

CEA

PERSPECTIVE

The Journal of the
Christian Engineers' Association

Spring 2009

Easter

Creation

Engineering as ministry

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Aims of the Christian Engineers' Association

1. To link Christian engineers and help them to maintain a consistently Christian stance in their work.
2. To enable Christian engineers to develop a thought-out Christian approach to professional issues.
3. To encourage Christian engineers to exert a constructive Christian influence in the engineering profession.
4. To support and encourage Christians who are entering the engineering profession.
5. To supply insight to engineering related missionary work.

Please send contributions for the next issue of the Journal to Mike Cowan at the address above before 10th August 2009.

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Editorial

Mike Cowan

This issue follows close on our December Issue and its timing is to coincide with our requests for you to renew your membership. We plan two issues per year, to be published in March and September.

The Committee hope you will wish to continue your association with us and recognise its value. I have been considering what should be our editorial policy and plan to present some thoughts to our next committee meeting which will take place in Gilmorton on Saturday 21st March. Some initial thoughts on editorial aims include:

- To help us to feel comfortable and confident in our faith by expressing it in the way that engineers think. The articles I have written for this Journal have often been driven by my own desire to clarify my thinking. Do come back with any comments that could sharpen our thinking!
- To share our experiences, challenges and encouragements with fellow believers who happen to have an interest in engineering.
- To supply information about aid and mission work associated with engineering.
- To provide opportunities for members who aspire to write?
- To include items for meditation and encouragement.

Although now retired, I am fully aware of the pressures that may be building up with the current financial crisis. I spent Christmas 1985 fearing a redundancy that came in the January. It was not a comfortable experience, but blessing did come out of it. If a failure to follow Jesus' value system led the world into this crisis, let us ensure that we ourselves turn to him for the route out of it!

In the section of this journal, 'membership matters', are some general thoughts raised by members of the committee on the value of networking.

Comments on the journal can be addressed to myself:

mike@christianengineers.org.uk

A tribute to John Baden Fuller

Nick Stroud

As John Baden Fuller takes on the role of President of the Christian Engineers Association your committee want to pay tribute to his many years of service as Chairman of the CEA.

I first corresponded with John in 1987 and was privileged to be part of the first committee meeting of the CEA (then called the Engineers Group of the Universities & Colleges Christian Fellowship [UCCF]). A somewhat uncertain group of individuals met at the UCCF offices in Leicester in April 1988 and under John's capable chairmanship formed the first committee. As well as ensuring that the meeting focused prayerfully on the aims of the Engineers Group, John used his local knowledge of Leicester to find us a good, but speedy, lunch. A tradition which has been continued into the meetings now held at John's home near Lutterworth.

In these days of computers, scanners, photocopiers, mobile phones and e-mail it is easy to forget how fast communications have developed. Reviewing the papers from this first meeting I found carbon copies, handwritten letters and typewritten agendas. Despite what we would now consider constraints John helped that committee to give effective direction to the group.

For me the CEA has had a number of achievements for which John should take full credit:

First, as Chairman he has led the voluntary committee of the association to draw in new members, encourage participation and ensure that, within the limited resources available, the association has continued to address its aims.

Secondly, over recent years he has taken on the additional task of Journal editor. John has sought out contributions, suggested themes, as well as writing a significant number of articles. The quality of the Journal has been maintained and developed through his editorship.

Thirdly, when UCCF sought to focus more clearly on student ministry, John actively sought alternative organisations to assist with

administration of the CEA and to provide us with spiritual support and backing. This resulted in us finding our current home with C@W.

There is much else which could be said about the contribution John has made in many walks of life: His family life (he and Dorothy recently celebrated their 50th Wedding anniversary); his work as a lay minister in his local church; his working life encompassing industry to academia; his professional activities with the Institution of Engineering and Technology (previously the Institution of Electrical Engineers); and his support of Workers Christian Fellowship (now Christians at Work).

As an association we owe a great deal to John for his direction, guidance and support over 20 years.

Membership Matters

Mike Cowan

A recent enquiry by the BBC looking for potential interviewees for a programme highlighted the value of a network like CEA. We have a list of potential speakers that Tony Fletcher is updating. If you can offer to join the list do contact him; his details are in the list of committee members. You might then be used to speak at a Christian Union or workplace fellowship.

The committee are discussing other ways in which a CEA network could add value. Thus the Armed Forces Christian Union began as a Prayer Union supporting military officers who were necessarily detached from any 'home' church. The needs of engineers working abroad immediately come to mind.

Just a thought -

“All you need is Love”?

Mike Cowan

Really? Love is not a vector quantity and engineers work with vectors because vectors have both magnitude and direction. I can remember driving fast down an autobahn in Germany with the *objective* of travelling to the ferry for UK, but I was driving in the wrong direction. My speed was impressive, but the faster I went the more rapidly my distance from the objective increased.

Jesus used the parable of The Good Samaritan to illustrate the Old Testament principle “you shall love your neighbour as yourself”. The Good Samaritan is motivated to action by his love towards his neighbour, and becomes a carer – even though that neighbour despised him. The magnitude of the vector – his love for the victim – provided enough drive for him to postpone that day’s agenda and become a carer. But what about the direction? The *objective* he chooses is to see the victim restored to health and the carer applies his life skills to provide first aid and then takes the victim to an inn. When the carer leaves the inn he applies his planning skills to ensure that the inn-keeper will care for the victim until fully restored.

Jesus defines the direction of the love that he commends thus:

- “Love your enemies and pray for those who persecute you, *so that you may be children of your Father in heaven...*” A description of how the Father behaves follows.
- “If you love me you will keep my commandments”.

In John’s Gospel we find:

- “God so loved the world that he gave his only begotten son, so that everyone who believes in Him may not perish, but have eternal life”.

St. Paul says:

- “And now Faith, Hope and Love abide, these three; and the greatest of these is Love”.

Love may be the greatest, but where is Love going without Faith and Hope? That question could be the subject for another ‘Just a thought’.

The Meaning of Easter

Vic Fletcher

A recent survey suggested that as many as one in five people do not know the meaning of Easter.

Briefly, Easter is about Love, Light and Life on the one hand, and Forgiveness, Reprieve and Pardon on the other.

Putting it as succinctly as we can, we start with God having made the World and, because He has a loving, parental nature, he then peopled it with men and women “in His image”, i.e. with a spirit which could relate to His spirit and respond to His love.

But real, *genuine*, love is only possible if it is freely given – the last thing God wanted was a race of puppets – so he had no option but to give His people *free will* – with all the risks that that entails. Many millions responded favourably. But even those who did were by no means perfect. God had laid down important guidelines and ground rules, particularly in the Bible, but people generally misused their freewill and persistently ignored the fact that any complex “mechanism”, Mankind included, will only work satisfactorily *if* used in accordance with the Makers’ instructions. Like any loving parent, God tried endlessly to persuade people to live the sort of life He knew was best for them, but generally to no avail. People insisted on “doing it *their way*” – often with appalling consequences so apparent around us today.

“But real,
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given...”

One of the most effective ways of helping people is to get alongside them and share their problems. God decided to do just that by sending His son (Jesus, part of the “Godhead”) to live here as a human being in humble circumstances to demonstrate how to live a life of love. He actually went further. Because people everywhere had consistently transgressed His laws (all very sensible and beneficial) they had

forfeited their relationship with Him (the source of life) and stood, therefore, to lose their spiritual “eternal” life.

God had every justification for washing His hands of the whole human race *BUT* he decided to allow His own Son, living as an ordinary human being, to die a dreadful death in our place, on a cross at Calvary. This amazing sacrifice not only gave everyone a reprieve but also a complete pardon, the *only* condition being that we *accept* what He has done for us (“Amazing Grace” indeed – grace being a completely undeserved blessing).

In effect, *God has put our salvation into our own hands*. He is only too willing to give – all He asks is that we acknowledge and accept.

Once Jesus had completed His mission on Earth as our Saviour, He was wonderfully restored to life, by God’s almighty power, at the *Resurrection*. (This being the reason, of course, for Easter eggs and why Easter cards so often depict baby chicks, Spring flowers and similar reminders of a burgeoning renewal of life.)

After living for several weeks with His disciples and followers (500 or so), Jesus “ascended” to His home in Heaven (the “Ascension”) and, as He had promised, sent the *Holy Spirit* to live within His people so that they, too, could share His restored “risen” life. The impact was enormous – whereas, in human form, Jesus was only able to help people in His vicinity, as an omnipresent spirit, He had no such limitations and was – and is – able to live within His people, *however many they may be*.

The message of Easter, then, is one of *restoration*, and an invitation to accept God’s really quite stupendous offer of pardon and a new life. He *does* not compel, that would negate His gift of freewill – but He does invite your acceptance and allegiance.

And may God’s Blessing rest on us all this Eastertide.

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Editor’s note: Vic Fletcher is Tony Fletcher’s father.

Delusion or Design?

A study of Creation

Mike Cowan

“I praise you because I am fearfully and wonderfully made; your works are wonderful, I know that full well.” Psalm 139 v14.

Introduction

It was summer 2007 and I had attended a seminar looking at the evidences for intelligent design in the universe. During the worship time the following evening I found a fresh sense of God’s glory. As I reflected on this I was surprised to realise that I was not more convinced of God’s existence but, rather, more aware of the wonder of his creation.

Three Books

The leader of that seminar was Martin Owen who has now published a book ‘Deluded by Darwinism’. Owen presents the current arguments for intelligent design and reminded me that what we know points towards a creator just as much as using the concept of a God to fill the gaps where we lack any explanation. The book is published by Kingsway Communications and provides a good layman’s guide to the issues.

In 2008 I came across the book ‘Hallmarks of Design’ by Stuart Burgess and published by DayOne in 2000. Burgess teaches engineering design at Bristol University and in 1993 received the Turners Gold Medal for the design of the solar ray deployment mechanism on the ENVISAT satellite. As a ‘would like to have been’ design engineer I was delighted to read this carefully researched study of nature from a designer’s point of view. There is a description of the human knee as a ‘four bar mechanism’ and Beauty is discussed in relation to the tail of the peacock and bird-song.

As a quality engineer my thoughts moved on from appreciation of the elegance of the designs to four further requirements for a good product:

- Choice of materials
- Manufacture: the human knee must grow from baby size to adult in concert with all the other parts of the child’s body
- Lubrication

- Maintenance and repair

A third book I recommend is ‘The Language of God’ by Francis Collins, published by Pocket Books in 2007. Collins was the head of the Human Genome Project from its initiation to its completion. All three books include a summary of the Good News brought to us through Jesus Christ, but Collins differs from the first two in that he does not believe that the earth is comparatively young and believes that God used evolution to achieve his creation. This variation reminds me that where faith touches science a good dose of humility is needed on all sides.

Collins explains his view of evolution in this way – “The solution is actually readily at hand, once one ceases to apply human limitations to God...in that context evolution could appear to us to be driven by chance, but from god’s perspective the outcome would be entirely specified” (p205).

Collins believes that Creationist theories, including the principle of ‘irreducible complexity’, are being overtaken by new discoveries in science. He is a supporter of ‘Theistic Evolution’, but would prefer to give it the name ‘BioLogos’ – Science and Faith in unity.

A question of Biblical Interpretation

Reflecting on these books I am challenged to decide how to interpret those first few chapters in Genesis. I am convinced that they are communications from a living and personal creator, albeit via human agencies. In what genre are they written? What limitations of language apply? If our creator were to give a description of the act of creation in literal and concrete terms would anyone even begin to understand it?

The conflict between Bible literalists and atheistic fundamentalists can degrade both faith and science. Thus, scientists don’t read the term ‘atom’, (cannot be cut), literally and I don’t think there is any demand to read the first chapters of Genesis literally. They do provide answers to the fundamental questions:

- Where am I?
- Who am I?
- Where have I come from?

Some personal observations

- I would not expect science ever to detect God's hand in creation. We are told that God commanded each process with words.
- Formless and void is an apt description of a singularity. The creation of matter is wisely left without description in Genesis.
- I am intrigued that, in the Genesis account, vegetation preceded the positioning of the sun and moon.
- The values given to the fundamental physical constants are finely tuned to produce a universe that is more complex than a dust cloud. I conclude that the singularity was like a giant Lego kit designed to produce man and a place for man to live.
- It is quite common for Physicists and Chemists to recognise elegance and beauty in their observations.
- To recognise God's Glory in his creation does not compromise my intellectual integrity.

A general conclusion

I always assumed the existence of God, but became a follower of Jesus because I wanted a reason for living and the power to live in harmony with that reason. I also sought truth and integrity in my thinking, and believe I find it as I grow as a Christian. I do not, however, expect to have all the answers.

I have struggled to read Richard Dawkins' book 'The Selfish Gene'. I tried to reconcile Dawkins' explanation for my existence with the needs for identity that I feel. Both Maslow with his 'hierarchy of human needs' and the teaching of Jesus align with my own experience of life where Dawkins' explanation leaves my sense of self a total mystery. If I need evidence for the existence of God I do well to observe myself and billions of my fellow humans.

I am left with a challenge laid down by Richard Dawkins. He defines 'altruism' as "increasing the other's welfare / chances of survival at the expense of one's own" and says "...if we observe that human behaviour is truly altruistic we shall be faced with something puzzling, something that needs explaining".

As Jesus put it: "Just as I have loved you, you also should love one another. By this everyone will know that you are my disciples, if you have love for one another" John Ch 13 vv34,35.

Internship with EMI

David Burgess

Over the past year I have worked with the South Asia branch of EMI (Engineering Ministries International). Along with other interns I joined the EMI staff in Mussoorie in the foothills of the Himalayas, Northern India. EMI is a non-profit organisation that produces designs for different ministries that are helping the poor and sharing the good news of Jesus. This includes schools, children's homes, hospitals, Bible colleges and many more.

Projects

It has been a privilege to learn about the different ministries that we have served. It has expanded my understanding of the amazing things that God is doing in the world. Each project was unique and I enjoyed each one. A particular highlight for me was a project in Goa in the west of India. YWAM Goa run a DTS (Discipleship Training School) and a variety of community projects including healthcare, teaching and a football camp. Our team developed a design for a new centre which would enable more people to attend the DTS and the other YWAM initiatives to grow. It is my prayer that more lives will be impacted as more people are equipped to share the good news and do good works.

On arrival at the current DTS centre, we were warmly greeted by the staff and students.

The first task was to survey the site, we would normally use the 'pukka' method – a theodolite (laser and prism). However since the site was only 0.6 hectares, we used the 'kuccha' method- tape measures and a bubble level to get the geometry and topography of the site.

After hearing more from the staff about their vision for the new centre, the Architects began work on different Masterplan schemes. Through some consultations with the YWAM staff a final design was developed using the best elements of the three options. Most of my work involved producing conceptual water supply and wastewater plans. Based on the expected number of residents and visitors to the centre, I was able to calculate the daily water requirements. There is a municipal water supply, however it

will be necessary to use a booster pump to fill the roof-top storage tank. I calculated the size of the septic tanks and soak pits that would be required to deal with the foul water.

We are thankful to God for helping the design come together and we pray that our presence and designs were a help and encouragement to the YWAM team.

Life in Mussoorie

After the project trip we continued the design and wrote the report at our base in Mussoorie. The office is on the top of a hill, which has steep sides and dense trees and vegetation, I haven't worked anywhere quite as extraordinary.

Outside of monsoon season there are beautiful views, the snow peaked Himalayas on one side and the Indian plains on the other. Every so often I was disturbed from my work by the presence of a monkey staring through the window! Apart from those surprises it was a privilege to witness God's amazing creation. Viewing the natural world through an engineer's perspective causes me to praise the amazing Creator.

I was fortunate to be part of a local Church where I was encouraged and had good fellowship and friends. I am thankful for all the opportunities I had to meet the community in Mussoorie and surrounding villages. At an international school there was a shortage of science teachers, so I helped teach Physics for one afternoon each week. It was a great chance to meet children from across India, as well as those that came from further afield such as Korea, China and the U.S.A. I also helped with a boys Bible study. It is my prayer that the children will grow in their faith.

What Now?

I am now working for Arup in Bristol. Mostly I am doing designs for surface and foul water drainage. I want to continue to learn ways that my Christian faith relates to engineering. In particular I want to glorify God in my work and in the opportunities it brings.

For more information about EMI please contact the EMI UK director Mike Woods (michael.woods@emiuk.org) or visit www.emiuk.org. If you would like to find out more about the EMI offices worldwide please visit www.emiworld.org.