THE GENESIS ACCOUNT OF CREATION

I believe it is possible to take the sting out of the Genesis versus science controversy about the origins of the world without serious damage to either side. All that is needed is to pay serious attention to the question, 'What is going on here?' without prescribing in advance what the answers must be.

In doing so I have found very helpful my professional experience of the thought forms of systems analysis and mathematical modelling. When I come to address these early books of the Bible I am periodically surprised to find a writer who thinks in much the same way as I have been trained to do.

Look for instance at the relentlessly logical classification of skin diseases in Leviticus 13, into general sores (13:1-8), boils (13:18-24), burns (13:24-8), sores on the head or chin (13:37), white spots on the skin (13:38-9), and baldness (13:40-4). Each of these is then subclassified into the various tests that are to be applied and the conclusions to be drawn, and measures taken, from each possible outcome. If for instance a sore has a hair which has turned white, the examining priest has to follow a procedure with a structure which today we might represent as something like this (13:1-8):

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IF more than skin deep THEN
        infectious: unclean
        FINISH
ELSE IF not more than skin deep THEN
        isolate 7 days
        IF unchanged, not spread THEN
                isolate 7 more days
                IF faded, not spread THEN
                        rash: clean
                        FINISH
                ENDIF
        ENDIF
        IF spread THEN
                infectious: unclean
                FINISH
        ENDIF
ENDIF
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On the medical worth of this I am not in a position to comment. What impresses me is the strongly structured logic of the system, which continues for the rest of the chapter. If we ask, 'What is going on here?', the answer is surely some extremely disciplined scientific thinking. This is also what I find when I examine the Creation story in Genesis 1:1 to 2:3. What we have here is a highly structured account of the activity of the Creator, which again translates readily into the thought forms of a modern analyst, characterised by a series of nested blocks, each with its beginning and end clearly defined (see the listing in Annex A below). Verse 1:1 announces the start of the process:

'In the beginning God created the heavens and the earth.'

2:1 neatly delineates its end:

'Thus the heavens and the earth were completed in all their vast array.'

Verse 1:2 describes the initial state of things, the raw data, what was given at the outset: the earth was formless, empty, dark and covered in water. There follows a repeated, nested procedure in which each of these attributes is (albeit not quite in the same order) reversed, the structure being functionally provided by the initial words of God and the repeated evening/morning device (1:3-31). After six of these, the procedure is ended and a break is proclaimed on the seventh (2:2-3).

This seems to fit remarkably well. The only price paid so far is that it means seeing the creation of 'the expanse "sky"' or atmosphere as reversing the attribute "formlessness"; but this is not asking much, and the loss of it if not granted would not be great.

So much for structure. What does it tell us about the world? Here the systems analyst's context diagram (Figure 1) provides a ready medium. I would encourage the reader to stop at this point and try to experiment by establishing the logical flow of the system being described for him/herself.

Consider the truly astonishing depiction of our life system on earth - interdependent plants, animals, people, in their respective habitats (land/sea/air), supported by sunlight, water and air (named as "sky" which I think includes atmosphere) in the cycles of the seasons. Consider too the masterpiece of classification into different sorts of vegetation and animal life - who governs what and what eats what - and the partitioning into light/dark, ocean/clouds,[1] greater light/lesser light, land/seas, precisely as any system designer might do it today. Within a single page we have a comprehensive description of nature and the ecosystem, a masterpiece to support all that was to follow.

What is going on? I suggest a brainstorming exercise by a true Thinker, as capable of scientific observation, partitioning and classification as any mind in the ancient world, and better than most (compare other cosmogonies such as Plato's *Timaeus*). He is asking himself how the world is and how it came to be, and answering this by pure brain power. I find his answer quite awesome, and it in no way detracts from this if (as I suspect) he believes that the birds and the stars both inhabit the

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[1] Verse 7, where God 'separated the water under the expanse from the water above it' (NIV) is often interpreted rather crudely in terms of a 'three-decker' universe. So for instance R.N. Whybray writes in the *Oxford Bible Commentary* (OUP, 2001) *ad loc* of 'the creation of a solid dome or vault (the sky, 1:6-8) so that there was water both above and below it.' He combines this with a literalistic interpretation of Genesis 7:11, according to which 'the sky had "windows" which when opened allowed the rain to fall.' Our writer then comes across as somewhat naive and unintelligent. However I find no evidence of solidity. The passage makes perfect sense if the 'waters above the expanse' are clouds. This is the process being described at Proverbs 8:28, rendered by NIV as 'when he established the clouds above and fixed securely the fountains of the deep.' (cf. also AV, JB, NJB, GNB, TNIV.)

same medium, or that his stars are created too late. He had no access to the devices which tell us otherwise.

I have tried to illustrate the kind of brainstorming this entails in the piece, 'Daddy, Where did Telephones Come From?' (Annex B below). The Thinker is tasked with identifying the logical components of a complex system, establishing their interrelationships and devising a history for each, all within a simple structure that even a child could understand. (Which would not be the case had the writer of Genesis *per impossibile* attempted a full description of the workings of the electron and its component sub-particles. Scarcely anyone in history would have understood such a thing.)

It is often pointed out that Genesis 2:4ff presents a second creation story, different in detail from the first. For instance man is created before vegetation. I see no problem here. We can think of this as the record of a separate brainstorming session, apparently an earlier one, in which the central subject is Adam the man. If so, then the Genesis 1 account can be seen as a reconsideration in greater detail of the origins of Adam's surroundings. In modern times system design frequently proceeds in this way. 'Top level' design, often sketchy, is followed by lower levels in which a greater amount of detail is supplied, and alterations made as found necessary. Once again, our model of a writer with the mind of a modern systems designer or analyst provides us with an intelligible counterpart.

Where does this leave issues of inspiration? If inspiration is seen as a sort of heavenly dictation, bypassing the conscious mind of the writer, then we could be in difficulties of all kinds. If on the other hand it is a matter of fallible human minds being taught to Think by engaging with the Spirit of God, a process which is never complete in this life, then we have the basis of a practical philosophy which can be illuminated by the experience of inspiration in other fields such as music and mathematics. Such a view is wholly consistent with the account given above, which for me engenders awe and admiration, undiminished by the presence of what some thousands of years later we now know to be a few factual inaccuracies.

Martin Mosse,
March 2009.

FOR FURTHER READING

Filby, F.A., *Creation Revealed: A study of Genesis 1 in the light of modern science* (London: Pickering & Inglis, 1963)
    A gem of a book by a well qualified chemist who combines an appreciation of the *structure* of the account in question with a clear exposition of the *science* involved.

ANNEX A: THE CREATION (Genesis 1:1 - 2:3)

1:1   BEGIN *creation of heavens and earth*

      DATA *earth*

1:2   INITIAL STATE of DATA

        ATTRIBUTE (1) = FORMLESS (no "sky" (atmosphere)?)

        ATTRIBUTE (2) = EMPTY
              { (2a) = (no vegetation),
              (2b) = (no creatures),
              (2c) = (no people) }

        ATTRIBUTE (3) = DARK
              { (3a) = (no light),
              (3b) = (no heavenly bodies) }

        ATTRIBUTE (4) = COVERED IN WATER (no land)

      PROCEDURE *create*

      DURING one_working_week DO :

1:3-5   "create light"   ! ATTRIBUTE (3a) reversed
           EVENING day_1;
           MORNING day_1:

1:6-8   "create atmosphere"   ! ATTRIBUTE (1) reversed
           EVENING day_2 ;
           MORNING day_2:

1:9-13   "create land"   ! ATTRIBUTE (4) reversed
           "create vegetation"   ! ATTRIBUTE (2a) reversed
           EVENING day_3;
           MORNING day_3:

1:14-19   "create sun, moon and stars"   ! ATTRIBUTE (3b) reversed
           EVENING day_4;
           MORNING day_4:

1:20-23   "create sea creatures"
           "create birds"
           EVENING day_5;
           MORNING day_5:

1:24-31   "create animals"   ! ATTRIBUTE (2b) reversed
           "create man (Adam)"   ! ATTRIBUTE (2c) reversed
           EVENING day_6;
           MORNING day_6:

        END one_working_week.

      END PROCEDURE *create*.

2:1   END *creation of heavens and earth*

2:2-3   DURING day_7: rest!

                      Martin Mosse, 30.6.2001, updated.

ANNEX B: DADDY, WHERE DID TELEPHONES COME FROM?

In the beginning George[2] created the telephone system. He started off with a bucket of broken plastic and some old wires, and it didn't work. It wasn't connected and indeed it didn't even look like a telephone. So he had a think about it.

On Monday morning George said to himself, "What we need is some electricity." So he designed a circuit diagram. This left him with two subsystems, the physical and the theoretical. "Great!", thought George. So he went to bed and slept on it all Monday night.

Next day he had another go. "We are going to need connections", he said to himself, "to link one telephone to another". So he sat down and worked out the necessary performance tolerances. "Wow!", he thought as he did it. That took him all Tuesday, after which he went to bed.

On Wednesday George thought, "Now what we need is some hardware." So he heated up the broken plastic in the bucket and trimmed off all the wires. The molten plastic he poured into moulds. There were two types of mould from which he made first, the unit to sit on the table and second, the handset to be held in the hand. And the unit and the handset he linked with a curly cable coiled from the wires. That was as much as he could manage on Wednesday so he climbed into bed and fell promptly to sleep with a broad smile on his face.

Next morning, bright and early, George set to designing the buttons. "We need some buttons with numbers on for dialling with", he said, "and others with stars and symbols for handling those wretched automatic answering systems". This gave him a headache so he called it a day.

On Friday he wrote a telephone directory in two sections. The first section he called "Business" and the second, "Residential". This gave him enormous satisfaction. Then he went to bed and had a nightmare in which someone invented Yellow Pages.

On Saturday George proudly screwed it all together to see if it would work. Halfway through the morning, just as he was about to try it himself, it rang of its own accord. Apparently an old schoolfriend of his wife wanted a quick word with her. By evening he gave up waiting and went to bed.

And so the telephone system was complete. On Sunday George congratulated himself on his brainstorm, unhooked the handset and read the paper.

Martin Mosse,
16 March 2002.

(Parish Magazine of St John the Baptist, Purbrook, May 2002.)

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[2] cf John 15:1 "I am the true vine, and my Father is George" (*geôrgos*, Greek, means 'farmer').