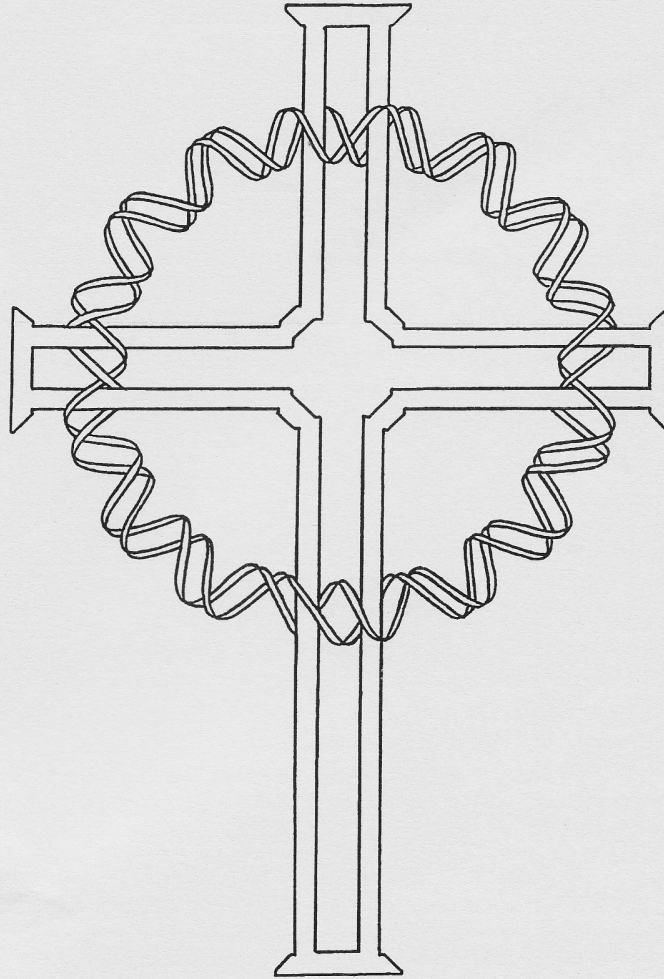


**SOCIETY OF
ORDAINED SCIENTISTS**



BULLETIN

Summer 2017

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From The Editor

Greetings and welcome to the Summer edition of the Bulletin. I was unable to be at the gathering this year – I expected to be on the Norwegian fiords but sadly Stella, my friend had an intracranial bleed the week before so I neither went on holiday nor to the gathering! Thankfully she has recovered quite well.

We have a new Warden who has written a letter to you all. The Gathering was blessed by have Dr David Thompson and we are grateful that he has allowed us to publish his addresses in this Bulletin. We also have the Sermon that Keith preached during the Gathering and some extracts from the Sermon of Bishop David.

We give our warmest congratulations to Robert Nelson who was awarded an MBE for his tireless work with the homeless. Geoff Turnock is offering a 'bargain' book of sermons 'From Laboratory to pulpit'.

We have an article by Martin Naylor, one of our Associate members entitled 'Creation and Evolution: faith and science reconciled.'

While Roger Pullin was far from his home he gave a talk to the Northern Chapter and has asked that it might be available for us all. It is entitled 'Body, Mind and Soul: What Are We Made Of?

Lucas Mix has contributed an excerpt from the book: *Thinking Fair: Rules for Reason in Science and Religion*.

This Bulletin is always a bumper production but I shall hope to produce another in the Spring so please keep writing the papers, reviews and news so that we can have two bumper copies per year!

Letter from the Warden

Dear Friends

This year's Gathering was, for me, an exhilarating experience – not least, of course, when Keith placed the Warden's stole around my neck. However, exhilaration also had occurred even before that moment. The reflections we were offered this year were fascinating and insightful themselves but a moment of revelation came for me in our small groups discussions.

Over the years I have been struck, during personal discussions at Gatherings and Chapter meetings, by how many of our members have experienced an encounter with God which reshaped their lives. This summer, in our small group about half our number recounted a story of their experience of God speaking to them directly. Further, it often related to their call to ministry. In some cases this was all the more surprising because it occurred before they had even become a Christian! In my own case, though I was a Christian, I confess that I was not entirely positive about the role of priests, often wondering what purpose they really served, so it still came as a shock.

In my individual conversations with members over the years I have often been struck by the need to make sense, not only of the event, but the whole nature of our relationship with God. This need was

echoed in the stories shared this summer. It is perhaps true for all humans but it did seem that as scientists we felt an additional pressure to make sense of the data before us, even if it was entirely subjective. Earlier this year, in my role as hospice chaplain, I facilitated a chaplaincy training weekend with the Pastoral Care Department of the Humanist Association. As chaplains we are all required to deliver compassionate care to everyone we meet, and, as such they were very keen to have a deep and sensible conversation with someone of faith, especially someone who, like them, professed to trust in reason and science. When asked why more was needed my response was that these two strands, even together, did not fully match or contain my experience of life and the world; both felt and observed, and I needed more. For me, believing in God, because of my life experience, was and is a rational conclusion – and even more, not to do so would feel irrational.

Thus, it was wonderfully reassuring and affirming to be with you all this summer; people who embrace both the rational and the mystical. As a gathered people who value reason and science, for whom both are significant in our lives, yet we recognise, perhaps because of encounters with the Divine, that there must still be more, and through faith and ordination, express that in our lives too.

On a lighter note, one of the challenges of interacting with God is the need for discernment. Was an event really of God, a coincidence, wishful thinking or a mental aberration? Just two days ago, in Liverpool for the first time in my life, imagine my surprise, whilst reflecting on chance encounters with the divine, who should be leaving Liverpool Cathedral as I arrived but Robert Nelson and family. Thirty seconds earlier or later and we would have missed each other. I am confident that this was not a mental aberration, but was it coincidence or divine guidance? Does it always matter? Divine gift or random chance, we should simply enjoy the moment and if it is a moment shared then so much the better.

May God bless you all,

Stig

Address by the retiring Warden, Keith Suckling, at the SOSc Annual Gathering, Cloverley Hall, June 2017.

This year SOSc is 30 years old. This is a good age for a dispersed community such as ours. Many have a much shorter lifespan. We celebrated 25 years when I became Warden, so now it seems a good time to take stock and review the journey we have all shared.

The Society was founded as a traditional dispersed community for the mutual support of ordained scientists. We have grown from around 30 full members to nearly 200 members and associates. Going from east to west, the membership stretches and has stretched from Australia and New Zealand, through the Philippines, Ukraine, Sweden, the Netherlands, Scotland, England, Wales, Ireland, Canada and the United States. By following our rule of prayer, we are aware of everyone on a regular basis. Think of the impact of 30 years of focussed prayer by our members, reinforced for many of us by meeting at the Gathering and Chapter. Over recent years we have made sure that we do not forget our deceased members, as we remember them each year at the Admissions Eucharist.

This is not the place for a detailed historical account. I have other plans for that, but it is worth recognising the substantial expansion of the membership. This has had a number of consequences. Perhaps most regretted by long-term members has been the necessity of finding new venues for our Gatherings. Launde Abbey, a spiritual home for many, finally became too small. We continue to search for and try alternative venues, as we are doing just now. The development of the North American Province was a very significant step and it has highlighted the importance of the category of associate membership. Simple geographical reasons prevent the Province from holding meetings more frequently than every two years, and even then travel is a major factor, so being able to admit people as associates at any time provides an essential route into the community. What is always striking is that new members are delighted and excited to join. We are stimulated by their

enthusiasm. Beyond our membership, people who hear of us for the first time, usually assuming the received conflict narrative, are simply surprised that we exist at all.

In society at large we have seen a growth in aggressive atheism, in challenges by false philosophy and superficial theology, now perhaps somewhat reduced, and now more recently both in the UK and in the USA an emergence in political circles of a very disturbing dominance of irrationalism. It seems to be a paradoxical victory and playing out of postmodernism. We all know what I am referring to. Suddenly some of our greatest secular critics find themselves in the same position as ourselves, seeing good evidence rejected in favour of a prejudiced and incoherent world view. For our part, we know we don't have all the answers (and there are good scriptural and theological reasons for that) but at least we can say that we share a world view that is well-tested, prepared to evolve and provides a coherent narrative.

How should we respond to this new situation as we enter our fourth decade? As the over-imitated posters say, 'Keep Calm and Carry On'. Keep the cycle of prayer. Keep coming to Gatherings and Chapter meetings wherever possible. Take the opportunities to tell people about us and who we are. My experience is that once we are heard about, we are not forgotten. One of the senior clergy in the Aberdeen and Orkney Diocese heard about the Society when I told him I could not come to a meeting that he had called at short notice because I was going to a Scottish Chapter meeting in Edinburgh. He sounded impressed. Every time he saw me after that he chuckled to himself and said, 'ordained scientists!' We have a story to tell and it is time to pull it together, to look back and look forward. More about that at the AGM this evening.

So what are we? We are a community. We are not an army or a movement. They have campaigns. We are not an academic society. We participate in them, but we are different: a community shares. a community supports. Like the early church, people see it and wonder about it. A number of years ago at Scargill I coined this phrase in response to the demand for evidence on the compatibility of science and faith: '*we are the data*'. It's not a theory or a philosophical answer to complex questions, which are hard to define anyway. It is simply us, ourselves and our common calling. Let us pray that God will continue to lead new members to this Society and that through our sharing of prayer and fellowship we may continue to support each other, our faith and our science.

Extracts of a Sermon preached at the Gathering 2017 given by Bishop David.

Douglas Adams, in his Hitchhikers Guide, tells the story of a huge computer, which in a short time begins with "I think therefore I am" and deduced the existence of income tax and rice pudding.

Adams appeals to a particular view of science as driven by logical necessity, one seen again recently when another atheist entertainer argued that 1000 years after an apocalyptic event science would have reinvented all that had been lost whilst previous religions would be totally forgotten. This view of science plays to the old image of the man (or just occasionally woman) in the white lab coat, holding a test tube. In the convention, that individual would have superhuman intelligence combined with the emotional and artistic capacities of an earthworm.

No doubt there are some scientists who are so coldly rational that they are capable of committing any conceivable act in the pursuit of their studies. The Nazi trials of 70 years ago threw light on some grave abuses of human rights that took place, in the name of science, in camps such as Auschwitz. But that is not the way that science as a whole progresses. Outside the world populated by Adams's fictional hitchhiker, there is no such thing as a truly rational rice pudding.

The scientific task is not just logical, it is aesthetic, artistic, moral and spiritual. Which is where you and I come in.

I discovered early on in my own research career, that the answers we find depend hugely on the questions we ask. It often takes far longer to find the right question than to answer it. Our choice of questions is determined to a large extent by factors such as what we think will be useful, what appears to have innate beauty, what may lead to morally good applications, and what funders are prepared to pay for. All of these are issues I face just as much in my day job as a bishop, and indeed they are matters we all face as Christian ministers.

So how can we use our grounding in both the fields of faith and science, so as to be a priestly people for the good of humankind? Rather than generalities, let me briefly look at three specific areas, but then the principles can be applied more widely.

Medicine and pharmacology

Statins and the CT scan. Why do I get offered a choice of treatment when many others don't?

Misuse of antibiotics, the tension between now and the future.

Manchester story, how nineteenth century scientists began to study the diseases and injuries of the working classes.

Climate change and human sexuality

How do we deal with politically or religiously driven minority research?

When is a consensus a consensus?

Particle accelerators and space probes

How much of the science budget should be spent on going beyond the obviously useful?

The true rice pudding is much more than the logical consequence of heating up plant seeds in liquid. It's a mouthwatering combination of flavours; it's a means of feeding the hungry; it's the use of a readily affordable crop that will grow well and cheaply in wet environments; it's a lifesaver for those with wheat intolerance. And for you and for me, it's something over which to offer thanks to God.

NEWS OF MEMBERS

Geoff Turnock

Geoff Turnock's Has produced a collection of Sermons '*Laboratory to Pulpit*' : *Sermons in Transition*. Geoff was ordained in 1987 having trained on the East Midlands Training Course and he began his non-stipendary ministry in a large suburban parish at Oadby in Leicester. After retirement from the University, he moved to Shillingstone, in the Diocese of Salisbury as a house-for-duty priest. Later in 2004 he and Brenda moved to Dorchester in Dorset where he was licensed to the benefice so that he could work on the Churches Together project for Poundbury. He was instrumental in building 'The Quiet Space'. His sermons span the whole of his ordained ministry with the emphasis in helping his people to appreciate the richness of the scriptures and to make connections with the theme of creation and redemption. I especially enjoyed the Good Friday addresses that he gave in Oadby 'Creation and the Cross' in which he emphasizes the cost to God of the cross and the links between creation and the redemptive power of God.

Geoff offers this book to SOSc members at £5 to cover postage and packing. Any money surplus to that will be divided between Christian Aid and the Children's Society.

Robert Nelson

Many congratulations to Robert Nelson who was honoured with an MBE for his tireless work with the homeless.



Robert and Dee outside Buckingham Palace.

ADDRESSES GIVEN AT THE GATHERING 2017 BY DAVID THOMPSON

ADDRESS 1. THE ECHO

Austin Farrer wrote:

‘If we believe in God at all, it is absurd and impious to imagine that we can find him out by our own reason, without his being first active in revealing himself to us. Therefore all our discovery of him is self-manifestation, and all rational theology is revealed theology. And this is the second proposition: if God does reveal himself to us, we cannot acknowledge or master what he reveals without the use of reason. Therefore all his self-manifestation is also our discovery of him, and all revealed theology is rational theology.’

INTRODUCTION

Firstly a word to thank Keith for inviting me to give these addresses. We have worked together as friends and colleagues for over a quarter of a century. My scientific credentials are sparse. It did however begin promisingly in a private lab in a spare room in which my older brother (then about 13) stored substances such as sulphuric acid, mercury, nitric acid, caustic soda- need I go on! I recall being warned of the possible consequences if I didn't ease up a bit as I vigorously stirred a cocktail of sulphur, carbon and potassium nitrate in a mortar and pestle as we made fireworks. My older brother was at Cambridge shortly after the debate between C.P Snow and F.R Leavis in the 1950s about the two cultures. Whether we apply our minds to science, philosophy, theology or the arts, however, we are using the same little grey cells, but as Bishop Wilkins (of Chester) suggested in the eighteenth century, there are varieties of evidence each of which needs to be approached differently. According to Wilkins evidence might be physical, mathematical or moral; to which I would add spiritual.

THE ECHO

As the war drew to a close we were in the Yorkshire Dales living with a farming family on the banks of the River Wharfe. One day as I set out across the fields towards water barn, I knew that I knew everything there was to know about my own small world and was master of all I surveyed. Shortly after this I must have made some long, since forgotten, discovery. I stopped in my tracks turned around and called to my brother to join me.

“Michael, Michael,” I called. He didn’t appear but I could distinctly hear him calling back, “Michael, Michael.” I thought he was winding me up. After going round the same circle a couple of times I began to feel agitated. In high dudgeon I marched back to the house to complain about my twin’s mocking behaviour. I found my mother at the kitchen sink, and complained bitterly about my brother’s response. She smiled and carried on washing up the dishes as she explained that what I had heard was an echo. I was mortified. One moment I had been master of all I surveyed, the next I slunk out of the kitchen with my tail between my legs and went into the farmyard. I chose the shippon to see if my mother was right. I called out and found the walls calling back: my first lesson in physics. It was also the first occasion I recall being convicted of pride and knowing the joy of sin forgiven.

The memory of this moment is vivid. I can still see the meadows at the foot of Simon’s seat where I stood and my young mother smiling at the kitchen sink. I recall the lonely walk to the shippon with my tail between my legs and the love and warmth of my mother’s smile which had made my humiliation bearable. It eased the path of discovery as I set off across the farmyard to experiment with the echo. Although I couldn’t have used this language at the time I realised that my self-esteem was laced with the sin of Adam. Had this not been the case I would not have felt so mortified when I came to my senses.

REDUCTIONISM

Although I fully apprehended what had taken place such apprehensions could hardly have been articulated by a four year old child! Nevertheless because they were subsequently capable of being articulated they were intellectual - the kind of truth which reductionist theologies tend to overlook. Take for example the metaphysical reductionism of Hegel. Surely such words as ‘world spirit’ and ‘ground of our being’ are deism in disguise. Moreover could my experience of conviction and forgiveness be reduced to ratiocination or emotion? A secular ethic derived from the notion that what is right and wrong can be ascertained solely by the exercise of the little grey cells hardly accounts for my four year old experience of an early awakening of conscience - an experience capable of subsequent rational exploration. If on the other hand religion is reduced to emotion or feeling (viz Schleiermacher) cultured despisers may set aside anything handed down by the saints they don’t find congenial. Further, too much focus on feeling and emotion is an easy way to side step all manner of difficulties in doctrine. God, as Mother Julian saw, made the world, loves the world and looks after it. It is this confidence in the creative love of our heavenly Father which enables us to embark upon a way of living which might best be called ‘the martyrdom of love.’ It is concrete evidence that we are striving to live such a life which empowers our ministry.

Bishop King said,

‘A person’s distinctive faith and conduct gives life and power to what they preach. This is not about what we feel but the core of who and what we are and the mysterious paths of our searching for God that have shaped us and compel us still. If we dare not expose our own searching for the living God, we will not entice others to embark upon the only exploration that makes the difference between life and death.’

THE ILLATIVE SENSE

Anselm wrote ‘Credo ut intelligam.’ Michael Ramsey answered an earnest question about the role of philosophy after a pregnant pause with the words “Philosophy is the handmaid of religion.” In the ‘Development of Christian Doctrine’ John Henry Newman suggested that Christian doctrines should be carefully examined to learn more both about the treasures within and applications for the here

and now. Further, in the 'Grammar of Assent', he considered the subjects of logic, notional and real assent, before moving on to certainty and certitude. The illative sense is the capacity to make judgements, which although not contrary to reason, aren't dependent upon reason alone. For example, we know who is our mother, we know when we have fallen in love, or how we feel about someone the moment they walk into the room. This faculty has been likened to the way jurors alight upon truth in a law court. Such insights might be immediate or alternatively, the product of a growing awareness. Certainty, it might be said, is to be found in logic, whereas certitude is concerned with relationships. Professor Ian Ramsey spoke about, penny dropping moments: for example when we see a multisided polygon become a circle as more and more sides are added.

THE OLD ENEMY

As I walked across the farmyard, then, at about the time of the Normandy landings my illative sense came to life. It was a penny dropping moment. I saw that my legitimate self-esteem was infected with pride.

C. S. Lewis wrote,

'It is a terrible thing that the worst of the vices, Pride, can smuggle itself into the very centre of our religious life, but you can see why. The other, and less bad, vices come from the devil working on us through our animal nature. But this does not come through our animal nature at all. It comes direct from hell. It is purely spiritual; consequently it is far more subtle and deadly. For the same reason, pride can often be used to beat down the simple vices. Teachers in fact often appeal to pride, or as they call it self-respect, to make us behave decently; many a man has overcome cowardice or lust, or ill temper by learning to think that they are beneath his dignity - that is, by pride. The devil laughs, he is perfectly content to see you becoming chaste and brave and self-controlled provided, all the time, he is setting up in you the dictatorship of pride - just as he would be quite content to see your chilblains cured if he was allowed, in return, to give you cancer. Pride is spiritual cancer; it eats up the very possibility of love, or contentment, or even common sense.'

Dom Gregory Dix wrote,

'The irony is despite the encouragement of this self-regarding attitude by the superstores and the media - if we church people appear to be self-regarding we will be rejected and ignored - people who have been willing to respond to God in a dying and rising kind of living reflect its fruits in their immense humanity in which they are so much at ease with themselves and with others. A strong and radiant faith radiates from them.'

The key to this humanity is humility.

ADDRESS 2 THE KNOCK ON THE DOOR

Michael Ramsey wrote,

'It is doubtful if any of us can do anything at all unless we have been very much hurt. That is the belly of the paradox into which baptism places us in this way of living through dying. If we really are Easter people we must take on board self-sacrificing love because that is the triumph of Easter.'

There are moments we never forget. I remember the flash and noise of an exploding bomb in the early days of the war in which a curtain rod became an arrow which landed on my brother's pillow inches from his ear. I remember where I was when President Kennedy was shot. I was sitting in the same chair in the same room studying a week or two before this dramatic event in 1963 when Gordon Phillips the Anglican chaplain of London University knocked on the door. My twin brother, he told me, had been diagnosed as suffering from schizophrenia, certified and admitted to the Retreat Psychiatric Hospital in York. "There is nothing you can do about it," he said - "get on with your theological study." He was right. This was the voice of reason. Humanly speaking there was nothing I could do. "Remember Phillips's law," he continued, "Either things get better or they get worse and in either case there is not much you can do about it." I was grateful for the advice.

After a number of troubled years my twin brother had settled at Art school but gradually became more distressed before walking out and locking himself up in his room just before his final examination. Treatment in hospital included multiple sessions of shock therapy, (no anaesthetic) being pumped up with insulin so that he looked like the Michelin Man and treated with chlorpromazine. When I visited he was katatonic. When he was discharged (because the funding had run out) he was so spaced out that he had to find his way to the nearest bus stop by running his hands along the sides of the walls. When a quarter of a century later I described his therapy to the principal of the institute of social psychiatry, Professor John Wing, he looked at me askance. Although the words moral turpitude have fallen into disuse, the sentiment is seen in the sunny optimism that cognitive behaviour therapy or counselling is all that is required for the mentally ill. Underlying the social niceties was either the sense that my brother was a lunatic or that all he had to do was to pull himself together. After almost two decades, this attitude was successfully challenged in an industrial tribunal where after more than a decade of being an outcast it was decided that he was incapable of work and awarded benefits. Like countless other families we had gone round and round the 'if onlys.' If only he could find a job which suited him? If only he could find a girl friend? If only he could leave home and move into a flat? But it wasn't that simple. A change of circumstance might ease the situation, but his best efforts were only of marginal assistance. He needed help. Although, following a series of hospital admissions in the 1960s, chlorpromazines continued to be a crutch, they didn't effect a cure. The love and care of a partner and the recognition that he was entitled to benefits did however help him to enjoy many years of partial remission.

ROUND TWO

A quarter of a century after the knock on the door my older son was diagnosed with schizophrenia. It followed a dramatic moment when he was deluded by a paranoid apparition during a family holiday in Cornwall. What became apparent over the years was the difference between the innate potential to become mentally ill and the triggers which light the fuse. The condition of both my brother and son can't be reduced to biochemistry, diet or genetic history, nor can it be wholly separated from bipolar disorder, depression, autism and a variety of other ailments. Moreover, the inescapable spiritual and moral dimension of mental illness surfaces as families affected wrestle with the question 'Mad or bad?' It soon becomes clear that underlying the attempts to answer the question 'What is going on?' lie untested assumptions. Presuppositions, self-interest and reductionism need to be set aside. The mad or bad question arises from the dilemma, 'Why can't the sufferer behave differently?' How is it that what might at best be called vile behaviour can melt away in a moment when a neighbour calls? For many it becomes apparent that the search for a quick fix is naively optimistic. Nevertheless as a family we learned that the social and spiritual climate is also important. For example the discord in the family when my brother became ill did nothing to help, whereas the harmony when my son became ill was therapeutic. Moreover because we knew what we were dealing with second time round we were better able to cope.

ACCEPTANCE

The acceptance and recognition that my twin brother and older son were mentally ill and that their problems wouldn't go away in five minutes was living in truth. The recognition that the grace and love of God were manifested in countless ways changed everything. We also learned that too much social stimulation e.g. family Christmases or too little stimulation, such as sitting all day in a back bedroom looking at the wallpaper, were equally unhelpful for the sufferer. Moreover, although R. D. Laing's 'Divided Self' was mistaken in the excessive blame it attached to families - it is hardly surprising that dysfunctional families contribute negatively to a sufferer's well-being. Sin and evil are the poison in the pot - not only afflicting sufferers, but exacerbating the frailties and inadequacies of families and carers. Although loving surroundings aren't a magic bullet, they certainly help and together with appropriate therapies play an invaluable role in the well-being of the mentally ill. So too does prayer and ministry.

INTEGRATION

Mental illness, then, is the consequence of a complex mix of events none of which tell the whole story. In order to paint the full picture it is necessary to take a comprehensive view. As we consider body, mind and spirit we see that it isn't always easy to tell where one ends and the other begins. Sickness affects the whole man not just part of him. Even a headache makes it difficult to pray, puts us off our lunch, or makes it impossible to read. Medication, mind-management or going down to the gym are only part of the cure. The spiritual dimension is also crucial. "If you have been raised with Christ, seek the things which are above for you have diedand your life is hidden with Christ in God. Put to death, therefore, whatsoever in you is earthly... clothe yourselves with compassion, kindness, humility, meekness and patience." (Colossians 3)

THE NSF

In 1970 I joined a small group who saw the need to build support for caring relatives at a meeting at the Welcome Foundation in Euston Rd. It was agreed to take preliminary steps to found the NSF - today 'Rethink Mental illness'. For three decades I discovered more about the importance of the words 'The truth will make you free.' Part of that truth is that the spiritual dimension of mental illness should not be ignored. Part of that truth is that the words 'mentally ill' are as misleading as the word 'mad' because what happens in the mind is inextricably intertwined with what is going on in the body and the spirit.(I came across one young man who was diagnosed as suffering from pathological jealousy.) Moreover, pride, envy and anger are especially fertile soil for incubating mental illness.

CHRISTMAS EVE

The risen Christ is with us and in us. He illuminates our minds. It was Christmas Eve shortly after my brother had been discharged from hospital in 1963. He had been disruptive and had gone missing. My parents had sought refuge in a miserably cold hotel in Harrogate. Alone in my hotel bedroom and distraught by my brother's deteriorating condition I knelt on the floor and cried out to God in distress. What came to me were the words 'Don't you think that I love him much more than you do.' A burden fell from my shoulders as I realised that I had been trying to go it alone. In my distress I had forgotten God. Pride had once again reared its ugly head with what I have called 'The me and my ministry problem.'

Proverbs 3 : 3ff.

'Let love and faithfulness never leave you; bind them around your neck, write them on the tablets of your heart. Then you will win favour and a good name, in the sight of God and man. Trust in the Lord with all your heart and lean not on your own understanding, in all your ways acknowledge him and he will set your paths straight.

ADDRESS 3 HOW DID YOU REACT?

TRUTH AND VERIFICATION

On the day that I discovered the echo three things happened. First I had fallen into the trap for fools-reductionism. Not only did I not consider the evidence, I didn't think there was any evidence to consider. Second, when I came to my senses I conducted my first scientific experiment. Thirdly, although I couldn't put it that way at the time, I saw that conscience can't be reduced to rational choices even though the intellect informs and educates our understanding of right and wrong. In later years, as I came to terms with living close to mental illness I realised that the mad of bad question was blighted by reductionism. The very words mental illness place undue weight on the mind whereas not infrequently the spiritual dimension isn't taken sufficiently seriously.

Irenaeus proclaimed 'What he did not assume he did not redeem.' God is present and active in our total humanity. God is in every part of us as well as everywhere else. This is why I have always had a soft spot for Bishop Berkeley. Descartes realised that innate ideas should be tested by rigorous

enquiry; Locke, that the employment of the scientific method should play an essential role in the pursuit of knowledge.(nihil in intellectu quid sunt non prius in sensu) David Hume warned against woolly thinking. (post hoc sed non propter hoc) But I always liked Bishop Berkeley's supposition that everything was held together because God kept a close eye on everything all the time. His response to those who questioned whether things existed when not perceived is summed up in the following lines.

My Lord,
Don't you think it is odd
The sycamore tree continues to be
When there's no-one about in the quad.

Reply
Dear Sir,
Your astonishment's odd,
I'm always about in the quad,
That's why the tree continues to be
Signed,
Yours sincerely, God.

The Gospel tells us that keeping a close eye on all things included sending his beloved Son who bequeathed the Holy Spirit who leads us into all truth.

GRACE

While a student I set out to do research on the topic of original sin. After a few months I threw in the towel, but during my studies I had been persuaded that the heresies of Arius and Pelagius are still with us. By failing to grasp the significance of Jesus Christ being truly God (that there was not a time when he was not) as well as truly man, Arius, like the teachers of the law, was effectively calling Jesus Christ an imposter - claiming to have power and authority which belonged to God alone. (Mark 2 : 8ff) Similarly Pelagianism came dangerously close to stoic altruism for it didn't take grace sufficiently seriously and proclaim with St Paul that that grace is life changing rather than a mild tonic.

By the end of the year in which I went round in circles wondering what the word concupiscence really meant I went to see my supervisor Dr F. L Cross. He persuaded me to study liturgy. He chuckled as he told me that this would involve travel around monasteries and libraries all over Europe and gave an account of his own journey across the Alps on an old bicycle. He also ensured that I had access to study the most important mss. in the Vatican library. During this period I discovered things about inspiration which profoundly affected my ministry. Let me give two examples. The first was the way that St Augustine urged the cognoscenti not to mock the humble efforts of the less educated clergy as they composed their own prayers for the Mass. Secondly in the fifth century absent-minded Bishop Sidonius would leave his libelli behind so he improvised the whole service. Such was his charisma that crowds were drawn to his celebrations.

HOW DID YOU REACT?

In 1960 I prayed in tongues. I didn't know what had happened and never spoke about it. Over a decade later while writing an article for the parish magazine I found myself wondering about speaking in tongues. So I went to the bookcase and found Dr F. L Cross's 'Dictionary of the Church'. I looked up 'speaking in tongues' and it said see 'glossolalia'. I looked up 'glossolalia' and it said see 'speaking in tongues'. Warily I sat back in my chair thinking 'Well that wasn't much help.' Immediately, I found myself praying in tongues for the second time. Later, while at prayer, I was challenged about keeping it secret- not just the speaking in tongues- but the joy in the Holy Spirit. Recently, while reading the prayer for the infilling of the Holy Spirit in the Confirmation Service in

the 1928 Prayer Book I noted with delight that it concluded with the words, 'But above all fill them with holy love.' When I hesitated to speak out about the charismata I was encouraged by the fact that St Paul had plenty to say about gifts and the graces. One day, two decades after my ordination, it came to me that I was called to be a fool for Christ's sake. So it was that I played a small part in the charismatic renewal. I was well aware that this wave of enthusiasm, the Pentecostal movement, was like the power of the mighty waters of the Niagara Falls, which, far below, are safely channelled by high banks on either side - in the same way that Pentecostal power may be cloistered and channelled by the received wisdom of Scripture and the Christian tradition.

In 1981 I attended the Anglican Renewal Ministries conference in Swanwick. In a quiet moment I went to the chapel to pray. While there, it was as if I saw a vision. I was taken back to a time just after the war when we had returned to Essex from the Yorkshire Dales. My mother had suggested that I sit on the window ledge to keep watch over the village green while awaiting my father's return. During the war he served in Iceland and India and only came home for one or two very short periods of leave. I didn't know what he looked like. As I waited I was full of hope. After all we would be a family again! As I pondered the scene it seemed as if I was asked a question: "What happened next?" After a moment's reflection I replied. "I don't know, it's dark, I can't see." The next question, "Why can't you see?" I replied, "I suppose I was disappointed." Throughout I was deeply conscious of the loving presence of God and thought that the communication would end with words of reassurance. After all I had done my best to be a loving son and brother! It wasn't like that at all. I was taken by surprise by the final question "How did you react?" After a short and intense silence I knew that deep within - behind the gritted teeth - I had been bitter and resentful. I realised that I had dealt with the pain of post war trauma with a stiff upper lip. Having acknowledged my bitterness I was bathed in the sheer joy of sin forgiven. I shed buckets of tears and continued to do so for weeks and months whenever I was alone. Before then I don't think I had shed a tear since I was a little boy. It is good to note that spiritual tears are different from emotional tears. They pour down the face as if a tap has been turned on. I remember seeing such tears streaming down my mother's face as she walked up to receive communion. As well as tears of sorrow and joy I shed spiritual tears - which in the Orthodox Church are deemed to accompany the gift of the Holy Spirit.

THE SECRET PLACE

We won't hear God unless we sit light to what we expect him to say! For many years a theologian called John Baillie, who wrote a book about revelation, said that he thought that God never spoke to him because he expected a dramatic voice from heaven or the arrival of the Archangel Gabriel. It was only when he understood that God was not in the storm, the wind or fire that he began to comprehend that God communicates with the heart. As we still the mind and listen, we begin to realise that he communicates with us every day. He shines a light on our prejudices and unquestioned attitudes which play a bigger role in impeding our journey than we realise. In order to hear God we empty our minds of everything (forget, forget, forget) and pray that the Holy Spirit would shine the light of God's love into the hidden recesses of the soul, so that we see what needs to be done, secure in the knowledge that when God unearths the dross he also bestows his love, mercy and assistance. Conviction isn't self-hatred, scruples or fear of consequences - it is seeing the need to let go of unnecessary baggage so that we might enjoy a closer walk with God.

Psalm 4 : 4 'When you are on your beds search your hearts and be silent. Let the light of your face shine upon us O Lord.'

'I praise you Lord of heaven and earth because you have hidden these things from the wise and learned and revealed them to little children.' Matthew 11 : 2

ADDRESS 4 BE THERE

SEEING AND FAITH

Gordon Phillips wrote,

'We must not therefore think of the act of faith as a sort of remedy to cure a disease; nor is it merely a sort of weight thrown into the scales of truth by some person or persons unknown which enables us to come down on one side or the other. It is rather a transfiguring light, a transforming power which makes us see what we were not before and we would not possibly be without its aid. Perish the whole tribe of historians, theologians and philosophers, if it be not this! The tokens of this strange transforming power are to be found in the complex yet simple life of the people called Christians, who live a life which it is not possible to understand by any principles drawn solely from man's natural reason. Neither the economic principles of Marx, nor the psychological notions of Freud, nor the whole wealth of the world's attempts to understand its own, can throw any final light upon these astonishing people. And what might be missed in the familiar mass, from close proximity or over familiarity, can be seen pre-eminently in the specific type of humanity we call the saint.....but the ability to recognise the marks of holiness or the quality of coming from and belonging to God is itself the gift of God and derives its certainty from him alone.'

HOLINESS

Soon after I arrived in my last parish I found that I was invited to do some readings in a Christian musical. It went on a very long time but I was left with two memories. The first was that passages laden with condemnation from the Old Testament seemed to be the meat, whereas there was very little living water from the New. The second were words of a song, based on a verse in the book of Chronicles, "You shall be holy unto me for I the Lord and Holy." An unintended consequence that Martin Luther himself discovered and admitted was that his emphasis on justification by faith led to the neglect of good works which were replaced by a carefree blessed assurance. Blessed assurance is great but what next? The traditional answer is sanctification which includes the little way of St Theresa Lisieux -which might best be summed up as doing little things with great love. Good works include recognising that what we do day by day is for the greater glory of God. I remember suddenly seeing the significance of this one day when I was mowing the lawn. As Keble put it,

The daily round the common task
Will furnish all we need to ask,
Room to deny ourselves a road
Which leads us daily nearer God.

In a world in which we are urged to live our dreams, how much care do we take to discern where God wants us to be and what he wants us to do? Moreover, what does it mean to take up our cross daily? Even the saints struggle to find their way. St Theresa of Lisieux wanted to live her dream. She wanted to be a missionary serving overseas as a nurse or a teacher. In the event she contracted TB and was confined to her sick bed. Only after an agonising struggle did she find the cross she was called to bear. When the penny dropped she cried out "At last I have found my vocation, my vocation is to love." Her call was to love her carers, the elderly nuns who looked after her. This for a young woman, hardly more than a girl, was hardly living her dream. It was a call to the martyrdom of love. Her baggage was that her heart's desire was to get well and so be able to live her dream of being a missionary. Her vocation was to travel light, stay put, and love those who cared for her day by day.

SECONDING GOD'S PROPOSALS

Peter Marshall and Agnes Sandford both spoke about sealed orders. Day by day it is good to prayerfully discern what God requires of us. As often as not, it will be primarily our natural duties, such as going to work or caring for the family. But as we offer up the coming day, priorities might come into sharper focus, as we begin to see that amongst all the things we have to do, some are

indeed God's prime concern. Maybe two or three things will be highlighted in prayer. Maybe something may be drawn to our attention which had not previously crossed our minds. To pray 'thy kingdom come, they will be done' and really mean it is the way of holiness. For the quest for holiness is seeking to be united with God in love and in purpose. In practice, to be holy is to find out what God is doing and gladly join in. Such a quest might lead to surprising results. How else can we make sense of the sermon Pastor Wurmbrandt preached to his prison bars? All alone he preached in his cell, yet his sermon was heard across continents and one hearer was converted. Such evidence cannot be put in petrie dish. It would appear that there are more channels of communication than we generally suppose. God might choose any one of these through which to make himself known. However as with all communications it is necessary to exercise every tool of discernment and be wary of sudden inspirations which are like hoax telephone calls. If we are open to God we might not hear or see anything. Yet, if our heart is in the right place we might simply find ourselves in the right place at the right time and about God's business.

Symeon the New Theologian writing in the eleventh century said,

'Do not say it is impossible to receive the Holy Spirit. Do not say then that one can possess him without knowing it. Do not say, God does not appear to men. Do not say men do not see the divine light.'

BE THERE

In the late nineteen-sixties my twin brother was on the fast track to vagrancy. It was impossible to help him when we didn't know where he was. On one occasion I knew that he was in Huddersfield, but as he had given no address I had no idea where he was. At the time I was serving as a curate in a busy parish and there was little understanding of the severity of his psychotic illness (the prevailing view was that he had to pull himself together and that I should get on with the day job). I wasn't at liberty to jump into my car and drive to Yorkshire during the day to see if there was anything I could do. One evening I became aware that he was in deep trouble. I knew I had to do something. I realised that what was going on couldn't be waved aside as moral turpitude or simply suffering from emotional or psychological problems. I had a spiritual hunch that it was time to make a move. I said goodnight to my wife and children and drove from Solihull to Huddersfield through the peak district, while praying and wondering where he was and if I would ever find him. As I drove into Huddersfield I had no idea where to look. It was impossible to make enquiries at 2 am so I parked the car and began to walk round the streets. After about fifteen or twenty minutes I saw a broken and emaciated figure slowly walking down the road beneath lack lustre street lights. When I approached he stood motionless - a frozen statue. He couldn't or wouldn't speak so I walked beside him trying to persuade him to let me take him home. He walked on. After a while I realised that there was nothing I could do- I still hadn't discovered where he was living. As I had to be back for 7.30 am I eventually said good bye and set off for home. Almost fifty years later I asked him if he remembered that night. I don't remember his exact words but he told me that it had saved his life. Shortly after this visit I found him lodging and being cared for in a poor home on the outskirts of the town in which no English was spoken. I left at dusk. As I looked out across the beloved hills of our childhood I thought to myself, 'There is the kingdom of God,' and pondered the fact that my brother had sought help from social services, the church, the benefit office and had been turned away for perfectly rational reasons. (So much for the greatest good for the greatest number) Strangers within the gate were caring for him.

Be there. Be a praying presence and listen to the Spirit: 'For the Spirit blows where it wills and you do not know where it is coming from or where it is going.' The Holy Spirit enables us to testify by telling the people the great things God has done - not just two thousand years ago but today, in our own homes, in our own churches and in our own lives.

Lord make us instruments of thy peace,
Where there is hatred let us sow love,

Where there is injury pardon,
Where there is doubt faith,
Where there is despair hope,
Where there is darkness light,
Where there is sadness joy.
O divine master grant that we may not so much seek to be consoled as to console,
To be understood as to understand,
To be loved as to love,
For it is in giving that we receive,
It is in pardoning that we are pardoned
and it is in dying
That we are born to eternal life.

CREATION AND EVOLUTION: FAITH AND SCIENCE RECONCILED

A PAPER BY MARTIN NAYLOR

More than a decade of research into the genetics and biochemistry of viruses and plants at Oxford and Cambridge Universities (Naylor M, 1998, 2002, 2005, 2006) has led me to conclude that viruses are evolving. As an ordained Anglican Priest ministering in the Diocese of Leeds, I have faith in the existence of God who loves us. In this paper, I seek to bring together Darwinian Evolution and Creation, in a marriage of Science and Religion.

Darwinian evolution & Fine-tuning of our Universe

Charles Darwin, considered by many to be the father of Biological Evolutionary theory wrote:- "It is impossible to conceive this immense and wonderful universe, including man with his capacity of looking far backwards and far into the future, as the result of blind chance or necessity" (Darwin, C, 1958)

A decade of Biochemistry and Molecular Biology study and research has taught me the importance of open-minded exploration without prejudice. The design of DNA is beautiful and elegant, and it is difficult to get over the ingenuity and complexity of the molecular machinery used to copy the DNA code. All this elegance and beauty springs forth from unchanging laws of physics and chemistry that were a joy to work with during my time as a research scientist. Darwin's law of Natural Selection and Biological Evolution have been scientifically proven, and this is compatible with my faith in a world created by God.

Viruses have genomes made of DNA or RNA. I have observed the genetic code of viruses changing and evolving, as the short and rapid life-cycle of viruses allows changes in genetic code to be analysed with relative ease. The smallest, simplest self-replicating biological system is RNA and evidence points to the very earliest self-replicating molecule emerging on primordial earth as having an RNA-like structure. Though the hunt is still on for fully self-replicating RNA molecules, recent advances support the notion of an 'RNA World' with RNA or something chemically similar as the first living substance. Emergence of life via the 'RNA World' scenario is a hot topic of current research.

Denis Alexander, a molecular biologist and an author on science and religion writes 'evolution is far from being a chance process. It is tightly organised and highly constrained' (Alexander, D, 2008: p322). Looking at the constraints of protein evolution, Weinreich, D.M (2006) concluded that much protein evolution is reproducible and predictable (Alexander, D, 2008: p324). The highly ordered universe we observe is consistent with the basic presuppositions of theism. It is not inconsistent with a universe under Divine control (Alexander, D, 2002)

The human eye has been a focus of attention by advocates of both creation and evolution. What is remarkable is that the eye has evolved more than once, separated by time and space. The eye, though beautiful and remarkable is not perfect and thus far the eye has not been useful in arguments seeking to prove Intelligent Design. The physical environment that led eyes to evolve, separated by time and space, the predictability of eyes evolving, is key to our understanding of a Universe created by God.

A question we need to ask is why on earth there are laws that lead to ever increasingly complex biological systems (including the human brain) evolving, and becoming self-aware in an unusually stable Universal environment. 'It as if the laws of nuclear physics have been deliberately designed with regard to the consequences they produce inside stars.' (Hoyle, F, 1959).

In his book *A Brief History of Time*, Stephen Hawking raises the question: *What is it that breathes fire into the equations and makes a universe for them to describe?* (Hawking, S, 1988: p174)

Our universe may appear at first glance bleak, cold, dark, vast, and purposeless, yet our universe has to be this vast and old, for elements such as carbon and oxygen to be made and for us to emerge. It has been estimated that if the universe contained only the number of stars that are in the milky way (our galaxy), it would have expanded for only one month. Our universe needs its 10^{22} stars in order for us to exist (Alexander, 2002). Our universe has to be big, old, cold and dark for carbon-based life to evolve.

Quoting Hawking, Boslough writes "The odds against a universe like ours emerging out of something like the Big Bang are enormous. I think there are religious implications". (Boslough, 1985)

Is our Universe fine-tuned for life? It is now widely accepted that the finely tuned values of a few physical constants are critical for life as we know it to have evolved. A few examples are listed below:

The cosmological constant is fine-tuned to 1 part in 10 to the power 120. Alter the constant and it would be impossible for us to have evolved.

If carbon, the stable building block of life is to accumulate, beryllium and helium have to stick together easily, and carbon must have a very specific nuclear resonance. If the resonant nuclear energy level of carbon, helium and beryllium were 0.5% different, no carbon would be around today, and no carbon-based life would be around either. No other atom comes close to carbon in its ability to form large metastable molecules.

Omega is the relative density parameter of the universe. If $\omega < 1$, the universe will expand for ever. If $\omega > 1$, the universe will eventually collapse. If omega was slightly too high, or too low just after the big bang; the universe would not exist, or would be dead and lifeless.

Eta is the weak nuclear force which is 10^{-7} . If eta was greater than 10^{-7} , or less than 10^{-12} , galaxy formation would not occur.

Two options arise:

acceptance of a fine-tuned Universe that has been created,

acceptance of a multiverse theory whereby we are one of many many Universes arising from many, many big-bangs, some of which may lead to complexity and the evolution of life; this theory has been made accessible to a wide public audience brilliantly by Prof. Brian Cox. (eg. Cox, B & Forshaw, J, 2016).

The laws of the universe are remarkably felicitous for the emergence of richness and variety (Davies, 1992). Stable, organised, complex structures require laws of a very special kind. These special laws have resulted in us living in a 'biocentric' universe. Why don't conditions change from moment to moment in a complicated or random way, or even abruptly cease to exist? The real universe is highly ordered and we need to ask why it is so ordered. The causal order of the universe, with well-defined

laws of physics that don't change, doesn't follow from logical necessity. i.e. it needs an explanation. There is just too much structure and order at the microscopic level.

"The preeminent mystery is why anything exists at all. What breathes life into the equations of physics, and actualized them in a real cosmos? Such questions lie beyond science, however: they are the province of philosophers and theologians." (Rees M.J, 2001). The enormous usefulness of mathematics is mysterious and there is no rational explanation for it. The language of mathematics for the formation of the laws of physics is a wonderful gift.

We can ask two questions:

Why are we able to consciously observe and understand our mathematically elegant universe?

Why has our universe grown its own self-awareness?

It has been estimated that late in this century, a computer the weight of a laptop today could provide 10^{16} times more powerful than all human brains put together today (Kurzweil, R, 2005). Human computing power (calculations per second) has not changed in two centuries, whereas non-biological computing power is growing exponentially. 'By the 2040s the non-biological portion of our intelligence will be billions of times more capable than the biological part'. 'Biology will never be able to match what we will be capable of engineering, now that we are gaining a deep understanding of biology's principles of operation.' (Kurzweil, R, 2005).

Though not necessarily advocates of traditional Christian theism, Paul Davies and astronomer Fred Hoyle have swung to the view that science does not disprove God, but exactly the opposite (Wilkinson, D, 2001). A deep understanding of the physical properties of our universe, led to Fred Hoyle's pathway out of atheism – "I believe that we are the emergence of software that has basically been designed by another intelligence, probably to represent itself. In a way, software is the soul" (New Scientist, 21 November 1983, p49) (Alexander D, 2002). In relation to the apparent fine-tuning of the cosmos, Fred Hoyle has said "Nothing has shaken my atheism as much as this discovery". A God of impersonal intelligence is represented here by Hoyle.

The outworking of my faith in God, who is in loving relationship with us, makes the notion of a personal God, consistent, with a universe in which persons have evolved, formed relationships, and community. The properties of our universe are evolved, to bring about conscious observers who are able to come into relationship with God. The question has to be asked if an impersonal 'force' exists merely as an abstract intelligence, why do we find persons within the universe?

There is agreement among many scientists that our Universe is arranged too amazingly just right for conscious life to emerge, to believe that it was merely a one-off giant fluke. The notion of an infinite number of universes, versions of Multiverse theory, does not remove the questions, such as why do we find persons within the universe? If our universe was only one of an infinite number with varying properties, we should only have part of the problem of why, in all those universes, our own should be possible. The assumption that all the critical physical parameters of our universe are totally random, and will be generated eventually in an infinite number of universes, needs to be scrutinised. It does not matter how many times dice are rolled; it is much more likely that the cosmological parameters fall within a certain range, and that an infinite number of dice rolls will *not* give you the goal of a viable universe in which life is possible.

'If you roll two dice the range of numbers you can obtain on a single throw is between 2 and 12. Placing this analogy in the context of cosmological constants, if 50% of all cosmological constants need to be in the range 2-12, but the remaining 50% in the range 13-17, in order to generate a viable universe in which life is possible, then it does not matter how many times you roll the dice, the values are loaded against you ever achieving such a goal' (Alexander, D, 2002; p419). Looking at biological systems, an apple pip does not have the potential to become an orange. However many times it is planted, it will not produce an orange.

Scientists spend all their time investigating cause-effect relationships. That is, we feel in the mind the constant and regular conjunction of causes and effects (Alexander, 2002). The Greek word 'semeion' is found in John's Gospel, and is used when describing miracles of Jesus, as meaningful in that they point to something beyond the event itself. If the intention of a 'semeion' is to reveal aspects of Divine power and love, then there are myriad wonderful signs pointing away from the mundane, revealing aspects of Divine intent, willing to be seen, and understood by us.

The theory that our Universe could be a simulation made by a higher intelligence is not new, but is gaining increasing interest as horizons of computer technology and Artificial Intelligence are moved forward. Would we be able to tell the difference between a simulated universe created by an intelligence, and a physical universe containing matter created by God? If we are living in a simulation, what is our reality a simulation of? If we are conscious beings with free will in either scenarios, what would be the theological implications? In this paper I have proposed that we are experiencing a physical reality created by God, rather than a virtual 'simulated' reality maintained by an abstract intelligence. To move a theory that we exist in a 'Simulated Universe' beyond mere Science Fiction will require substantially more research than has been published thus far.

As an acorn contains within it the code and template for a giant oak, so the big-bang seed contained within the code and template for our Universe. Mathematics, physics, chemistry, biology, life, brought to life and sustained by God's creative life-giving Spirit. My enjoyment of science and the wonders of our Universe have been enriched by my reaching out to God in faith. Far from a suspension of reason or evidence, I join with scientists who are Christian around the world in celebrating a life fired up by a passion for science and the miraculous, proclaiming God's loving grace at work in our lives.

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BOOK EXCERPT

Excerpt from *Thinking Fair: Rules for Reason in Science and Religion*

by Lucas John Mix, S.O.Sc.

Available in paperback (via Createspace) and ebook (Amazon)

<https://dcalu.wordpress.com/books/>

The Hill Society had been running for about a year when one of the members said something that stuck with me. We were walking from the Hill to a local pub for dinner and he said, “I’m still an atheist.” It was important for him to assert this. He said, “I want you to know I’m still an atheist, but you’ve convinced me that these are questions we have to ask in a group.” I’m not convinced we need to find the same answers, but I have a strong conviction that we must learn to ask them together. Both knowledge and belief are far too important for us to attempt them alone. Both confidence and conviction are too difficult to gain. Or perhaps they are too easy, but shouldn’t be. Playing the game of reason in groups allows us to explore a far wider swath of the world than we could alone. Our friends and colleagues play an indispensable role in shaping our thought, our acts, and our identity. Perfect insulation is ill advised, even if it is possible. Though we must reason for ourselves, we need not reason by ourselves.

Our reasoning improves as we become more aware of our own metaphysics. We have a remarkable ability to make sense of the world around us. This can only improve if we use our reason transparently and in community. Science provides wonderful insights about the physical world but it will not be enough to give us a functional model of the cosmos. For that we need more. We need other ways of knowing about people, values, choices, and abstractions. We need mechanisms for holding ourselves accountable to the standards we set. We need languages to communicate, rituals to form, and communities to reinforce our models and turn them into actions.

For me, Anglican Christianity provides these things. It helps by respecting the strengths and weakness of modern science and by being open to hearing the wisdom from a wide variety of sources. Christianity more broadly gives me practices and groups integrated with my model. The weekly celebration of a common meal reinforces my belief in a God who justifies curiosity and compassion. It reaffirms my humility in the face of reality and challenges me to actively seek out inconvenient facts. If it really is God’s world, how could we not benefit from a fuller knowledge of it? Christianity also affirms my belief that God set things up in a way that I can understand, that my ability to reason can uncover at least some of the mysteries of the cosmos. It works for me.

I do not know what has worked or will work for you, but I hope this book will start a few conversations. I hope it will provoke you to seek better knowledge, better belief, and a better integration of the two. I also hope it will give you a language of reason that can bring you and your neighbors together. I want that kind of understanding for everyone.

SCIENCE AND RELIGION

At their surface, the religion and science debates in the United States represent a dysfunction. We have grown weary of our models and our authority figures. More precisely, we fear losing a few basic axioms (i.e., the world or morality is understandable), and so we try to prop them up, becoming dogmatic about some and skeptical about others. Our society is fractured and many authorities seek to prop up their own power by asking you to distrust all others. We are rightly

suspicious of this kind of power play, no matter who makes it. Each of us must learn to reason for ourselves.

At a deeper level our society is right where it needs to be. As a larger community, we are working out a common metaphysics. We are deciding on common rules for how we play the game of reason. We are debating whether words like “natural” and “supernatural” have meaning for us, whether they are effective for communicating our ideas and navigating the world. We are working out the methods we want to use when we foster knowledge and belief. Each of us has our own preferences and our own ways of deciding what works, but all of us work on the problems together.

Undoubtedly, some worldviews are better than others. Some worldviews allow us to reach our goals and some do not. Some value systems lead to happiness, productivity, and enlightenment. Some lead to loving relationships. Others do not. Perspective and accuracy matter. We have good reasons to change our worldview. And we have good reasons to change the worldviews of others. Both personal and social change work best when we are open about the process, when we talk about our goals and expectations. In other words, they work well when we talk about our rules for reasoning as we do. It is not enough to say “I am right” – we should know why we think we’re right and explore why others disagree.

Abraham Lincoln once said, “If both factions, or neither, shall abuse you, you will probably be right. Beware of being assailed by one and praised by the other.” Both scientists and Christians have accused me of undermining their side. Scientists worry that I contextualize scientific knowledge too much while Christians worry that I place too much emphasis on the human aspects of religion. Perhaps both sides have a point. Nonetheless, this perspective has worked for me. And, of course, I’m always open to improving it.

The truth needs no apologist, only a level playing field. I know that science will persist in our culture; it has power on its side. Science generates knowledge, and while that knowledge may be imperfect, for most things it remains the very best our ingenuity can provide. Religion represents a synthesis of thought, action, and community fundamental to human life. Even those who sell science as an alternative are really just advocating for a new synthesis. So religions will persist as well – though there is some question about the kind of religion. Will it be one of hope and critical thought, or a more intolerant, dogmatic faith? Only time will tell.

I believe you have a role to play in the formation of the world. I believe you can make the world a better place by thinking for yourself, but reasoning in groups. Our hope rests in developing an awareness of how the process works, trusting one another, kindly correcting where necessary, and working for a more reasonable world. In such a world I have no doubt that the truth will appear.

Body-Mind and Soul: What Are We Made Of?¹

Introduction

The question for today is a very big one and must be approached with humility. We can only ever “*know in part*”¹ about the human condition. We are, however, well equipped to explore as far as possible. I make no claims to be saying anything new. I will present a model built on existing ideas and discuss it briefly in relation to divine (and diabolic) action, faith and unbelief, and creativity in science.²

Each of us is biologically *unique*. Apart from monozygotic twins and future clones, every human self has a unique genome. In medicine, the difference between ‘self’ and ‘non-self’ tissues is crucial. Each

¹ A presentation by Roger Pullin to the Northern Chapter of the Society of Ordained Scientists, delivered at Manchester Cathedral Visitors Centre, May 13, 2017; contact pullin.roger@gmail.com

² Much of this material is covered at length in my book “*Free Thought, Faith and Science: Finding Unity Through Seeking Truth*,” published in 2014 by Outskirts Press, Parker CO. 448p.

of us lives in a uniquely evolving self-experienced environment; for example, our exposures to pathogens and toxins etc.

Each human brain develops a unique set of capacities, processes a unique compendium of information, has unique *subjective* experiences, builds a detailed personal creed, and retains a unique set of memories. All of the above can be held in private or shared with others, according to what the self decides.

In other words, each of us is intrinsically *free*. I define *free will* as the sovereign state of human selfhood from which all thought proceeds, independently and in private. I believe that God has ultimate and eternal authority over all that exists, but gives to the human self during earthly life a temporal state of sovereignty; i.e., the freedom to make choices and the responsibility to take the consequences.

As Terry Eagletonⁱⁱ put it, there is “*no absolute distinction between being influenced and being free*”, because our interpretation of influences “*is a creative affair*” and: “*We are free agents only because we are shaped by a world in which this concept has meaning, and which allows us to act upon it.*”

Let’s now restate our question for today. Are we made entirely of one kind of stuff that is material and materially derived, or are we made in part of an entirely different kind of stuff, which we can call spiritual? This *substance monism* versus *substance dualism* debate has lasted for millennia and is still going strong.

I am a biologist, a Christian and, unashamedly, a substance dualist. Most scientists, including some among those who are Christians, are monists concerning the composition and workings of the human self. Nevertheless, human consciousness and selfhood have long been seen as hard problems for the physical sciences.

Karl Popperⁱⁱⁱ considered “*materialism...a great movement and a great tradition not only in physics, but also in biology*” and added: “*with life...problem-solving enters the universe; and with the higher forms, purposes and aims, consciously pursued. We can only wonder then that matter can thus transcend itself, by producing mind, purpose, and a world of products of the human mind.*”

Roger Penrose^{iv} wrote: “*If it is other than a mere convenience of language that we speak as though there were such an independent ‘self’, then there must be an ingredient missing from our present-day physical understanding. The discovery of such an ingredient would surely profoundly alter our scientific outlook.*”

Terms and Definitions

Many terms have been used around the world for whatever might be conceived as seemingly nonmaterial within the human self (mind, or soul, or ‘mind-cum-soul’) and the terminology can be very confusing. George Makari^v reviewed how René Descartes and his contemporaries used some terms interchangeably and had problems with translations. Makari summarized this situation as follows: “*Esprit and âme, mentis and anima, mind and soul: all were one.*”

Sacred texts have added more complexity with terms including the biblical Greek *pneuma* and *psyche*, Latin *spiritus* and Hebrew *nephesh* (mind or soul) and *ruach* (breath or spirit), and the Qur’an’s *Nafs* (Soul), *‘Aql* (intellect), *Ruh* (spirit) and *Qalb* (heart).^{vi} Different scholars find support in Scripture for a monistic or a dualistic human self, or conclude that there is insufficient clarity for a decision either way.

It is now pretty much agreed across science that the composition and workings of the human body, including the brain and all that can be called mind or mental, are indeed made entirely of one kind of stuff that is physical or physically derived. In other words, bodily matter and mind are consubstantial.

The remaining question is whether whatever anyone might still wish to call the *soul* is also consubstantial with that body-mind package or made of something else? Should we opt for monism (one substance for body-mind and soul) or dualism (one substance for body-mind and another for soul)? I have framed my terms and definitions accordingly. All are listed and defined in an Annex.

I avoid the terms *immaterial*, *embodiment* and *transcend*, which sound good but fail as explanations.

For example, what can it mean to say that physical stuff ‘transcends itself’? Transcends itself into what? For sure, only into stuff that is physically derived.

I take the terms *material* and *physical* as synonymous and as referring to only one kind of stuff; i.e., entities and processes that are entirely physical or physically derived. I call the other kind of stuff *spiritual*. I use the terms *monism* and *dualism* to mean, respectively, *substance monism* and *substance dualism*.

I define the *material realm* as all that is composed of, or derived from, matter and energy. I define the *spiritual realm* as all that is composed of, or derived from, spiritual stuff, including God, the spiritual force for evil (my term for what many call the Devil or Satan) and all human souls.

I regard the terms *human selfhood* and *personhood* as synonymous, but use only the former here. I define the *human self* as the totality of a human individual, comprising a unique material *body-mind* and a unique spiritual *soul*. I propose that the self’s body-mind and soul interact across the *mind-soul interface*, which I will define later.

I define the *body-mind* as the totality of the material components of the human self, including the brain and all neural and mental activities. The body-mind is a material work in progress from conception to death. It then disintegrates into material remains.

I define the *soul* as the human self’s spiritual component, which is allocated by God, presumably during early childhood. The soul is a spiritual work in progress up to the death of the body-mind. The soul then lives on as the self’s eternal spiritual form.

The soul defined thus is never the ghost *in* the machine^{vii} (i.e., the body-mind). It is always the spiritual self, existing in a separate realm *beyond* the machine. Being neither physical nor physically derived, the soul is impervious to any damage and disorder in the body-mind, including dementia.

The Human Self’s Duality

The human self’s duality has been agreed across widely differing worldviews. The Trappist monk Thomas Merton^{viii} distinguished between the “*exterior ‘I’*” and the “*inner self*,” which he described as being “*as secret as God and...not a ‘thing’*.” Neuroscientist Antonio Damasio^{ix} distinguished between the “*self-as-object...the material me...a dynamic collection of integrated neural processes...that finds expression in...mental processes*” and the “*I*,” “*the self-as-subject-and-knower*.”

Damasio described his version of the “*I*” as: “*a more elusive presence, far less collected in mental and biological terms than the **me**, more dispersed, often dissolved in the stream of consciousness...stacked, so to speak, on top of the self-as-object, as a new layer of neural processes giving rise to yet another layer of mental processing*.”

Damasio summarized his model as having “*no dichotomy*” but rather “*continuity and progression*” with the “*self-as-knower...grounded on the self-as-object*.”

As we will see later, some Christians in science also regard the human self, body-mind and soul, as layers of increasing physical and physically derived complexity.

Peter Russell^x, however, recognized his own duality of thought, which he described as follows: “*I have a choice as to how I see a situation. I can see it through eyes caught in the materialist mindset that worries whether or not I am going to get what I think will make me happy. Alternatively, I can choose to see it through eyes free from the dictates of this thought system...The place to go for help is deep within, to that level of consciousness that lies beyond the materialistic mindset – to the God within*.”

I propose a similar duality between what I call *basic thought* and *Free Thought*. *Free Thought* has capitals to indicate its high status and to distinguish it from so-called *free thought* and *freethinking*, as used to describe thought that has led to unconventionality – such as opting for atheism among believers. No type of thought that is defined by a specific type of outcome can properly be called free.^{xi}

I define *basic thought* as the mental process by which the self makes choices about securing its biological needs, such as food, clothing, shelter, and finding a mate.

I define *Free Thought* as the self's capacity to combine the soul's processing of (and responses to) spiritual information with the body-mind's reasoning about (and responses to) material information for making decisions about the higher things of life, including faith, justice, morality and the development and use of creativity.

Free Thought is assumed to be an entirely conscious process.

Free Thought and *basic thought* are often complementary. For example, we need money to obtain some of the targets of our *basic thought*. We use *Free Thought* in ethical and moral choices about acquiring money and about what to purchase.

The outcomes of *Free Thought* episodes are reconfirmations or changes in the self's positions on the higher things of life, including preferences for any related action or inaction and decisions as to what will actually be done or left undone.

Some Monistic and Dualistic Perspectives

In 1926, Joseph Needham^{xii} paid due respect to Descartes for his insight that "the body was really a machine governed not by any vital force but by the soul or mind or whatever the nonmaterial part of man may be called," Needham added: "...we are not tied to any of the details of his (Descartes') philosophy or his physiology...Nor are we in the least compelled to accept his absolute dualism of matter and spirit."

Needham hailed "the triumph of mechanistic biology...for its own sphere" but denied "its jurisdiction over other fields."

Needham concluded that: "The biochemist and biophysicist...can and must be thorough-going mechanists, but they need not on that account hesitate to say with Sir Thomas Browne '**Thus there is something in us that cannot be without us and will be after us though indeed it hath no history what it was before us and cannot tell how it entered into us** (my emphasis)'." This is a fine description of the human soul.

Let's look now at some recent and current perspectives from Christians across science and theology, beginning with some prominent monists concerning the human self.

John Polkinghorne^{xiii} proposed "dual-aspect monism", with "**only one stuff in the world** (my emphasis)", but capable of occurring "in two contrasting states (material and mental phases, a physicist would say)."

Malcolm Jeeves^{xiv} saw "an important **duality** between the mental and physical", but rejected "dualism of substance" and called himself a "dual-aspect monist."

Keith Ward^{xv} described the soul as: "having the capacity to 'exist', to stand outside the **physical processes that generate it and of which it is part** (my emphasis)."

Peter Clarke^{xvi} noted a "strong monistic...tradition in Christian thought, stemming from St. Thomas Aquinas", with the soul as "an embodied principle". He found this "closer to the biblical concept of man" and "fully compatible with neuroscience."

Nancey Murphy^{xvii} rejected dualism as "theologically undesirable", because its adoption: "gave Christians something to care about (their souls) in place of Jesus' primary concern, which was the Kingdom of God." She proposed "nonreductive physicalism" and has claimed that: "science provides as much evidence as could be desired for the physicalist thesis."^{xviii}

Let's look next at a couple of dualistic perspectives.

R. Scott Smith^{xix} criticized Murphy's nonreductive physicalism as being based on only "one ontological state of affairs, which is physical" and concluded that: "...without immaterial essences to our mental states, we cannot match up with reality. And to have and use such states, it seems that substance dualism is needed."

John Turl^{xx} found "some form of dualism...still scientifically respectable" and considered it "difficult if not impossible to construct a non-reductive monism", with reductive monism "unacceptable philosophically and theologically."

Turl also stated: “For the Christian who believes that the Holy Spirit is active in the world, causal closure of the physical domain is not an option. **There is something in the mind that is designed to interface with the spiritual. It should not therefore be seen as an inappropriate mechanism if a person’s soul, which I contend to be a spiritual entity, can affect her/his own brain** (my emphasis).” I call that “**something**” the mind-soul interface, which I define as the human self’s internal gateway, through which material information from mental reasoning and spiritual information from soul processing are shared iteratively.

The mind-soul interface links body-mind and soul and in doing so provides a link between material and spiritual realms in every human self.

A Proposed Model of the Human Self

Figure 1 depicts the model’s main framework and Figure 2 presents the complete model, as a human self engaged in Free Thought.

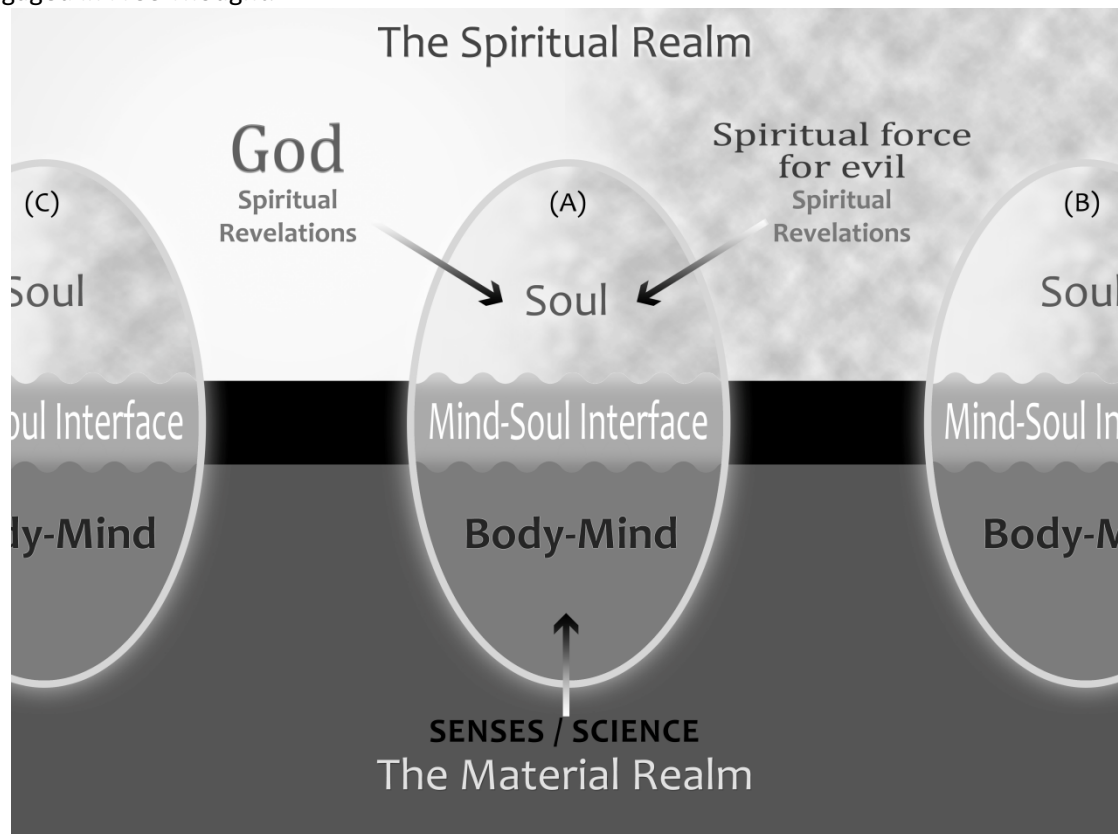


Figure 1. This is the main framework for the proposed model. The barrier between the spiritual and material realms is permeable only at the mind-soul interfaces of human selves, shown here as A, B and C. God and the spiritual force for evil inhabit the spiritual realm. God’s power is superior to and constrains that of the spiritual force for evil, but both influence the human self.

A, B and C have body-minds in the material realm and souls in the spiritual realm. A’s soul is receiving spiritual information (revelations) from God and the spiritual force for evil. A’s body-mind is receiving information from material realm sources, including science, via the senses.

For diagrammatic purposes, the two realms are given the same sizes. The same applies to the body-mind and the soul. In reality, the body-mind is contained within the physical self, whereas the soul has no conceivable physical dimensions or location. The mind-soul interface is symmetrical, but its body-mind boundary is conceived as physically located within the brain, whereas its soul boundary has no conceivable physical dimensions or location.

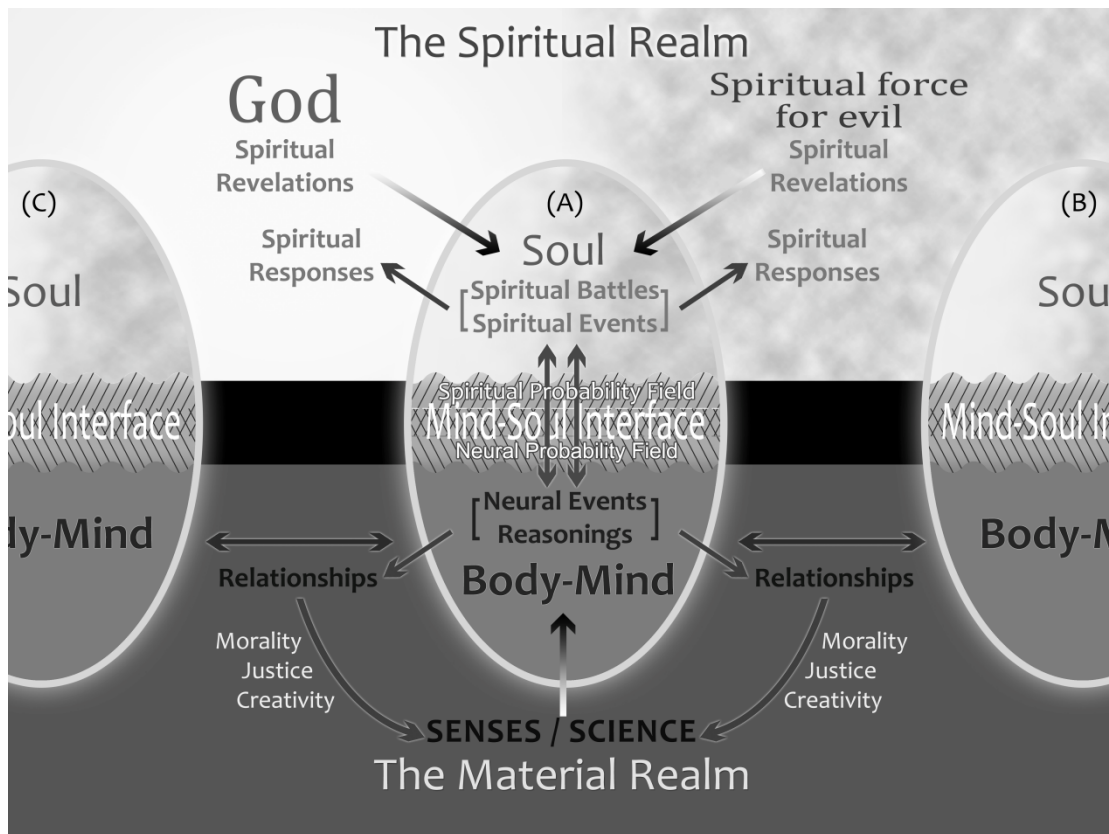


Figure 2. The complete proposed model is shown here for one human self (A), who is engaged in a Free Thought episode. A's body-mind senses and reasons about material realm information from everything encountered therein, including disclosures through science. A's soul receives and processes spiritual information as revelations from God and the spiritual force for evil.

The results of neural events/reasonings and spiritual battles/events are exchanged iteratively across A's mind-soul interface in common nonmaterial formats, such as probability fields. A's soul responds in the spiritual realm eliciting more revelations. A's body-mind acts in the material realm and receives more material information.

These processes can continue, singly or in combinations, progressing through uncertainty, multiple options and temporary resolutions, until A brings this Free Thought episode to a self-chosen end, establishing new baselines in body-mind and soul for the next episode.

Morality, justice and creativity are shown here only in the material realm, in and around body-minds, but all are also present in God, as the divine source of all truth and goodness, and also in all human souls. Their opposites are present in the spiritual force for evil and also in human souls.

This model is considered applicable to all humans. If God gives a soul to every human self, then God will surely call on every soul. On this basis, the human condition is *inclusive* and God interacts with every human self, regardless of whether she/he has any particular religious affiliation or none.^{xxi}

This model is not considered applicable to any non-human life forms. In common with humans, non-human life forms as diverse as bees and dolphins make assessments and communicate about food, sex, safety and family/group material interests etc. However, the notion that they consider and communicate about any higher things seems far-fetched. In other words, they engage only in basic thought, whereas humans engage in basic thought *and* Free Thought.

Some animals exhibit empathetic, quasi-moral behavior, including aversion to injustice and choosing to behave unselfishly, but this is always accompanied with prospects for materially expedient pay-offs for the actor(s) and/or others with partisan interests in common; for example, as reciprocity and/or furtherance of genes.

I hold that only humans can choose to behave truly morally and as genuine altruists, literally for goodness' sake alone.^{xxii} Only humans are made in God's "own image".^{xxiii} God places His image, including His perfect morality, in our souls, which are our spiritual realm selves while we live on Earth and thereafter.

Possible Mechanisms

A Free Thought episode starts with the posing of a question within the self about some higher thing of life. There are three possible questioners – the self, God, and the spiritual force for evil. I assume that any one of these can pose such a question, after which any or all can pose further questions en route to a self-chosen outcome.

When the initial question is posed and throughout the episode, mathematical menus of possible answers and their relative probabilities are generated. It seems reasonable to assume that the same mathematics applies in both realms.

I assume that information is the *common currency* within and between the two realms. For the sharing and processing of material and spiritual information in a Free Thought episode, up to and including its self-chosen outcome, all information must be in one or more common formats, which must provide for uncertainty, multiple options and scope for resolutions.

Quantum probability fields might qualify. I lack the background and mathematical ability to appreciate quantum theory beyond its simplified verbal descriptions. If anyone can show me that what I propose hereinafter is untenable nonsense, I will offer many thanks and seek more guidance.

I acknowledge also that Peter Clarke^{xxiv} doubted a role for Heisenbergian uncertainty in neural processes because of the huge mismatch in scale between quantum effects and neural events. However, he stated subsequently that: "*if quantum phenomena can be shown in brain neurons, this could have far-reaching implications for our understanding of brain determinism and of conscious thought more generally.*"^{xxv}

For the model presented here, there could be no mismatches in scale for anything touching the soul, which is neither physical nor physically derived. Moreover, it is surely unwise to discount the possibility of quantum phenomena in neural processes. That having been said, we can consider possible mechanisms for the model, based on what has been established for classical physics and quantum physics.

To illustrate probabilities in classical physics, Henry Margenau^{xxvi} chose the example of how one might compute where a bullet will hit a target, the probabilities for which are set by largely uncontrollable state variables, such as air currents and the shooter's involuntary body movements. According to Margenau: "*if these perturbations are known exactly and included in the calculation of the bullet's path the precise point of impact can be predicted on the basis of strictly causal laws.*"

At the quantum level, however, only the probabilities can be calculated. As Margenau put it: "*Probability fields therefore take the place of paths, and if the latter were regarded as real in classical mechanics the former deserve the attribute of reality in the domain ruled by quantum theory.*" He also stressed that quantum probability fields "*carry neither energy nor matter.*"

At the quantum level questions generate probabilities, and quantum observations, which are *de facto* measurements, choose paths of particles from probabilities. What John Bell^{xxvii} called "*beables*" can get to *be* by having been observed (i.e., measured).

Henry Stapp^{xxviii} noted that the quantum observer "*both poses the question and recognizes the answer.*" He explained that interactions between "*mind – pure conscious experience*" and "*the 'physical' aspect of nature, as that aspect is represented in quantum theory*" are possible because the latter "*is informational in character, and hence links naturally to increments in knowledge.*"

In confronting Daniel Dennett's claim that dualism violates the law of conservation of energy, Stapp^{xxix} emphasized what he called "*contemporary physics*", in which "*...due to the Heisenberg uncertainty principle, trajectories of particles are replaced by cloud-like structures, and...conscious choices can influence physically described activity without violating the conservation laws or any laws of quantum physics.*"

Stapp concluded that: "*Contemporary physical theory allows...an interactive dualism* (my emphasis) *that is fully in accord with all the laws of physics.*"

All of the statements cited above refer to physical and physically derived monism. The same applies to the following passages from Stapp and Penrose, but I can find in all possible parallels between the duality/interactions of classical and quantum physics and the duality/interactions of physical and spiritual stuff in the human self.

According to Stapp^{xxx}: *"The **physical aspects** of quantum mechanics are...more like **mental things** than material things...Quantum mechanics is therefore **dualistic**...(it) involves...aspects of nature that are described in physical terms, and...in psychological terms. And these two parts interact in human brains in accordance with laws specified by the theory. In these ways orthodox quantum mechanics is completely concordant with the defining characteristics of Cartesian dualism."*

Penrose^{xxxi} discussed how the "world of classical physics" ("C") and the "alien entangled quantum world" ("U") meet during quantum measurement ("R"). He explained that: *"the transition from U to C (quantum to classical) cannot in general be achieved without the introduction of probabilities, so that the determinism involved in the equations of U (and of C) is broken and a 'jump' in the quantum description would normally have to occur."* The quantum observer engenders the 'jumps', which reduce the probabilities to appropriate sets of question-related options.

A monistic self as a quantum observer engaged in R can connect U and C in basic thought about the material realm. A dualistic self can do likewise and can also connect U, C and the *spiritual* stuff (S) of her/his soul with God and/or the spiritual force for evil. Within such a dualistic self and with that self and God and the spiritual force for evil as quantum observers, all determinism, material and spiritual, is broken.

Every human life is then an unscripted drama. Every human self is a new experiment by God, having been placed in a given set of material circumstances, with a God-given soul and the God-given freedom to make whatever she/he chooses from everything encountered, material and spiritual. This temporal sovereignty of human selfhood is God-given – His choice for us, under His eternal sovereignty.

Divine (and Diabolic) Action

John Polkinghorne envisaged: "a physical world within whose open grain it would be fully conceivable that the God who is that world's Creator is providentially at work through the input of active information."^{xxxii}

According to the model presented here, the body-mind borders of human mind-soul interfaces are the only places where any such "grain" lies open for spiritual influences to have any physical impacts; i.e., in and through the body-minds of human selves.

Polkinghorne also suggested that God might act as: "the extraphysical determinator of quantum outcomes or as the selector of the pattern in which a chaotic system traversed its strange attractor, determined by a divine input of pure information." He preferred chaos theory, for its "manifest macroscopic relevance."^{xxxiii}

I accept that chaos theory and/or other theories might contribute in this context. However, I lean towards quantum probability fields and quantum observations, respectively, as the information formats and mechanisms for human decisions about the higher things of life and for divine (and diabolic) action through human agents.

According to the model presented here, divine (and diabolic) action can take place directly only within the human soul; i.e., entirely in the spiritual realm. This model does not provide for direct divine (or diabolic) action in the material realm.

It provides for battles between good and evil in human souls during Free Thought episodes. Their self-chosen outcomes can then project good and evil into the wider material realm through human behaviour. Humans help and harm themselves, their fellows and their environments as they exercise free will through basic thought and Free Thought. Meanwhile, nature's fixed laws govern the courses of accidents, natural disasters, infections, healings, and the genetic lotteries of reproduction.

God engineered the composition and workings of the material realm and the human self such that many things in our lives are clearly not possible even for Him.^{xxxiv} His gifts of free process under the

fixed laws of nature and free will in the human self are temporal. His ultimate and overall sovereignty is eternal.

Therefore it should suffice for believers to thank God for life and for the universe and its processes and potentials without asking for or expecting direct miraculous material interventions. As Nevill Mott^{xxxv} put it: “the more we can shed any belief in miracles, while retaining our concept of the supernatural...the more we can learn from Him.”

The model presented here provides for prayers that elicit God’s spiritual influences on the souls and thereafter the behavior of those praying, those prayed for and others. On this basis, intercessory prayer brings spiritual benefits, but can bring material benefits only to the extents that these are naturally (i.e., physically) possible.

Faith and Unbelief

I define *faith* as personal belief and trust in God. *Believing* in something means having *complete* certainty that it is true. *Trusting* in something means having *complete* confidence in its reliability. Faith is true freedom, living life in a personal relationship with God, the Giver of freedom.

Faith is not the same as *religion*. One can have faith without a religious affiliation. One can lead a highly religious life without faith. I define a *religion* as an institution or organization that promotes specific beliefs, especially those concerning spiritual beings or forces and their alleged influences on the material and spiritual lives of humans, and that requires its adherents to obey certain rules and follow certain practices. Joining a religion or being carried along by one confers a group identity, which can bring material and social benefits but typically entails obligations to obey rules and to donate money. The same applies to some secular organizations.

Unbelief is personal denial of the existence of God or acceptance of the possibility that God might not exist; i.e., *unbelief* includes atheism and agnosticism. *Doubt* is personal reappraisal of one’s current state of faith or unbelief. For the believer, the onset of *doubt* is a change from *faith* to *unbelief*, because the completeness of belief and/or trust in God has been compromised.

At any point in life after the onset of Free Thought, one is either a believer who has chosen faith or a nonbeliever/doubter who has chosen unbelief – in every case as the outcome of a Free Thought episode. Moreover, the self’s detailed personal creed evolves entirely as outcomes of Free Thought episodes. Choosing faith does not require belief in all angels, demons and miracles. Choosing unbelief does not require the ridicule of all accounts of allegedly spiritual things.

Creativity in Science

I define *creativity* as the attribute of the human self that enables all artistic endeavours and advances in science. The self’s creativity is developed and/or applied during Free Thought episodes. Their outcomes can be shared in partnerships and teams.

I define *science* as any intellectual activity, observation or experiment concerning the composition and workings of the material realm and the spiritual dimensions of the human condition. Science defined thus encompasses all quests for truthful explanations of any human observation and experience.

David Deutsch^{xxxvi} wrote: “Of all the countless biological adaptations that have evolved on our planet, creativity is the only one that can produce scientific or mathematical knowledge, art or philosophy.”

Creativity is indeed the special attribute that explains much about the human condition, but I do not agree that it has evolved entirely as “*biological adaptations*”, with or without the sharing of so-called ‘memes’, which I will not address here.

The creative endeavors of humans are often non-adaptive. They include art for art’s sake, often pursued in poverty, and science for truth’s sake, sometimes pursued and reported at great personal risk from those with anti-science agendas.

Scripture says: “the Spirit of truth...will guide you into all truth.”^{xxxvii} This can be interpreted to include God’s enabling of all truthful disclosures through science, by influencing human creativity in believers and nonbelievers.

Scientific theories can be wrong. Free Thought can lead to wrong conclusions, but divine influences always support the quest for truth. Therefore, explorations in faith and in science (as guided by God) are complementary paths to truth. God helps to advance science and encourages its applications for good. The spiritual force for evil encourages fraud, pseudoscience and science for evil ends.

Michael Polanyi^{xxxviii} emphasized “*the scientific conscience...(which) cannot be satisfied by the fulfillment of any rules, since all rules are subject to its own interpretation.*” He also emphasized the twin necessities of objectivity in science *and* individual “*commitment (to) facts, knowledge, proof, reality etc.*”^{xxxix}

The model presented here explains what Polanyi called the “*scientific conscience*” as the human self’s choices during Free Thought episodes about advancing science and/or the ethics of implementing scientific advances. It also helps to explain why science is often shot through with subjectivity while in pursuit of objectively evidenced findings. Moreover, as John Searle^{xl} put it: “*There is no reason why an objective science cannot study subjective experiences.*”

Concluding Remarks

Let’s revisit today’s big question, posed as a choice between monism and dualism in the human self. Let’s also remember that we are not going to get a definitive answer. All that anyone can do is to weigh up all available information and choose whichever option seems to offer the better explanation, or sit on the fence.

Nevertheless, we must continue to explore the pros and cons of monism and dualism. Our evolving positions shape our self-images and our images of and relationships with our fellows and our environments. The perspective that every human self has a soul points towards inclusivity and treating all humans as equals.

Anyone who believes that “*God is a Spirit; and they that worship him must worship him in spirit and in truth*”^{xli} is affirming that spiritual stuff and a spiritual realm really do exist and are accessible to the human self. Moreover, all theists believe in divine action in the world – directly, or through humans as God’s agents, or both.

For most nonbelievers, the best explanation of the human condition is that everything in the world, including the human self, is entirely physical and physically derived. As we have seen, some scientists who are also Christians hold to the same explanation.

I cannot envisage how an entirely *physical and physically derived* human self, even a highly complex one, could interact with the *spiritual* stuff of God and/or the spiritual force for evil for making choices between faith and unbelief and about the other higher things of life. A soul made of spiritual stuff seems essential as the self’s receiver, processor and transmitter of spiritual information, assuming that such exists.

Stephen Jay Gould^{xlii} saw science and religion as separate domains, which he called “*Non-Overlapping Magisteria.*” In the model that I have presented, the material and spiritual realms interact only at the mind-soul interfaces of human selves. However, this provides for the human self to seek for truth, as both scientist and theologian in the very broadest senses, with faith and science as complementary paths to truth.

More research is needed on the subjective experiences of believers *and* nonbelievers. Past work has focused mostly on testimonies of faith. Most atheist authors have criticized religion (often rightly so), but have dodged serious engagements with subjective experiences of faith *per se.*^{xliii} We can and should undertake more extensive and rigorous analyses of subjective experiences in faith *and* unbelief, across large and diverse populations around the world.

I will end with Henry Allon’s^{xliv} wonderful words, which summarize much of the subjective evidence for faith: “*You may demonstrate to a man that it is a mere philosophic imagination to believe in a personal God, that it is an unhistoric delusion to put faith in Christ, that it is a scientific absurdity to offer prayer, that it is a gratuitous expectation to dream of a life after this. He may be utterly unable to reply to your arguments, but his own conscious experience neutralizes them all. He knows and feels that there is a God who forgives sin, and hears prayers, who gives holy inspirations to his soul, and holds spiritual fellowship with him.*” Amen!

ANNEX – DEFINITIONS OF TERMS

Basic thought is the mental process by which the self makes choices about securing its biological needs, such as food, clothing, shelter and finding a mate.

The **body-mind** is the totality of the material components of the human self, including the brain and all neural and mental activities. The body-mind is a material work in progress from conception to death. It then disintegrates into material remains.

Creativity is the attribute of the human self that enables all artistic endeavours and advances in science. The self's creativity is developed and/or applied during Free Thought episodes. Their outcomes can be shared in partnerships and teams.

Doubt is personal reappraisal of one's current state of faith or unbelief. For the believer, the onset of doubt is in itself a change from faith to unbelief, because completeness of belief and/or of trust in God has been compromised.

Faith is personal belief and trust in God. Believing in something means having *complete* certainty that it is true. Trusting in something means having *complete* confidence in its reliability.

Free Thought is the self's capacity to combine the soul's processing of (and responses to) spiritual information with the body-mind's reasoning about (and responses to) material information for making decisions about the higher things of life, including faith, justice, morality and the development and use of creativity.

Free will is the sovereign state of human selfhood from which all thought proceeds, independently and in private.

God is the Original Spiritual Being, the Creator of the composition and workings of all that has ever existed, exists now and can ever exist, the Sustainer of His creation through love, and the Seeker of an eternal relationship with every human soul.

The **human self** is the totality of a human individual, comprising a unique material body-mind, which begins and ends its existence entirely in the material realm, and a unique spiritual soul, which exists entirely in the spiritual realm.

Material information is anything sensed by, processed in, and communicated from the body-mind, all entirely in the material realm

The **material realm** is all that is composed of, or derived from, matter and energy.

The **mind-soul interface** is the human self's internal gateway through which material information from mental reasoning and spiritual information from soul processing are shared iteratively.

A **religion** is an institution or organization that promotes specific beliefs and associated practices, especially those concerning spiritual beings or forces and their alleged influences on the material and spiritual lives of humans, and can thereby provide for its adherents a group identity.

Science is any intellectual activity, observation or experiment concerning the composition and workings of the material realm and the spiritual dimensions of the human condition. Science defined thus encompasses all quests for truthful explanations of any human observation and experience.

The **soul** is the human self's spiritual component, which is allocated by God, presumably during early childhood. The soul is a spiritual work in progress up to the death of the body-mind. The soul then lives on as the self's eternal spiritual form.

The **spiritual force for evil** is the spiritual opponent of God's will for His creation, especially the forging of loving human relationships with Him and with one another.

Spiritual information, which can also be called *spiritual revelations*, comprises all influences from God and the spiritual force for evil on the human soul and the soul's responses, all entirely in the spiritual realm.

The **spiritual realm** is all that is composed of, or derived from, spiritual stuff, including God, the spiritual force for evil and all human souls.

A **substance** is a unique class of ingredients (i.e., a type of stuff) within a human perception of and/or hypothesis about reality, at all levels of complexity.

Substance dualism is the philosophical position that reality as a whole, and the entire human self in particular, are made of two kinds of substance, the material or physical and the spiritual.

Unbelief is personal denial of the existence of God or acceptance of the possibility that God might not exist. Defined thus, unbelief includes atheism and agnosticism.

ⁱ I Corinthians 13: 9, 12

ⁱⁱ Terry Eagleton (2002). *On Evil*. Yale University Press: New Haven CT. p.11.

ⁱⁱⁱ Karl Popper (1983). Materialism transcends itself, p.3-35. In Karl Popper and John C. Eccles, *The Self and its Brain: An Argument for Interactionism*. Routledge: London.p.11.

^{iv} Roger Penrose (2005). *Shadows of the Mind: A Search for the Missing Science of Consciousness*. Vintage Books: London.p.36, 414.

^v George Makari (2015). *Soul Machine: The Invention of the Modern Mind* W.W. Norton & Company: New York. p.27-28.

^{vi} Aemen Javairia and Asma Hussain Khan (2014). The venerability of the soul in Islamic psychology, p.121-126. In (M. Fuller ed.) *The Concept of the Soul: Scientific and Religious Perspectives*. Cambridge Scholars Publishing: Newcastle-upon-Tyne, UK.

^{vii} See Arthur Koestler (1990) *The Ghost in the Machine* (Penguin Edition: London) and Gilbert Ryle (2003) *The Concept of Mind* (The University of Chicago Press: Chicago IL).

^{viii} Thomas Merton (2004). *The Inner Experience: Notes on Contemplation*. HarperOne: New York. p. 5-7.

^{ix} Antonio Damasio (2010). *Self Comes to Mind: Constructing the Conscious Brain*. William Heinemann: London. p. 9-10.

^x Peter Russell (2003) *From Science to God: A Physicist's Journey into the Mystery of Consciousness*. New World Library: Novato CA. p. 96.

^{xi} For a review of the history and use of these terms, see Roger Pullin (2014) *Free Thought, Faith and Science: Finding Unity through Seeking Truth*. Outskirts Press: Parker CO. p. 61-66.

^{xii} Joseph Needham (1926). Mechanistic biology and religious consciousness, p.219-257. In (J. Needham ed.) *Science Religion and Reality* The Sheldon Press: London. p.250, 257. Available at: www.kessinger.net. Needham quoted from Sir Thomas Browne's *Religio Medici* (1643).

^{xiii} John Polkinghorne (1996). *The Faith of a Physicist: Reflections of a Bottom-Up Thinker*. Fortress Press: Minneapolis MN. p. 21,163.

^{xiv} Malcolm Jeeves (2013) *Minds, Brains, Souls and Gods: A Conversation on Faith, Psychology and Neuroscience*. IVP Academic: Downers Grove IL. p. 40.

^{xv} Keith Ward (1998). *In Defence of the Soul*. Oneworld Publications: Oxford.p.142.

^{xvi} Peter G.H. Clarke (2015). *All in the Mind? Does Neuroscience Challenge Faith?* Lion Hudson: Oxford. p. 162.

^{xvii} Nancy Murphy (2002) The problem of mental causation: how does reason get its grip on the brain. *Science and Christian Belief* 14: 143-158. p. 143.

^{xviii} Nancey Murphy (2014). Mind, soul and the cognitive neurosciences, p. 39-54. In (M. Fuller ed.). *The Concept of the Soul: Scientific and Religious Perspectives* Cambridge Scholars Publishing: Newcastle-upon-Tyne, UK. p. 42,43.

^{xix} R. Scott Smith (2012). Could we know reality, given physicalism? Nancey Murphy's views as a test case. *Perspectives on Science and Christian Faith* 64 (3): 179-187.

^{xx} John Turl (2010) Substance dualism or body-soul duality. *Science and Christian Belief* 22 (1): 57-80. p. 57,79,75.

^{xxi} Christ said: "I am the way, the truth and the life: no man cometh unto the Father, but by me (John 14:6)" and "I and my Father are one" (John 10:30) and "he that hath seen me hath seen the Father" (John 14:9). God Incarnate stated that the only way to God is through God. God is then surely free to accept the soul of every honest seeker and teller of truth.

^{xxii} Frans de Waal ((2013) in p.17-18 of *The Bonobo and the Atheist: In Search of Humanism Among the Primates* (W. W. Norton & Company: New York) recognized our "huge push in the rear from our background as social animals", but was: "reluctant to call a chimpanzee a 'moral being'." Sam Harris (2010) in *The Moral Landscape: How Science Can Determine Human Values* (Free Press: New York) saw morality as the pursuit of maximized science-based wellbeing, which I equate with flexible, consequentialist/utilitarian 'quasi-morality', as found in animals and humans. C.S. Lewis (2001) in p.16-18 of *Mere Christianity* in *The Complete C.S. Lewis Signature Classics* (New Harper-Collins: New York; first published in 1952) described true morality as "The Law of Human Nature" i.e., God's fixed moral code, embedded in human souls, helping us to distinguish right from wrong.

^{xxiii} Genesis 1:27

^{xxiv} Peter G.H. Clarke (2010). Determinism, brain function and free will. *Science and Christian Belief* 22 (2): 133-149.

^{xxv} Peter G.H. Clarke (2012). Response to Brownnutt: indeterminism beyond Heisenberg. *Science and Christian Belief* 24 (1): 86.

^{xxvi} Henry Margenau (1984). *The Miracle of Existence*. Ox Bow Press: Woodbridge CT. p.22, 90, 91.

^{xxvii} John S. Bell (1984). *Beables for Quantum Field Theory*. European Organization for Nuclear Research: Geneva. CERN-TH.4035/84. p.2.

^{xxviii} Henry P. Stapp (2004). Attention, intention, and will in quantum physics, p. 143-164. In (B. Libet, A. Freeman and K. Sutherland eds.) *The Volitional Brain*. Imprint Academic: Exeter, UK. p. 154, 158.

^{xxix} Henry P. Stapp (2011). *Mindful Universe: Quantum Mechanics and the Participating Observer*. Springer: Heidelberg. p.81. Stapp referred to Daniel Dennett (1991). Why dualism is forlorn, p.33, 35 In *Consciousness Explained*. Little, Brown & Company: Oxford.

^{xxx} Henry P. Stapp (2009). Quantum reality and mind. *The Journal of Cosmology* 3:570-579.

^{xxxi} Roger Penrose (2016). *Fashion, Faith and Fantasy in the New Physics of the Universe*. Princeton University Press: Princeton NJ. p. 121,142,143.

^{xxxii} John Polkinghorne (2005). *Exploring Reality: The Intertwining of Science and Religion*. Yale University Press: New Haven CT. p. 36.

^{xxxiii} John Polkinghorne (2012) Divine action – some comments. *Science and Christian Belief* 24 (1): 31-32.

^{xxxiv} The inclusion of ‘nothing impossible’ in biblical promises could be a device to encourage belief in their *specific* material subjects [e.g., remarkable pregnancies (Genesis 18:13-14 and Luke 1:36) and material gains interpreted as divine gifts (Jeremiah 32: 15, 17)] or in purely spiritual possibilities (Matthew 19: 23-26, Mark 10: 24-27 and Luke 18: 24-27). Moreover, God’s promises and human requests to Him are always circumscribed by the following: “Thy will be done in earth (Matthew 6:10)”, “whatsoever ye shall ask in my name...that the Father may be glorified in the Son (John 14:13)” and “If ye abide in me and my words abide in you (John 15:7).

^{xxxv} Nevill Mott (1991). Christianity without miracles, p.3-22. In (N. Mott ed.) *Can Scientists Believe? Some Examples of the Attitudes of Scientists to Religion*. James and James: London. p. 17.

^{xxxvi} David Deutsch (2011). *The Beginning of Infinity: Explanations That Transform the World*. Viking: New York. p. 398.

^{xxxvii} John 16:13

^{xxxviii} Michael Polanyi (1964). *Science, Faith and Society: A Searching Examination of the Meaning and Nature of Scientific Inquiry*. University of Chicago Press: Chicago IL. p. 40.

^{xxxix} Michael Polanyi (1974). *Personal Knowledge: Towards a Post-Critical Philosophy*. University of Chicago Press: Chicago IL. p. 303.

^{xl} John R. Searle (1997). *The Mystery of Consciousness*. New York Review of Books: New York. p. 123.

^{xli} John 4:24

^{xlii} Stephen Jay Gould (2002). *Rocks of Ages: Science and Religion in the Fullness of Life* Vintage: London. p. 5-6.

^{xliii} For example, Richard Dawkins used only about 8 pages in *The God Delusion* (Bantam Press: London; 2006; 406p.) to address (and ridicule) personal spiritual experiences.

^{xliv} Henry Allon (1873) The argument for the supernatural character of Christianity from its existence and achievements, p.249-289. In (S. Wilberforce, prefaced) *Faith and Free Thought: A Second Course of Lectures delivered at the Request of the Christian Evidence Society*. Hodder and Stoughton: London, p. 252. Available at www.kessinger.net

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