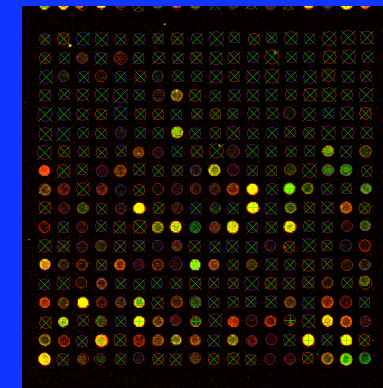
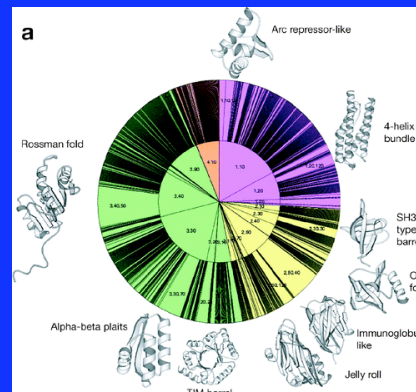
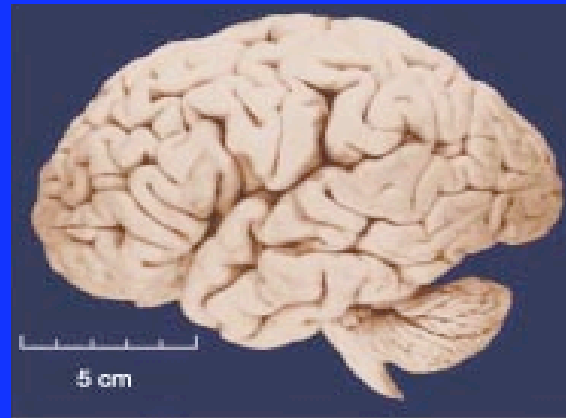
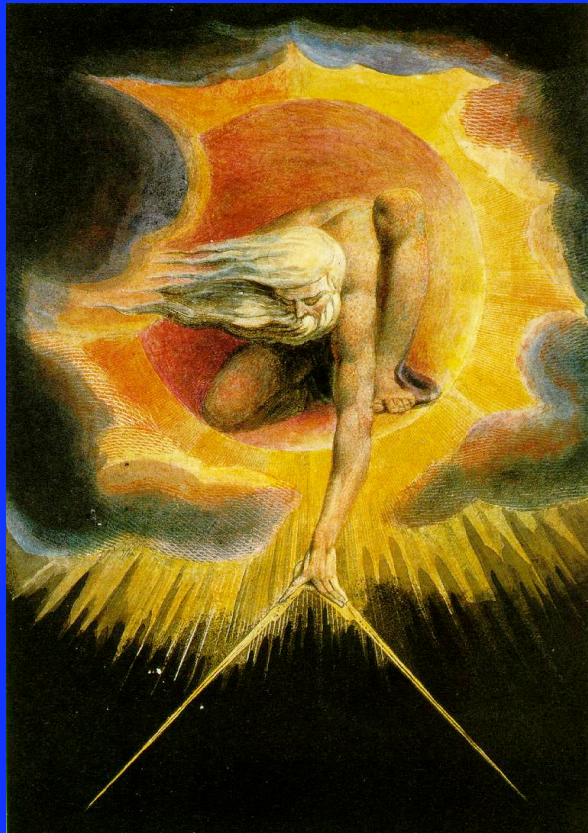


Darwinian Evolution

- the Really Hard Questions





QUESTION 1: “What about the huge amount of death and suffering that is intrinsic to the evolutionary process - how can that be compatible with the notion of God’s creation in Genesis Chapter 1 repeatedly being declared ‘good’?”

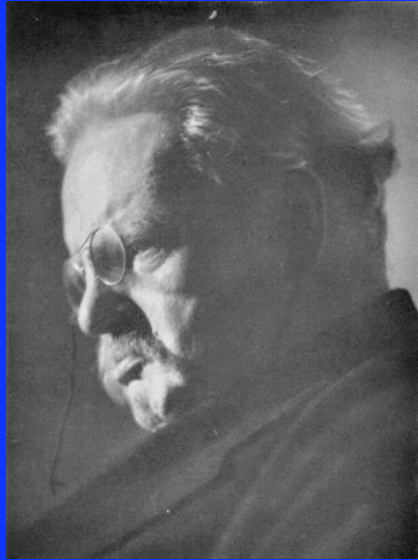


QUESTION 2: “How does the Biblical teaching about Adam and Eve relate to the evolutionary account of the origins of humankind and how does this relate to the doctrine of the Fall?”



Three introductory points

1. The importance of doing full justice to both the theology and the science.
2. Getting used to not knowing the final answers.
3. Our responsibility both as Christians and as Christians in science is to describe to the best of our ability what God has actually done in the created order, not what we think He should have done.



“Whenever we feel there is something odd in Christian theology, we shall generally find there is something odd in the truth”.

G.K.Chesterton

The three types of death in the Bible

1. PHYSICAL DEATH

**In the Old Testament...earthy....matter of fact..
You have your allotted span on earth and then
depart for *sheol*.**

**The prayer of Hannah: “The Lord brings death
and makes alive; he brings down to the grave
(*sheol*) and raises up” (1 Samuel 2:6).**

The three types of death in the Bible

1. PHYSICAL DEATH

In the New Testament....physical death looks more like an enemy to overcome...

**“The last enemy to be destroyed is death”
(Paul in 1 Corinthians 15:26).**

Jesus has come to “free those who all their lives were held in slavery by their fear of death” (Hebrews 2:15).

The three types of death in the Bible

2. SPIRITUAL DEATH - separation from God

Paul: “For sin, seizing the opportunity afforded by the commandment, deceived me, and through the commandment put me to death” (Rom.7:11)

BUT

“through Christ Jesus the law of the spirit of life set me free from the law of sin and death” (Romans 8:2).

Believers are those who have been “brought from death to life” (Romans 6:13).

The three types of death in the Bible

3. THE SECOND DEATH - permanent separation from God

Jeus: “Do not be afraid of those who kill the body but cannot kill the soul. Rather, be afraid of the One who can destroy both soul and body in hell” (Matthew 10:28).

Jesus: “He who has an ear, let him hear what the Spirit says to the churches. He who overcomes will not be hurt at all by the second death” (Rev. 2:11 cf. Rev. 20:6; 20:14; 21:8)

Biology is a 'package deal'

PLUS

Life

Survival

**Mutations are essential
for our existence and
our diversity**

**Apoptosis is essential
for development and
prevents cancer**

**Bacteria are essential
for a healthy life**

Eating

MINUS

Death

Pain

**Mutations cause cancer and
genetic diseases**

**Apoptotic dysfunction can
cause cancer**

Bacteria can kill us

**Increases Reactive Oxygen
Species → DNA damage
→ aging**

Death in biology

Sun --> Oak Tree --> Squirrel --> Bobcat --> Fungus -->

FOOD
CHAINS



sun --> producer --> herbivore consumer --> carnivore consumer --> decomposer

THE SCALE OF DEATH IS HUGE:

* An estimated 5×10^{30} bacteria in the world, >92% underground, equivalent roughly in weight to all the plants

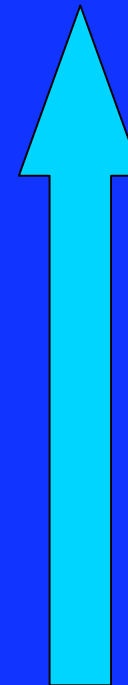
- >99% of all species that ever lived are extinct



HUMAN DEATH

155,000/day
108/minute

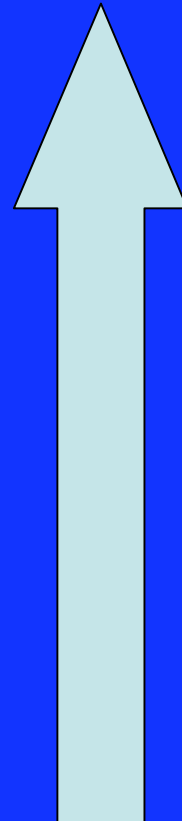
A pile nearly
30 miles high





**BRAIN
COMPLEXITY**

SENTIENCE



The evolutionary process “could be titled, perversely,
‘the evolution of suffering’”, Holmes Rolston III

A channel sets the gain on pain

Stephen G. Waxman

Nerve impulses that convey pain signals to the brain are produced by sodium channels in the neuronal membrane. Studies on people who are unable to feel pain identify one specific sodium channel as essential to the process.

"God...shouts in our pain. It is his megaphone..."

— C. S. Lewis

One of these genes, *SCN9A*, encodes a sodium channel known as $\text{Na}_v1.7$, which is preferen-

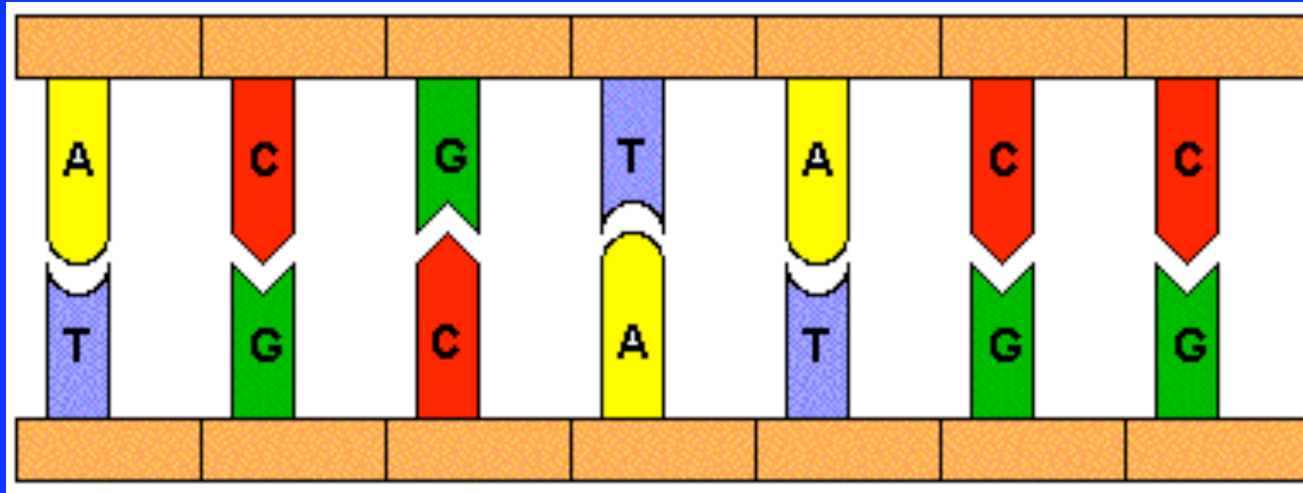
nature

Vol 444 | 14 December 2006 | doi:10.1038/nature05413

ARTICLES

An *SCN9A* channelopathy causes congenital inability to experience pain

James J. Cox^{1*}, Frank Reimann^{2*}, Adeline K. Nicholas¹, Gemma Thornton¹, Emma Roberts³, Kelly Springell³, Gulshan Karbani⁴, Hussain Jafri⁵, Jovaria Mannan⁶, Yasmin Raashid⁷, Lihadh Al-Gazali⁸, Henan Hamamy⁹, Enza Maria Valente¹⁰, Shaun Gorman¹¹, Richard Williams¹², Duncan P. McHale¹², John N. Wood¹³, Fiona M. Gribble² & C. Geoffrey Woods¹



Mutations causing cancer - example of one large recent study

- 518 kinase-encoding genes were analysed from 210 different cancers.
- 1000 mutations were identified of which 158 were identified as actual 'drivers' of carcinogenesis

Greenman, C. et al Nature 446: 153-158, 2007

HELIUM → **BERYLLIUM** → **CARBON** → **DEATH!**



Adam & Eve and the Fall

THREE USES OF ADAM IN THE GENESIS TEXT:

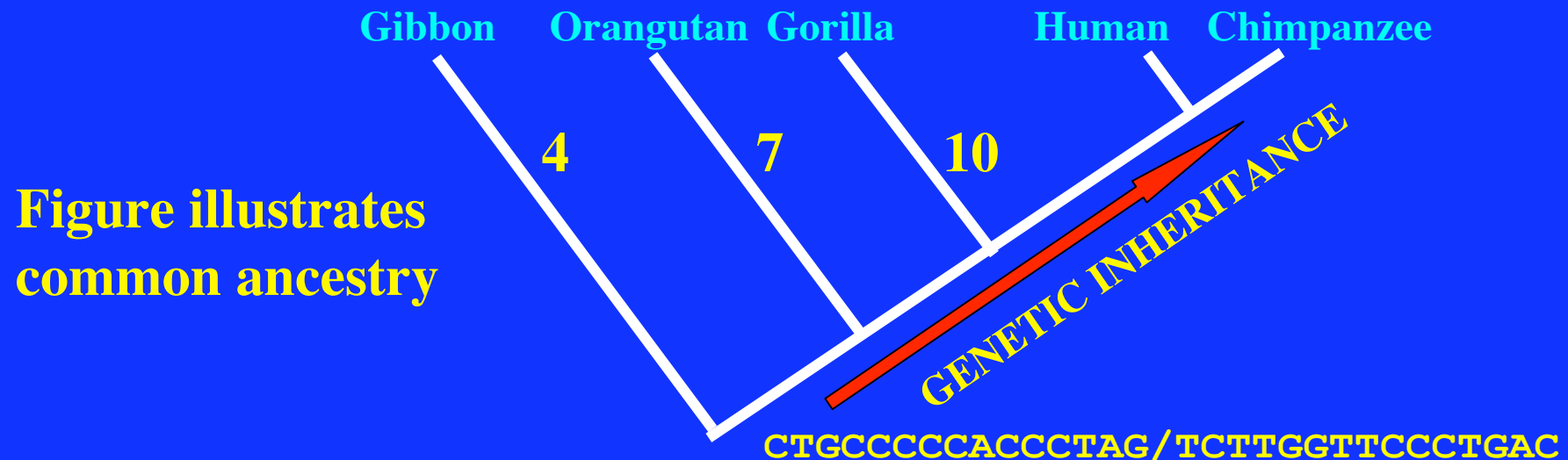
1. Adam, humankind, Gen 1:26, made in God's image, 'male and female He created them' (cf. Gen. 5:1-2).

2. The Adam with the definite article, as in Gen 2:7 when God makes the-Adam out of the-*adama*, the ground. Personal names in Hebrew do not carry the definite article.

3. Adam as a personal name, first found without the definite article in Gen. 4:15 where Adam 'lay with his wife again'.

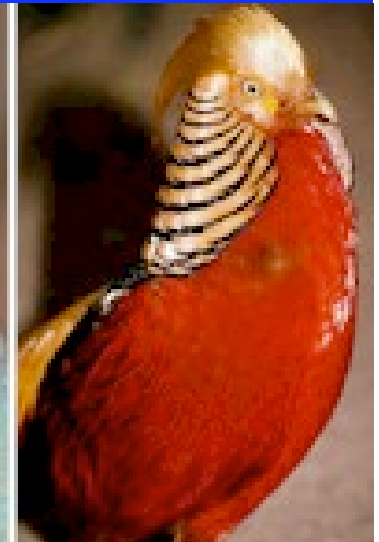
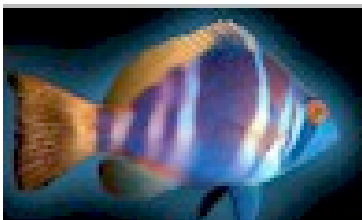
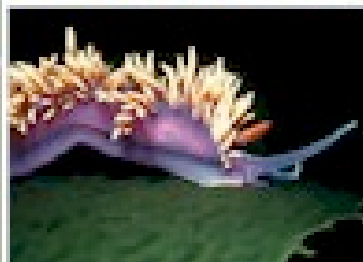
‘Genetic fossils’ in our genomes from viruses reveal our ancestry

| <u>species range of a given provirus</u> | <u>number of proviruses</u> |
|--|-----------------------------|
| human specific | 13 |
| human, chimp | 1 |
| human, chimp, gorilla | 10 |
| human, chimp, gorilla, orangutan | 7 |
| human, chimp, gorilla, orangutan, gibbon | 4 |
| <u>total</u> | <u>35</u> |



Pseudogenes are ‘genetic fossils’ in our genomes that reveal our ancestry

For example, our chromosome 7 encodes 1,150 genes, but also 941 pseudogenes, molecular relics of our genetic past.



Anatomically modern humans

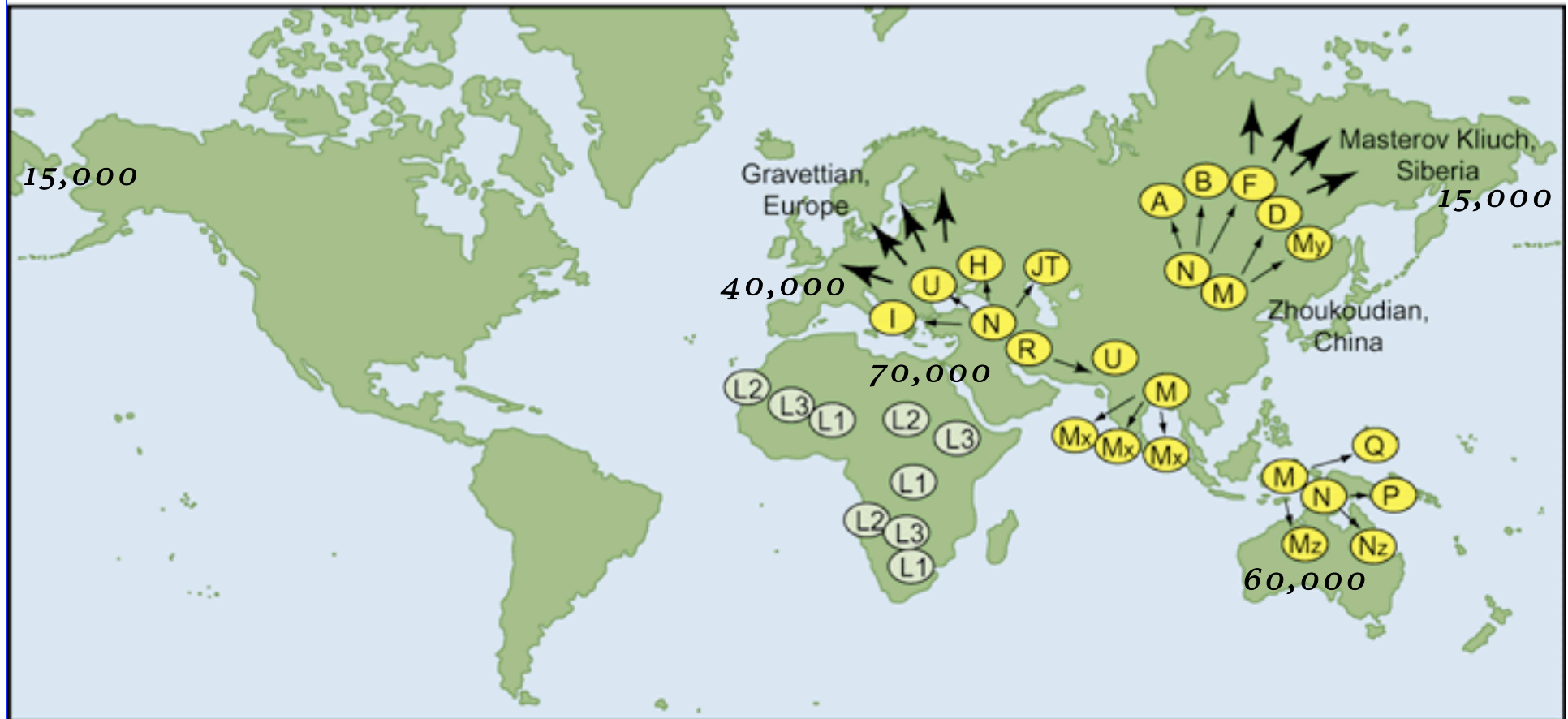
Archaic *Homo sapiens*
[emerged in Africa c. 0.5m years ago]



Spread across Africa, into Near East + Asia
[displacing populations of *Homo erectus*]



Anatomically modern *Homo sapiens*
[earliest fossils date from c. 195,000 years ago,
found in S. Ethiopia, see Nature 433: 733-736 2005]



The erratic swings of the last Ice Age stabilised at 30,000 years ago (the transition from glacial stage 3 to stage 2), local *Homo sapiens* populations grew strongly, expanding into Europe and northern Asia, and *Homo neanderthalensis* became extinct. Archaeological evidence for modern human presence increases (Gravettian culture in Europe, Zhoukoudian fossils in China). Note that only a selection of mtDNA haplogroups is shown on the maps, for space reasons.

Adam & Eve, the Fall and Evolution



Michelangelo's *Temptation and Fall*
from the Sistine Chapel Ceiling

Adam & Eve, the Fall and Evolution

- 5 Models

[Models A-C compatible with current evolutionary theory,
Models D-E incompatible]

MODEL A: the Ahistorical View

“The story of the Fall has no intention to be historical in any sense. It is a theological narrative that describes the common human experience of alienation from God through disobedience to God’s commands”.

Adam & Eve, the Fall and Evolution

- 5 Models

[Models A-C compatible with current evolutionary theory,
Models D-E incompatible]

MODEL B: a gradualist Protohistorical View

“As anatomically modern humans evolved in Africa there was a gradual, growing awareness of God’s presence and calling upon their lives, but this awareness was consciously rejected in favour of choosing their own way rather than God’s way. Therefore the Fall is a process happening over a prolonged period of time”.

Adam & Eve, the Fall and Evolution

- 5 Models

[Models A-C compatible with current evolutionary theory,
Models D-E incompatible]

MODEL C: a more 'event-based' Protohistorical View

“God chose a couple of Neolithic farmers in the Near East to come into fellowship with Himself, so that they might know Him as a personal God, giving them commands and responsibilities, in particular that stewarding His earth is a holy enterprise. The Fall then becomes the disobedience of these first *Homo Divinus* to the expressed, revealed will of God. Adam is the ‘Federal Head’ of humankind”.

Adam & Eve, the Fall and Evolution

- 5 Models

[Models A-C compatible with current evolutionary theory,
Models D-E incompatible]

MODEL D: the Old Earth creationist view

“Although plant and animal death were present before the Fall, and the evolutionary process may apply to most biological diversity, Adam and Eve were created miraculously by God and preserved from physical death until their disobedience, at which point they were destined to die physically as well as spiritually”.

Adam & Eve, the Fall and Evolution

- 5 Models

[Models A-C compatible with current evolutionary theory,
Models D-E incompatible]

MODEL E: the Young Earth creationist view

“All biological diversity originates from the creative acts of God during 6 literal 24 hours of creation about 10,000 years ago. There was neither physical nor spiritual death of any kind prior to the Fall of Adam and Eve who were created separately by the miraculous creative work of God”.

Spiritual death is the immediate consequence of the Fall

“But you must not eat from the tree of the knowledge of good and evil, because on the day [yom] that you eat of it you will surely die” (Genesis 2:17).



Genesis Chapter 3 - Adam and Eve die spiritually
-shame (v.3); fear (v.10); blame (v.12);
alienation...in relationships, in identity (vv.16-19)



A treatment of the Fall narrative in the Old Testament

[‘Pride comes before a Fall’]

Ezekiel 28: Prophecy against the proud King of Tyre

**v.2 ‘In the pride of your heart you say, “I am a god;
I sit on the throne of a god in the heart of the seas”.
But you are a man and not a god, though you think
you are as wise as a god’.**

**vv. 12-13 ‘You (viz the King of Tyre) were the model
of perfection, full of wisdom and perfect in beauty.
You were in Eden, the Garden of God.....’**

Spiritual death in the interpretation of the Fall in the New Testament

1 Cor. 15:22 'For as in Adam all die, so in Christ all will be made alive'.

Rom. 5:15 'For if the many died by the trespass of one man, how much more did God's grace and the gift that came by the grace of the one man, Jesus Christ, overflow to the many!'.

Nicodemus in John 3: 4 "How can a man be born when he is old?" Nicodemus asked. "Surely he cannot enter a second time into his mother's womb to be born!"

'Oh death where is your sting, oh grave where is your victory?' (1 Cor. 15:55)

Four points in favour of Model C

- 1. It includes Model A! Of course the account is also the 'story of Everyman'.**
- 2. The model seems to fit better with the New Testament focus on Christ as the 'second Adam', a real historical person.**

Adam and Federal Headship

REST OF
HUMANITY

Federal Headship



Federal Headship



REST OF
HUMANITY

Homo Divinus

Adam & Eve (Third Century) Fresco. Catacomb
of St Piretro and St. Marcellino, Rome



THE FALL

REST OF
HUMANITY

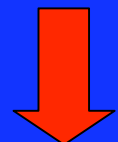
Federal Headship



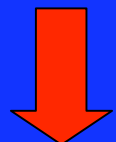
Federal Headship



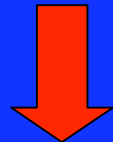
REST OF
HUMANITY



SIN

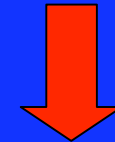


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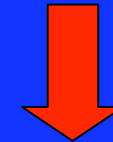


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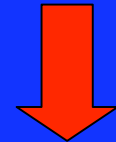
Michelangelo's *Temptation and Fall*
from the Sistine Chapel Ceiling



SIN



SIN



SIN

1 Cor 15:22: "For as in Adam all die, so in Christ all will be made alive".

Four points in favour of Model C

1. It includes Model A! Of course the account is also the 'story of Everyman'.

2. The model seems to fit better with the New Testament focus on Christ as the 'second Adam', a real historical person.

3. The model is consistent with the Neolithic type culture painted for us in the Gen.3-4 narratives. As a bonus also explains where Cain got his wife from and why he was afraid of being murdered as he wandered the earth (Gen. 4:14).

4. The model focuses on God's interactions with individuals - setting the pattern for the rest of the Biblical text.

Nuances of the word 'good' (*tob*) in the Hebrew text of the Old Testament

[list kindly provided by Ernest Lucas]

- 1. That which is pleasing to the senses, both physical and intellectual. In this sense it refers to aesthetic beauty.**
- 2. That which is good of its kind.**
- 3. That which is usable, effective, efficient, in other words 'fit for purpose' - seems to be a development of meaning (2).**
- 4. A quality of human character - in many cases 'kindness' or 'friendliness' - also a development of meaning (2).**
- 5. That which is morally good - a relatively rare use of the adjective in the Old Testament.**

The dark face of providence and the question of Theodicy



Gottfried Leibniz
1646-1716

THEODICY

*Essays on the Goodness of God, the
Freedom of Man and the origin of
Evil*

1710

**Theodicy: “All those attempts to
explain how a good and all-
powerful God could create a
world with suffering and so-called
‘natural evil’ in it”.**

“I want to state immediately that no argument finally convinces. We cannot rationalise God, or fully explain suffering and evil”

Paul Fiddes, ‘The Vulnerable God and the Problem of Suffering’

“In seeking to justify the ways of God to man, one is inevitably tempted to extend faith’s dim sense of a hidden divine purpose and sovereignty into an open map of providence such as could be available only to the Creator Himself”.

John Hick, ‘Evil and the God of Love’.

Theodicy, evolution and the omnipotence of God

↓ Laissez-faire

Total control ↓



**Process
Theology**



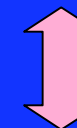
**Kenosis: God restricts his
omnipotence to allow the
creation 'to be itself'**



**Jack Haught: God is "willing
to risk the disorder and
deviation that actually occur
in the evolution of cosmic
beauty".**



**God is faithful in creating
and sustaining the properties
of matter which fulfill his
Intentions and purposes**

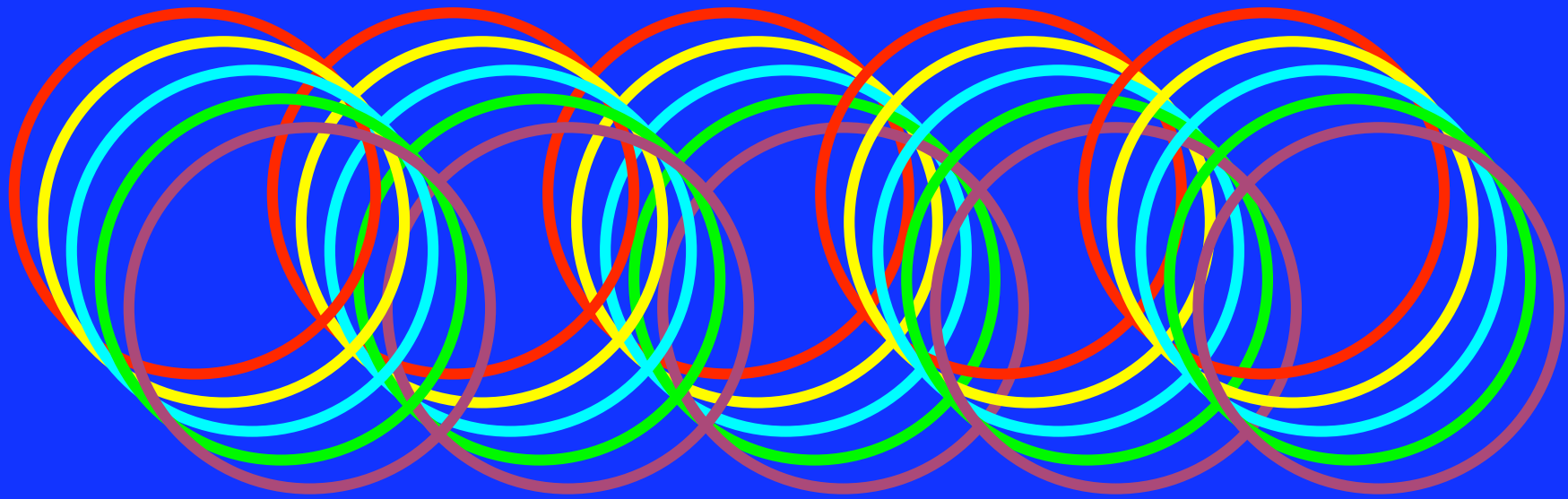


**Colin Gunton: "There is no
suggestion in the Bible that
the act of creation is anything
but the joyful giving of reality
to the other".**

[*The Triune God*]

“Poor, limping world, why does not your kind Creator pull the thorn out of your paw? But what sort of a thorn is this? And if it were pulled out, how much of the paw would remain? How much, indeed, of the creation? What would a physical universe be like from which all mutual interference of systems was removed? It would be no physical universe at all”

Austin Farrer, *Love Almighty and Ills Unlimited*



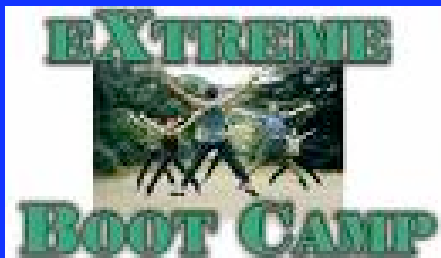
Theodicy, evolution and the omnipotence of God

↓ Laissez-faire

Total control ↓



John Hick's 'Vale of Soul Making'
- the world more like a 'Boot Camp'
than a 'Vacation Camp'.



**God is faithful in creating
and sustaining the properties
of matter which fulfill his
Intentions and purposes**

**Looking forward to the new
heavens and the new earth**
(Gk. *kaine*, 'new in quality' not
neos 'not having existed before')

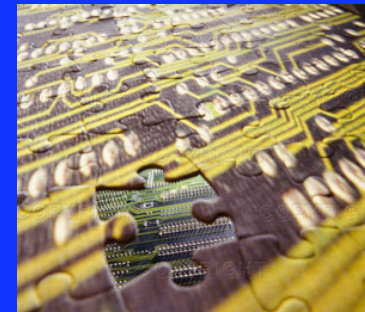
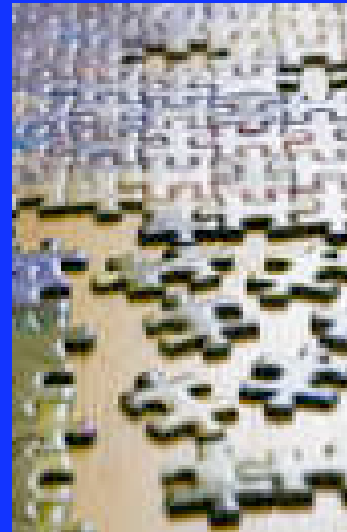
**Luke 10:9 Heal the sick who are there
and tell them, 'The kingdom of God is near you.'**

**Luke 11:20 But if I drive out demons by the finger
of God, then the kingdom of God has come to you.**

Jigsaws with missing pieces in science and theology

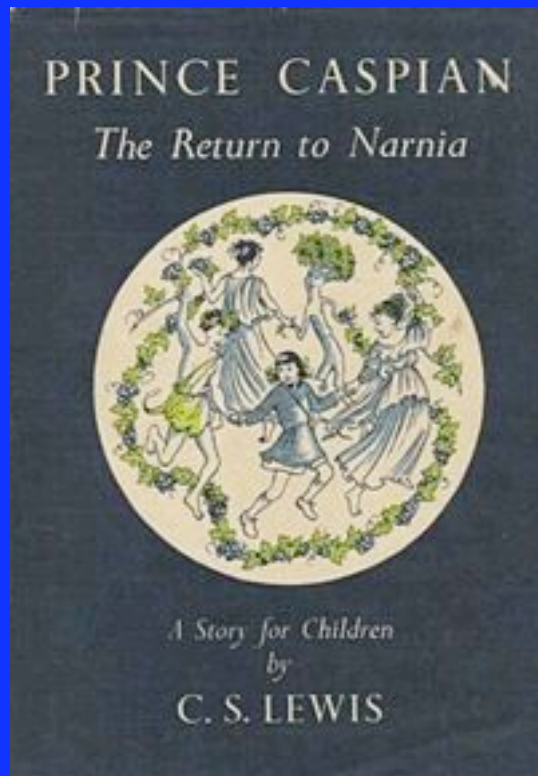
Quantum mechanics.....

Theodicy.....



*'You come from the Lord Adam and the Lady Eve',
said Aslan, 'And that is both honour enough to
erect the head of the poorest beggar'.*

C.S. Lewis, Prince Caspian



‘Through Christ it is possible to understand how the Father’s love is present in all things, even in suffering. Suffering can be regarded as a mark of our distance from God because we are subject to the cosmos simply by being creatures. Yet, depending on a person’s response to suffering, a person can be in contact with God *through* their suffering and *in* suffering. To be in touch with the reality God has made, even when it is a painful touch, is to have indirect contact with him who is above it and who is above all else, love. Insofar as it is contact, it is good; insofar as it is painful, it is not. But what a difference when the *same* pain results from the grip of a friend, and not the mindless grip of nature’.

Diogenes Allen

The End

