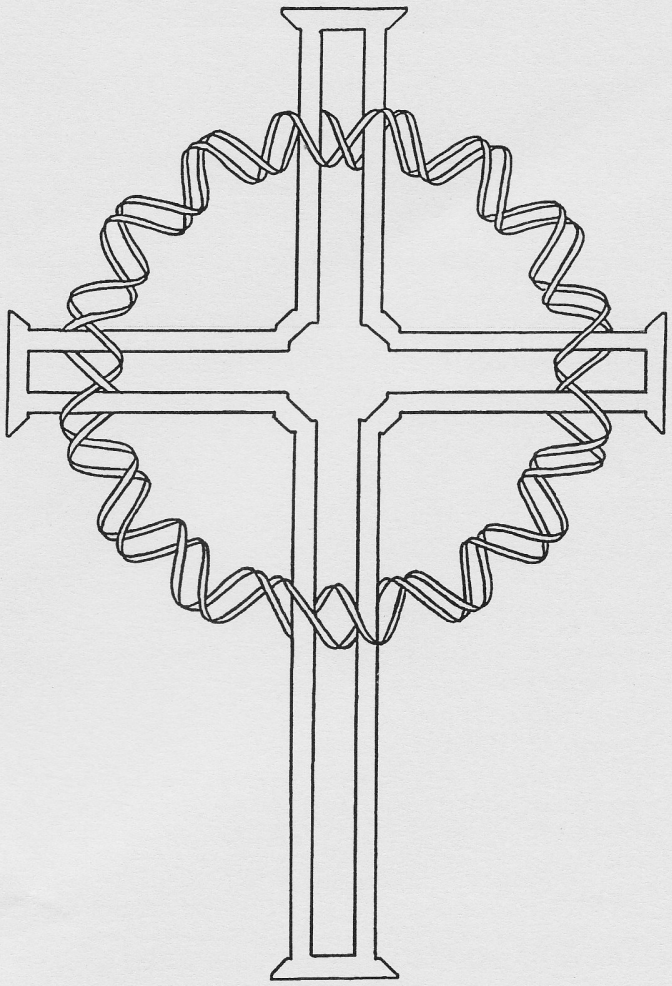
SOCIETY OF
ORDAINED SCIENTISTS



BULLETIN

Summer 2018

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Editorial

I am so pleased to be able to produce a Spring Bulletin and many thanks to all who contributed. The Warden had contributed a preliminary paper on 'Spiritual Pain and how to define it.' He writes that it is an on-going analysis which he will probably finish in retirement! The North American Chapter had a successful Retreat in February and we have the Sermons preached by +David, our Visitor and the Warden of that Chapter, Lucas Mix. I am delighted to print a 'memoir' by a Member from Sweden, Ingrid Maria Bergman, which tells of the Society from a very person viewpoint. Bishop David Atkinson has published a two-part paper on Michael Polanyi which we are pleased to be able to offer in the Bulletin.

Richard Hills has just published his autobiography entitles 'The Seven Ages of One Man or How one man started the Museum of Science and Industry in Manchester.' I am up to Age 3 and am finding it a fascinating read. If you want to buy a copy contact Richard who will be pleased to send you details! Please do keep articles, book reviews and other interesting material coming to me so that we can communicate between Gatherings.

'Spiritual Pain, and how to define it.' A preliminary study by the Warden: Stig Graham.

So, what is spiritual pain? It does seem to be one of those things that seem to beg the response, 'Well, I know it when I see it'. Or even falling back on the metaphor of the Higgs boson we know it's there because we can see the evidence of its consequences, i.e., indirectly. It is true that, accepting that it exists, spiritual pain manifests itself through physical, mental, and emotional pain. Do we need to complicate things with spiritual pain as a separate entity?

In a hospice and palliative care setting the multi-disciplinary team aspires to provide complete and holistic care for all our patients, with all disciplines pooling their knowledge and insights to generate as comprehensive a picture as possible of each individual. As part of this approach it is not unusual for the chaplaincy team, or as we often prefer to be understood, the spiritual and pastoral care team (S&PCT), to be identified as being best equipped to discover the source of a person's suffering. Equally, it may be that the S&PCT are recognised to be best placed to ease that suffering. To attempt to bring spiritual relief the first step of a chaplain is simply to be with the individual, listen attentively and acknowledge, without contradiction, the patient's pain. Only then may a chaplain hope to join with the individual in exploring their beliefs, looking for alternative assumptions or understandings, seeking acceptance of what cannot be changed or undone, and searching for hope.

Frequently, in a hospice and palliative care setting, though it is not difficult to determine the core praxis of each discipline, it can be very difficult to determine the boundaries between disciplines.

This is especially true of S&PC where, to a greater or lesser extent, all disciplines would lay claim, and rightly so, to delivering some element of S&PC. Indeed, there some clinicians, including consultants and nurses, who insist that without a proper awareness of the S&PC needs of their patients they would be unable to deliver the care needed.

Many tests, questionnaires and methods have been developed to determine spiritual well-being, but none have been universally accepted, let alone embraced. Again, to follow a scientific metaphor, we seem to cross the boundary between what can be understood reductively and what can only be fully appreciated in a complex and relational way. The more we seek to reduce and simplify, the more we seem exclude and trivialise. The more we include, the less tangible, the less precise we seem to become.

A clear definition of spiritual pain is difficult to achieve and seemingly impossible to agree. At one time, and not so long ago, an answer to such a question may well have been framed in religious terms; bring in the appropriate religious representative and they would explain to the patient the necessary understanding. In modern chaplaincy we find that religious affiliation plays a very small part in what we do. People will talk with anyone who is prepared to listen attentively to their concerns and, even though they may ask, the last thing they want is someone who will tell them what to think.

Another element of the problem concerns just who is perceived to be suffering spiritual pain. By way of example: in a hospice, everyone may ask, 'Why me? Why now?' Someone of faith may ask, 'Why is God permitting this?' or even, 'Why is God doing this?', finishing with 'and it's not fair'. Equally, an atheist or humanist[1] may observe, with the same frustration or even anger, 'I have never done anyone a bad turn. I have never smoked or drank. I have saved towards my pension all my life, and had such plans, but now I won't live long enough to do any of it. ***And it's not fair!***' It is that last statement which is the changer. Just as with a believer one might ask, 'What is it in your belief that persuades you that God is doing this to you?', one can also ask an atheist, 'In what way do you see a universe in which personal fairness is amongst its qualities?' I am conscious that, as written, these questions may seem harsh but, when asked with genuine interest and compassion, the answers they generate can be surprising, moving and insightful.

In the same way an atheist may ask, 'Have I lived my life well?', and a Christian may ask, 'Will God say I have lived my life well?'. Both are essentially the same question as each depends upon some personal understanding of what a 'life well lived' means. Both can entertain doubts. Both can internalise and externalise the question and their response. Both can interpret their answers through the reaction, real and imagined, of their families, friends, communities, and institutions. An affirmative outcome generates a sense of spiritual wellbeing which permeates the whole of the body and the mind. A sense of failure may bring significant spiritual distress, which is reflected physically, mentally and emotionally. It is well established that a newfound sense of spiritual wellbeing can result in lifting in a patient's mood, a reduction in the use of analgesics, increased alertness and improved resilience.

A further complication is inconsistency. The same circumstances do not always produce the same results; we are entirely dependent on the patient indicating to us how much pain they feel. One example would be women who have had an abortion. Some will mention an abortion in passing as a

[1] Just to be clear, when I draw parallels with atheists or humanists, I do not intend disparage their thinking or feelings any more than I would wish to disparage the seeming vagaries of beliefs held by Christians, other faiths or agnostics. Rather it is useful to be able to demonstrate the diversity and complexity of human thinking and beliefs. Humanists are a very useful mirror for people of faith to consider. Hence, just as many humanists believe in life after death so there are Christians who do not. Just as there are Christians who do not believe that Jesus is the Son of God so there are humanists who believe in astrology or homeopathy. Whilst there are those who will insist, 'Well they aren't proper Christians/Humanists', a chaplain not only accepts their beliefs but actively works with those beliefs to ease their pain and find reconciliation where there is discordance.

very natural part of their lives. Some are riven by grief that they have failed or even betrayed their child, their family, the father, God, or their understanding of motherhood, and so on. With a physical condition, whilst it is equally difficult to predict the physical pain that any given individual will feel, it is usually possible to ask at least, 'Where does it hurt?', and, 'On a scale of one to ten, how much does it hurt?'. With spiritual pain, the number and complexity of drivers and emotions encountered render identification and quantification seemingly impossible.

This is the context for 'spiritual pain'. Spiritual pain can take many forms and be rooted in many different beliefs and moralities. Beliefs can lift, inspire and engender hope. However, when they clash with life and personal experience, they can equally bring a sense of failure, disappointment and even despair. With sensitive support, remedial action is possible, but quantification is challenging. There is the potential for confusion as the descriptive terms we use overlap with those used by our colleagues in other disciplines and though in many ways medicine is historically rooted in faith traditions, it is true that chaplaincy, as spiritual and pastoral care, has come late to the party.

Is there no way to identify and name the forms of spiritual distress in a way that is useful to clinicians, including chaplains themselves? In a hospice setting with so many narrative strands, intense emotions, and diverse relationships, not to mention explicit pressure of time, the situation is far too complex. The challenge of obtaining the ethical permissions in such a setting is also challenging. A simpler setting without all the psychological and emotional distractions would help. Earlier in my career as a chaplain, I found it very helpful to reflect on humanism and humanists, who insist on objective evidence and reason, without the distraction of emotion and non-rational thinking, as part of their credo. They still seemed to experience what I thought of as spiritual pain. As outlined above, humanists still asked questions about the meaning and purpose of life in general and the quality of their own lives in particular. This was good so far as it went but because of the perceived antagonism between humanists and those of faith it was difficult to be seen to offer dispassionate observations. Or to be confident that one was entirely detached in one's own thinking. What was really needed was a control group; a world which was dominated by reason and intellect, which relied on calm measured reflection and consideration of the evidence. A rational world without emotionalism, or subjective thinking and indisciplined thoughts. A world rather like the world of science. Surely there was no space for spiritual pain in Science

Clearly, this initial thought was pursued with my tongue firmly in my cheek but the more I contemplated the possibilities, the more it seemed that world of science offered ample opportunity for presenting elements of spiritual pain. The first example that springs to mind is our distress as scientists when we witness 'bad' science: when the principles of science are betrayed, when results are falsified, or when evidence is ignored. Many of us as scientists will have an aspirational image in our heads of science as a philosophy and a way of life, a place integrity, of reasoned doubt and questioning. When that image is tarnished or damaged we can feel a very real pain. The pain may find emotional expression as anger, frustration, grief, betrayal, and if the hurt is sufficiently personalised, even guilt and shame.

Near the beginning of this exploration I gave an example of spiritual pain about evaluating one's life, along with an observation that not everyone might feel any pain at all. In the year before it was concluded that enough evidence had been gathered to enable the world of science to say that the Higgs boson had been discovered, it was fascinating to note the diverse views of different scientist groups speculating on the possibility of its existence not being demonstrated. The young scientists were thrilled at the prospect, 'It will mean that we have got it wrong, and we will have to tear down our present thinking and build a whole new understanding, and we will be at the beginning of that process'. An older scientist was much more solemn, 'I hope', he said, 'that we do discover the Higgs boson. It will mean that my work has not been in vain'. To look back on one's life and consider that one has worked in vain is a painful experience. Strictly speaking, in science, we know that to demonstrate that something is not the case is equally important as showing that something is the case but somehow, we seem to find much more satisfaction in the latter. Equally, to look back on one's life and feel that one's work was second rate because it was not ground breaking or

transformational is incredibly sad. Oppenheimer apparently felt profoundly distressed that because he was just a handful of years too young he had missed out on the chance to be one of the great pioneers like Pauli, Dirac or Heisenberg, and 'lost his chance at immortality'. Some scientists and mathematicians, spending their lives believing that maths and science would provide the answers to everything, were thrown into despair when Gödel produced his Incompleteness Theorem.
Clearly, if one accepts the possibility of spiritual pain, it is apparent that within the world of science there are many examples of how it may be experienced. It may be that consideration of spiritual pain in this setting, observing its physical, mental and emotional consequences will enable us to clarify its form and existence. We may or may not achieve the clarity of the Higgs boson but we can further our understanding what it is to be human.

Sermon given by Lucas Mix at the Society of Ordained Scientists Retreat, Richmond Hill, Richmond VA.

It can be hard to preach when you're in the process of changing your mind. Nick's talks this week have me thinking and changing, but that's part of what I wanted to say today, so it's fitting. I'd like to share with you two dualisms and a monism: that is two ways of dividing the world – neither of which I entirely agree with – and some thoughts about how to pull it all together.

We have a reading from Genesis about the First day, and that has me thinking about Philo, who may have been the first to suggest a dual creation. The first day was, for him, a creation in light of ideal forms. The other days, the material creation, began to work out the details of concrete physical things. This dual creation inspired similar schemes in Augustine and Aquinas and eventually the familiar mind and matter of Descartes. I think it also lies behind the line in the Nicene Creed about God creating all that is, seen and unseen, the invisible order and the visible stuff of creation. I do not think there are two kinds of substances – mind and matter – but I do think we live at the boundary between the two. I think we live at the intersection of the mental and the physical. I also think that we, especially as ordained scientists, live at the boundary of the known and the unknown, the seen and the unseen.

Our readings from Acts and Mark also provide a dualism with two kinds of baptism:
the baptism of John and baptism of Jesus,
the baptism of water and the baptism of spirit,
the baptism of repentance and the baptism of new life.
I'm not sure how best to interpret these passages and I don't want to suggest that I have the best way, but I'd like to share my own thoughts on the two baptisms. I see John's baptism as reactive. It brings repentance and forgiveness. John's baptism is all about turning away from what is evil. But that is not enough. It is not enough to turn away from the evil; we must turn toward the good. We must orient ourselves in God and Christ. Jesus' baptism is proactive. It brings adoption and inspiration. It leads to growth. It does more than save us from the evil; it empowers us in the good.
The two can never be fully separated, but I think it's useful, in both science and theology, to think about renewal in both ways. We do more than falsify bad theories; in some mysterious way, we find good ones. With C. S. Lewis, I think that there are infinitely more ways of being right than there are of being wrong. When we focus too much on atonement, repentance, and salvation, we develop an anemic faith, one that can resist the bad, but cannot embrace the good, one that can deny the past, but not reach forward into the future. Atonement, repentance, and salvation are crucially important; they are not the full end of baptism. There must be more. There must be a movement of the Holy Spirit in us.

And once again, we, particularly as ordained scientists, live at the boundary, where we are rejecting the bad, but also embracing the good, turning away from bad ways of looking at the world, but also promoting good ways. Skepticism is not enough.

Some of you may be familiar with a book by Bill Countryman, *Living on the Border of the Holy*. It speaks of our calling as Christians to live on the borderlands between the secular and the sacred, between life as we experience it and life fully in the presence of God. We cannot cover the ground for people, nor can we act as an intermediary between them and God, but we can be guides for others as they travel unfamiliar territory. We can reorient them when they get lost, help them up when they stumble, and point out some areas where it's easy to get bogged down or stopped altogether.

There is only one world, and all of us struggle to find our way in it. Science and faith can be valuable tools for that, when we use them rightly. Ordained Scientists have a calling to help people in that process.

What do you do when you find yourself in sudden darkness? Call out? Light a match or turn on a flashlight? In my mind, science is like a flashlight. It is this wonderful tool for dealing with darkness. We should always carry it with us and try it out. And sometimes, a flashlight just doesn't help. It shines over the edge of a cliff, or onto a black surface, or the battery runs out. Sometimes we need other tools and other strategies. We need to be prepared when our flashlight is not enough. After all, sometimes the best response to the darkness is to let our eyes adjust. And sometimes we can only lie down and sleep until the dawn.

The borderlands can be like that, the strange region between seen and unseen, visible and invisible, secular and holy. They require patience and clear thinking and a variety of tools. I think ordained scientists can help people use their flashlights, but I also think we are here to help people when the flashlight isn't enough. Science is narrow. Faith must be broad enough to encompass the whole world.

I love God and I love the world that God has made. This love keeps me looking. It motivates my science and my theology as I try to understand, and nothing could stop me from my investigation. Would you stop from following your beloved?

We know about relationships. We know that they require both curiosity and commitment. A relationship with curiosity but no commitment, cannot grow. It lacks the bonds that hold people together. It lacks the shared responsibility and care that make two people one. A relationship with commitment, but no curiosity, grows brittle and frail. How can we say we truly love someone when we no longer know who they are? Our relationship with God and creation must be like this: committed to curiosity and curious about commitment. We must be always looking and listening to hear. We must be always responding and sharing what we have.

So, I would commend to you both curiosity and commitment, as you negotiate the borders of seen and unseen, and as you help others along the way.

Readings for the Day

Genesis 1 : 1 – 5
Psalm 29
Acts 19 : 1 - 7
Mark 1 : 4 - 11

Notes from a Sermon given by the Episcopal Visitor Bishop David Walker on 10 January 2018 at the Retreat of the North American Chapter at Richmond Hill, Richmond, VA

As most of you know, I'm not a proper scientist, I'm a mathematician who dabbles a bit in statistics. But on the plane coming across to the US I was reading a report on a survey of 3000 scientists in the UK, France and Germany, that was examining the evidence for the popular belief that science and religion are at war. These three European countries (assuming I'm still allowed to consider the UK as European until Brexit) would all be classified as at the secular end of the scale. Yet what was interesting was that only a quarter identified as atheists, and around half claimed to be religious or spiritual in some way. Only a minority among the atheists believed science and religion are opposed. and quite a small minority of them saw science and the broader notion of spirituality as being in conflict. Particularly interesting was that atheism scores were lower for those who had higher scientific qualifications, doctorates for example. The high profile, high performing, anti-religious polemicist could well be categorized as an endangered species. I was pondering that we should maybe set up sanctuaries for them in places that would minimize contact with the outside world. But I'm not sure sanctuary is a word they could cope with. Anyway, none of these findings imply that we should simply assume the argument to have been won, endangered species are always worth studying. But maybe it suggests that the force of our efforts should and could lie elsewhere. Let me offer you three challenges, or opportunities, that arise from these Ipsos-Mori research findings, one for each of the three main non-atheist groups. Some of you are probably already doing a lot of this.

Strengthening the faithful

• Being visible in a society where religion is treated as private. Physically visible, visible in the cyber world, visible in magazines, journals etc. Housing example.
• Sermons and liturgies that take science seriously - maybe special events to appeal to those who don't want a weekly habit.
• Finding people things to do. How can a faithful scientist grow their faith through practical action or engagements? Faith, like a bodily muscle, grows when you exercise it. Give it nothing to do and it will slowly atrophy.
• Helping people articulate what they believe and how it relates to their science.
• De-compartmentalizing, to use some of the language we have been working with this week.
• Scientists in Congregations event at Manchester Cathedral this coming Tuesday.

Encouraging the spiritual

• Offering a spirituality that goes beyond the individual's private experience.
• Awe and wonder at the natural world as shared phenomena.
• Opening up the mystical traditions of faith. It's not primarily about dogma.
• Quest religiosity.
• Building that inhabitable house that Stig has referred to in our conversations. For some people the Chapel is there in the basement, alongside the foundations, for others it's on the roof, the final element to be put in place. Spirituality can lead to belief as well as the other way round.
• I not sure there has been enough exploration of what a good science informed spirituality looks like. The Western tendency to look for spirituality in pre-scientific societies may not be a help.
• Turning spiritual values into practical action.

Engaging the undecided

• Opening the mind through meditation. Conversation with senior BBC director.
• Ethics - paralleling the responsible shareholder movement, what is responsible science? Too often ethics seems to be a box to be ticked when getting a research proposal through the maze of university protocols. The Ethics Committee is one more hurdle to jump, and once you've cleared it

you can forget it. What does it mean to take a responsible, ethical approach at every stage of the scientific process?
• Enjoying uncertainty together - the Quest dimension of religiosity. It's ok to have doubt, it's even better to enjoy doubt and uncertainty, especially when they become the energy to explore further. Not to reach certainties but to find some even more exciting doubts to profess.

I've couched this in response to a survey about professional scientists, but I would hope that it's more widely applicable to engaging with the scientific mind and spirit in general. Each of us can pick at least one to focus on for this new year. To help the religious, the spiritual, or the agnostic. And not to waste energy throwing food to the polemicists in their protected enclosures.

From: Ingrid Maria Bergman

The liturgists from the laboratories.

They stand with one foot in priesthood and the other in the world of scientists – chemistry, genetics, medicine. Society of Ordained Scientists wants to close the gap between church and science.

Once a year, a group of people meet for prayer and silence at an Anglican monastery in England: They have in common that they are scientists at a high level who also are ordained priests, pastors, or deacons. Since 1987, Society of Ordained Scientists has admitted members who make a commitment to pray for one another and to ”bring faith to the scientific community, science to the church, and both to the general public”. Most of them now work as priests while others have brought their clergy identities with them into research jobs reaching from particle physics and biology to engineering. The society belongs to Anglican Church of England and is supervised by an Anglican bishop or archbishop, but members represent various denominations.

With all your mind

A key word to the society is the passage in the Bible where Jesus summarizes “the greatest commandment in the law”. It’s not only about “love the Lord your God with all your heart and with all your soul” but also “with all your mind” – and “your neighbor as yourself”. Among the earliest incentives in the brother- and eventually sister society were recognized names within the scientific community as Arthur Peacocke (Biochemistry, Oxford University) and John Polkinghorne. The latter left his professorship in theoretical physics at Cambridge University as a 47-year-old, from an important role in the discovery of the quark and the establishment of S-Matrix-theory to theological studies and ministry, i.a. as dean at Liverpool Cathedral.

They want to “bring faith to the scientific community and science to the church”.

Although only a small proportion of the population as a whole have any accurate scientific knowledge, it is science and technology which are creating new attitudes. To people so influenced the language of the Church appears to be not only obscure but obscurantist and, even, dishonest: founder Arthur Peacocke wrote:

Also, most priests are not – understandably – very well equipped “to understand, from the inside, the chief formative influence [of research] in the mind of modern man”, Peacocke thought, according to the society’s home page. Because of this, the society was founded, to gather people who combined insights into theology, faith, and the life of the church with an “intellectual rigor“ that also was rooted in “ worship and silence”. They envisioned a group of people that, visible in public, could confront the intellectual issues of the day. They should do this while being “quietly committed to spiritual practices and personal faith”.

SOSc has an extrovert mission with lectures in churches and parish contexts, as well as contributions in debates on faith and science. – But primarily, focus is inward, it says on the web page. – We want to strengthen and enrich the ministry of those who stand with one foot in each world, faith and science.

Researchers with priest callings:

Once a year, the members of the society gather for a retreat. Here are, among others, Bishop Lee Rayfield (in purple), who has carried out research in immunology, and Maureen Palmer (to the left of the bishop), who is a priest and expert in gut physiology. The picture is from the gathering in 2013.

I have become a better priest

My background as a geneticist has given me a softer eye as a priest.

Ingrid-Maria Bergman (56) is deeply grateful for the fellowship of her ”siblings” in the society. Bergman shares her time between chaplaincy at Västervik Hospital on the Swedish east coast and ministry in Törnsfall parish in the same place. The pendulum began to swing towards research in the year 2000, after she had suffered a burnout in a different priest job. She needed a break from ministry, and reasoned she might be able to recover by studying biology, a favourite subject from school. This way, life started to move forward more easily; in 2005 she achieved her Master’s degree, and was then offered a stipend as a Ph.D. student in biomedicine at Linnaeus University. In 2010, she defended her thesis on the ‘Genetics of the Immune System of domestic pigs and wild boars’ and obtained her Ph.D. It was basic research, but as a “side-effect”, our findings provided clues on how to reduce the use of antibiotics in pork production. And this can of course lead to positive effects, says Ingrid-Maria Bergman to STREK.

Holy Eucharist and DNA

Regardless how fascinating she found the lab world, she still longed back to ministry. Not least, I missed leading public worship, in particular the Holy Eucharist. When I do that, I can in an explicit way – celebrate the mystery which I perceived so strongly when studying the DNA molecule. Many people might stun at a parallel like that? As far as I’m concerned, there has never been any kind of antagonism between faith and science, it’s the same God who makes himself known in the Holy Eucharist and in the small print complexity of the creation. To carry out research on genes and evolution is to “see God from behind”. What do you mean? As humans, we cannot see God’s face and live. But he lets us see him from behind, if you understand what I mean. My years in the lab have made me sense God’s greatness, that there is an immense love behind the interplay in nature. I think I also have become a better priest. In what way? I have been given a softer eye, I think. I look at us humans from more than one perspective, our frailness as well as our greatness. Human beings also call forth awe and humbleness. You understand that things about us are not as simple as you might think at first glance.

She found out about Society of Ordained Scientists by chance. Her husband Martin, who also is a priest, found the society’s home page an evening in 2011 when he was surfing at random. He

startled a bit. – This could perhaps be something for you, he said. And it was. The year after, she was admitted as a member in SOSc. It has been a great joy to have this fellowship with other people who have the same background, to experience that "there are more like me". From a starting point, I, being Swedish, am a bit out in the periphery of the network. But the brothers and sisters in England and the USA are very good at making sure I don't feel that way. The annual retreats in England have become very important to me.

Prayer circle

The same goes for the prayer routine the members have committed themselves to. We are divided into groups, one for each date of the month. Today, we pray for group 7, since it is the 7th of February, Marilyn, Stephen, David and so on. Before I go to bed, after brushing my teeth and having a shower, I take out the prayer card with the names. It means more than we often realize to carry each other in prayer like this. Are there occasions when the "mission" of the society becomes particularly obvious to you? If you have this double background as I have, you may face skepticism from both sides. When I worked as a scientist, I sometimes experienced that colleagues thought I wasn't in my right mind having a background as a priest. That was only possible if you were intellectually dishonest. However, this was not the rule, and most colleagues came across with respect, also regarding my "other" background. Similarly, she has experienced how colleagues in priesthood have turned their back on her when realizing that she embraces the evolution theory. It was probably threatening to them. But again, this is not the rule when it comes to colleagues. But you meet many people in Church of Sweden who are intimidated by, or remarkably uninterested in, research and science. Have they been put off by the lack of ethical awareness displayed by some scientist? There have been scandals, of course. But it is a shame that this harms the trust in the large majority of scientists and scientific milieus that have no ethical ballast and contribute to society. To carry out research on genes and evolution is to "see God from behind".

Solemnly admitted: In this chapel, St Hilda´s in Whitby in Yorkshire, Ingrid-Maria Bergman was admitted as a member of Society of Ordained Scientists in 2012.

The Quest for Truth and Freedom: Some Polanyian reflections
By Bishop David Atkinson and published on Fulcrum
I. Introducing Michael Polanyi to a post-truth world

In a two-part article helping the church think about how it understands itself and the nature of its calling in a 'post-truth' world, David Atkinson here first introduces the life and work of Michael Polanyi and two key themes in his thought: The Way of Discovery and the personal component in all knowledge and the key role of A Society of Explorers. In the second part, these insights will be related to a number of areas of Christian discipleship and the church's witness.
Christian discipleship is – among other things, as we shall say more fully in due course - about following The Truth, doing the truth, living the truth, preaching the truth, worshipping in spirit and in truth. One of the disquieting features of our times is the disappearance of truth. This paper explores one approach to understanding the excitement of exploring truth, particularly in science, and its liberating power in society, drawing on the work of the scientist/philosopher Michael Polanyi. It concludes with drawing some implications from his insights for our understanding of Christian discipleship today, just over forty years after his death.

The Oxford Dictionaries Word of the Year for 2016 was 'post-truth' — an adjective defined as 'relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief'. Dictionary editors said that, while the word had been in existence for the past decade, there was a 'spike' in frequency in 2016 'in the context of the EU referendum in the United Kingdom and the presidential election in the United States'.

'Post-truth' is not quite the same as 'lies'. It is about exercising power and control and manipulating public opinion. The liar may know the truth, but the post-truth politician does not care what is truth and what is not. We were made aware of post-truth politics during the 2016 UK Referendum campaign on leaving the European Union by the bus advertising '£350 million a week' supposedly available for the NHS, and by the message from UKIP's deplorable anti-migrant 'Breaking point' poster. In 'post-truth' politics, people pick and choose between 'alternative facts', the phrase once used by one of President Trump's aides when defending the White House's statements concerning the numbers who attended the presidential inauguration. Or we live in the 'power of positive thinking'-land of Odd Ball, Donald Sutherland's character in the film *Kelly's Heroes,* who responds to a fellow soldier's complaint that a bridge might have been blown up again by the enemy: 'it's a beautiful bridge… think it will be there, and it will be there.' It is possible to be drawn into a fantasy land where, through our own determination, we can come to believe whatever we wish to be 'true.' It is increasingly possible, also, for example through social media, to belong within a bubble of like-minded people who continually reinforce each other's views of the world whether or not that has any true relationship to reality.
For post-truth politicians and journalists — and, indeed, for many users of social media — 'truth' no longer carries the transcendent quality that it does, for example, in the Bible.

The Meaning of 'truth'
There are, of course, many minefields in philosophical discussions about truth – correspondence theories, coherence theories, existential approaches, and so on. Most of these concentrate on what it means to say that a statement is 'true'. In the Bible, the emphasis is much more practical. In the Old Testament, 'truth' can mean faithfulness or reliability. It is about 'doing the truth', acting with integrity. It points to God's 'steadfast love and faithfulness.'

In the New Testament, truth is contrasted with hypocrisy when words do not match deeds. In Jesus, whose 'word is truth' and who embodies 'the truth', we see personal integrity, trustworthiness, being in touch with reality. The antithesis of truth is not error, so much as lies or deception.

Although ‘truth’ can mean ‘a true statement’, it more often refers to ‘moral and personal integrity’. ‘Truth’ thus means more than simply ‘factuality’. Truth encompasses integrity, reliability and faithfulness in the discerning, interpreting and recounting of ‘facts’ in accordance with reality. ‘Truth’ points to something transcendent, something universal, described by Christian faith in terms of the trustworthiness of God.

To speak of truth – or indeed justice, love or beauty – as *transcendent* is to say that truth confronts us with its own masterful objectivity and ultimate authority. Truth stands above us and beyond us as a reality that we reach out to but never control, as a navigator before the pole star reaches towards it and sets his course by it. Truth places us under an obligation to respond appropriately. Our statements about truth refer beyond themselves, and so are not themselves ultimate and final, but always open to correction as further truth is disclosed to us in our discoveries. Our statements have their own truthfulness by reference to an ultimate truth. In Christian understanding, Truth is always related to the faithfulness of God, who is the source of all Truth, and is revealed as personal Being in Jesus Christ.

The word ‘truth’ used always to carry this ‘transcendent’ quality. However, in our recent ‘post-modern’ world, we have become used to ‘relative truth’ - ‘your truth’ and ‘my truth’. And now ‘post-truth’ describes people for whom truth simply does not matter - except when we disagree with someone else’s truth, which we then call ‘fake’. Our loss of the transcendent nature of truth could have deeply troubling consequences for public life. One voice from the past for whom these issues were of supreme importance was the scientist/philosopher Michael Polanyi.

I have called this paper ‘The Quest for Truth and Freedom’ to honour two of Michael Polanyi’s major commitments. His first commitment was to science as a quest for knowledge. In 1951 he wrote ‘Until fairly recently it used to be assumed that [pure science] served its own purpose: the discovery of knowledge for the love of truth.’[1] His second major commitment was for what he called a ‘free society’. When truth is no longer respected, or even acknowledged, he argued, our very freedoms are at stake. ‘A general respect for truth is all that is needed for society to be free.’[2]
It was Polanyi’s belief in the transcendent reality of truth that underlay his approach to science as an intellectual passion, and also his deep concern for what he called the crisis of modern culture, and the loss of commitment to truth in our political and social worlds. So who was Michael Polanyi?

Michael Polanyi: A Short Biography
Michael Polanyi was born in Hungary to a secular Jewish family in 1891. He started academic life working to gain doctorates in both medicine and in chemistry. His research included chemical kinetics, 3 x-ray diffraction, adsorption of gases, fibre diffraction analysis, and plastic deformation of ductile metals. In Hungary, in 1918 he became secretary to the Minister of Health.

Polanyi emigrated to Germany in 1926, becoming a chemistry professor at the Kaiser Wilhelm Institute in Berlin. He also - because of the political situation there - became very interested in economics. (His older brother Karl Polanyi was due to be recognized internationally as a leading economic historian.) Then, in 1933, with the coming to power of the Nazis, Michael resigned his chair in Germany and came to England, becoming a Professor of Chemistry at the University of Manchester. He was later given a specially created Chair at Manchester in social sciences. In 1944 Michael Polanyi was elected a member of the Royal Society, and on his retirement from Manchester in 1958 he was elected a Senior Research Fellow at Merton College, Oxford. He died in Oxford in 1976.

Key factors in Polanyi's academic development.

Various factors moved Polanyi from his career in chemistry to his study of politics, social sciences, and eventually philosophy. He came to believe that it was a terribly wrong understanding of science that distorted humanity's understanding of our place in the world, and of what makes for a healthy and free society. Although brought up in a secular Jewish family, he was increasingly attracted to the Christian faith, and at one point spoke of a belief in a spiritual reality, though he later said that he would prefer to call it a belief in the reality of emergent meaning and truth.[3] In his last book, *Meaning*,[*4]*Polanyi wrote of the huge importance of spiritual imagination and faith, and 'the religious frame of mind'. Although clearly very sympathetic to Christian faith, and certainly to the transcendent values embedded in 'the Christian inheritance', his own personal religious convictions remain mostly hidden in his writings.

In the mid 1930's Michael Polanyi was very disturbed by developments in Soviet Russia's approach to science. To cut a longish story short, a conversation in 1935 with Nikolai Bukharin, a senior Communist political leader, shocked Polanyi. Polanyi asked Bukharin what was the future of pure science in the Soviet Union? Bukharin explained that pure science was a symptom of a class society. And 'although scientists freely follow their own interests, owing to the internal harmony of socialist society they would inevitably be led to lines of research which would benefit the current Five Year Plan'. The comprehensive social planning of all research, Bukharin claimed, was merely a confirmation of the 'pre-existing harmony between scientific and social aims'. Polanyi was a passionate believer in the freedom of science, and so found this deplorable. There was massive persecution of biologists in particular in Soviet Russia; physical scientists for some reason seemed to get off more lightly. So what was going on, Polanyi asked himself, both in society and in science? Marxism, claiming to be a science, faced Polanyi with questions about truth, about society and about science. His major life's work was an attempt to address these questions [5].

Polanyi believed Western culture was in crisis, a crisis that led the twentieth century to be the most violent in history. The clue to his understanding of this crisis came to him from his reflections on the nature of scientific discovery but he was propelled to this clue by the brutal and violent events in which he was caught up.[6] He began to see that immense evils spring from a false scientific outlook. He knew from his scientific experience that discovery was rooted in freedom, and freedom was rooted in a faith in certain fundamental values, both of which Marxism denied. So he had to find a way of justifying his belief and this was urgent because Bukharin's denial of the independence of thought seemed to Polanyi a symptom of what 'underlay the violence, oppression and inhumanity that he saw destroying Europe'.[7]

Much of Polanyi's work can be summarized in two phrases: First, 'The Way of Discovery', an exploration of the personal component in all knowledge; and second, 'A Society of Explorers', Polanyi's name for the community of science which provided him with a model for understanding The Free Society, and for his work in politics and social theory.

A. The Way of Discovery

Polanyi's work focused on an exploration of how scientific knowledge is arrived at, and what it is.[8]. He had come to believe that the social crisis in the Soviet Union in the 1930s and 1940s was underpinned by a false ideal of 'scientific detachment'. It made him ask what science really is, and what is going on when we make a discovery. One of Polanyi's major pre-occupations became the error of assuming that knowledge can be detached from the human knowing person, 'the kind of detachment which is currently supposed to be the mark of scientific integrity'.[9] Polanyi argued that the ideal of objective detachment can be traced to the rationalism and critical doubt of the Enlightenment, and it has undermined the commitment to the transcendent values of truth-seeking, liberty and justice.

To be clear: Polanyi does hold firmly onto the notion of objectivity. It is the false notion of 'so-called scientific objectivity', detached from human agency, and the idea that science is somehow 'value-free', which Polanyi criticises so fully. He does so because *all* knowledge, he argues, is not actually detached knowledge: the human knowing person is always inescapably part of our knowledge. Polanyi is trying to provide a fresh examination of the grounds of all knowledge of which science is one part.

Our exploration of Polanyi's philosophy of scientific discovery is divided into four sections.

1. All knowledge is personal

Michael Polanyi's major work is called *Personal Knowledge[10]*. This was based on the Gifford Lectures of 1951-2, and developed ideas he had published in 1946 in the book *Science, Faith and Society*. In these lectures he developed his opposition to a positivist account of science, and illustrated the important role that personal commitments play in the practice of science. In *Personal Knowledge*, Polanyi set out to re-equip us with the skills and faculties that generations of 'critical thought' have taught us to distrust. He wanted to interpret the world as it is, not as 'objectivist science' said it must be. Polanyi developed the view that all knowledge relies on personal judgments. One of his primary theses is that there is an unavoidable act of personal participation and personal commitment to a framework of interpretation in all our explicit knowledge.

The scientist is not a detached observer, but actively participates in knowledge - we choose the questions to explore; we make judgments about measurements and probabilities; we develop skills; we formulate theories. We are driven by passions, informed guesses and hunches, by commitment, by the longing for discovery. There is an inescapably personal dimension to all knowing and all knowledge. Science cannot be reduced simply to sense data.

'Personal' does not, of course, mean merely 'subjective'. In answer to the criticism that such a personal element in all knowledge will land us in subjectivism and relativism, Polanyi looks again at the logic of discovery. You cannot discover anything unless you are convinced that it is there, ready to be found; unless you have a deep commitment to the belief that there is something there to be discovered. It is the masterful objectivity of the reality that confronts us which prevents knowledge lapsing into mere subjectivism. When you believe your discovery reveals a hidden reality, you will expect it to be recognized equally by others. The scientist is seeking to make contact with a reality that at the moment he or she does not fully apprehend. Scientific work seeks to bring that reality to light, and we present it to our scientific colleagues for their scrutiny, their critique, their correction, or their endorsement. This 'inter-subjective testability' means that all our knowledge is therefore corrigible, and open to correction in the light of fresh insights, but we are nonetheless in the quest of truth. Polanyi calls this 'working with universal intent'. He says: 'I speak not of universality, but of universal *intent*: I might be wrong.'

So for Polanyi, 'there is no finished certainty to our knowledge, but there is no skeptical despair either. Through all our different kinds of knowledge, there is reasonable faith, personal responsibility, and continuing hope.'[11] There is an openness to the future uncovering of further truth, which may correct or add to what we know.

2. The tacit component: we know more than we can say.

In *Personal Knowledge*, Polanyi speaks about what he calls 'the tacit coefficient' - a theme which he developed further in his later book *The Tacit Dimension.[*12] He regarded his explanation of what he called 'the structure of tacit knowing' as one of his most important contributions.

We begin with Polanyi's saying: 'We know more than we can say'. One of Polanyi's examples is the way we recognize someone's face. We can perhaps describe the eyes, the nose, the shape of the mouth, whether the hair is covering the forehead and so on. But to focus on these particulars means that we lose the face. We recognize someone's face by 'indwelling' the subsidiary particulars - in

other words we allow ourselves to be tacitly aware of the shape of the eyes, the frown on the forehead and so on, as we concentrate on their joint focal and integrated meaning - the face of the person. The structure of tacit knowing is therefore this: we attend from subsidiary knowledge, such as the features of the face, of which we are tacitly aware, towards their joint meaning, namely the face itself. All thought contains components of which we are subsidiarily aware as we focus on the meaning to which they point. Tacit knowing, Polanyi maintains, has this from-to structure. And this is what is going on when we make a discovery. We attend *from* tacit awareness of subsidiary clues *to* focal awareness of their joint meaning.

Polanyi uses the word 'indwelling' to describe this process. We indwell the subsidiary tacit awareness in order to concentrate on the focal awareness. To put it another way - knowledge is not about detachment, but about engagement: knowledge comes by participation. For example, a blind man is probing the inside of a cave with his stick. The stick explores the cracks and crevices in the wall and when this is going on, the other end of the stick is pressing on his hand. If the man focuses on his hand, all he will feel is the pressure on the hand. But if he allows himself to be subsidiarily aware of the feelings in his hand, he can focus on the other end of the stick, and he will then understand something of the structure of the cave. He 'indwells' the stick; he is *subsidiarily* aware in a tacit way of the pressures on his hand; he is *focally* aware of the walls of the cave.

So all our knowledge, Polanyi argues, has this from-to structure. We are tacitly aware in our bodies of a knowledge that we cannot fully articulate. We know more than we can tell. But these subsidiary clues bear on our task as we strive to become focally aware of concepts that give these clues their joint meaning in which truth emerges. That emerging truth is mediated through our tacit awareness. We attend *from* our bodies *to* the world around us. Science research has been described as being 'on the knife edge' between nagging ignorance on the one hand and tacit understanding on the other. We know there is something more to discover, but we cannot say what it is. At the heart of all science there remains the element of tacit personal judgement based on our skills. Knowledge therefore always has a personal component, and points towards a transcendent truth.

3. Levels of reality and dual control

Polanyi sometimes gives the example of a spoken literary composition. If we attend away from the sounds the speaker is making, we can focus on the words; attend away from the words, we can focus on sentences; attend away from the sentences, and you will focus on the meaning I as the speaker am trying to convey. We are tacitly aware of one level as we focally attend to another level of meaning. There are thus these different levels of activity: voice, words, sentences, style, and literary composition. Each level has its own rules. And each level is *subject to dual control*. In other words, sentences are controlled both by the words of which they are composed, and also by the style to which they contribute.

Polanyi uses this concept of dual control in his response to the reductionism of some life-sciences.[13] He argues that living beings operate at more than one level. At one level they are like a machine, subject to the constraints of physics and chemistry for its construction. But a machine is also subject to the constraints of a higher level: namely the purpose for which the machine is constructed. Physics and chemistry have no knowledge of the operational principles of machines.

In an analogous way, the DNA molecule in a living being cannot exist without physical properties and the constraints of physics and chemistry. However, for the DNA molecule to act as a code, the information contained in it is not reducible to the laws of physics and chemistry. That information is a property constrained by a higher-level ordering principle.

Knowledge, which has the from-to structure of subsidiary and focal awareness, works within hierarchical levels of reality and of understanding. That of which we are subsidiarily aware points

beyond itself to a higher level of reality that gives it meaning. Herein is transcendence. So, as Polanyi puts it:
'living beings are possessed of intelligence…which controls and directs the operations of their sensory-motor faculties…But the principle of intelligence is not the ultimate principle or the highest level in the hierarchy governing the functioning of living beings, just as the sensory-motor levels of life leave themselves open to the control of intelligence, so the principle of intelligence leaves its powers open to the still higher principles of responsible choice. Human beings exercise responsibilities within a social setting and a framework of obligations which transcend the principle of intelligence'.[14]
Polanyi thus takes us from mechanism to intelligence, then to responsibility, and so to morality.

4. A fiduciary framework
We have already suggested that, for Polanyi, knowing is an act deeply committed to the conviction that there is something there to be discovered. It is personal, in the sense that it involves the personality of the discoverer. The discoverer, he argues, is filled with a compelling sense of responsibility for the pursuit of a hidden truth.15 The knower, in her act of knowing, exercises a personal judgement in relating evidence to an external reality, an aspect of which he is seeking to apprehend.

All this begins with a belief-system, a commitment of faith, a 'fiduciary framework' of assumptions and traditions that underlie all science. The scientist begins with the commitment to the belief that there is something there to be found. At this point, Polanyi quotes Augustine's word about 'faith seeking understanding.'[16] We believe in order to understand.
Here is Polanyi's summary of this point:
'No scientist is ever concerned with producing the most convenient summary of a given set of facts. This is that task of the editors of encyclopedias and the compilers of telephone directories. It is of the essence of a scientific theory that it commits us to an indeterminate range of yet undreamed consequences that may flow from it. We commit ourselves to these, because we believe that by our theory we are making contact with a reality of which our theory has revealed one aspect. It is this commitment that lends universal intent to a scientist's more original solitary thought.[17]
Notice: 'we commit ourselves…because we believe.' There is always more to discover.

B. A Society of Explorers
The second major theme in Polanyi's work shows Polanyi's shift from science into social and political comment, and especially in his various writings on what he called 'The Free Society'. Marxism had put questions to him about the nature of science and the nature of truth, and also about the nature of society. His work was an attempt to answer all these.
The best way to understand this shift is to begin with Polanyi's description of the scientific community at its best.

1. The scientific community
We have already noted that in order to avoid the misunderstanding that he is advocating a wholly subjective approach to knowledge, Polanyi very clearly underlines the fact that the scientist works within a tradition of beliefs and understandings and puts his discovery out into the public realm of the scientific community for scrutiny, correction or corroboration. There is 'conviviality' and 'inter-subjective testability' within the community of science. Polanyi evocatively calls the community of scientists 'a society of explorers.'

Scientific discovery is therefore an art, a skill learned through apprenticeship to someone who knows more than I do. It is unspecifiable - tacit - in detail: through following a master you know more than you can say. But this is really a submission to authority. You follow your master because

you trust his ways of doing things even if you cannot fully analyse them in detail. In other words, you submit to a tradition - a tradition which is embodied in skills, hunches, connoisseurship, which cannot be fully specified. A tradition that is corrigible and open to correction. A tradition that carries a framework of beliefs.

So the structure of tacit knowing demonstrates a vital relationship between traditional frameworks of understanding, and the acquisition of new knowledge. It is within a convivial society of explorers, appreciating their tradition but constantly willing to call it in question in the light of new discoveries, that the researcher – depending on that tradition – is enabled to press forward in innovative ways.[18]

Polanyi knew that science must be free from external authority but realized that authority and tradition are both vital for the free community of science. The authority of the scientific community is not that of a ruler who claims to know best, nor a majority suppressing a dissident minority. It is the authority of [9] the way scientists work together. The free scientific community depends on mutual trust, and confidence that others are also committed to truth.

Whether Polanyi would describe today's scientific community in quite the same terms is a good question. Significantly more competitiveness, pressure to publish in order to obtain job security, obligation to complete endless funding applications, and political constraints of one sort or another, lead too often to what has been called a 'cost-benefit manipulation of truth'. Polanyi might fear that his vision of the society of explorers committed to love of truth has seriously lost its way since his time. Could he write now what he wrote in 1946?: that the scientific community at its best is a community which effectively practices free discussion…dedicated to the fourfold proposition (i) that there is such a thing as truth; (ii) that all members love it; (iii) that they feel obliged and (iv) are in fact capable of pursuing it.[19]

2. Moral inversion

In Polanyi's analysis of the 1930's Soviet Union, society got it wrong because its understanding of science was wrong. One really important issue for Polanyi was the claim of Lenin's doctrine to scientific certainty. Dialectical materialism was a 'radically utilitarian conception of progressive society' in which - and this is Polanyi's insight –

moral passions are masked as scientific laws, which, by defining a historical necessity, sanctions the machinery of violence. Engels said that Marxism had transformed socialism from a utopia into a science. But actually Marxism rests on the emotional force of its utopian aspirations, and merely disguised them as scientific predictions. [20]

What we have here, then, says Polanyi, are 'genuine moral motives which are concealed within a scientifically respectable machinery of acquisitive violence'. So a very curious social structure emerged: 'high moral motives disguised as scientific predictions, and secretly injected into the engines of merciless power'. This – he says – is moral man's flight into captivity.

Polanyi calls this process 'moral inversion', and it applies much more widely than his critique of Marxism. Let us put it this way: how can it be that science – which many people rightly and demonstrably thought to be a great boon to humanity – has become a weapon of destruction? Why do social philosophies supposedly based on science become absolute tyrannical ideologies? Polanyi realized that 'moral inversion' is the fusion of real moral passions with a 'detached', objectivist view of science that can lead to an ideology which treats persons as things, and human beings simply as cogs in a machine. When that happens, our proper human impulses become detached from human values and social constraints and are too easily pushed into violence.

3. Truth and The Free Society

Just as science at its best operates within a society of explorers, committed to the belief that there is some reality whose nature is being disclosed to our endeavours, so a free society, Polanyi believed, also needs to hold fast to transcendent values and – as a society of explorers – be determined to work together in the light of these values.

'The free society', says Polanyi, 'can be defended only by expressly recognizing the characteristic beliefs which are held in common by such a society and professing that these beliefs are true'.[21] He goes on: 'the ideal of a free society is in the first place to be a *good* society: a body of men who respect truth, desire justice and love their fellows.' [22] Or again: 'a general respect for truth is all that is needed for society to be free.'[23] Polanyi is here not far from the commandment 'You shall not bear false witness', nor from Jesus' saying: 'the truth will make you free.' But he is a long way from the hollow shallowness of 'post-truth'. A free society is able to grant recognition to the independent growth of science, art and morality when it is dedicated to specific traditions of thought and the values by which its structures are constrained.

One very positive aspect to Polanyi's story made a great impression on him: his experience of the Hungarian Revolution in 1956. Despite moral inversion, that Revolution showed that it is nevertheless still possible for thought, morality, art, justice and religion to persist, even though the governing authorities tried to repudiate them. Personal values somehow broke through, and moral inversion in Hungary collapsed because people demanded the freedom to write the truth; write about real people, report truthfully on events. With huge cost, the quest for truth and for freedom broke through. That revolution saw a re-awakening of a sense of truth, justice and morality. This, for Polanyi underlined the huge importance of transcendent values.[24]

But what if truth is not believed to be *real* and *absolute*? It may then seem proper, says Polanyi, 'that the public authorities should *decide what should be called the truth*'.[25] But this is the route to totalitarianism and social disintegration. Towards the end of his life, he wrote
'When a judge in a court of law can no longer appeal to law and justice; when neither a witness, nor the newspapers, nor even a scientist reporting on his experiments can speak the truth as he know it; when in public life there is no moral principle commanding respect; when the revelations of religion and of art are denied any substance; then there are no grounds left on which any individual may justly make a stand against the rulers of the day. Such is the simple logic of totalitarianism.'[26]

Who today speaks with such a prophetic voice? To choose a very select few, perhaps it is Noam Chomsky's dissection of current political issues in *Who Rules the World*? Or George Monbiot's plea for [11] ecological and environmental justice in *How Did We Get Into This Mess*? Joseph Stiglitz analyses the social costs of neo-liberal capitalism in *The Price of Inequality*. Amartya Sen links justice with development in The *Idea of Justice*. Fiona Reynolds nourishes the human spirit in *The Fight for Beauty*. Naomi Klein is one of many voices arguing that climate change is the priority moral issue facing humanity *This Changes Everything.[*27]

Raymond Plant comments: 'critics [i.e. of Plant's own discussion] will argue that what I have called the 'economic virtues' are in fact embedded in and underpinned by a traditional moral inheritance derived from the Judaeo-Christian tradition which the development of capitalism has in fact undermined consistently over the pasts few centuries displacing this tradition by individualism and subjectivism. This is a central theme in Karl Polanyi's *The Great Transformation*.'

Michael Polanyi and Karl Polanyi on freedom

Michael Polanyi, and his older brother Karl, each developed a strong prophetic social philosophy with implications for economics and politics. Both were deeply concerned with the failures of state

communism, though Karl was early on more supportive of the possibilities of Marxism than Michael ever was. Both wrote strongly and passionately about the free society. Michael's thought developed in the direction of libertarianiam, with a focus - like F.A.Hayek's – on the priority of the individual, and the belief that good spontaneous order would arise among people if the state did not interfere. For him, the free market, and Adam Smith's invisible capitalist hand seemed the right way forward for social freedoms to flourish, though he did have a leaning towards trying to integrate all this with Keynes, whom he admired. Karl, on the other hand, believed that with the coming of the Industrial Revolution what used to thrive as 'social' markets for human well-being all became commoditised, and human values got lost in the capitalist free Market, which he thought was too often misunderstood as a mechanism within natural science, rather than a human artefact capable of human improvement:

The control of the economic system by the market is of overwhelming consequence to the whole organization of society: it means no less than the running of society as an adjunct to the market. Instead of economy being embedded in social relations, social relations are embedded in the economic system.[28]

However, on many things the two brothers were not too far apart.[29] Karl acknowledged the importance of markets for economic efficiency, and Michael acknowledged the importance of over-all government planning for social well-being. Both agreed that freedom in a complex society could only be achieved if it were rooted in and derived from what Michael called the 'transcendent values' which Karl explicitly understood as embedded in the Christian tradition.[30] [12]

4. Transcendent values

Both Polanyi brothers, despite different approaches to political and economic practicalities, believed that a good and free society depends upon its rootedness in transcendent values, which Michael expressed as truth, law, justice, love and beauty.

However, of course, in a world of sin, selfishness, and stupidity, there is much to work against these transcendent values and virtues, and much truth is partial. There are compromises with competing value claims. The doctor, out of love, does not always tell the whole truth to a dying patient. More dubiously, a government, seeking to keep a measure of peace, creates ambiguity and bluff concerning the use of nuclear weapons. Pressures on research scientists today to publish results in order to qualify for funding are much greater than Michael Polanyi would have known and this can sometimes regrettably lead to economies with the truth. Too often, for unworthy commercial or political advantage, truth is withheld or denied — as by some unscrupulous scientists who sowed doubt about the harmfulness of tobacco and are now doing so about climate change.[31]

Journalists often find it hard to tell the truth, despite the text-book words: "Journalism's first obligation is to the truth." Of course, there are different interpretations, and all our knowledge is limited and open to correction. Polanyi acknowledged that this was the case in science, which is crucially why a scientist's theories are tested by a peer group, to be corroborated or criticised. It is possible to get it wrong. But having said all that, and despite the uncertainties and difficulties in verification, we can understand our obligation to the transcendence of truth and aspire to tell it and do it.

That is utterly different from not caring about truth. Post-truth politics can lead to disillusionment with politicians and open the door to extremist views that no one feels it is important to verify or challenge. Social media seems to be increasingly dominated by opinion, and opinionated news. A false news item or allegation becomes a tweet and goes viral through the networks among like-minded people who reinforce each other's views. Politicians are routinely accused of lying — not

least during an election campaign — and increasingly that is accepted as part of the 'game'. A recent article in *The Economist* illustrated how alarmingly easy it is becoming to create 'fact' from fiction and produce convincing audio and video of things that have never happened, leading to false stories and actually 'fake news'.[32] What motivated Michael Polanyi was what he called the crisis in our culture. Where a society loses touch with transcendent values such as truth, justice, love and beauty, our proper human moral passions, he argued, become increasingly liable to be pushed in other directions, too often – as he experienced all too clearly - into violence.
The really troubling thing in a post-truth world is not that we get it wrong, but that truth ceases to matter.

The Quest for Truth and Freedom: Some Polanyian reflections
II. What the Church can learn from Polanyi in a 'post-truth' world

In this second part of his two-part article helping the church think about how it understands itself and the nature of its calling in a 'post-truth' world, David Atkinson relates Polanyi's insights to a number of areas of Christian discipleship and the church's witness.
As we said in the first part of this article, 'truth' is a central word in Christian discipleship. We have seen how, in Michael Polanyi's philosophy, the transcendent quality of truth emerges in the processes of discovery. He saw the crisis of the modern social and political worlds as related to loss of commitment to truth. The practice of science demonstrates the inescapably personal dimension to all knowledge. The scientist, through personal participation, and working within a tradition rooted in a framework of faith and commitment, is seeking to make contact with a reality that he or she does not yet fully apprehend. All our knowledge is corrigible, open to as yet undreamed possibilities, but we are nevertheless engaged in the quest for – and love of – truth. A commitment to transcendent values such as truth, justice, love and beauty are essential for human freedom and for the flourishing of a good and free society.
In this second part, we will seek to relate such Polanyian insights to that quest for truth and freedom which forms part of Christian discipleship. This is inevitably very brief, sketchy, partial and selective but explores nine different areas.

1. Truth in the New Testament

Truth is a strong theme in John's Gospel, which includes Pilates question 'What is truth?' and to which the rest of the Gospel narrative about Jesus Christ provides the answer.
Jesus Christ is described as the Word made flesh whose glory is 'full of grace and truth'. In John's Gospel Jesus says 'I AM the way, the truth and the life'. He prays to the Father that He would sanctify his disciples in the truth, for 'your word is truth.' Jesus refers to the Holy Spirit as 'the Spirit of truth', who will guide the disciples 'into all truth'. Jesus links truth with freedom in: 'the truth will make you free.'[1]
Truth is also a central concept for St Paul and other New Testament writers. St Paul speaks 'on behalf of the truth of God'. To suppress the truth, or not obeying the truth, is sin. Knowledge of truth is embodied in God's law. The Gospel is 'the truth of Christ', described as 'the Word of truth'. The goal is that everyone 'come to the knowledge of the truth'.[2]
So Christian discipleship includes 'loving in the truth'; speaking the truth in love; loving not in word or speech, but in truth and action; being armed in spiritual conflicts with 'the belt of truth'. It is about obedience to the truth; walking 'the way of truth'; rejoicing in the truth, which is coupled with sincerity, and doing 'what is true'[3].
The Christian Church, the community of disciples of Christ, co-workers with the truth, is described as a 'pillar and bulwark of truth'. Their worship of God is to be 'in Spirit and truth'. [4]
Truth for the Christian, then, is a 'transcendent value', rooted in the trustworthiness of God - the Word of God, the Spirit of God, the Way of God, the love of God and the worship of God.

Michael Polanyi spells out four basic assumptions for a free society. They are not far from these New Testament themes. They are

I. a belief that there is such a thing as transcendent truth
II. that we should seek and love the truth
III. that truth should be known and freely served by submitting to its standards
IV. that human judgement, although conditioned by a viewpoint, is still capable of seeking and knowing truth. [5]

In what follows we will briefly – and all too sketchily – refer back to Polanyi's insights set out earlier in his discussions of

- a 'fiduciary framework' for the way of discovery;
- the priority of the personal;
- the fact that in our quest for truth, all our knowledge is partial and open to correction
- truth as mediated through aspects of reality which point beyond themselves
- living in a many-levelled world
- human beings as capable of destructive 'moral inversion'
- a 'society of explorers' which could embody the redeeming values on which a good and free society depends.

2. Truth within a framework of faith

The transcendence of truth, the knowledge of which is gradually discovered within a framework of faith-commitment (a 'fiduciary framework'), is, we said, a foundational theme in Michael Polanyi's philosophy. Both the theologian Thomas Torrance and the missionary bishop/theologian Lesslie Newbigin – among many others – drew on this Polanyian theme.

T.F. Torrance, a Barthian theologian from Edinburgh, who developed a keen interest in the implications of modern science for theology, not only worked quite closely with Polanyi, and often quoted Polanyi in [3] his own theological work, but also knew Polanyi well enough to be made his literary executor. Torrance accepted Polanyi's description of a 'fiduciary framework' in all knowledge. He wrote:

'It was evidently not Polanyi's main intention, in reconstructing the scientific basis of man's knowledge of the universe, to make room for religious faith or knowledge of God, but he was nevertheless aware of doing just that, as a by-product of his argumentation. Not only has he helped to release Christian faith from pressure by the concept of the universe as a closed mechanistic system of cause and effect, but he has shown us that in the most rigorous scientific activity the human mind cannot operate outside a framework of beliefs which, though formally unprovable, play an essential role in guiding the thrust of inquiry into the hidden meaning of things.'[6]

In *Truth to Tell,[7]* Newbigin also affirms the importance of a 'fiduciary framework' to all knowledge by quoting Polanyi's use of Augustine's '*credo ut intelligam'* ('I believe in order to understand'), 'which Polanyi as a practicing scientist saw as a true account of the relation between faith and knowledge'.[8]

For these contemporary theologians and church leaders, the recognition that all knowledge flows from the risky commitment of the whole person in the quest for truth, within a tradition which embodies a framework of faith, believing there is a transcendent reality being made known, is an essential first step in speaking about our knowledge of God.

3. The Priority of the Personal

What does knowledge of God involve? Drawing on Polanyian themes indicates that all knowing is a skill; it is an activity of persons in community; it involves risk and commitment; it is

essentially personal knowledge; it involves the self-disclosure of God; and it is the 'supreme adventure which takes us beyond everything we can know' [9].

As we have said several times, Polanyi demonstrated that all knowledge has an irreducibly personal dimension. Faith is not just intellectual acceptance, but the risky commitment of the whole person.

In Joan Crewdson's 1993 work for an Oxford BD in theology, based on Michael Polanyi, (with whom in its earliest stages she had worked) she says that her aim was 'to show that the basic unit of reality is not either matter or mind, but both-and, and that we live in an irreducibly personal universe, with personal being as its highest product.' She quoted Polanyi as viewing evolution as 'steps on the road to personhood' and personhood as the product of an environment which both challenges and rewards life's adventure' (p. 206).[10] According to Crewdson, Polanyi was constantly asking: 'What kind of a world can give rise to a mind capable of knowing the universe, while remaining part of it?' She develops a personalist theology, rooted in God who is transcendent yet immanent in the world, and argues that in a similar way, 'the world transcends the persons who are part of it, and persons transcend the world by knowing it.' (217). For Crewdson, the answer to Polanyi's persistent question was that Christianity sees Jesus Christ as God's Word (l*ogos*), who provides the conceptual framework needed to interpret the created order, and it sees his divine Sonship as the key to the relation between God and human persons (294). In Polanyian terms, then, 'Christians find in the *Logos* of God the needed interpretative framework (rationality), that enables them to understand the nature of creation and redemption, including their own place in God's scheme of things.' (312).

This is wholly consistent with John's Gospel, in which Jesus says, 'I AM the Truth'. The basic ideal of knowledge in the New Testament is the mutual knowledge of persons, involving trust and commitment to another person.[11] Truth is ultimately Personal Being.

This gives a high priority to the personal in our human identities, roles and relationships. Polanyi himself illustrates this in his argument against the biochemical reductionism of writers like Francis Crick,[12] and in his elaboration of the hierarchical levels of reality as a way into the mind/body problem.[13]

As Polanyi made clear, the detached objectivist approach to science, as in such great pioneers as Francis Bacon, sadly fed the notion that we human beings are 'masters and possessors' of nature, rather than fellow subjects with all God's creatures under God's care, and with a responsibility of care for God's creation. This has contributed to an irresponsible attitude to the environment, regarded as there wholly for our benefit, instead of seeing that 'the earth is the Lord's'.[14] Equally unhealthy is our current approach to economics, assuming a detached rational individual and a mechanistic approach to economic theory, instead of one rooted in transcendent values of love and justice and other human values. The personal being gets lost in the system.[15]

A free society working for the common good will seek not only equity amongst human beings, but the common good of all God's creatures, and will seek to understand both ecology and the financial economy within the wider framework of the transcendent values of God's creativity, human agency and interpersonal relationships.

4. In the quest for truth, all our knowledge is partial

We made clear earlier that Polanyi believed that 'there is no finished certainty to our knowledge'; the scientist knows he or she may get it wrong, which is why peer group review, correction or corroboration is so vital. Polanyi was also very clear that we commit ourselves to our theories in the belief we are getting in touch with a transcendent reality that we, as yet, by no means fully apprehend.

As St Paul memorably put it, speaking of the ultimate revelation of God in Jesus Christ in judgement and glory, 'When the complete comes, the partial will come to an end…Now we see in a mirror, dimly, but then we will see face to face. Now I know only in part; then I will know fully, even as I have been fully known.' [16] Or as John wrote, 'Beloved, we are God's children now; what we will be has not yet been revealed….What we do know is this: when he is revealed, we will be like him, for we will see him as he is.'[17]

What this means is that though our knowledge, distorted and partial as it is, is still knowledge, it is knowledge that must remain open to correction in the light of further truth, and open to fresh revelation.

The Puritans of the seventeenth century were very clear about the strength of truth, but also clear that more is to be discovered. As evangelical Anglican theologian J.I.Packer wrote concerning the Puritan theologians

'Just as God's mind is unfathomable, so there are illimitable depths in Scripture: 'the stores of truth laid up in it are inexhaustible.' It is always the case that, in the famous words ascribed to John Robinson, 'the Lord hath more truth yet to break forth out of his holy word.' As interpreters, we never reach the end of God's thoughts, and must not permit ourselves to imagine otherwise.'[18]

Similarly, in his introduction to the Putney Debates, A S P Woodhouse commented:

'Within limits the spirit of Puritanism is not only active, but experimental….The Bible embodies a revelation complete and unalterable; but there is still room for progressive comprehension, progressive interpretation; and it is here that free discussion can (as Milton maintains in the *Areopagitica*) minister to the discovery of the truth and to agreement in the truth.' [19]

A strong statement about the objectivity of God's truth is held together with liberty of conscience before God, our personal engagement with the truth, and the acceptance that all our knowing is limited and fallible, and not under our control. Alongside a commitment to the rational order of God's creation, and the controlling authority of God's Wisdom and Word, the Christian believer – like the scientist – is also committed to the faith that there is a transcendent truth yet to be discovered. Rational obedience to what God has revealed, and faith commitment, belong together.[20]

5. Mediated truth

One of Michael Polanyi's major contributions was his elaboration of the concept of tacit knowing. His understanding of the vectorial quality of our attention *from* subsidiary *to* focal awareness, and of the stratified nature of reality into many levels, indicates that many aspects of our experience engage our attention *through* other aspects. We see the picture *through* seeing the paint.

There is, in other words, a 'sacramental' aspect to the natural world: we begin to grasp the meaning of certain things through the mediation of other things. William Temple wrote of a 'sacramental universe', a concept that brings together two of the ways in which God is thought to relate to the world: the world as an instrument of God's transcendent purpose, and the world as a symbol through which God is revealing something of God's eternal nature. As the psalmist put it 'the heavens are telling the glory of God'. One of George Herbert's poems on Prayer speaks of 'heaven in ordinary'. In another poem he writes 'Teach me, my God and King, in all things Thee to see.'

One of the ways we know something of God's presence and activity in the world is through things. A sacrament is described as 'an outward and visible sign of an inward and spiritual grace'. The one world has a dual aspect: natural and spiritual, secular and sacred, ordinary and extraordinary, natural and supernatural, transcendence and immanence together.[21] It is by

what Polanyi called 'indwelling' the outward and the visible, that we apprehend something of the inward and the spiritual.

One of the 'things' in our world through which God's Word speaks is the Bible. The mediatorial quality of the Scriptures was underlined in John's Gospel when Jesus said to the unbelieving Judeans in the temple: 'you search the scriptures because you think that in them you have eternal life; and it is they that testify of me. Yet you refuse to come to me that you may have life.' (Jn. 5.39).

This has a bearing on our disagreements about biblical interpretation. The living Word of God (*logos*) is expressed through the words (*lalia*) of Scripture.[22] There are some forms of Christian liberalism which overlay the *lalia* – the words – with the overriding authority of reason, because there is no belief that there the living and dynamic Logos of God is to be found through them. On the other hand, there are some forms of Christian fundamentalism which believe that the living Word (*logos*) is to be *identified with* the words of Scripture (*lalia*). This can lead straight into belief in an infallible Bible, and to a set of doctrines which are accorded higher authority than the revelation of the living Word who is mediated to us *through* the words of Scripture. As we have said, according to Polanyi, personal knowledge emerges within a community of conviviality as a commitment of faith, based on sufficient evidence, is tested out, seeking reality to reveal itself to our explorings; it is corrigible and open to change; it is also open to being called in question, and to discovering hitherto undreamed of possibilities. This is not far from the 'critical realism' advocated by Tom Wright for reading biblical texts:

This is a way of describing the process of 'knowing' that acknowledges the reality of the thing known, as something other than the knower (hence 'realism'), while also fully acknowledging that the only access we have to this reality lies along the spiralling path of appropriate dialogue or conversation between the knower and the thing known (hence 'critical'). This path leads to critical reflection on the products of our enquiry into 'reality', so that our assertions about 'reality' acknowledge their own provisionality. Knowledge, in other words, although in principle concerning realities independent of the knower, is never itself independent of the knower (except for the special and highly complex case of self-knowledge).[23]

I believe Polanyi would encourage us to allow the biblical words to be the medium through which the living Word of God speaks to us, and sometimes speaks freshly and with more light.

6. A world of many levels

Our reference to a 'sacramental universe' gives a theological flavour to Polanyi's description of the universe in terms of a hierarchical stratification of rising levels, each one controlling the boundaries of the one below. He argues that all meaning lies in the higher levels of reality that are not reducible to the laws that govern lower levels. So, we saw, the human being operates as a machine when regarded only in terms of its physics and chemistry. When we realize that DNA acts as a code, we recognize a higher level of ordering which is not reducible to physics and chemistry.

So Polanyi's universe consists in this hierarchy of levels, each with their own 'science' and interpretative mode. Our knowledge of the universe involves being able to strive forwards to integrate the clues on different levels into a pattern, and so try to discern their joint meaning. From a theological perspective this world is a God-given contingent order: it could have been otherwise, but it serves God's purpose by being what it is. And to give some theological meaning to the whole, as we find each level is given meaning through its connections to a higher level, we can think of the Incarnation of the Word made flesh (Jn 1.14) as, 'as it were, the intersecting vertical dimension which gives the horizontal coordinates of the universe the integrative factor providing them with consistent and ultimate meaning.'[24]

Throughout the universe, things and people point beyond themselves towards an integrative pattern that gives them coherence and meaning. And in that search for meaning we ourselves are changed. An ultimate meaning derives from the 'ultimate mystery of being'.[25] This is what Polanyi means by 'transcendence' - each level pointing beyond itself under 'an over-arching firmament of universal ideals.' In a very personal credo he writes:

'Through indwelling I participate in comprehensive entities, from my own body and the objects I perceive, to the lives of my companions, and the theories we employ to understand inanimate matter and living beings. I partly transform myself in that which I am observing and thereby extend my range of knowing to include knowledge of all the hierarchies – from inanimate matter to the frameworks of our convivial settings and the firmament of obligations which supervene the operations of our intelligence within these frameworks.' [26]

As Drusilla Scott notes, it is when the overarching claim of one transcendent truth is denied that many different groups can all claim to have the final truth, and seek to impose it on everyone. This is what leads to what Polanyi calls 'moral inversion'.[27]

7. Moral inversion and redemption

If Polanyi is right that a good society, a free society, is one which is committed to the transcendent values of truth, justice, love – values which a Christian defines in terms of the character of God's trustworthiness, God's justice, God's self-giving love – then a society which abandons trust in transcendent values ceases to be either good or free. When such values are defined by state authority we are in a totalitarian world. When they are identified with self-interest, we are on the high road to nihilism.

Polanyi's insight was that 'the objective ideal' remains the dominant view of science, separating facts from values, and disregarding the personal component in knowledge. This leads not only to the loss of the personal by reducing living beings to mere physics and chemistry, people to cogs in machines. It also removes personal responsibility for decisions based on moral values and destroys the glue which holds communities together. The whole society becomes sick.

The loss of the personal lies behind much of the violent expression of what Polanyi called 'moral inversion.' When the proper human passions are directed towards the fulfillment of human values such as love and beauty, and when they are constrained within a society governed by justice and the rule of law, such passions can bring humanity enormous and abundant good. But when those proper moral passions are detached from human values and operate outside the constraints of justice and of law, they unleash destructiveness and violence.

We are not today so directly caught up into Marxist doctrine. But the process of 'moral inversion' is alive and well, whether that is Marxist inspired violence, or the ruthlessness of today's so-called Islamic State.

Polanyi's use of the term 'moral inversion' is of interest also in that one significant theological tradition (including Augustine and Luther) describes sin as '*incurvatus in se'* – a person being 'curved in on themselves'. The self becomes the centre, rather than the centre being 'the over-arching firmament of universal ideals', or what Christians would call transcendent values rooted in the character of God. Sin is thus not so much 'doing wrong' (though it includes that), as 'being in the wrong'. When a person's relationships with God are in the wrong, that affects all other relationships: within one-self, with others, with the environment in which we live.

Sin is not a category Polanyi says much about directly, but he does use Christian language to talk about redemption. There are many metaphors for redemption, that is for the reconciliation and healing of broken relationships, and Polanyi's work highlights that of gathering together fragments into a new unity, a new wholeness, a new society. Crewdson comments:

'Polanyi reminds us that the meaning which gives coherence to a set of scattered and contradictory clues is not found within the clues themselves, but is a gift from another plane of

reality – a gift of borrowed wholeness – which unites the fragments by lifting them onto a new level of being and clothing them with a new and transforming meaning.' [28]
This is not far from Christian concepts of grace. It is also close to Irenaeus' understanding of the work of Christ as 'recapitulating', that is drawing everything under a different 'head', or to use the language of the Acts of the Apostles 'another king named Jesus' (Acts 17.7). This thought is largely derived from Eph. 1. 10: '[God's] plan for the fullness of time, to gather up all things in [Christ], things in heaven and things on earth' and from Col. 1.15ff.: 'all things have been created through [Christ] and for him. He himself is before all things, an in him all things hold together.' This is the language of redemption of all things through Christ, bringing all creation to a new coherence, a new wholeness under the lordship of God and the values of God's kingdom.
Our part in this redemptive process is to strive to exercise moral responsibility in the light of the values of God's kingdom, with the strengthening grace of God's Spirit. Polanyi almost says as much in one of the rare passages in which he speaks of Christian understanding of God, and holds our moral responsibility together with hope in God's grace:
The technique of our redemption is to lose ourselves in the performance of an obligation which we accept, in spite of its appearing on reflection impossible of achievement. We undertake the task of attaining the universal in spite of our admitted infirmity, which should render the task hopeless, because we hope to be visited by powers for which we cannot account in terms of our specific capabilities. This hope is a clue to God.[29]

8. Truth and Freedom

Polanyi is nowhere more passionate than when he writes about liberty, by which he mostly means public liberty – the freedom of a society which is characterized by its belief in the reality of truth, justice and charity, and its dedication to the service of these realities. When these transcendent values are denied, he argued, society disintegrates and falls into servitude or totalitarianism of one sort or another, in which public authorities then decide what is called 'truth' and what counts as 'justice'. He even wrote:
'We may be faced with the fact that only by resuming the great tradition which embodies faith in these realities can the continuance of the human race on earth, equipped with the powers of modern science, be made both possible and desirable.' [30]
Polanyi's direction of thought (mutual participation in a community of explorers, leading to knowledge of transcendent values, commitment to which is the route to liberty) is very close to the themes of John's Gospel: 'Then Jesus said to the Jews who had believed in him, "If you continue in my word, you are truly my disciples; and you will know the truth, and the truth will make you free."' (Jn 8. 32).
Abiding in (indwelling) Christ's word, leads to the personal knowledge of him who is the Truth, and that is the route to deliverance. The background to much of John's Gospel is the narrative of the Exodus and the liberation of God's people from slavery in Egypt. In fact the primary meaning of *eluertheros (= make free)* is to rescue from servitude. But it is not only a freedom *from*, but primarily a freedom *for.* The Hebrew people were set free in order to serve and worship God. As the Song of Simeon poetically puts it: 'that we, being set free from the hands of our enemies, might serve God without fear, in holiness and righteousness all our days.' (Luke 1. 73). In the gospels and in the New Testament epistles, that political history of liberation from slavery became a theological metaphor for describing salvation - deliverance from God's wrath, from the powers of sin, of law, and of death. And this applies both to the corporate life of Christian believers ('the glorious liberty of the children of God'), and to the whole creation: 'that creation itself would be freed from its slavery to decay, to enjoy the freedom that comes when God's children are glorified.' (Rom. 8. 21). This is the work of God's Spirit ('where the Spirit of the Lord is, there is liberty', 2 Cor. 3.17). The life of the Christian church, although still affected by the

constraints of sin, now lives under 'the perfect law of liberty' (James 1.25; 2.12), and this is precisely the freedom for love and service to God and others, and for the promotion of justice in all our human affairs (cf. James 2.1-13). It must not become an excuse for unloving licence ('As servants of God, live as free people, yet do not use your freedom as a pretext for evil.' 1 Peter 2.16).

Of course there is much political debate about the meaning of public freedom, whether it is the negative freedom of the absence of coercion, or the positive freedom 'to live the kind of lives we have reason to value' [31] including goods like social justice, welfare, or greater social solidarity. And there is philosophical debate about the extent to which our freedoms are subject to causal determinants over which we have no control. Nonetheless, the central Christian theme about freedom is that it is to do with the freedom to live in accordance with our true nature. The opposite of such freedom is not determinism, but irrationality or sin. The way to freedom is through seeking the truth. Lies, evasions and 'post-truth' are the low road to tyranny and slavery. Freedom for service walks together with truth, both in the life of the individual disciple, in the corporate life of the Christian, and in the wider society of interpersonal relationships at community and national level.

9. The Church as a 'Society of Explorers'

Lesslie Newbigin at one point says that Polanyi's major book *Personal Knowledge* 'is a massive attempt to demonstrate that all knowledge of reality rests upon faith-commitments which cannot be demonstrated but are held by communities whose 'conviviality' is a necessary factor in the enterprise of knowing. This is as true for the scientist as for the Christian believer'. [32]

Polanyi speaks about 'conviviality' in his discussion of science as an activity of persons within community, which he describes as a society of explorers. Within that society – at its best – of mutual trust and mutual accountability, scientists operate with 'universal intent', taking the risk of making their findings available for scrutiny within a community of explorers, for their correction or corroboration. They know that they might get it wrong. The scientist is committed to a reality that as yet is not fully apprehended, but as fresh truth emerges through discovery so these discoveries open up undreamed-of new possibilities of further understanding.

The transcendent values held by science and by a free society stand against the strong individualism which has no place for a society of explorers, no place for mutuality and shared enterprise for the common good. Although Polanyi supports the concept of each person pursuing their own interests, he also holds firmly to the importance of a *society* of explorers, marked by conviviality and mutual respect for transcendent values. That is his model of the good society, the free society, a fellowship rooted in transcendent values and committed to fostering the truth and respecting what is just, loving and beautiful.

All this is consistent with the New Testament models of the Christian Church. We concentrate on two models. First, the Church is a community of Christ's 'friends' (Jn 15) who are 'disciples' (= 'learners'), open to being led into all truth by the Holy Spirit. Second, the Church is 'a pillar and bulwark ('buttress') of the truth' (1 Tim 3.15), a phrase used to advise possibly Timothy himself, as he learns how to exercise leadership, but more probably all the readers more generally 'how to behave in the household of God'. The Church is here understood as a spiritual assembly of local Christian community yet part of a larger whole. The reference to 'a pillar' may recall the local Temple to Diana with its 127 marble pillars, and means 'display and hold up to public view'. A buttress gives support. William Barclay's comment on this verse gives a good summary: 'In a world which does not wish to face the truth, the Church holds it up for all to see. In a world which would often gladly eliminate unwelcome truth, the Church supports it against all who would seek to destroy it.'

A convivial community of Christian disciples, constantly learning, are thus to be engaged in displaying and defending the truth of God in a world of denial and active opposition – in a world of 'post-truth' where truth has ceased to matter. To follow Polanyi's lead, that engagement with and defence of truth would include, for the Church,

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i. a shared commitment to the truth of God, on whom we are all dependent;
ii. a shared commitment to working within the framework of a tradition of faith, sharing the risks and excitement, and a shared participation in the processes of learning and knowing;
iii. a recognition of the authority of a mutual commitment to God's truth, and mutual accountability to obey it, live it and do it;
iv. a recognition that 'truth' is not mere 'factuality'; it is to do with integrity, reliability, faithfulness in discerning, interpreting and recounting reality (a parable can speak truth even though not 'factual');
v. a recognition of the priority of the personal in our knowing, in our relating, in our deciding - in science, art, economics, politics, etc.;
vi. a desire to come to the living Christ through the Scriptures, be open to the leading of God's Spirit into future truth and giving freedom, and to be open to fresh light being broken from God's Word and learning to live in it;
vii. a realization of the tendency towards self-advancement, and so moral inversion, and the constant need of redeeming grace to heal and to make all things new;
viii. holding fast to the Christological hope of all things holding together in Christ;
ix. living out something of 'the glorious liberty of the children of God' in service and worship of God, love to our neighbours, and seeking justice in all our human affairs.

By so doing, the Church may – in the hollowness and shallowness, and ultimate destructiveness, of a post-truth culture – demonstrate itself to be a good and free society. It would do so as a society of godly explorers. It could become a model to the wider political community, a demonstration of fully personal life. It would embrace the commitment and risk of faith in shared participation in an adventure of discovery, worked out in accountable moral argument and responsibility. It would show a prior regard for the interests of others and the common good, and would active

1 *Logic of Liberty*, 1951 (published Liberty Fund 1998), p.3,[LL].
2 *Science, Faith and Society*, Chicago 1946, p. 19. [SFS].
3 SFS, p. 17.
4 Michael Polanyi and Harry Prosch, *Meaning*, Chicago 1975.
5 'Background and Prospect', 1963; the new foreword to *Science Faith and Society*, 1946.
6 cf. Richard Gelwick *The Way of Discovery*, Wipf and Stock, 1977, p. 41 [Gelwick].
7. Drusilla Scott *Everyman Revived: The Common Sense of Michael Polanyi* The Book Guild Ltd. 1985. p. 6. [Scott].
8 see Gelwick p. 24.
9 'The Scientific Outlook, its sickness and cure'. *Science,* 125, March 15th 1957.[Scientific Outlook]. 10 *Personal Knowledge: Towards a Post-critical Philosophy*, Routledge 1958
11 Scott p. 60.
12 *The Tacit Dimension*, Anchor Books, 1966 [Tacit Dimension].
13 'Life's Irreducible Structure' 1968, reproduced in Marjorie Grene ed. *Knowing and Being: essays by Michael Polanyi*, Routledge 1969.
14 Michael Polanyi, 'Transcendence and Self-Transcendence' *Soundings* 53.1 (1970) 88 - 94
15 *Tacit Dimension* p. 24f.
16 *Personal Knowledge* p. 266.
17 Scientific Outlook
18 *Personal Knowledge* p. 53ff.

19 SFS p. 71.
20 Scientific Outlook.
21 LL p. 35.
22 Polanyi, *The Logic of Liberty*, (Chicago 1951) Liberty Fund 1998, pp. 35, 36.
23 Polanyi, *Science, Faith and Society*, p. 19.
24 cf. Gelwick p. 13; Scott p. 107-9.
25 LL p.58
26 Meaning, p. 19.
27 Noam Chomsky *Who Rules the World*? Penguin 2016; George Monbiot, *How did we get into this mess?* Verso 2016; J. Stiglitz *The Price of Inequality*, Allen Lane 2012; Amartya Sen *The Idea of Justice*, Allen Lane 2009; Fiona Reynolds *The Fight for Beauty*, Oneworld, 2016; Naomi Klein *This Changes Everything: capitalism vs. the climate,* Allen Lane 2014.
28 Karl Polanyi,*The Great Transformation*, Beacon Press, 1944, p. 57.
29 cf. Walter Gulick,'Michael and Karl Polanyi: conflict and convergence', January 2008; printed in *First Principles* 24.6.2017.
30cf. also Raymond Plant *The Neo-Liberal State*, Oxford 2010. p. 168.
31 cf. Naomi Oreskes and Erik M. Conway *Merchants of Doubt* Bloomsbury 2011; and Naomi Klein *This Changes Everything: Capitalism vs. the Climate,* Allen Lane, 2014.
32 'Creation stories' *The Economist* 1 July 2017. p. 70.

Part II
1 Jn.1.14,17; Jn 14.6; Jn 17.17,19; Jn 14.17; 15.26; Jn 16.13 cf. 1 Jn. 4.6; 5.6; Jn 8.32.
2 1 Cor.15.8; Rom 1.18; Rom.2.8; 2.20; 2 Cor.11.10; Gal.2.5; Eph.1.13; Col.1.5; James 1.18; 1 Tim 2.4.
3 2 Jn 1; 3 Jn 1; Eph. 4.15; 1 Jn 3.18; Eph.6.14; 1 Pe.1.22; 2 Pe.2.2; cf. 2 Jn 4; 3 Jn 4; 1 Cor.13.6, 1 Cor 5.8; Jn 3.21; 1 Jn 1.6.
4 3 Jn 8; 1 Tim 3;15; Jn 4. 23-4.
5SFS p..71; summarized also by Joan Crewdson *Christian Doctrine in the Light of Michael Polanyi's Theory of Personal Knowledge*, Toronto Studies in Theology Vol. 66, Edwin Mellen Press, 1994 [Crewdson].
6 T.F.Torrance ed. *Belief in Science and in Christian Life: the relevance of Michael Polanyi's thought for Christian Faith and Life,* The Handsel Press, 1980. p. xvi
7 Lesslie Newbigin, *Truth to Tell*, SPCK 1991
8 *Personal Knowledge* p. 266.
9 Lesslie Newbigin, *Honest Religion for Secular Man*, SCM 1966,p. 80 – 99.
10 Joan Crewdson *Christian Doctrine in the Light of Michael Polanyi's Theory of Personal Knowledge*, Edwin Mellen Press, 1994.
11 cf. here Lesslie Newbigin, *Christ our Eternal Contemporary*, 1968, p. 13f. cf. also: The Scottish philosopher John Macmurray argued that the starting point for philosophy should be the self as *agent*, not as detached Cartesian thinker, and gave as the primary thesis of his 1953-4 Gifford Lectures: 'All meaningful knowledge is for the sake of action, and all meaningful action for the sake of friendship.' *The Self as Agent* Faber 1956 (nb. p. 15); *Persons in Relation*, Faber 1961.
12 Knowing and Being chapter 14.
13 Michael Polanyi 'The Body/Mind Relation', a 1966 conference paper, published in *Man and the Sciences of Man,* ed. W.R.Coulson and Carl Rogers, Charles E.Merrill, 1968.
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15 cf. Herman Daly and John Cobb *For the Common Good: Redirecting the Economy toward Community, the Environment and a Sustainable Future* Beacon Press 1989; Jeffrey D. Sachs *The Age of Sustainable Development,* Columbia University Press 2015.
16 1 Cor. 13.10, 12.
17 1 Jn.3.2
18 J.I.Packer,*A Quest for Godliness: the Puritan Vision of the Christian Life* Crossway Books 1990, p.99.
19 Introduction by A S P Woodhouse of *Puritanism and Liberty* on the Putney Debates 1647-9, published by J M Dent 1938, p. 45.
20 cf. here T.F. Torrance, *Belief* p. 9.
21 cf. discussions in William Temple, *Nature, Man and God,* (1934) Macmillan 1964 Lecture XIX p. 473.Alister McGrath *The Open Secret*, Blackwell 2008, p. 215; John Macquarrie *A Guide to the Sacraments*, SCM 1997; Arthur Peacocke *Theology for a Scientific Age*, SCM 1990/1993,p. 341.
22 cf. here T.F.Torrance, *Reality and Evangelical Theology*, Westminster Press 1982, Preface.
23 N.T.Wright, *The New Testament and the People of God,* SPCK, 1992 p. 35. cf. David Atkinson 'Why Do Christians Disagree', *Fulcrum website*, Dec 11, 2013.
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26 M. Polanyi 'Transcendence and Self-Transcendence' *Soundings 53.1* ,Spring 1970, 88-94).
27 Scott. p. 108
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29 Personal Knowledge p. 324.
30 *Logic of Liberty*, p. 58

31 Amarya Sen, *Development as Freedom*, Oxford, 1999, p. 14
32 Lesslie Newbigin, *The Other Side of '84*, British Council of Churches 1983, p.24.

DECEASED MEMBERS TO 2017

Arthur	Peacocke
Peter	Arvedson
Michael	Benton
Sjoerd	Bonting
Robert	Buckley
Mary	Catterall
Tim	Gouldstone
Jack	Hird
Eric	Jenkins
Hubert	Makin
Philip	McPherson
Michael	Meredith
James	Moran
Rowland	Moss
Barbara	Pursey
Michael	Ranken
Robert	Semeonoff
Helen	Stacey
Bill	Stoeger
George	Tolley
Frank	Topham
+David	Young