in *CENTJ* **11**(3):328-9 had the same author. More importantly, I thought it was *useful* of him to point out the problems in secular chronology and recommend books like *Centuries of Darkness.* DB's point about the Hittites is reasonable, and if I had strongly objected to that I would have said so, not attacked something unrelated.

However, his evidence is not conclusive, even though it could well be right. The Hattusan Empire might have had outposts in Palestine, in which case they might have learnt the Hebraic language of the area and intermarried with the Canaanites. We know that the Hattusans under Muwatallis did have the better of a draw against the Pharaoh Ramesses II in the famous Battle of Kadesh in Syria. For comparison, I am a Jew, but I live far from my ancestral homeland, speak an Indo-European tongue and have a lot of Japhetic blood.

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Logic and creation: but what sort of logic?

Dr Sarfati's overview of logic[1] is timely and useful, as many Creationists and Evolutionists do not know when their arguments are valid. Much material produced by both sides convinces only those already convinced.

But caution is needed. However self-evident the application of logic to Scripture may appear to those who think logically, we should avoid believing that the Bible is consistent with, or can be analysed using, Aristotelian logic.

Western reasoning, including Aristotelian logic, is due to Plato and Aristotle, whose approach displaced a more informal, rhetorical epistemology. These Greeks practised, and approved of,[2] homosexual paedophilia. Such depravity was the end result of their refusal to acknowledge God and give Him thanks (Romans 1:18-32). Since *'The fear of the LORD is the **beginning** of knowledge'* (Proverbs 1:7), these men did not even **begin** to find knowledge. They stumbled in darkness (contrast Isaiah 45:19). Yet their way of reasoning, the foundation of modern epistemology, by denying validity to other ways, arrogantly stands to judge whether God's way is valid. No wonder God destroys Greek 'wisdom' (1 Corinthians 1:19—22). So how can Greek methods be the right way to seek Truth (Romans 12:2)?

Nor is Aristotle's the only system of formal logic. Mathematician Cantor, working on infinite subsets of the natural numbers, showed that Aristotelian logic was applicable only to finite sets; later, self-consistent non-Aristotelian logics were developed.[3] Although Aristotelian logic helps solve practical problems, it is neither God-given nor unassailable.

Aristotelian logic assumes that problems can be subdivided, and each sub-problem determined to be either 'true' or 'false'. For real-life problems, the process usually results in some loss of integrity in the problem studied (i.e. the problem is more than the sum of its analysed parts). The rigid true/false dichotomy also makes the solution appear more clear-cut than it actually is.

Spurious confidence in the validity of the analysis also stems from a more fundamental problem: although inconsistent solutions are rejected, the best solution cannot be determined. The method does not make clear that the solution obtained may be suboptimal. Hence, people are sometimes trapped into logically unassailable, but intuitively bad, solutions. In principle, any non-trivial problem can be analysed in many ways, depending upon what aspects of the problem are regarded as 'important'. Each approach gives a different, logically impeccable solution. Hence any particular solution is only one of many, and unlikely to be the best. Aristotle's method cannot help to decide how to divide up the problem in order to find the best. The most important stage in the analysis must be done subjectively, with no way of knowing whether a different division might be better. This subjectivity is the method's greatest weakness.

Nevertheless, by using analysis, modern science is very successful where irregularity and uncertainty are least apparent, and feedback from its results is strong (e.g. does the technology work?). It is less widely appreciated that exclusive emphasis on this way of thinking results in cultural and metaphysical loss. Many people believe logical scientific method is the *only* valid epistemology. Clearly not — this methodology with its ruthless logic fails when consistently applied to human relationships. Those who try are soon friendless!

In everyday life, people use a less rigorous, less 'black and white', logic, that copes with vagueness and uncertainty, and suits the way people reason, which is associatively rather than by deduction.[4] If people commonly draw conclusions that conflict with Aristotle's logic, we should consider whether they are using another logic, rather than simply conclude that their thinking is fallacious. Their thinking may be rational, reflecting either a different set of 'important factors to allow for', or be a correct conclusion in a different logic. Such a logic may well, like real life, be incapable of being made formally consistent!

Someone else's logic may appear incomprehensible! Anyone who studies philosophy discovers philosophers, presumably intelligent and thinking men, whose conclusions appear nonsensical. Whatever our opinion, their conclusions made sense to them. We should not assume that

ours is the right or only way to reason.

The Christian must know how *God* would have him reason. He should avoid the way of the present world, including modern science (Romans 12:2). Rather than impose Aristotle's alien logic system on the Bible, as Dr Sarfati apparently recommends, we must reason like the Bible writers in order to understand it correctly. This is not easily learned: we must become as children and lay aside our preconceptions. Nevertheless, in our attempts, we soon discover that God, in his dealings with men, does not use the strict rules of Aristotelian logic.

The Hebrews did not think analytically, and so did not develop any science. Their approach to knowledge and wisdom, revealed in Proverbs, was different. No scientist uses riddles (Proverbs 1:6) to report his work. In line with the Old Testament, Jesus also uses elliptical teaching methods, and only resorts to 'logic' when addressing Jews with that mindset, e.g. the Sadducees' question about the woman with seven husbands (Matthew 22:23-34). When He used logic, He was 'answering fools according to their folly' (Proverbs 26:5),[5] and cut through their flawed presuppositions (Matthew 22:31-34). Nevertheless, any logical argument can only refute a limited range of presuppositions, and is therefore of restricted application.[6] Because all reasoned arguments can be refuted somehow, the Bible stresses authoritative declaration as the means to enable people to find Truth (e.g. 1 Corinthians 1:17-2:5; Romans 10:14). Other wisdom can be imparted only after the right basis is established (1 Corinthians 2:6-15).

More examples illustrating the Bible's non-Aristotelian reasoning could be considered: many people cannot understand the 'logic' that required Jesus's sacrifice for our sins; God can appear unfair (e.g. Matthew 20:1-16; Luke 19:24-26), or capricious (e.g. what constitutes a fulfilment of scriptural prophecy?).

God is not answerable to us. Some of God's thoughts transcend human reason, and attempts to understand them must fail (Romans 11:33-34). Faith must sometimes accept without understanding (Job 38:1-42:5, Lam. 3:20-23).

God's 'ways' include a different approach to 'logic': arithmetical examples[7] are misleading. The 'antinomies' — logical inconsistencies — which arise in all formal systems of Christian theology show that they cannot reflect divine reality adequately, and hence that God's logic transcends ours.

Unbelievers argue, correctly, that many biblical statements are inconsistent with formal logic. Rebuttals using the same logic are rarely convincing. But to biblical logic and usage, which takes account of the intended purpose of the passages, the contested statements raise no fundamental difficulties. Christians should discourage the belief that the Bible is consistent with formal logic and should be interpreted accordingly.

We need a renewed mind in Christ (Romans 12:2): He is our wisdom (1 Corinthians 1:30). We must turn away from a mindset which implicitly accepts the essentially materialist, or at best deist, outlooks which arise from concentrating on scientific mechanisms. Scientific determinism — rather than evolution[8] — is the main philosophical barrier that keeps people from faith in Christ.

The Hebrews knew no secondary causes. God controls everything directly, from moment to moment, and can foretell detailed events in the distant future (e.g. Isaiah 44:24-45:7). Not even a sparrow falls to the ground without the Father's involvement (Matthew 10:29). The modern preoccupation (accepted by most creationists) with material causes and effects now makes it all but impossible to see God at work, except, perhaps, as some exceptional, unlikely, and hence incredible, miraculous intervention.

Christians are not to live by law

(given for the immature) but by the Holy Spirit (Galatians 3:1-5; 3:23-4:7). Can God live by any lesser way? God Himself lives by His Spirit, not by setting up rules according to which He must work. From moment to moment God does the thing which is right for us. When we pray, and He answers, He translates His answer into events, more or less imperceptibly. Most of the time — not always — He works in ways which seem 'normal' and regular to us.

We should not imagine that the 'laws of nature', by which we make sense of the world are reality. Still less should we see them as 'laws' which God decreed and we discovered.[9] All scientific 'laws', and our methods of reasoning, are purely human, cultural constructs — the fact that they will always be subject to revision proves this conclusively.

Moreover, there is much we do not know. Our 'physical laws' and 'laws of logic' relate only to the least interesting, more regular features of creation. Because it is hard to comprehend things we cannot categorise, we tend to disregard phenomena that do not fit our 'laws'. It is like going to a beach, picking up only the round white stones, and then concluding that there are no others!

The unbeliever is firmly gripped by the mindset that believes that 'scientific law', chains of material cause and effect, controls everything. This is perhaps the most powerful threat to the gospel today: evolutionary theories and the long timescales of historical geology are merely its fruit. This mindset is the root of modern atheism, whether this belief is openly declared, or only hidden in the heart.

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1. Sarfati, I.D., Loving God with all your mind: logic and creation. *CEN Tech J.* 12(2): 142-151.

2. Plato, *The Symposium,* translated by W. Hamilton, Penguin Books, Harmondsworth, Middlesex, England, 1951. This book is devoted to praising homosexual 'love' for boys.

3. Bell, E.T., 1953. *Men of Mathematics,* 2:612-639, Pelican Books, Harmondsworth, Middlesex, England. (Accessible to non-mathematicians)

4. For example, usage of linked conditional logical statements. Dr Sarfati (ref. 1, p. 146) objects to using 1 Corinthians 13:1-3 to prove that angelic tongues exist. According to Aristotelian logic, he is correct, but people do not use natural language that way. In this passage the tongues of men and of angels are linked ideas, and there is nothing to show they should be regarded differently. The tongues of men certainly exist. Hence, normal usage concludes that the tongues of angels probably exist. Whether this is a correct conclusion must be assessed, subjectively, from general Greek usage, and Paul's usage elsewhere.

5. What should the logician make of the conflicting advice in Proverbs 26:4-5? According to the uncompromising requirements of Aristotelian logic, each statement nullifies the other.

6. Although Jesus' argument effectively silenced the Sadducees it can be refuted, for example, by regarding the continuity implied by Exodus 3:6 as referring to God rather than Abraham, Isaac and Jacob.

7. Sarfati, ref. 1, p. 142.

8. Sarfati, ref. 1, p. 143

9. God has, of course, limited Himself — for our good — to providing a degree of regularity, by providing day and night and the seasons (e.g. Genesis 1:3-4,14-18; 8:22). However, these statements and covenants do not establish 'laws' that are independent of the ongoing providence of God — see e.g. Joshua 10:13.

Aristotle (384–322 BC)

Jonathan Sarfati replies:

I appreciate that Dr Johnson finds my overview of logic to be 'timely and useful' because it taught the difference between valid and invalid arguments.

But the rest of his letter seems inconsistent with that, as he strongly downplays the use of logic. However, the astute reader should notice that he commits the *fallacy of self refutation.* For he *must* use logic, in particular the *Law of Non-Contradiction,* to dispute my article. If logic were optional, his disagreement would be meaningless. In fact, communication would be impossible. Without the Law of Non-Contradiction, there would be no difference between the propositions 'Aristotelian logic is bad' and 'Aristotelian logic is good', or even any distinction between these propositions and 'Margaret Thatcher was Empress of the Hattusans' etc.

Even the Bible would make no sense unless it presupposed the Law of Non-Contradiction. Even the very first communication from God to Adam presupposes this Law — there had to be a difference between eating the fruit of the tree of the knowledge of good and evil, and abstaining. Also, God's warning 'for when you eat of it you will surely die' presupposes that Adam understood the logic of *implications.* In Genesis 3, we see the outworkings of the valid argument *modus ponens* — Adam did eat the fruit, and he really did die.[1]

Don Carson's book *Exegetical Fallacies*[2] has a whole chapter devoted to logical fallacies. Dr Carson demonstrates that logic is an essential tool for properly interpreting the Bible. Also, many cults and much legalism have arisen because people have drawn conclusions unwarranted by logical deduction from Scripture.

I already pointed out that Jesus used logic to defeat his opponents like the Sadducees, but Dr Johnson explained this away rather than refuting it. And evangelicals should be alarmed at his claim that Jesus' argument could have been refuted. Aside from the attack on His divinity that this claim entails, surely if there was a way to refute the argument, the Sadducees would have found it. And there are only two possible ways to refute an argument:

1. Show that at least one premise is false;

2. Show that the argument is logically invalid (i.e. that the conclusion does not follow from the premise(s).

This shows that Aristotle didn't *invent* logic; rather, he formalized what was *already in existence.* It is analogous to Newton — gravity was already in existence before he formalized its properties. The examples I gave from everyday life show that these rules are universal. Note also that Dr Johnson has committed the *genetic fallacy* when he tried to discredit 'Aristotelian' logic by pointing out Plato's advocacy of pederasty. It would be just as fallacious to reject Newton's gravitational theory (or smash all reflecting telescopes) because the inventor denied the Trinity. So there is nothing wrong with Christians using Aristotle's formalism — Dr Johnson hasn't shown a single example where my paper's examples of such formalism could mislead.

I'm puzzled by Dr Johnson's claim: '*If people commonly draw conclusions that conflict with Aristotle's logic, we should consider whether they are using another logic, rather than simply conclude that their thinking is fallacious.'* Consider a case where an evolutionist's argument is *denying the antecedent.* Instead of pointing out the logical fallacy, should we consider whether the evolutionist is 'using another logic' where denying the antecedent is valid? Or even more seriously, Dr Johnson seems to believe that God might think that denying the antecedent is valid. Cantor's theory of infinite sets is irrelevant to the points I discussed; in fact, it presupposes logical laws like the Law of

Non-Contradiction.

In his endnote 4, Dr Johnson disputes my analysis of 1 Cor. 13. First, he commits the fallacy of hasty generalisation when he claims that *'people do not use natural language that way* [logically]'. Well, I *'use natural language that way'* and so do others, so it logically follows that we are not people *(reductio ad absurdum).* And I explained that if people do 'use natural language that way', it means that Paul really did move mountains and give his body to be burnt, and that Jesus really did cast out demons by the power of Beelzebub.

Many of Dr Johnson's arguments confuse the truth or falsity of the premises with the validity of the reasoning. I made it clear that logic can be misused if anti-scriptural premises are used. The problem with Greek 'wisdom' was the faulty non-monotheistic axiom, not the logic. Also, it's not that *'people cannot understand the "logic" that required Jesus's sacrifice for our sins';* rather, they are ignorant of certain biblical premises that entail this:

- God is perfect justice, meaning sin must be punished (Hab. 1:13);
- Sin against an infinite God requires infinite punishment (Ps. 49:8-9);
- The punishment must be endured by the sinner or by a Substitute (Is. 53);
- The Substitute must be sinless or else he would need to pay for his own sins (Heb. 7:26);
- The Substitute must have the same nature as the sinner — man (Rom. 5:15, Heb. 2:14 ff.);
- The Substitute must be God, as no creature could endure the infinite punishment we deserve (Acts 2:24, 1 Pet. 3:18), and only God can restore us to life (2 Tim. 1:10).

I don't know why Dr Johnson thinks *'God can appear unfair (e.g. Matthew 20:1-16; Luke 19:24-26)'* — a logical response is that this presupposes a premise that man is in a position to judge God.

Another point Dr Johnson seems to have ignored is that logic is the relation between *propositions.* Sometimes analysis is needed to determine the proposition which is being asserted, maybe in a figurative way. After this, logic should be applied.

The same points apply to his claim *'ruthless logic fails when consistently applied to human relationships.'* The fault is either with faulty or misunderstood premises or invalid deductions from true premises — i.e. with *faulty* logic, not logic *per se.*

Dr Johnson's support of (unnamed) unbelievers who claim that *'many biblical statements are inconsistent with formal logic'* is without foundation. So many alleged examples of biblical 'contradictions' adduced by unbelievers demonstrate their lack of logical understanding. A good example is Proverbs 26:4-5, where he claims the two statements nullify each other under 'Aristotelian' logic. Not at all — proverbial literature is never *intended* to teach absolute rules. In this case, the two proverbs constitute a *dilemma* — there are problems in both responding and not responding to a fool. But their *intention* is clearly the two following commands:

- Do not answer a fool according to his folly if answering him thus would bring you down to his level;
- Answer him according to his folly if not answering him would give him the conceit that his arguments are unanswerable.

Nothing contradictory about these. As I wrote, a *contradiction* has the logical form p.~p. These proverbs have the logical form $(p \supset q).(\tilde{\ }p \supset r)$.

And if a formal system of Christian theology has antinomies, the fault is the logical deficiency of the systematizer, not an indication that the Bible is not logical. Unfortunately some theologians think it is somehow more pious to believe in illogicalities. But as the Christian philosopher Dr Gordon Clark (1902-1985) used to say, *A paradox is a charley horse between the ears — removable by*

rational massage.' And again, Dr Johnson is guilty of hasty generalisation here — how would he know that all systematic theologies have 'antinomies' unless he had examined all of them?

It is a mistake to equate logical and scientific laws. I pointed out that science relies on the formally logically invalid principle of *induction,* and that using verified prediction as 'proof commits the *fallacy of affirming the consequent.*

I didn't discuss scientific laws in the 'Logic' paper. But in various articles and talks, I have pointed out that scientific laws are *descriptive,* not *prescriptive.* They are our *descriptions* of the way God regularly sustains His creation. They no more *cause* anything to happen than the outline of a map causes the shape of the coastline (many Christian philosophers have argued thus).

In conclusion, I stand by my paper arguing that logic is essential for Christian faith, morality and evangelism. Logical thinking is an outworking of being created in the image and likeness of God and having 'the mind of Christ', the *logos.*

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References

1. Adam immediately died spiritually, i.e. he was separated from God, and the process of decay began which led to physical death, just as the warning (literally 'dying you shall die') said.

2. Carson, D.A., 1996. *Exegetical Fallacies,* 2nd Ed., Baker Books, Grand Rapids, MI, USA and Paternoster Press, Carlisle, UK.

The days of Genesis

In his letter The Days of Genesis' in *CENTJ* 12(1):37-38, Dr Shackelford says, *'I would remind each of us that an Earth millions or*