FURIOUS HORSEMEN

DEBUNKING THE NEW ATHEISM

(finished 2022.12)

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The Four Horsemen
~ minus one, plus two ~

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Man Time World

PROLOGUE

Atheism, defined as the unconditional rejection of gods, was known at all times and among all people, but it is first in our own age that it has become really widespread. Already the antique philosophers before Socrates had a critical attitude to the traditional mythology and stressed the human intellect as the only means to be conscious of truth. Xenofanes, e.g., ridiculed Hesiod and Homer for ascribing improper habits to the gods, thinking them as all too human; but at the same time he spoke in an important fragment about "one God, greatest of gods and men, and unlike mortals as regards body and soul". Leukippos and Demokritos developed an atomistic view of the world wherein there is no place for gods at all. Neither is there any place left to God by modern atheism.

A sharp philological criticism of traditional religion emerged in the history of ideas with the humanism of the renaissance. This was continued with philosophical arguments by the rationalists Hobbes and Spinoza and, with eloquent irony, by the empiricist Hume. The physicist Newton, who in his *Principia* had laid the basis for classical mechanics, found it necessary to refer to divine intervention in order to explain the stability of the planetary orbits; the saying goes that he was dismissed by the mathematician Laplace with the words: "Je n'ai pas besoin de cette hypothèse la!" Kant, in his critical philosophy, sought to defend "den sicheren Gang einer Wissenschaft" and tried to show a new way that was equally far from dogmaticism and skepticism. Hegel, on the other hand, who did not accept the limits for reason put up by Kant, audaciously claimed that he, in his *Logik*, had mapped "the thoughts of God before he created the world"! The reaction against such an extreme form of idealism soon cropped up as an equally extreme materialism.

The pious atheist Feuerbach gave new wind in the sails to the criticism of religion, and with Darwin, Marx, and Freud, as banner leaders it gradually blew up to full storm. Darwin reluctantly admitted a conflict between the doctrines of creation and evolution; but Marx openly described religion as "opium for the lay people", and Freud flatly called it an "illusion". Three different circumstances contributed to strengthen these movements in their revolt against tradition: 1) the contemporary stage of development of the natural sciences which was stamped by a naïve materialism and a primitive notion of causality as being purely mechanical; 2) a growing historicism, posing the question "wie es eigentlich gewesen" (L.v. Ranke); 3) a theological criticism of the Bible (D.F. Strauss), which lead at least some theologians to renounce the old doctrine of verbal inspiration, i.e., the idea that every word in the Bible, *GT* as well as *NT*, was in a way "dictated" by God himself; a view which today has been abandoned by almost all academic theologians.

The leaders of the neo-atheists are *the four horsemen*, a militant aggressive troup of cavalry comprising R. Dawkins, D. Dennett, C. Hitchens, and S.Harris, as its members, and having Dawkins as its *primus motor*. As Dennett denies the significance of quantum effects for the function of the brain as a computer, I disregard him for instead to consider the chemist P. Atkins and the cosmologist L. Krauss, whose ideas I find worth discussing. This together motivates both supertext and subtext in the title of the present chapter.

1. PETER ATKINS: "Creation Revisited" [1994].

Atkins may have been an important source of inspiration for Rowlands [2007]. Atkins belongs to the troup of militant atheists. If Rowlands is an atheist too I don't know. In what follows I want to discuss some similarities and differences between them.

According to Atkins, the possibilities for man to grasp the structure of the universe are unlimited, and the true explanation will turn out to be simple, natural, and elegant. Rowlands, being one of the very few scientists who has dared to suggest a final solution to all the problems of both cosmology and biology, would most certainly agree.

Atkins makes himself a spokesman for the view that the scientific explanation of the origin and structure of the world will show that the idea of a Creator is superfluous. Everything happens of itself, automatically, and it just could not occur in any other way. There is no need for God as Creator, because there is nothing for a Creator to do!

But, to begin with, he states some premisses for his arguments that are quite naïve. That we, all of us, consist of stellar stuff is in our days obvious; but when he claims that all existing things are made of atoms that exist "because they are visible", it undeniably sounds as a belated echo from the materialism of the 19.th C. What about the "quarks" that are "invisible in principle"? Rowlands does not seem to be that old-fashioned.

However, let us leave the more or less observable elements of ordinary matter. More important is it how Atkins explains motion, or change. His stance finds expression in the words: *change is decay*. His point is that all change is a process, and in the course of all processes there is a dissipation of local energy. However, what is changing is not energy as a quantity, but only as a quality. It is no longer fully available for work.

Gravitational energy has the highest quality. CMBR energy has the lowest quality. All processes lead to a production of heat which then dissipates and is lost in outer space. In the end, all energy is transformed into heat, and universal space is the final heat dump. The whole development towards higher order is driven by a change of motion into heat. Apparent progress is merely local, its cause being the global decay back to chaos.

All events, all occurrances around us and within us, are driven by pointless decay. All observable actions are conditioned by an infinite causal chain of preceding reactions. So the entire biological evolution is seen as being constituted by a dissipation of energy. Biological molecules did not want to reproduce themselves, it just simply happened.

Living organisms are equipped with antennas apt to receiving information from the surroundings; their nerve threads have evolved into senses sending signals to their brains. As long as our bodies are able to recreate themselves by collecting high quality energy and giving it back again as low quality energy, we can maintain and preserve our bodies.

We exploit the world surrounding us in order to have an inner life; even our own will and thought show the decay of everything; and *ultimately there is only chaos* (p.41). In the end, Atkins claims that energy is changed into *love and war* by pure chemistry! Thus far Atkins has stated a trivial brand of atheism that might be shared by all horsemen. Just like them, he seems to opine that all high quality started with the Big Bang.

What justifies my above comparison with Rowlands concerns the following points:
1) Zero is the origin of everything: the universe is an exquisitly organized "nothing".
2) Time is the decisive parameter, because time differentiates nothing into something.
3) Space in three dimensions is needed for the stability of atoms, thus for matter to exist.
4) Consciousness is only possible where a world-time differentiates matter in 3-space.
5) A close affinity holds between our minds and the structure of the entire universe.

All these points, to which I subscribe myself, have clearly inspired Rowlands.

The inspiration from Atkins is apparent from an introductory quotation (p.3), from the choice of title of his book: *Zero to Infinity*, and, finally, from his mathematical tool: *a nilpotent Dirac equation* based on *a nilpotent universal computational rewrite system*.

Rowlands claims that the laws of nature for physical reasons must be valid at any time everywhere (p.600); therefore (p.620), contrary to Atkins, he pays no respect to the idea of a Big Bang. But they agree that what stems from nothing must return to nothing. This clearly holds for the world of our senses. But does it also hold for Truth?

Atkins forwards some interesting views as regards the importance of time (p.57): *Time is internal, space external: while we grip objects in space, it is time that grips us.* Creation occurs in space when time differentiates "nothing" into simple pairs of duality; if the differentiation produces patterns of a sufficient sophistication, they will be stable. The prime matter of the universe is *a dust of binary forms*, 1 & -1, yes & no, true & false. The creation of something from nothing must be described by pure numbers derived from the quantity '$\emptyset$' (zero, nil). - By using a rewrite system, Rowlands would add.

To Rowlands (p.4) the notion of *duality* plays a crucial rôle in his construction of the *NUCRS* (*nil-potent universal computational rewrite system*) and thus of mathematics. When describing the rewriting as "a proces that is not a progress in time", he might mean that it is not time in a physical sense (: A-series), only in a logical one (: B-series.

Contrary to Atkins (p.67) who uncritically accepts Einstein's explanation of gravity as a distortion of spacetime, Rowlands (p.459f) characterizes *GR* as an arbitrary way of describing phenomena that only makes sense as a theory of gravity if certain Newtonian premisses are granted. How strongly Rowlands deviates from the standard view of *GR* follows from the conclusion of his book (p.622). His idea of proving how something can emerge from nothing is based on certain classical presuppositions: a) the universe has to be infinite as regards time and space; b) the universe must constitute a reference frame that permits an unique definition of motion and rest; c) this universal reference frame allows a re-definition of the classical concept of an absolute and universal time.

An all-embracing cosmic time is not only presupposed in the quantum mechanical notion of *non-locality* which precludes the existence of *horizons*, imagined by Atkins to differentiate the universe into a socalled multiverse, but is also a condition for the notion of *causality* in classical as well as relativistic physics. The import of such cosmic time is explained by Rowlands as follows (p.579): The thermodynamic evolution of the universe is the measurable result of ***the unique birth-ordering of quantum events that constitutes the absolute, unobservable, quantum theoretical time*** as well as all causal chains.

According to the view of Atkins, partly accepted by Rowlands, a universe with one dimension of time combined with three dimensions of space is the only one wherein matter can get a stability sufficient to survive the quantum fluctuations that produced it, and is the only one which offers the conditions needed for the evolution of life possessing consciousness. But Atkins, against Rowlands, explains matter by the curvature of space, saying that the creation of mass involves the emergence of spacetime structure (p.87).

The concept of quantum fluctuations is very important to Atkins, since he imagines an unlimited series of arbitrary fluctuations where a single one accidentally produced our own world as well as ourselves, its time being combined with a stable 3-space (p.149). This gives him the opportunity to dream of a *multiverse* consisting of countless minor universes "which all the time emerge and disappear" because time does not attain the stability needed for the formation of three dimensional space.

Atkins (p.83) goes so far as to claim that the consciousness of human beings itself is three-dimensional, which seemingly betokens that our scientific conceptions of space must themselves be spatial; he does not realize that our thought then cannot be explained by local processes inside our brain, but only by global, or universal, processes! Rowlands, however, flatly rejects the fantasm of multiple universes (p.609).

Atkins sees the universe as being a form of spacetime and boldly claims (p.95) that spacetime, in a deep sense, is *self-conscious*. Apart from his use of the concept of "spacetime", I could not concede stronger! This agreement, which I share with Rowlands, further concerns the fact that one of the abilities characterizing our self-consciousness is that we are able to create mathematics. Atkins views our self-consciousness as a property of matter conditioned by three-dimensional space, and claims frankly that, when we gaze outwards in space, we look at the contents of our own heads (p.101) - *Sic!*

"The great book of nature is written in the language of mathematics", Galileo said. That nature can be described thus is due to the fact that *physical reality is mathematical*, claims Atkins (p.109). The reason that we are conscious of the world, inclusive our own inner world, is that our brains mirror the structure of the world (p.111). An identity reigns between the structure of a single human brain and that of the entire universe (p.119).

This conjecture, which Atkins calls *the hypothesis of deep structuralism*, explains how our brains can develop the mathematics that is needed to decode the natural world. This idea is adopted by Rowlands who makes it even more explicit by describing both structures as *quantum Carnot engines.* Contrary to the horseman Dennett who explains the structure of a human brain as being similar to that of a computer based upon classical physics and chemistry, Rowlands insists on the relevance of quantum processes.

But if a human brain that functions like a thermodynamic quantum computer is able to develop a consciousness that, by its thinking, can grasp and describe the whole universe, albeit only from its own individual perspective, is it then inconceivable that the infinite world itself may work as a thermodynamic quantum computer, consisting of "a dust of binary forms", for a Divine Consciousness who is able to integrate all created minds into an universal birth-ordering of non-local quantum events? -

2. RICHARD DAWKINS: "The God Delusion" [2007].

The title of his book, says Dawkins, is to be understood in accordance with this definition: *a **delusion** is a belief firmly held in spite of strong evidence to the contrary* - and he quotes R.M. Pirsig: *When one person suffers from a delusion, it is called insanity; when many people suffer from a delusion, it is called religion* (p.38). So, what he attacks in his book is: ***God, all gods*** .. (indeed) ***everything supranatural*** (p.57).

Dawkins claims that God's existence should be discussed as a scientific hypothesis, a hypothesis which, against all evidence, insists on the existence of a supernatural creator. His point is stressed further (p.39f.): *A theist believes in a supernatural intelligence who, in addition to his main work of creating the universe .. is still around to oversee and influence .. his creation .. He answers prayers, forgives or punishes sins; intervenes in the world by performing miracles; frets about good and bad deeds,* just knowing everything. God, in the sense here defined, is a delusion .. a pernicious delusion (p.52).

An atheist, on the contrary, believes that nothing can transcend the physical reality. There is no unobservable intelligent creator, no soul that survives the death of the body, and no wonders or miracles, except in the sense of ordinary natural phenomena (p.34). And he quotes J. Baggini: *What most atheists do believe is that although there is only one kind of stuff in the universe and it is physical, out of this .. come minds, beauty, emotions, moral values, in short the full gamut of phenomena that gives richness to human life.* Matter as *prima causa naturae* - just an outdated materialism disguised as science!

Dawkins admits that he is a great admirer not only of Darwin, but also of Einstein, and he says frankly that he has no objection to the religion represented by Einstein (p.40): *To sense that behind anything that can be experienced there is a something that our mind cannot grasp and whose beauty and sublimity reaches us only indirectly, is religiousness. In this sense I am religious* - and "in this sense too I am religious", Dawkins admits; but with the reservation that 'cannot grasp' does not have to mean 'forever ungraspable'.

Dawkins would hardly object to the famous saying of Spinoza: *Deus sive Natura.* According to Spinoza, nature has two attributes, *extensio & cogitatio*, that may never be mixed, though both are divine. It is told, that Bohr and Einstein often discussed Spinoza. But natural science has progressed since then, and Atkins and Rowlands are perpared to derive space and mind from the same *mathematical stuff*, viz., *a dust of binary forms*. Atkins' stance, however, is ambiguous; apparently, he is still stuck in something material. Rowlands, by contrast, speaks frankly: *There is no such thing as 'reality'* (p.60) !

Thus, if Dawkins by 'supernatural' means something transcending physical reality, something that does not ultimately stem from "solid matter" as its first cause, he may well counter unexpected problems. But it is not better to base the atheistic case against theism upon the notion of 'existence', for if a supernatural Creator is supposed to be *prima causa* of existence, what sense does it make, then, to say, or deny, that the Creator does "exist"? Dawkins, of course, would probably claim, that this formulation is just a simple variation of the old, "devastating, and unbeatable", quandary: *who created the creator?*

The infinte regress, assumed by Dawkins and others, is easily dismissed, however. According to Thomas ab Aquino, *doctor communis* of the Catholic Church, God should be understood as *actus purus*, i.e., as *a perpetual act of creation and preservation* where nothing is left undone. This description which, presumably, is acceptable also to thinking protestants, shuns the difference between actor and action feigned by the above question. *God is identical to a continuous creative activity*, so the question misses its point.

But what does Dawkins, then, mean by his rejection of everything supernatural? Presumably he accepts to define the term *natural* by reference to nature's socalled laws; maybe we could even agree to define the relation between cause and effect by such laws. But I doubt that Dawkins has caught the vital difference between using the accepted laws of nature to ***explain*** *something present as the effect of something past as its cause*, and to use those laws to ***predict*** *something future as the effect of something present as its cause*. At this point, quantum physics has made a decisive correction to classical physics.

Dawkins has blamed R. Swinburne for arguing that God, having created the laws of nature, is not constrained by such laws, but can change or even suspend them *ad libitum*. This standing is undeniably hazardous and, just like Dawkins, I shall fortright dismiss it. Either God created nature with its laws, or he did not. In the latter case he has nothing to do with the laws of nature and cannot change them; and in the former case, where he has power, he cannot change the laws without contradicting himself. But if God contradicts himself, he talks gibberish, so his word cannot be trusted. Further, as a creator, he cannot suspend his own laws without destroying his creation. The idea of miracles, therefore, understood as events contradicting the laws of nature, is absolutely meaningless**.**

Quite another issue is it whether all natural occurrences are subject to strict laws. Does there exist laws of nature that, from the exact description of some given initial state, allows the exact prediction of all successive states? No, quantum theory precludes that! But the presupposition concerning a precise description of some given initial state is itself untenable, even when judged in the light of classical physics. At a whole, physics can in general only make predictions concerning the more or less probable. B.v. Fraassen [1989] has argued strongly for the stance that the idea of "laws of nature" is simply a relict from traditional metaphysics and should be replaced by the ideas of ***symmetry*** and ***invariance***. However, already C.S. Peirce described the socalled laws of nature as "habits"!

As Plato said (*Tim.29c*): When inquiring into such subjects (what has been created) we should content ourselves with what is probable and not search for what exceeds that. And to Lucretius, who was a simple atomist - a position which was far from that of Plato, but which inspired Marx to a materialism whose implications undoubtedly may appeal to Dawkins - all evolution in nature is explainable by "a universal motion of falling atoms".

It is astounding that if we replace 'cosmic motion of falling' by 'cosmic dissipation', viewing the atoms as a kind of "clocks" able to observe and communicate with each other - a sort of conscious observer-particles, or particle-observers, like the monads of Leibniz - one comes close to the theory developed by the Christian mathematician and cosmologist E.A. Milne of Oxford, a theory that he termed: *Kinematic Relativity* [1951[2]]!

According to Milne - who did not mention a "Big Bang", but preferred to speak of *a transcendent point-event*, i.e., something which is ordinarily described as *a singularity* - the resulting motion of dispersion is not only the cause of the phenomenon of gravitation, but also the cause of the electro-magnetic forces. Thus Milne had already developed a very comprehensive theory at the middle of the 20.th C. He is, further, the only physicist to have offered a nearly visual explanation of the force of gravitation! What is interesting in our context, however, is that *his explanation of the laws of nature is purely statistical, they did not hold exactly at the instant* $t = 0$, but are stabilized in the course of time.

This might be appealing to Dawkins, who knows something similar from biology. It is well known how biological "laws" are a sort of habits, stabilized by *trial and error*. Even Rowlands, who seems to defend a stricter notion of law than what is hinted at here, says clearly that *workable rewrite processes* has evolved by a sort of *natural selection*, and that it is the same kind of processes which are stabilized as biological "laws".

What is striking, indeed unique, by Rowlands' "TOE" (*theory of everything*) is that he, as the first one ever, offers a *physical* explanation of a long series of biological facts! Thus he proves that molecules like RNA and DNA have a structure like regular polyedra; and his *rewrite process* can be seen as a *semiosis* (*a sign-action*) based upon one symbol, viz., the empty one, {}, or ∅, resting in itself, as *firstness*, and whose *rewriting* is a going out of itself, as *secondness*, followed by a returning to itself, as *thirdness* - cf. Peirce!

By this move Rowlands clears the way for *biosemiotics*, a new trend in biology which tries to amend traditional biology as represented by neo-darwinists like Dawkins. If one reads the paper: *Theses on Biosemiotics: Prolegomena to a Theoretical Biology* [2009], it appears from *thesis 1*, that the distinction *semiotic / non-semiotic* is assumed to cover the distinction *alive / not-alive*, just as it appears from *thesis 7*, that biosemiotics is still at a preliminary stage, the basic idea of *semiosis* lacking a precise definition.

My own thesis is now that Rowlands, in his book, offers precisely that definition, so that the *rewrite process*, invented by him, can be viewed as *exemplum instar omnium* yielding the mathematical-physical-logical basis of *biosemiotics*, its scientific paradigm! Rowlands here refers to G. Bateson's idea of a universal meta-pattern in nature (p.559). Granted this thesis is valid, it tells that the sphere of biosemiotics comprises all of nature, so that *teleological explanations attains a new scientific foundation* in modern biology. But as Rowlands only writes about semantics, not semiotics, and does not mention Peirce, it is clear that its validation would constitute a substantial task for future research.

Returning briefly to Dawkins' doing away with "supernatural events", it is evident that the Biblical story about the socalled "virgin birth" is due to a misreading of Es 7,14. It is not reported in the eldest gospel, describing the baptism and divine adoption of Jesus, Mk 1,9-11. Moreover, it conflicts with Mt 1,1f. & Lk 3,23f., tracing the ancestry of Jesus back to David *via* Josef. Concerning the "resurrection", Paul talks of "heavenly bodies" in a way recalling "near death experiences", 1 Kor 15,35f.; further, one of the eldest pieces in the New Testament is *Hymn of Christ*, Phil 2,5-11, reporting the "exaltation" of Jesus. The poet Hans Andersen warned: "One should not take everything just as it is told!" -

Mogens True Wegener

3. CHRISTOPHER HITCHENS: "God is not Great" [2007].

Hitchens said that "religion poisons everything", and his book bears witness to that. Seldom, if ever, has one been met with such poisonous and hateful attack on all religion! The author is obviously unable to discover any modifying, or mitigating, circumstances. That does not mean, however, that his arguments are well reasoned, or valid.

Due to the microscope and the telescope, religion has lost all justification (p.282). Darwin revolutionized biology, and Einstein later did the very same to cosmology (p.65). Thanks to these "mighty advances in our knowledge" we can now expose religion as it is: a residue from the infancy of mankind, a childhood dominated by fear and superstition. Hitchens was firmly convinced that all attempts to reconcile religious belief with reason and science are doomed in advance to suffer defeat and ridicule (p.64). - *Come on!*

Hitchens counted four serious objections against all kinds of religious belief (p.4): 1) it completely misrepresents the ultimate origin of humankind and the entire universe; 2) as a consequence of its first mistake, it is able to connect a maximum of servility with a maximum of solipsism; 3) it is the cause to, as well as the effect of, sexual subpression; 4) it is the expression of wishful thinking; 5) all religion is man-made.

Hitchens himself considered the last objection as being decisive and annihilating. So let me confront that objection first and outright admit, that all religion is human-made! Thus the entire *Bible* is written by fallible members of the human race. Does that preclude that they might be guided by the Holy Spirit? No, of course not, if only it is not assumed that the result hereof is infallible. That the Bible is inspired in detail by God is untenable. But man's ability to create gods in his own image does not destroy the metaphor that man, due to his ability to say: "I am!", is created as *imago dei*, i.e., in the image of God!

The view that the Bible is wrong as regards the origin of the world and ourselves is only warranted if the biblical scriptures are read literally and not as imaginative speech; but, of course, there is no reason to do that. It is an obvious mistake to interpret the notion of truth presupposed in the Bible as a one-to-one correspondence between word and fact. The Biblical conception of truth is a very far cry from being purely factual.

The Bible consists of stories, or narratives, about occurrences taking place in time, and, following to the hermeneutician P. Ricoeur, *it is only told events, time as a narrative, which can be human without clashing with science*. Ricoeur's point is that events, if told, have two elements: one *factual* referring to *history*, another *fictitious* referring to *fantasy*. Hitchens fault was to focus on the factual / historical, and to ignore the fictitious / poetical. Albeit literary, he could hardly have made sense of Dante, or of Hans Andersen!

Hitchens is right that one's preferred belief is often determined by wishful thinking, but this is understandable if the target of belief, God, is seen as the aim of human longing. It is here illuminating to quote Augustine (*Confess. I*): *"You have created us to you, and restless is our heart until it rests in you"*. The citation affirms that religion is invincible. Hitchens and his fellow horsemen should not nourish too great expectations as regards its annihilation; a little sober reasoning might cure them for that mistake!

Concerning sexual suppression, however, there is undoubtedly some connection. The Christian idea of ***agape*** as the *downwards* directed love of God to a sinful humanity has too often been placed in a relation of mutual exclusion to the Platonic idea of ***eros***, the human desire for satisfaction, elevated by Plato to a longing *upwards* for the divine. So the theologian and historian of ideas A. Nygren, in his work: *Eros och Agape* [1930f.], has utilised the Lutheran doctrine of grace to criticize the *caritas-synthesis* of Augustine. This is very regrettable for the reason that these two ideas mutually support each other. God's love may appear as an empty postulate if *agape* may not be seen as related to *eros*. For the poet Dante, his own youthful love to Beatrice played a crucial rôle that constitutes an erotic *motif* not excluding grace and permeating the entire *Divina Commedia.*

Concerning the objection that religion is an incitement to solipsism and servility, it is hard to see what Hitchens meant by solipsism. But as regards servility, his allegation clearly hits *Islam*, meaning "submission" - which is to be understood quite literally, since a muslim prayer should be performed flatly on the face with the behind turned upwards! The German word "Gnade", by contrast, is just an unfortunate rendering of Greek χάρις. Further, the Christian may confidently dismiss Hitchens by referring to John, 8.31-36:

Jesus said to those Jews who had come to believe him: »If ye continue in my word, ye are truly my disciples, and ye shall know the truth, and the truth shall make you free.« The Jews answered: »We are Abraham's seed. We were never in bondage to any man. How sayest thou, ye shall be made free?« Jesus answered: »Verily, verily, I say unto you: Whosoever committeth sin is a slave of sin. The slave abideth not in the house for ever. The son abideth for ever. If the son makes you free, you shall be really free.«

Hitchens turned all his hatred and disgust against the three Abrahamitic religions: Judaism, Christianity and Islam, viewing the latter as a poor plagiarism of the two former. Abraham he regarded as a mentally disturbed person who, believing that God ordered it, is on his way to murder his own son in a holy sacrifice, but is just accidentally held back. He did not want to see that the story can be read differently, viz., as a doing away with the human sacrifices of a cruel past, where what has to be sacrificed instead is the "stag": one's egotism. The story, when it is read thus, exposes Islam as a perverted Christian sect, where moslems wish to "honor" God by sacrificing their lives to kill other people.

Following Hitchens, the abomities accepted by *GT* are innumerable; nevertheless, he claims that *GT* is by far superseded by *NT* with respect to abomities! This, of course, is just a wild exaggeration of the kind that is intended to "further one's understanding". The double commandment of love, Mk 12,28-31, is in *NT* described as a fulfillment of Mosaic law, since the demand: *»Thou shalt love thy neighbour as thyself!«* is put equal to the demand: *»Thou shalt love the Lord thy God with all thy heart!«* The fanatic, who sacrifies the love to his neigbour in order to adore his God, has thereby doomed himself. That Jesus taught us to call God *»Our Father«* is a revolt against the image of God in *GT*. No wonder that the Jewish clergy strove so hard to get him sentenced to death.

But Christians may not ignore that Hitchens' criticism of religion is often justified. It is shameful that he is right so often; the Christian just has to admit: *mea culpa!*

Mogens True Wegener

4. LAWRENCE KRAUSS: "A Universe from Nothing" [2012].

Krauss is the spokesman for a free and enlightened scientific manner of thinking, against superstition and religion. In this rôle he toured around the world with his friend, Dawkins. At first, Hitchens had promised to write an afterword to the book concerned, but, since he became too ill to perform the task, it was instead turned over to Dawkins. For that reason it is natural to guess that these two *horsemen* were on a par with Krauss who, among the three, was the only one to show any competence in the exact sciences. Thus it is important to know what he judged as common sense and good science.

Just like the first two horsemen, Krauss views Einstein as being his idol and guru. This is clear since he, without any worry, or hesitation, accepts all ideas and theories of his scientific rôle-model, just as he accepts the common dogmas of standard cosmology. Regarding that, this front figther for common reason has totally pawned his critical sense and, as if this were not enough, he speculates freely, heaping hypothesis upon hypothesis. But, if one by 'possible' understands that which is not evidently contradictory, as he does, there is no obvious limit for what one may suggest as being "possible"; and he cheerfully embraces the "principle" that all which is not logically precluded is possible. (p.176)

What, then, is the outcome of the ride he makes, posing on his scientific Pegasus? What he attempts to do is comparable to the sunride connected with the name of Icaros, but may be more like the sort of wishful thinking that ended so suddenly in a mud ditch. The purpose of his book is to do away with the idea of God as the creator of the universe, and he begins by shame riding an old horse, viz., the quibble: Who created the Creator? But he quickly puts it aside again, since his real intention with the book is to demonstrate that our contemporary science is able to handle, and to answer, that greatest of questions: Is it posssible that the world could emerge from pure nothing, without a Creator?

Many thinkers have regarded the query "why is there something and not nothing?" as the deepest issue of philosophy. Krauss pretends to offer a scientific answer.

As we hinted at above he is not the first one to do so, and his answer is not original, since it, naîvely and uncritically, adopts the standard ΛCDM model for the universe, only extended with *inflation* and *quantum gravity*. The latter is hoped to unify *GR* and *QFT* (quantum field theory); but quantum gravity is not a theory, only some confused attempts to solve a problem. Further Λ, *CDM*, and inflation, are three other *ad hoc* hypotheses with which the *FLRW metric* (Friedmann-Lemaitre-Robertson-Walker) has been bolstered up in order to ensure the supposed validity of the field equations of Einstein's *GR*.

In this way *GR* constitutes the foundation of all these weird speculations; however, *GR* is more like "a colossus with a foot of clay", and a building erected upon such a basis merely shows a miserable look: it most of all resembles a huge, airy edifice resting upon a scaffolding of rotten rafters and covered up with a perforated rug of multi-coloured rags. The lofty idea of *a basic theory of everything* is lost sight of in a fog of hypotheses!

The scientific establishment assumes *GR* to rest upon observation and experiment. Whether this is true in fact has been carefully examined by Rowlands [2007, pp.444-483].

Further, I have shown how all *GR*-tests are reproducible directly from *SR* (see ch.17, §4); and already Poincaré foresaw *ondes gravifique*, "gravitational waves", on the basis of *SR*. Einstein, however, found the fascination of *GR* in "its logical completeness", adding that: "If only a single one of the conclusions drawn from it proves wrong, it must be given up". This seems like honest talk, if he had not in another context uttered the following remark: "(But in that case) I would feel sorry for the dear Lord, for the theory is correct anyway!" One may muse what Einstein might have said, if he had known that *the force of gravity is instantaneous*, not respecting the finite speed of light; cf. Rowlands [ibid., p.448]!

So much for the foundation of the theory *GR*. But what about its superstructure? According to Rowlands, *GR* is not even a theory of gravitation, but only a mathematical description of local bendings in *spacetime*, where a relation to gravity is first established by assuming that the Schwarzschildt solution of the field equations approximates to the classical limit. This is seen to justify another hypothesis, viz., that gravitation is universal, so that it attracts all particles and acts as a brake on the "expansion" after the Big Bang. That the universe stems from a huge explosion blasting a singularity ("a primeval atom") was first proposed by the Catholic abbé Lemaître who rediscovered the *GR*-equations of Friedmann, where gravitation is taken to be "caused" by the curvature of spacetime.

This means that *the velocity of escape* v_∞, derived from Newton's classical theory, is surmised to constitute the limit between two kinds of expanding models of the world, where the first kind, due to its spherical geometry, ends up in *a big crunch*, and where the other kind, due to its hyperbolic geometry, allows the gravitational attraction to decrease, so that the expansion continues infinitely. An unique third model with flat geometry, and expanding precisely with the limiting velocity of escape, slowly halts when $v_\infty \underset{t\mapsto\infty}{\rightarrow} 0$.

In all the cases described, gravitation acts like a brake hampering the expansion. That only three kinds of models can exist is accepted without criticism by Krauss (p.27), who also airs his preference for a flat Euclidean space as this is the "prettiest" one (p.34)! But all models with a flat space are just as unstable as were Einstein's first world model, where he had to introduce an arbitrary constant, Λ, in order to balance gravitation.

The stability problem turned up because Einstein supposed a static world model, and because he, just like most of his contemporaries, believed gravitation to be universal. Already Newton realized that any universe, if supposed to be an island of matter in space, will be inherently unstable. Now Einstein's preferred model was a static sphere of matter placed in a space that is curved inwards; so it describes a finite universe without borders. Hence he assumed an outwards directed force, Λ, to counteract universal gravitation.

But his solution turned out to be a hoax, its lack of stability being far more extreme than that of a needle when placed on its pin. With Hubble's discovery that the universe is expanding, the idea of a cosmic explosion to explain the expansion soon won acceptance. So we are back with the three kinds of models mentioned above. None of these, however, is immediately compatible with the recent observation that the expansion is accelerating. Accepting *GR*, there is only one explanation of this: Λ, i.e., "dark energy" (pp.57, 86-89). So this is also the answer given, without the slightest sign of hesitation, by Krauss.

Einstein's purpose of constructing *GR* was that he had a relativistic view of gravity, but had not been able to interpose gravitation into *SR*, and did not think it to be possible. But some decades later Milne succeeded in devising a Lorentz-invariant theory of gravity where the attraction between material bodies falls off faster than their squared distances. He thought the universe to have begun in a singularity followed by an expansion of space (here taken literally) with constant speeds in all directions, so that the expansion speed is proportional to the distance, $v = r/t$, and, at the edge of the universe, $c = R_u/T_u$.

Describing material particles as being "observer-particles", or "particle-observers", like the monads of Leibniz, Milne distinguished between *fundamental observers*, obeying the principle of cosmic isotropy, and *accidental particles*, which he thought to be injected arbirarily among the former, hence not obeying the principle of isotropy. On account of the relativistic contraction, implying the length of a moving object to depend on its speed, he was able to explain how a universe containing an infinite number of mass particles can be enclosed within a sphere in a flat space of finite radius that expands with speed c.

What in this context is interesting, since it displays the arbitrariness of assuming Λ, is Milnes deduction of "the force of gravitation" as *a local, instantaneous, consequence of the expansion of the universe*; this explanation shows: 1) that gravitational attraction *does not hamper the expansion of space*; 2) that gravitational attraction is spontaneously present as *a new kind of non-locality*, and so *does not respect the limiting speed* c.

His point was that the ensemble of *fundamental observers* constitutes a universal frame of reference where any single observer-particle, with equal right as any other, can regard itself as being placed in the center of the universe and all other observer-particles as receding with speeds increasing with their distances. This frame concurrently enables all observers, fundamental or accidental, to discriminate rest from motion in the universe. If we now think a single *accidental particle, A,* to be injected randomly into this frame, it follows logically that, if the ensemble is dense, there must be a *fundamental observer*, F_1, marking the position of A at the instant t_A it passes F_1, and a *fundamental observer*, F_2, receding from F_1 at the same instant t_A with the same speed and direction as A.

I will now state my own interpretation of Milne's argument. The randomly injected particle A which, due to its motion, possesses the kinetic energy $E_{\boldsymbol{v}} = m\,c^2/\sqrt{1-\boldsymbol{v}^2/c^2}$ relative to F_1, must, on account of the assumed Lorentz-invariance, possess the same energy relative to F_2; but, because F_2 recedes from F_1 with the same velocity as does A, F_2 and A are at relative rest, and the energy possessed by A relative to F_2 can no longer be *kinetic*, but must be potiential, or *dynamic*. This qualitative argument only presupposes an equivalence class of fundamental observers at rest with respect to the *CMBR*.

Now it is natural to insert the classical velocity of escape, $\boldsymbol{v}_\infty$, mentioned above, with $\boldsymbol{v}_\infty^2 = 2GM\boldsymbol{r}/r^2 = -2\boldsymbol{\phi}$; so we ascribe the randomly injected particle A the energy $E_{\boldsymbol{\phi}} = mc^2/\sqrt{1+2\boldsymbol{\phi}/c^2}$ relative to F_2, which at the instant t_A is the center of the universe. So far, the argument shows that the universe, for a particle A, seems to have a mass M_u that approximates zero when the motion of A relative to F_1 likewise approaches zero.

This convincingly proves that, in Milne's kinematic model, in contrast to Einstein's, there is no attraction between fundamental observers, and therefore absolutely no need to introduce a constant Λ, representing a mysterious "dark energy", to "balance" gravitation. Krauss admits that Λ has no explanatory value (pp.72,89), but is ready to swallow it raw! As if this were not enough, he also accepts "cold dark matter", *CDM* (p.34), appearently not realizing that Ungar, expert on analytic hyperbolic geometry and its import for *SR*, has devised a relativistic formula evading the need of "cold dark matter" [2008, p.491f]!

In order to ensure that the geometry of space is flat, Krauss further embraces the inflation hypothesis that lets the Big Bang go directly over in a phase where the universe expands exponentially, a phase that in almost no time increases its radius by 10^{28}! (p.97). This allows the curvature of space to dwindle towards zero, thereby approaching flatness; concurrently, all lumps of stuff are smoothed out, their distribution approaching isotropy (p.95). So the evolution of the universe is "predicted" to follow a weird series of phases: first 1) BB, then 2) inflation, next 3) deceleration, finally 4) acceleration. Amazing!

The scenario presupposes a myriad of free parameters which can be manipulated to conceal that the predictions from this mess are invented *ad hoc* & *ex post facto* (p.97). It is that sort of rotten woodwork, covered up with a perforated rug of strange hypotheses, which is worshipped with such awe by atheistic horsemen parading as scientists!

As if this were not enough, even abundantly enough, it is at this very moment that Krauss himself starts up, exerting his own undeniable talents for unhampered speculation. What is important for Krauss is to profess the "possibility" of a *multiverse* comprising an infinity of Einsteinian *baby-universes*, each one with spherical geometry and zero energy. This infinite set of totally separated spacetimes he envisages to have emerged by random quantum fluctuations, each blasted by inflation and developing its own physical laws.

Lee Smolin, nicknamed as "the new Einstein", earlier proposed the very same idea which led him to profess a Darwinian view, allowing a survival of the fittest baby-world in accordance with the notorious *antropic principle*, admired by Dawkins: an explanatory fake, finding the explanation of the fact the we live in a world offering us the necessary conditions for our survival in the fact that, if this were not the case, we could not be here! By such shortcut science is spared the vexing search for *a proper fundamental theory*.

But Krauss, having criticized the socalled *string-theories* for allowing abundantly many solutions ($>10^{500}$!), so that they appear as *theories of anything*, rather than as the sought for *theory of everything* (p.134), now projects the dazzling idea that this immense multitude might, after all, be a virtue - for, if the hypothesis that elementary particles are multi-dimensional strings is merged with the not yet existing theory of *quantum gravity*, this might "explain" how the "bubbles" in the multiverse obey different physical laws.

It is this idea that Krauss, in his own way, works out to its utmost outcome (p.174). But, if the "bubbles" are separate spherical universes, the multiverse has no general laws. We know that *vacuum* is not empty, so that fluctuations "all the time" emerge and perish. Maybe "reality" is just a "bubble" and the "entire multiverse" a "boiling porridge"... ?

5. SAM HARRIS: "Letter to a Christian Nation" [2007].

According to Harris, the world - especially the religious part - sorely needs a debate that can stimulate people to *critical thinking* and *intellectual honesty*. I completely agree! But when he claims that atheism is a confirmation of the obvious, I definitely disagree.

Harris claims that the core of the issue is very simple: 1) either the Bible is merely an ordinary book written by mortals, or it is not; 2) either Jesus was divine, or he was not; but, if the Bible is just an ordinary book, and Jesus was just a mortal man like other men, then the Christian doctrine of faith is fundamentally faked. - But he is totally wrong!

The core of the issue is not an 'either-or', but a 'both-and'! Jesus of Nazareth, also named Christ, is by all Christian churches believed to be *both* truly human *and* truly God; cf. the council of Chalcedon (451), and if the duality holds for the head of all churches, why should it not hold for the biblical scriptures written by prophets and apostles?

But does it not follow, then, that these holy books should be exempt to criticism? Also here a misunderstanding lurks. If it is concluded that every word, every single letter, therefore, must be inspired by the Holy Spirit, one is stuck in an awful mess of nonsense. No, the writers of the Holy Scriptures, also the four Evangelists, were not divine, but only human, thus fallible, beings; so they have conveyed their treasures to us in "earthenware". Therefore it is also mandatory for us to consider their writings with critical eyes.

Harris also scolds the opined link between religion and morality, pointing out that, where religious dogmatism overpowers moral reason and human compassion, it becomes hard to find any connection: in the name of God, Christians have throughout the centuries subdued, abused, tortured, and killed, countless innocent people. Regrettably, these words are true, and it would undeniably behave the Christian communities better if they openly admitted their misdeeds, instead of offering empty explanations and hollow apologies!

He also scorns that the confessing Christians often spend more "moral" energy on impeding abortion rather than on preventing genocide, and that they warn against using means of contraception in countries where millions of people have died of untreated aids. In El Salvador, the Catholic Church has succeeded in obtaining unconditional prohibition against the termination of pregnancy under any kind of circumstance; often such "crimes" are sentenced to several decades of hard imprisonment! By contrast, the Catholic Church often treats clergymens abuse of youngsters with a most inappropriate tolerance!

The official Catholic stance against abortion might probably have been somewhat more lenient if the Church had allowed itself to be enlightened by the view of the pre-protestantic poet Dante as it is expressed in his *Commedia,* Purgatorio, canto xxv, v.61 ff. Dante here describes the evolution of the human foetus and, according to him, the crucial change from animal to human creature occurs when the brain of the embryo has attained full maturity: first then is God able to blow his spirit into the unborn child's brain!

It is painful to ponder how much suffering that might have been prevented if only such a sound and natural view had been common accepted by all Christianity! -

EPILOGUE

If one searches the internet after *The Four Horsemen*, one gets (at least) three hits: 1) the four horsemen in the Book of Revelation, ch.6, v.1-8; 2) a song of Metallica; and 3) a YouTube video presenting a discussion (2007) between Dawkins, Dennett, Hitchens, and Harris, which CaNANDian has described as "porn for the mind"; so all are warned! The participants in this discussion appear frankly to accept the designation "horsemen", supposed to hint at the four horsemen of the Apocalypse announcing "the day of wrath" and "the end of the world", here obviously meant to be the end of all religion.

The word 'horseman', taken literally as describing an amphibian of man and horse, however, also refers to something fourth, viz., the fantastic centaurs of Greek mythology which Dante, in his *Divina Commedia*, Inferno canto xii (exempting the wise *Cheiron*), employs as symbolizing a whimsical, but unrestrained, fury and rage. An entire army of these imaginary animals have been entrusted the job of guarding the widths of Phlegeton, the third of the four infernal rivers. Placing them here is particularly apt when linked to the raging campaign of the militant atheists against all institutionalised religions!

Dante, as psychologist in depth, has constructed his Hell so that the infernal rivers (which all receive their water from tears shed by the mythological giant placed at Crete) designate the most important transitions for his journey "down under": i) the first one is *Acheron, the river of death*, followed by the places of retribution for the unrestrained; ii) the second one is *Styx, the swamp of wrath*, surrounding the outer ramparts of Hell, enclosing *the fortress of the soul*, to which the sign of access is an open denial of God. The infernal fortifications are further divided by two more rivers, one hot and one cold: iii) namely *Phlegeton*, a burning stream of blood, followed by the hot cellars of evilness; iv) and finally *Cocytos*, a bottom-frozen ice-lake, followed by the places of punishment for the worst sin of all - the conscious, deliberate, and ice-cold, treason.

Resembling the chalk paintings in medieval churches, this appears utterly barbaric; in particular, if one recalls the sinister inscription over the gate marking the entrance to Hell, which gives one the impression that all these harsh punishments have been devised, and forced upon the unrepenting sinners, by a "loving" God. However, as I have tried to prove here in *ch. 4*, one misinterprets Dante if one takes his *Divina Commedia* literally. The poem is an allegory describing the lives and deeds of people *sub luce aeternitatis*, and the cruel punishments are *not sanctions imposed from the outside by a divine power, but the sin itself as judged in the light of eternity*. Hell is a very "human" creation!

Allow me to end this chapter by citing a few lines from the beautiful poem *"Man"*, a worthy counterpart to Dante's *"Commedia"*, by the Norwegian bard Henrik Wergeland, where the poet lets *Akadiel*, the first born among spirits, rebuke the ghost of atheism:

"Abiriel, spirit! God's thoughts they are that the light reveals: his, who into space, as droplets of dew, countless suns has spread out as sustenance for worlds innumerable! He invented the beauty of flowers, he outlined their leaves!" -

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Mogens True Wegener