeley and his colleagues we have been able systematically to fractionate memory so that today we realise that memory is not a single unitary entity but is, rather, made up of a series of memories that in optimum conditions work together to serve a wide range of different functions. What they all have in common is that they provide a capability first to store and then, subsequently, to retrieve information. Subsequent studies, using functional imaging techniques have cast light on the anatomical basis of the component parts of Alan Baddeley's psychological model of working memory, the visuo-spatial sketchpad, the phonological loop and the central executive. The phonological loop involves two separate locations within the left hemisphere of the brain, the visuo-spatial sketchpad is distributed across at least four locations in the right hemisphere and the central executive depends on a range of locations within the frontal lobes of the brain. The advances in experimental psychology and cognitive psychology over the past thirty years have been crucial, because, for anyone interested in the underlying biology of memory, their task is going to be almost impossible if we do not have a clear idea of what it is that we are trying to study and explain.

### Personality and Emotion

It is not only cognitive functions that are affected by brain damage. We are beginning to understand something of the neural substrate of personality and emotion. The classic case of this is the oft-told story of the railroad worker Phineas Gage. Gage had the misfortune prematurely to light a charge when clearing rocks on a railroad in New England which resulted in a tamping iron entering his cheek and exiting from the top of his head. The rod landed some fifty yards away with traces of brain and some blood on it. Surprisingly Phineas Gage, though stunned temporarily, was not killed. He recovered, and the next day, though having a very sore head, he was able to communicate with his carers. Why this particular case is so important is that a great deal was known about Phineas Gage before and after his accident. Beforehand he was conscientious, reliable, dependable, hardworking and a pillar of society. After the accident, whilst his cognitive functions such as memory and language were virtually unchanged, his personality changed dramatically. He was now totally unreliable, boastful, a gambler, and unable to devote himself consistently for any length of time to a particular task. In short, a reliable, morally upright excellent character had

# Brain damage 'can produce psychopaths'

## Impairment of social and moral behavior related to early damage in human prefrontal cortex

Steven M. Anderson, Antonio Damasio, David Tranel, Daniel Tranel, and Mark Hare

DAMAGE to portions of the brain in very childhood makes adults who do not know the difference between right and wrong, who lack the ability to make value judgments, who have no conscience.

A man and his woman, children of two different mothers, indicate that the source of their behavior is the prefrontal cortex. Two patients studied by the team — a woman aged 22 and a man aged 23 — displayed disruptive and immoral behavior: lying, stealing, making no value judgments, insensitivity and lack of remorse.

The team studied a woman named E. and a man named M. who suffered damage to the prefrontal cortex when an iron bar was driven through the head in a boxing accident in 1966. He made an excellent

student, but suffered from anger and poor control of his emotions. He became a man who, if left to his own devices, would have made a terrible mistake.

Other team studies have shown that early damage to the prefrontal cortex of the brain is linked to a lack of conscience, poor control of anger, and poor control of emotions. He became a man who, if left to his own devices, would have made a terrible mistake.

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become unreliable, morally irresponsible and a source of little good to the society he kept or within which he lived.

the same brain region but due to disease and vascular accidents, and has been well documented by Professor Tony Damasio. In the November 1999 issue of [Nature Neuroscience](#) he reports the cases of two children who suffered brain damage—one a woman at 15 months, the other a man at three months. The woman is now 20, the man 23. They both displayed disruptive and reckless behaviour, lying, stealing, inability to make friends, insensitivity and lack of remorse. The classic picture of a psychopath.

This, however, is how [The Times](#) reported it. Another commentator on Damasio's earlier patients wrote, "It's as if the moral compass of these people has been demagnetised, causing it to spin out of control" (de Waal). He went on, somewhat provocatively, "What this incident teaches us is that conscience is not some disembodied concept that can be understood only on the basis of culture and religion". Morality, he claimed, is as firmly founded in neurobiology as anything else we do or are. This tightening link between personality and emotion and their neural substrates has been further documented in studies by Hare and his colleagues of a series of imprisoned psychopaths. He has been able to secure brain images of a group of psychopaths when they have been exposed to emotion-laden words. He was able to show how a normal functioning brain lights up when exposed to such emotion-laden words, whereas the brain of a psychopath appears to remain inactive particularly in those areas linked with feelings and self-control.

A related study of the brains of murderers again indicated less activity in the frontal cortex than in the brains of non-violent subjects of the same age and sex. In one study of 22 murderers, three-quarters of them had low frontal activity of this kind, believed indirectly to regulate aggressive impulses. These findings remain controversial and need replication and extension.

### (c) Emerging issues

For our purposes here today the take-home message of this very brief account of some contemporary research in neuro-psychology is that, with each new development, we see a tightening of the links between mind, brain and behaviour, not simply linking to particular areas but indicating how whole systems are involved, linking multiple sites.

The examples I have given can easily leave the impression that the whole story depends on what we may call the 'bottom-up' approach. That is to say, we can see how changes to the neural substrate limit behaviour, and regulate and determine cognitive activity and the behaviour of which the organism is capable. To leave you with that impression would be mistaken. Whilst it is very much harder to do research on the 'top down' approach, there is already evidence for the importance of the conscious top-down control of mental activity and behaviour, an aspect emphasised repeatedly by the Nobel Laureate, Professor Roger Sperry. There are several studies which indicate how behaviour in which one engages varies the proportion of blood dedicated to a particular area of the brain.

Using brain-imaging techniques Sadato and colleagues (1996) reported that blind subjects showed activation of primary and secondary visual cortical areas during tactile tasks, whereas normal subjects showed deactivation. This study was an extension of an earlier one by Pascual-Leone and Torres (1953) which showed that the region of the brain normally dedicated to somato-sensory processing is expanded in proficient Braille readers when compared with sighted subjects. It is evident that training and habitual use modifies the neural substrate in such a task. The results of such studies carried out with cerebral blood-flow studies in humans have been confirmed in studies using non-human primates trained to carry out tasks with one of their digits, and then by tracing out the cortical territory devoted to the task. The results show that

the cortical area extends considerably beyond the normal area for such behaviour and into areas which would otherwise be used for other tasks. In short, the habitual behaviour engaged in, if you like the top-down direction of activity, determines the neural substrate devoted to that activity.

Finally, a study carried out in Italy illustrates the possible benefits of early education in warding off the effects of Alzheimer's disease in later life. The background to the study is that primary-school education in some parts of Italy was not made compulsory until many years later than in most other European countries. This, combined with widespread poverty in some areas, meant that few people could pay to educate themselves. The result was that significant numbers of Italians, in their sixties, seventies or eighties at the time of the study, had little or no schooling at all. The researchers saw the opportunity to ask the question, "Does the amount of education in early life have any effect on the state of the brain in old age?" One surprising result was that rates of Alzheimer's disease – the commonest form of senile dementia – were fourteen times greater among illiterate people with no education than among those who had had more than five years of education.

### **Taking stock**

This all-too-brief glimpse at exciting developments in neuro-science has, I hope, given a little of the flavour of an overall trend - namely the steady tightening of the links between mind, brain and behaviour. Evidence accumulates daily and is often dramatised by the media.

As in all these areas of science we have to make the distinction between the accumulating evidence on the one hand, and the interpretation of that evidence on the other. I said earlier that advances in neuroscience cannot be conveniently confined to the academy and the research institute. They will be given wide publicity and the more newsworthy they seem, the more magazines and papers they will sell and the more TV coverage they will attract.

## **Implications from neuropsychological research for Christian beliefs and practices**

### **(1) Beliefs - Whatever happened to the soul?**

First, I am suggesting that statements about the physical nature of human beings made from the perspective of biology or neuroscience refer to exactly the same entity as statements made about the soulish or spiritual nature of persons from the point of view of theology or religious traditions. This disavows the suggestion that human science speaks about a physical being whilst theology and religion speak about a non-material essence or soul. Perhaps a better way of saying this is that when we talk of souls we are talking about whole persons: body, mind and spirit. One might say "we are souls, we don't have souls". Such a view contrasts sharply with views of soul and body in, for example, Socrates' discourse on death. He wrote "Does not death mean that the body comes to exist by itself, separated from the soul, and that the soul exists by herself, separated from the body? What is death but that?" (Socrates, Plato's *Phaedo*, Fourth century BC). The idea of an immortal soul arises not from the Bible but from Greek thought. In the end, Plato records that Socrates lived out his own teaching by drinking the poison hemlock in the serene conviction that his immortal soul would now find release from its bodily prison. For Socrates and Plato, bodily death was a welcome liberation. Indeed, it was actually not dying.

In the centuries after Christ, theologians combined this Greek doctrine of the immortal soul with biblical images of human nature. When Origen, a third century platonic philosopher, became the father of theology, he built into Christian doctrine Plato's idea of the soul. In the early fifth century, Augustine thought Plato to be the most bright in all of philosophy. And in the sixteenth century, John Calvin, who was heavily influenced by both Plato and Augustine, declared that Plato alone "rightly affirmed" the immortal soul that "lies hidden in man separate from body".

Second, whilst scriptural teachings about the image of God do not, by their nature address directly any dualism-physicalism distinction, there is at the same time nothing in their teachings that necessitates belief

in an ontologically distinct soul. What is clear from Scripture is that the image of God is primarily relational. That is, it implies a capacity to enter into a covenant relationship with God and with other humans. Humans are considered unique from the rest of God's creation primarily due to their capacity for covenant relationships.

Third, any ideas we have about the nature of persons ultimately affect the way we treat one another. What we understand about human nature impacts on our ethics. Are there any consequences of the views I am putting forward which might start us on a slippery slope of ethical or moral decline? In the past, dualist views have certainly sustained a sense of caution about what can appropriately be done to besouled bodies of other individuals. If an immortal soul is present, doesn't this force one to continue to honour and love the seriously mentally defective or demented? The medical ethicist Stephen Post, whilst recognizing that in the past dualism has played a protective role within ethical systems, suggests that the fundamental biblical motive for the care of those who have little ability to reciprocate is not to be found in a dualist consideration of the soul of the other person. Rather, he argues, it emerges from the ethos of bestowed love and from the narratives of Jesus amongst the most vulnerable. Thus a narrative of love and consideration to helpless, dying or deficient persons is sufficient motive, and perhaps a more purely biblical motive, than the consideration of a separate substantial soul.

## **(2) Practices-The Mind-Brain link and the Christian Life**

By emphasising, in the way that I have, the unity of the human person, I am, by implication, suggesting that the spiritual dimension to a person's life is no more immune to changes in the brain than other aspects of mental life. Such a suggestion, at times, seems to surprise and trouble, some Christian people. I do not believe that it should and may I now give you three brief examples to illustrate why I think this is the case. There are a number of well documented cases of what happens to devout Christians when they develop Alzheimer's disease. The psychologist professor Glenn Weaver documents the spiritual pilgrimage of a devout Christian lady who after a life of regular attendance at church services where she was well known as a gentle Christian, with a deep concern for her fellow Christians, she began to develop the tell tale symptoms of increasing forgetfulness. She struggled with the problem in the way that many people do but she was fighting a losing battle. She found that she could no longer remember the names of those she wanted to pray for and her letters became verbose and lost much of their content. This in turn made her increasingly anxious; and her anxiety led onto depression and the classical textbook description of developing Alzheimer's disease became evident. Glenn Weaver, however, points out that in her case there was much more to her experience than the usual textbook account. She was deeply troubled about her relationship with God. She felt she was personally responsible for falling away from her former close walk with God, and that she was deserting her friends through her friendship and prayers. She concluded that because of her lack of faith God was setting her aside because she was no longer fit for his service. As she continued she became more confused and began to lose control of her natural processes and away from the security provided by her home and husband, she would wander about violating the commands of her nurses and then describing bizarre sexual disturbances in an explicit way. She came to believe she'd committed sins that provoked God's wrath and the continued deterioration of her condition and the fact that the doctors could not help her confirmed her in her beliefs. Eventually she lost all interest in her daily devotions and prayer. The main point here is quite simple; with neural changes there are psychological consequences and these in turn affect spiritual awareness. Such is the unity of the human person.

My second example is the attempts to explore the association of some forms of religiosity and the occurrence of mystical experiences with their possible neural substrates, an attempt which has continued from time to time over the last thirty years. Many who write on the topic begin with the apostle Paul's Damascus Road experience and then quickly move on to talk about the religiosity of the typical epileptic patient, something which has been recognised since at least 1838 by Esquirol. The debate will continue as more evidence becomes available. However, as one recent study by David Tucker and his associates has reported, "the data indicate that hyper-religiosity is not a consistent interictal trait of individuals with temporal lobe epilepsy. Further, although hyper-religiosity and temporal lobe epilepsy may co-occur in a few individuals, it does not appear to be a direct causal relationship between repeated seizure discharge in the temporal lobes and hyper-religiosity."

Third, I suggest that a return to a more holistic view of the human person, prompted in part by recent developments in neuroscience has helpful implications, I believe, for understanding the spiritual distresses that are well documented in the experiences of Christian leaders and from which we all, from time to time, suffer. It means that the spiritual dimension to our personality is not immune to the changes in our biological and neural substrates. I have already given you one example of this in the specific instance of Alzheimers disease. The psychiatrist Gaius Davies has documented how some of the outstanding men and women of God whom all acknowledge have been greatly used by him are also found on close study often to be those who have endured significant swings in the immediacy of their felt awareness of the presence and power of God. Davies shows how in the case of some of these people it is possible for us, with the benefit of hindsight, and informed by the advances in psychiatry at the end of the 20th-century, to be fairly sure that some of their experiences were pathological in the sense that today we would classify them in accepted categories of psychological illness. Some were obsessive compulsive, some were manic depressive, some struggled with specific phobias, and so on. Among those studied by Gaius Davies were John Bunyan and Amy Carmichael, William Cowper, CS Lewis, Martin Luther, Gerard Manley Hopkins and J. B. Phillips. The relevance of his studies to us today is that there are those amongst them whose illness probably had a significant biological and biochemical etiology and these would include Luther, Cowper, Shaftesbury and Phillips. Luther was probably an obsessive compulsive/depressive; Cowper suffered six serious depressive breakdowns and made several suicide attempts; Shaftesbury was probably a manic/depressive suffering from a bi-polar affective disorder (he reported how his moods swung from 'wild joy' to 'cruel despondency'. Phillips was probably an obsessive-compulsive. Despite all these things they triumphed to our lasting benefit. We do indeed 'have this treasure in earthen vessels'.

Those of you, who like me enjoyed the fascinating BBC television series by Susan Greenfield on the brain, may remember that in her first lecture she made several references to the religious or spiritual dimension to a person's life and personality. It is interesting that following her presentation there were a number of letters to the press complaining that she was attacking religion and the spiritual dimension to life. While we can understand the sensitivity, for some people, of singling out religion for reference in this way, a little thought would quickly indicate that it was unjustified. To be more specific, Susan Greenfield could as easily have indicated that in due time, using appropriate brain imaging techniques, we may be able to say a little more about which systems in the brain are most active when she is talking about brains and their properties. No one, I think, would have then gone on to argue that because we may understand something of brain mechanisms underlying her fascinating presentations, therefore, we could give no validity to the brain story that she was telling us. In a word, understanding something about the brain mechanisms underlying mental life tells us nothing, one way or the other about the truth claims of the statements being made at the time. To be more specific because this is an important point, she could as easily showed us a picture of Einstein's brain drawing attention to some of its unusual features, but this would have told us nothing at all, one way or the other about the truth of his theories. What I believe is much more relevant is that by welcoming every new bit of information about the neural substrates of spirituality, should give us insights which will enable us to understand ourselves better, but more importantly will enable us to show more sympathy and compassion to those who may be going through what in past centuries used to be called " the dark night of the soul".

### **A Summing up**

My Christian beliefs convince me that humankind is as much a part of nature as any other part of the created order and that the various biblical injunctions to care for the creation and to seek to study and understand it and to be a good steward of it apply as much to humankind as to any other part of creation.

More specifically, for the psychologist, this means that there is something intrinsically interesting about what comes from our efforts to understand the psychological origins of the religious quest and the maintenance of religious beliefs, as well as the various functions of religious beliefs in the lives of individuals and of groups.

In each instance the things said by psychologists present both challenges and insights and as such should be welcomed and taken seriously. Historically the reactions of people to the pronouncements of psychologists

have varied widely. They range from a knee jerk reaction of hostility, a denial of what is being said, to, on the part of some, an uncritical over enthusiastic welcome verging on the gullible. For a scientist none of these reactions is acceptable.

At the turn of the last century a distinguished professor of theology here in Cambridge, Professor Sanday, posed the question of whether, what was then understood in psychology could have anything to contribute about the theological understanding of the two natures in the one person of Jesus Christ. I'm referring to him now because, leaving aside his particular views on the two natures in one person issue, I think his general approach to the relation of psychology and theology is worth remembering. He suggested that the views of psychologists were destined to be of importance and value in the future of theology and, specifically, he wrote concerning anything that was asserted that, " it ought, however, to be worked out on the ground of psychology first by the disinterested methods of psychological science and then on the foundations thus laid the theologian may build". I fear that all too often the comments that are made are not based on "the disinterested methods of psychological science" but rather on some preliminary speculation with very little in evidence to support it. What psychologists choose to study at any given time naturally reflects the current dominant emphasis in psychological research at that time. As I have indicated, it may be social and personality psychology, or behaviourist psychology, or psychophysiology or as more recently of cognitive psychology and neuropsychology. I also indicated that there are occasions when aspects of psychological research may remind us of things we knew but had forgotten or got out of balance. I gave the example of action and faith in the Christian life. At other times the researches of psychologists may call for a radical re-examination of some long and widely held traditional Christian beliefs. The specific example I gave was understanding of the nature of the human person in the light of developments in neuroscience and psychology.

I have also suggested that we have to be careful as we examine the statements made by psychologists about religious beliefs and behaviour. Fifty years ago Sir Frederic Bartlett, professor here in Cambridge, and as I indicated often described as one of the precursors and architects of the cognitive revolution wrote " it is inevitable that the forms which are taken by feeling, thinking and action within any religion should be moulded and directed by the character of its own associated culture. The psychologist must accept these forms and attempt to show how they have grown up and what are their principal effects. Should he appear to succeed in doing these things he's tempted to suppose this confers upon him some special right to pronounce upon the further and deeper issues of truth and value". In this regard, however, Bartlett goes on, "... the psychologist is in exactly the same position as that of any other human being who cares to consider the matter seriously. Being a psychologist gives him neither superior nor inferior authority". This applies to the psychological scientist and neuroscientist as we try to take seriously what we learn from our faith as well as from our science. We find no excuse for a compartmentalisation, even though at times it may mean some very long hard thinking and some serious reappraisal of some of our traditional Christian beliefs. And we must be ready to discover that, on occasions, there are no easy answers and we must continue to wrestle with the issue and await further evidence.

You may feel that today I have let my enthusiasm for psychology and neuroscience outrun my judgement. Perhaps, at times, I have, and if so I can do no better, in mitigation, than remind you of the words of the 17th century scientist Nathaniel Carpenter. He wrote in 1622, "I am free, I am bound to nobody's word, except to those inspired by God; if I oppose these in the least degree, I beseech God to forgive me my audacity of judgement as I have been moved not so much by longing for some opinion of my own as by my love for the freedom of science".

## **The Discussion**

*The following discussion took place on the evening of the lecture, after dinner in St Edmund's College.*

**Malcolm Jeeves:** I tried in my lecture to show three main things. First, that by looking back to the history of the interaction between psychology and religion, there were, on the one hand, those who studied this interaction because they wanted to understand more about

religious life and beliefs while, on the other hand, there were those who did so because they wanted to explain away religious beliefs. In each case, as you look back you need to ask, what are the nature of the explanations which people are purporting to give, and what are the pre-suppositions that they bring to their work. What you find, not surprisingly, is that you can be sure that people reach the conclusions that their pre-suppositions required. If they began as reductionists, they finished as reductionists.

Second, I looked at one or two examples where it seemed to me that those of us who are Christians may have been too negative, appearing too defensive about what the psychologists might find. I think that Christians should be more open and welcoming to the challenges to re-think the basis for their beliefs, to welcome any insights psychologists can give and to take to heart any timely reminders that they provide. I suggested that an example of such insights from within social psychology are the differences between intrinsic beliefs and extrinsic beliefs, or between committed and consensual beliefs. Another area that is important is the understanding of the relation between faith and action. We can be thankful that psychologists have reminded us of these issues and that there is more to be learned. Those were issues which have arisen in the past. I also suggested that today we are in a different situation where a specific traditional belief, indeed a central Christian belief about the nature of the human person, is being called for re-examination in the light of the steadily accumulating evidence of the relation between mental life and our biological substrate. I chose to concentrate in my lecture on the neural substrate. I feel fairly strongly about this, because one of the things that has saddened me in the recent past has been the accentuation of divisions in the Christian church that have occurred over evolution. I think it is a sad saga. My worry is that, if we are not careful, similar divisions could develop among Christians about what they believe about the soul.

The third point I made was that I think that the fact that spirituality is embodied, that it doesn't stand apart from the rest of us, gives an opportunity for Christians to behave with more compassion and understanding towards those who are going through what in the old days we used to call the "dark night of the soul". Just as a footnote, I would say there is another whole area in evolutionary psychology that could be developed now. By evolutionary psychology I mean results from detailed study of the non-human primates. This raises afresh the whole question of what is it that makes us uniquely human. Many of the things that we observe in Homo sapiens we can also observe in the non-human primates. We have to ask ourselves what is it that makes us uniquely human: personally I would want to develop an answer in terms of our capacity for relationships, with God in covenant, with others and with the rest of creation.

**Jim Sweeney:** Striving to understand the human person and overcome the body-soul dualism is important. The religious picture has been painted in dualistic terms, but the notion of a 'substantial soul' distinct from 'body' doesn't actually sit very comfortably with the biblical view of the unity of the person, nor with Aristotlean/Thomistic philosophical categories either. Yet, the problem is death, and what becomes of the person then? You (M.J.) solve the problem by appealing to resurrection. As I understand you, the individual survives death not because there's an intrinsic element – the soul – which is untouched by death, but by virtue of the action of God who raises the person to new life. I have some difficulty with that. It seems to be appealing to something completely outside the created order to solve a problem of the created order – ie, the problem posed by death. But that just shifts dualism on a stage – to a dualistic universe rather than a dualism of the human person. I think there's a danger of making too sharp a distinction between the natural or created order and the order of Redemption.

I'd agree that we are souls rather than we have souls, which is a philosophical position – an anthropology really – and it has the implication of our 'being open' or 'marked by transcendence', and this as something inscribed in our very nature as human persons; that is

to say, we have an inbuilt need for our leaning towards what 'lies beyond' our present bounded existence. Anyway, I'd want to defend the position that there's something intrinsic to the human person (popularly called 'the soul') which gives the person this special 'character' and is at least a basis of immortality.

**Malcolm Jeeves:** Had I had time I would have wanted to explore, as I have done elsewhere in writing [for example, Human Nature at the Millennium, (Baker, Apollos 1997), Science, Life and Christian Belief with Sam Berry (Baker, Apollos 1998) and Whatever Happened to the Soul? Ed. Brown, Murphy, Maloney (Fortress 1999)], the whole idea of what I call souliness. What do we mean when we talk about the "soul"? I would want to define it in terms of the capacity for relationships, beginning right back in Genesis when God walked with Adam in the cool of the evening. Humans have a capacity for relatedness to God, for relatedness to one another, and for relatedness to the rest of creation. It is this capacity to enter into a covenant relationship with God which is one of the important themes through scripture and therefore I think of souliness in these terms. Concerning the question of death, I am struck by the frequency the picture of death as sleep is used by our Lord himself and elsewhere in the scripture. Over and over again we get this picture, that with physical death we go to sleep and we wake up again on resurrection morning. I find little support for an intermediate state or that we are going to be floating around as disembodied souls. The terms used in scripture are "spiritual body", "glorified body" - embodiment is the theme in scripture.

More specifically you have a concern that I am appealing to something outside the created order to solve a problem of the created order. I begin from the Christian belief that "God upholds all things at all times by the Word of His power". It is this same divine upholding, moment by moment, which gives us grounds for confidence that we shall be raised to new life. The 'new creation' is as much upheld as the present creation. To put it in a slightly different way, I believe, as a Christian, that it is only by God's grace that I came into existence, it is by His grace that I continue in existence, moment by moment, and it will only be by God's grace that I shall continue to exist after physical death. Everything depends on the gospel of grace.

**Fraser Watts:** The nature of the body is a mystery - as you say it's a spiritual body and that's very much a transformed body. There is a line going around at the moment that there is a sort of consonance between neuroscience that is in its way emphasising the physicality of the human being and the doctrine of the resurrection of the body that also in a different way emphasises it. But it seems to me that there are a huge number of differences in assumptions between those points of view and they are not as easily run together as some people want to.

**Malcolm Jeeves:** I think I would agree with that. There is a great temptation for us to try to infer that the authors of the various books in the Bible were aware of these discussions of dualism and monism and physicalism and so on, so easy for us to read these philosophical viewpoints back into scriptural writings. It seems to me that the evidence over three decades now does point increasingly to the unity of the human person.

**Brian Heap:** It's interesting how the area you have been talking about, the brain and the mind, has started to bridge the gap that previously we've seen in terms of 'two cultures' – arts and humanities on the one side and science on the other. I suppose it has been the artists, the people in the humanities and the theologians who in the past have expanded the ideas that you were talking about tonight, but that suddenly we are finding that the neuroscientists are beginning to encroach on their areas much more strongly than before. I suppose the earlier discussions have been on the theory of the mind and our understanding of the soul, but now the neuroscientists are starting to have the tools that allow us to address some of these same questions.

I was interested in this in connection with the current debate over the status of the human embryo. There is a view that the human embryo up until day 14 does not have any neural elements and therefore in the UK we developed legislation which was argued strongly, both for and against in 1990, which allows for experimental work to be done on the human embryo up until day 14. The argument for this is that day 14 is the time after which division into two individuals does not occur, whereas up until that time there could be two individuals leading to identical twins. It struck me that the point Malcolm Jeeves was making about the extent to which there is interaction between the mind and the neural substrate is quite helpful in this question of the status of the human embryo.

Experimentation on embryos in the first 14 days would be unacceptable to some who believe that personal individuality and genetic individuality start from the moment of fertilisation, but there is an alternative viewpoint which draws attention to the idea that genetic individuality occurs at fertilisation but personal individuality does not occur until somewhat later, which would be the time of the development in development biological terms of the neural substrate.

**Robert White:** My view is that it is dangerous and unwise to use such a sophisticated determination of the time at which an embryo becomes an individual person as that involved in the development of the neural substrate in an embryo. Quite apart from anything else it has only recently become technologically possible to determine this. But more importantly, there is no doubt that our scientific understanding tomorrow will be different from today, and it is certainly different from what it was yesterday. If we are forced to define a moment in time when a human life starts, then we should use some very obvious and unambiguous point like the time of fertilisation. If you were to ask the proverbial man in the street about when neural cells start to differentiate in the embryo, then they wouldn't have a clue; but if you were to ask them when a baby is made, they would certainly have an answer.

**Jim Sweeney:** That's the traditional Catholic view.

**Malcolm Jeeves:** But you have got to make a distinction here – you say "human" being. Right from the word go it's human. It's when the person emerges that we are asking about.

**Robert White:** Perhaps you can amplify the difference between a human and a person.

Malcolm Jeeves: Well, the material is human.

**Robert White:** So is someone who is in a persistent vegetative state a human or a person, or (as I would contend) both?

**Malcolm Jeeves:** Let's deal with the other end of life first, where we're starting from. The naturally aborted foetus is a human foetus, but is it a human person? There is a continuing lively debate about when it is appropriate to label human cellular material as a person.

The late Professor Donald Mackay raised the question of whether the foetus from the moment of conception has the status of a person, adding the further question, if not, then at what stages must the rights of a person be recognised. These, I am sure we would agree, are deep issues. It is in this sense that I said that of course, the foetus is human, it is alive and its growth is a divine work. That, however, leaves unanswered the question of whether at an early enough stage in foetal development there is anyone there to whom normal obligations are owed or who can meaningfully be said to "have rights" as a person – a centre of personal experience and personal agency. Because there is complete continuity in biological development does not rule out a decisive moment (or stage) before which there is nobody there and after which there is a 'she' or 'he' there. The logical fallacy, as Donald Mackay

pointed out, is to deny that because there is continuity there is therefore no difference between the ends of the continuum. The same would apply to dying. A person is an entity belonging to a different category from nerve cells.

As Donald Mackay also pointed out, there is no knock down argument that a foetus aborted before a few days or weeks is not and never was a person any more than we can prove conclusively that trees are not inhabited by spirits. These are not matters of proof but of commitment.

**Jim Sweeney:** But if you push that argument to a conclusion you still have difficulties. If you say there's not a person at day 10 but there is one at day 16 – then at that stage the problem of heaven and 'finding all these persons you never knew' still arises. I mean, what's the difference in terms of that kind of problem between a naturally occurring abortion on day 10 as against one on day 16? Is one a person 'fit for heaven' and the other not? Maybe it doesn't make sense to talk about heaven this way.

**Brian Heap:** That's when this question arises about the extent to which you require the neural substrate in order to get the interaction that points to individuality. If there isn't a neural substrate present, could you identify the group of undifferentiated cells as a person? Many developmental biologists would say that there is a defining moment when the neural cells evolve which makes the difference. And if you look at it from the other side, you gave examples of the way in which, in Alzheimer's disease, there is a gradual deterioration in the neural substrate. You commented that none of us is immune from some form of neural deterioration and in that sense it can be extremely distressing to see people who have hitherto had religious faith or belief who may then go through this terrible period of spiritual distress. You drew attention to the fact that there seemed to be a linkage between spirituality or spiritual appreciation and the neural substrate itself. So what about those of you who work at the sharp edge and on the practical side, dealing with counselling people who have distressing experiences and symptoms.

**Fiona Blake:** Initially I was anxious that a focus on the physical responses of particular parts of the brain and the biological element of its study was going to lead towards more reductionist perspectives. I see this happening frequently within psychiatry, so it is very refreshing and for me a novel perspective to see these scientific studies as actually unifying. They bring a holistic perspective that the body and mind are integral and that therefore spirituality is also integral to the person. I find it particularly helpful that if somebody has a disordered experience, whether it be found to be biological in terms of neurotransmitters or defective temporal lobe, or whatever, they are still valuable as human beings. In dealing with people with distorted experiences, I consider their mental disturbances as illness. In doing so I am supposing that they actually have an integrity that they can aspire to, and that they are valuable individuals despite their illness. I find it helpful to think of their totality and their preciousness and meaningfulness as a whole. I have seen the development of understanding of schizophrenia and depression and various mental disorders as being reductionist, with the more we find about brain imaging differences between normal and abnormal and the different reaction of different neurotransmitters as taking away from their essential humanity.

**Malcolm Jeeves:** It is certainly true that there is an understandable trend in recent years for more brain scans to appear in psychiatric journals. There is a similar understandable increase in references to serotonin levels, biochemistry, and such like. They are often balanced by references to cognitive therapy and the like. However, I can see the force of your point that often we don't talk much about people. It's actually people who are sick.

**Hill Gaston:** Is it useful or valid in thinking about the question of Alzheimer's as it might affect someone's spirituality to draw an analogy with the "locked in" syndrome where someone's neurological substrate does not allow them to communicate in any of the normal

ways that we would expect and yet the person has some capacity for thinking and feeling things? Is there a sense in which the neurological substrate in Alzheimer's does not allow the expression of spirituality as we would normally recognise it, and perhaps even as the person might consciously recognise it, and yet spirituality might still be a real aspect of the whole person?

**Malcolm Jeeves:** You mean they're still in there but they can't get out?

**Hill Gaston:** Yes. But does this reasoning bring in a vague soul, allegedly residing in the individual, even though there is no evidence for it?

**Malcolm Jeeves:** If you push me, I have to say it does. You raise an important point which I would like to pick up; one of the aspects of human uniqueness, the degree to which you find it in humans, is the capacity for relatedness to others, and to a covenant God. The most important commandment is "to love the Lord your God" and to love others, and in this way we enter in to relationships. But there is a syndrome known as Capgras Syndrome in which the individuals, whilst they can visually identify the members of their family, feel no relationship with them at all – they don't show any love to them, they can't show love to them, they can't empathise, they seemingly can't enter into relationships. These sort of people illustrate what goes wrong when you cannot enter into personal relationships. There is a need to think through more carefully what it is that is essential about humanness, what are some of the defining characteristics, because I suspect that some of the ones we have used in the past are really rather peripheral. I don't think it's having a soul that marks out humans as different from animals, I think it is more profound, to do with the capacity for loving relationships.

**Hill Gaston:** So, the Capgras Syndrome people fail the relationship test, but you would still regard them as human?

**Malcolm Jeeves:** Absolutely - they form some relationships, but they are not able to form normal relationships. They are an example of what happens when the normal capacity to form relationships is not working properly. [This underlines the danger of reductionism, since we are talking about people who enter into relationships and with all our technology, we mustn't forget about that.]

**Mark Phippen:** Within the Bible, there are references to people, to human beings, as having "a body, a soul and a spirit". There's a distinction sometimes drawn between soul and spirit and in some Christian circles, soul is regarded as not what we've been talking about, but as emotion, mind, will, that sort of concept which is much more in the realms of psychology, not that part which is supposedly immortal. So what is it that makes us human? I'm not sure that it is soul, or necessarily mind: it may be spirit. I want to make another point, again in relation to what it is that marks us out as human – I work as a counsellor and I'm very struck with the degree to which people talking to me need to find meaning in their experience, and often that comes across in what we might call spiritual with a small 's' terms. In simple levels many people think of it as punishment from God for all the things that have happened; but it can be much more sophisticated. But we need meaning to make sense of our lives – I'm not sure whether we find that elsewhere than in religion.

**Malcolm Jeeves:** The word 'soul' and the various translations that are rendered 'soul' are not uniform throughout Scripture. There is a whole variety of ways in which the word is used and it's used at different times in different contexts. In the bible there is a theme running through, primarily from the Hebrew tradition, that it is the whole person that is meant by soul. This is distinct from the Greek tradition which was, at times, a dualist position, so that Socrates could take the poison because he believed he had an immortal soul which was going to go on anyway after he died. The biblical view emphasises the dependence upon God

throughout. Of course the word 'soul' is used in a variety of ways but I believe that, certainly in the New Testament, it refers essentially to a person. "My soul doth magnify the Lord", means "I magnify the Lord". In a recent bible translation such as the New International Version, what was previously translated as soul is now translated as me, myself, I, in totality, not this bit of me doing this, or this part of me doing that.

**Denis Alexander:** My comment and question is going to move us away from the soul. I wanted to pick up some of the concerns about reductionism and also comment on the interpretation of the kind of brain scan data that you mentioned in your lecture. For example, you showed scanning data of the brains of murderers and suggested that there are differences from the brains of non-murderer controls. It seems to me that these kind of correlative data are invariably ambiguous.

We accept that every mental subjective thought has a physical correlate in the brain. But normal notions of cause-effect relationships break down when we think about the relationship between subjective mental experiences and physical correlates in the brain representing those experiences. This is illustrated by the apparently simple question we can ask of a computer as it works out a mathematical problem: "Is it the case that the electrical functioning of the computer chips is causing the mathematical problem to be solved, or is it the case that the mathematical problem is causing the flashing of electrical currents through the chips?"

The answer is of course ambiguous – in a sense the answer is 'both'. The answer is equally ambiguous when we ask about the murderer's brain: "Is it different from other brains as a result of his harbouring murderous thoughts and practising murderous behaviours over a period of many years? Or is it different in the causal sense that here there is a brain pathology which might act as an explanatory cause of his murderous behaviour?". It seems to me that the kind of correlative results you showed can never, in principle, tell us the answer to that question. Can you comment on this conundrum?

**Malcolm Jeeves:** I agree, of course, that correlation does not demonstrate causality. I also agree that to do full justice to the events occurring as the computer solves the mathematical equation both accounts are necessary and both are correct within their domain. On your more specific question I can perhaps best respond by asking a further question. I told you the story of Phineas Gage and his radical change in moral, ethical and social behaviour after his accident. I mentioned the more recent reports by Tony and Hannah Damasio studying two people who received damage early in life to brain areas similar to those damaged in Gage's accident and who in their late teens manifested similar behaviour problems to Gage. My question is, do you think that these case studies indicate that in some instances the direction of causality is clear? I think they do.

The other point I flagged up at the end, and this is relevant to your question, is that most of the evidence I put up was from a "bottom-up" approach – you look at what's happened when the brain has gone wrong, either if you've done it experimentally if you're using animals, or with accidental damage with humans, and you look at the changes in mental life and behaviour that follows. What I called "top down" research is harder to do. By this I mean studies of the effects on the brain of what we habitually think and do. That is the other side of the coin, and if the brain is as malleable as it would appear, then we have really hardly begun to take that seriously.

Relevant to your point is the study of Alzheimer's patients I mentioned which was reported by Bonaiuto and his colleagues in *Neuroepidemiology*, 14, 1995, pp. 101-9 and in *Archives of Gerontology and Geriatrics*, 20, 1995, pp. 105-13. I believe it has now been replicated in several countries and the same result is coming out in each place. So what is happening? Answer, we don't know. What it seems to me to suggest again is that the top-down effect of

what you do with the neural substrate seems to be having some very long-term effects.

**Michael Harris:** So far as I am aware, the Bible tells us that we are created in the image of God, however we interpret that. God is seen as a being in relationship, Jesus, with the Father, with the Holy Spirit. In that sense we are created to relate not just with God but with each other as in the first two commandments. Might this not provide a solution to the Capgras patients who, as you discussed, might just be locked in. They are still created within the image of God and that is what defines them as unique from the rest of the animals in the created order.

**Malcolm Jeeves:** What defines continuing respect and love of others is what I called the "Jesus narratives". It is not because people have got a soul, but because He loved people from all these different groups of society, that is the motivation for us to follow in the steps of the Master. The motive of the Jesus narratives is the essential thing to me.

*The discussion ended here*

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