

A Biochemist's explanation of the Trinity

We believe in the unity of God. But while we affirm that God is one, we also confess that He exists in three persons – Father, Son and Holy Spirit. We worship one God in trinity and trinity in unity. To our friends in the Muslim World such a belief is irrational – an oxymoron. It is a self-contradiction like saying, 'I have a four legged tripod'. They say that Trinity amounts to plurality and plurality contradicts unity.

Most of my time in the Arab World was in university circles both as a student and as a professor. Many times I was confronted with the absurdity that, as a scientist, I believed in this irrationality. Our friends, both students and faculty, have problems in their understanding of God's unity in Islam. There is considerable speculation about God's existence both in Islamic theological doctrine and more so in Islamic mysticism – Sufism. Even thirty years ago biochemists were talking about 'intelligent design'. I could talk freely with the approval of all about a Creator God, but when it came to the issue of what sort of God He was in Himself, the bare absolute singularity of God raised issues which were either left unanswered or led to the pantheism or monism of the Sufis. Many were conscious of this and were troubled.

The term 'unity' may be used in a mathematical sense meaning mere oneness or singleness of an object. This is how our friends have always understood the term. But when 'unity' is applied to an object of higher complexity, it can mean more than singularity. It can indicate a sense of individuality determined by a number of properties peculiar to itself that can't be subdivided into parts without a loss of that essential unity. As a bio-organic chemist I will call it organic unity. [I didn't invent this term. I am borrowing it from Temple Gairdner of Cairo.]

So one way to think of the unity of God is in an analogy with organic unity. Teaching in a medical school, the obvious model is the body. This type of unity is indivisible and divisibility will bring about its destruction! In this mental exercise we must take great care to convey that God in Himself is not an organic being. We are only arguing by analogy – in Arabic law: *Qiyas*. We will never know what God really is in His being. All that is meant by what has been stated is that His unity – by definition of the very highest type – is comparable to that known to be the highest understood in our human knowledge – us human beings.

What is organic unity?

Forgetting theology for a moment, let us apply the concept of organic unity to common objects of our experience. For our present purpose we are in a Medical Faculty so our experience of organic unity is found in the body. Anatomists and physiologists are constantly emphasising the mutual connectivity and dependent parts of all the 'bits' of the body so the body shares a common life or existence. Biochemists love to go down to the cellular level and describe how DNA, RNA, enzymes, production of ATP, anabolism and catabolism etc. are all interrelated and very, very complex even for uni-cellular organisms! So what makes an organic system? It is when the whole of the being is constituted of dependent and interdependent parts. It is because this is a condition that the body can be distinguished from other bodies and so be unique. These two qualities – distinctiveness from others and its uniqueness – constitute individuality.

Man is the highest known being in creation and he possesses organic unity. As an individual he has qualities of a unique personality. Please keep remembering that when we speak of God as One we are not saying that He is One in exactly the same way that man is one. Rather we are saying that the expression 'one' can be applied to a mathematical integer and it can be applied to a man. When we apply it to an individual, we imply that that individual is distinct from others – having organic unity (cloning considerably clouds this argument!). When 'oneness' is applied to God it implies a far higher sense than the simple analogy of man's organic unity.

But when the idea of organic unity is applied in a spiritual dimension – i.e. when it is applied to God – it provides a quite reasonable explanation of God's existence in His Divine diversity in unity – the Trinity.

In the animal kingdom, as distinct from plants, the greater the inner distinction (think of the body) the more valuable the unity. For example, if we take an object low on the scale of existence – say a stone – by splitting it in two with a hammer we don't destroy its unity. We now have two stones! One differs from the other only very superficially. The two stones are the same in their essential properties. They have the same constitution as before. There really is no uniqueness in the stone.

Moving to the plant world – a lowly piece of moss has a unity and individuality only a little higher than the stone. But if you take a rose the situation is very different. A rose can't be divided without being destroyed.

So the greater the complexity, the greater the internal differentiation of the parts and the more truly or essentially 'one' an object is. This same phenomenon is true in the animal world. If the scale of differentiation is low – such as in sponges – the individuality of each sponge is not very significant. Even so there are thousands of different species of sponge! But by the time you reach the vertebrates – especially mammals – as consciousness develops and in primates intelligence, the internal differentiation shows an increase. As the differentiation increases, so does the essential organic unity.

This unity is marked by:

1. **Indivisibility** – it cannot be divided without being destroyed.
2. **Uniqueness** – each one differs from all the others. Each has its own individuality – i.e. its own set of chromosomes.

These two qualities are true of us human beings. In the world of life and consciousness the really essential unity increases directly as there is an increase in internal distinctions. So far our 'friends' have no difficulties! The question comes when we speak of God. Which kind of unity should be applied – the unity of a stone or that of the world of consciousness where there is intelligence and will?

This puts our friends in a dilemma because they can see where the argument is going! They want to say 'a stone'. But to say this is to break all the rules of Qiyas. We can look at an example: the operative cause for the prohibition of alcohol is that it intoxicates the mind. Therefore, by analogy (Qiyas), anything that intoxicates the mind, such as narcotics, is also prohibited.

So from this analogous argument, well understood at least in academic circles versed in theological arguments (such as medical students and faculty), it could be the case that any distinctions (parts) such as those found in man, were found in God and then they would be transcendently real – distinctions, but with a far richer unity than we could ever imagine. So far I have argued that diversity in unity is possible with God – i.e. it is rational. Now the counter arguments come in thick and fast!

Counter Arguments

1. It is irrelevant and irreverent to compare the Creator to the created world in any way whatsoever!

But if this is true, then all knowledge of God will always be impossible for it reduces God to a negation – i.e. God is not like anything we know or can know. Some Muslim theologians have taken this position. Most Muslims quoting the Qur'an say that God is knowing, living, willing etc. So to say that there can be no similarity between God's knowing and man's knowing makes using the word 'knowing' meaningless.

The true position of Muslims and ourselves is that while God transcends us in every imaginable way, there are aspects in which He has graciously made man so that the same quality (and therefore word) may be applied to both God and man. We would say we are '**made in His image**'. Muslims deny this. When we say that we cannot assert of God an abstract unity, but the one that shows the highest differentiation, we are asserting a reasonable, logical probability.

2. The categories of unity in diversity are only applicable to the physical world and cannot be applied to spiritual beings – especially God.

We have seen that as we move from inanimate objects (stones) through animate, sensitive and finally to the rational, there is greater differentiation (diversity of parts) but a greater/higher level of unity. If this is true in the physical world, why is the spiritual world so different? Man, as the lowest form of spiritual life, is transcended by angels, archangels etc. They are also created beings. Finally there is the infinite leap to God as a Spirit.

3. When we leave the material/physical world all these categories of unity and diversity cease.

This is rather like argument (2) and even (1). Man is not only a physical being, but also an emotional, social, rational (having intellect) and spiritual being with a will. We don't only have physical bodies but also immaterial spirits. This means that we can act in ways that are significant in the spiritual realm of existence. Connected with this spiritual life is the fact that we have immortality. We will not cease to exist. We will live forever.

We are also moral beings. We are different from the animal and plant world in that we are morally accountable before God for our actions. We have an inner sense of right and wrong (a conscience) that sets us apart from the animals.

These are some of our characteristics as man that make us like God in some aspects. Angels may also share significant degrees of likeness to God. So these are some aspects in us that make us more like God than the animals:

- *Moral aspects*
- *Spiritual aspects*
- *Mental aspects – the ability to engage in abstract reasoning*
- *Our use of complex, abstract language*
- *Our awareness of the distant future – life after death*
- *Our creativity in art, music, literature, science and technology*

In all these ways we differ from animals not in degree but absolutely. So our great Creator God made man more like Himself when He made us.

In some small measure we have 'parts' of our organic unity that we can understand as similar to the revealed nature of God. As physical/spiritual beings we experience unity in diversity. We have seen that the physical universe demonstrates an ascending order of complexity and increased essential unity. Man is in transition between the material and the spiritual. It is rational to expect the spiritual world, and supremely God Himself, to have some unity and diversity.

4. The Trinitarian concept of God makes God divisible and that is absurd – a mild word for what is often expressed.

Great emotion is seen in the objection that the Trinity involves the divisibility of the divine substance – i.e. like cutting the stone; one stone can produce two stones or more. This is contrary to the fact we all agree on – there is one God.

The argument above states that in unity there can be diversity. But in unity/diversity the 'thing' can't be divided without being destroyed. You can divide a stone, but you can't divide a rose without destroying it. If you sever a hand from the body it is no longer a hand but just a lump of flesh. It is the material in a person that can be divided/separated, but you can't divide the unity of the organism. A spiritual being is indivisible. For example, you can't separate out the conscience of a person. The unity of man has internal distinctions – both material and spiritual.

God has no material substance, so He is indivisible. Man and animal organisms can only exist in the fullness of their natures or be destroyed. Of course medical science deals with amputation and surgery. A hand can be surgically removed without destroying the person. So in man the hand is part of the body, but the body is quite different from the hand. This is for the simple reason that a hand is only really a hand when it is connected to the rest of the body.

The Christian understanding of the Trinity – the Father, Son and Holy Spirit – is not in any way referring to ‘parts’ of God. They are eternally mutually involved members of an indivisible and indestructible unity.

5. The Trinity is really Tri-theism – three individual Gods lumped together under a ‘Godhead’

In biology we have genus and species. So the Godhead would be the genus – the Father, the Son and the Holy Spirit like three types of species. To use a simpler example, Tom, Dick and Harry are three individuals but they are all men. The implication is that if you kill Tom ‘man’ still exists but only in Dick and Harry. This is a very common misconception of God.

God is the highest reality possible and is not an abstract generalisation. God is a unity in and through the three persons of the Trinity. None of them has a separate existence, but each lives for and through the others. So the Father is the one substance of God, the Son is the one substance of God and the Holy Spirit is the one substance of God. They are not three gods but One God.

Multiple gods are common in some religions. But for Christians there would be considerable confusion if we believed this! There would be no absolute worship or loyalty or devotion to One True God, We would wonder to which God we should give our ultimate allegiance. At a deeper level, this view would destroy any sense of the ultimate unity in the universe because in the very being of God there would be diversity but no unity. If there is not perfect unity and diversity in God Himself, then we have no basis for thinking there can be any ultimate unity among the diverse elements of the universe either. Science requires this ultimate unity if it is to be rational and follow what we call the Scientific Methods.

6. If the Father, the Son and the Spirit are each part of the one substance of God, it means there can be no distinctions between Father, Son and Spirit. There is no possibility of assigning to any one of these ‘persons’ anything that is particular to ‘him’. You can never say that one does what another does not do – i.e. there is One God and Trinity is a confusing myth.

Before answering this objection we must re-state that the three persons are not three gods with a common personality – like Tom, Dick and Harry who share a common humanity. The Persons of the Trinity act together by mutual inter-penetration. Whatever is done or is affected in a given situation isn’t three separate things, but the same thing. In theology, inter-penetration is called *perichoresis* from ‘*choreum*’ = to move or contain – meaning that the persons move within each other and contain each other.

So in every action by God the whole Trinity is at work. It is wrong to say that one event was done by the Father and another by the Son. All three are equally and indistinguishably involved in all divine operations.

The event of creation is said to be especially the work of the Father and the Son and the Holy Spirit. In Col. 1:16 we read, **“For by Him (Jesus) all things were created, all things were created through Him and for Him.”** We see the Holy Spirit’s involvement in Gen. 1:26, **“Let us make man in our image.”** There are distinctions of internal relations with the Trinity but these are not considered distinctions of their external operation.

For example, in the incarnation not all three persons were incarnate. It was the Son who became incarnate and not the Father. Augustine of Hippo (in Algeria today) said, **“The Trinity wrought the flesh of the Son.”** The whole Trinity was involved in the incarnation in so far as they were all equally at work in the creation and manhood of Jesus.

It helps to be a scientist for we have to live with apparent paradoxes in language and perception but not in reality. A description of a photon would be an example. It is both a particle and an electromagnetic wave. An electron is both a particle and a negatively charged area of space (‘cloud’). String Theory for the Strong Forces that hold positively charged protons together in a nucleus is another example. It constructs a model of protons and neutrons as one-dimensional entities rather than the zero-dimensional points of previous theories. These elementary particles have super symmetry. All this expands the usual four dimensions to nine or ten! Nuclear physicists live in ten dimensional universes!

The intellectual difficulty in our case isn't so complex! If we apply the concept of spiritual body to Divine Unity, the problem becomes easy to understand. The general principle in any body is that the whole of one essence acts in every action of every 'part' and yet each part has its appropriate function. If my eye sees, I see, but my ear does not see. Yet we don't draw the instant conclusion that I do see and I don't see at the same time! No, we say that we see through our eyes and not through our ears. But the whole body, including the ear, profits from my being able to see. So if one 'part' does anything, the body can be said to do it and all – or at least many – 'parts' can co-operate in order to make it happen. So each part performs its appropriate function.

When such an argument is applied to God, the reality is much higher than our highest conception. In the incarnation God certainly became incarnate in His Word – the Son. Yet this doesn't assert that the Father or the Spirit were also incarnated. Similarly, in the atonement it was God in Christ reconciling the world to Himself and yet it was the Son's body that died on the Cross.

The question is often asked, "How can God be in Christ and yet at the same time be in heaven as the Father?" God in human form brings God within the limits of time and space and He ceases to be infinite.

In the Bible and in the Qur'an it is stated that, from time to time, God allows Himself to appear bound by space. Qur'an Sura 20:10 Moses heard God's voice in a burning fire, "*O Moses, truly I am your Lord, so take off your sandals.*" The Bible records many examples of God within time and space – for example as a fiery cloud above the Holy of Holies in the tabernacle.

But no one thinks that the Heaven of Heavens is empty of God's presence in such a case. Such appearances of God in the Old Testament hint that it is possible for God to reveal Himself in a sensible way – i.e. through the senses: eyes – ears – touch etc. The New Testament teaches that all the fullness of God lived in Jesus in bodily form. So again we live in apparent paradox:

The Godhead in space/time in fullness, and not in it! His presence in a certain place and yet not limited to it; appealing to peoples' senses and yet transcending all sense. The Godhead fully revealed, yet veiled in the manhood of Jesus.

Temple Gairdner said, "**We find that the Son, in the fullness of the Godhead, was incarnated: the Word became flesh. This incarnation was willed and planned by the Father and carried out by the inspiration of the Spirit. Therefore we can say that God was incarnate, without saying that the Father was or the Spirit was, in the same sense as the Son. My whole self is in the hand with which I write. Yet my whole self is not bounded by my hand. So God Himself was in Jesus. But the fullness of the Godhead was not limited by the man Jesus. If one denies that my whole self is in my hand, then I ask what part of me is in my hand? Is my spirit divided? No, and so you can get no further than this. The fullness of the Godhead was in Jesus and yet it was not bounded by the man Jesus.**"

God is Spirit and Spirit is mysterious. Spirit in relationship to the material world is also mysterious. How then do we describe in finite words the nature of the presence of the Infinite Spirit God in relation to material things? These things transcend reason. They are not in conflict with reason. This is a special case of a greater mystery and that is God's relation to the physical universe. But still it is very clear that we live in a rational universe.

Does anyone ever come to faith through such reasoning? No! But isn't our evangelism slowly removing the blocks that our friends have. The apparent stupidity and irrationality of the Trinity is a very big block! Building bridges of understanding is a key part of our evangelism.