



Decoding

World History

The enigma

Of the zonic effect

In the evolution of civilization



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PREFACE

World history hides an enigma, in plain sight. This is a short guide to *World History and the Eonic Effect* with its examination of that riddle, the so-called ‘eonic effect’ as the evidence for a non-random pattern in world history. The term ‘non-random’ is minimalist and might be described with more intuitive language. Crusoe observing Friday’s footprint was definitely seeing the non-random by comparison with the uniform background of the beach. In many situations the non-random is something that catches our attention as unexpected or that stands out as causally rare or designed or even ‘intended’.

There are many possibilities here and the term non-random in world history receives a careful discussion as both an epochal frequency and a global synchronous action. Causality, design, and intention are complex terms indeed and the question will arise, is design the same term we find in critics of darwinism who seem to critics of these critics to introducing a Trojan Horse for divinity. But design is omnipresent in nature and innocent of theology as it asks for its place in scientific explanation. The term has been sabotaged by another, ‘intelligent design’, used sa a Trojan horse for theological legerdemain. We must be wary of creationist stealth terminology. Recent computer programs, as in ‘artificial intelligence’, show ‘intelligence’

but they aren't alive or conscious. That's a warning to be wary of design arguments, especially 'intelligent design' sophistries.

An idea to ponder here is the way new discoveries stretch our sense of naturalistic explanation. Recent programs in AI often seem very intelligent indeed, but they are mechanical. However, the term 'design' is a perfectly good candidate for science.: but we cannot specify 'mind' in nature without proof. The eonic effect is as close to proof as one might get, but then consider Schopenhauer's idea of the Will in nature: he was an atheist, yet found 'intelligent' design in the play of the will in cosmological becoming. Scientists have been needlessly confused by design given religious implications. But those implications are false. In the end 'design' tokens a teleological process.

The eonic effect challenges religious claims for theistic historicism and darwinism both, which means you have never heard of it in a culture dominated by rival propagandas, religious and pseudo-scientific. There are no higher authorities here, and darwinism is 'god's gift' to amateurs who can made short work of the 'peer reviewed' propaganda in these areas. Hoyle, a great scientist, noted that natural selection can never be right. And yet the whole biology profession, and academic historians, have made an enforced paradigm.

The real science of evolution still hopes to find its theory and here the study of the eonic effect might help. The religious issue is the claim that 'god' enters world history as a revelation of theistic action in time. This is the myth of the Old Testament and the first problem is that the term 'god' remains undefined so we cannot say anything one way or the other. the real meaning of the Biblical saga is something else.

But a close look at the eonic effect will leave one to wonder, what is that? We must think in new categories. We will show design in world history but challenge theistic historiography by showing a new and fascinating interpretation of the tale of the Old Testament with its superb but mythological saga parallel with the Homeric sagas and whose correct interpretation will turn out to be an aspect of the eonic effect. The history of Israel, if you like, is a massively detailed 'non-random' pattern, but its correct interpretation will elude the theologians of Yahweh, a rather bloodthirsty 'one god' so named yet unnamed as IHVH. The world is better off without Yahweh, as the last chance divinity in the eclipse of paganism.

The term 'god' refers to an X claiming omniscience, omnipresence, omnipotence. The eonic effect is entirely different and shows a mystery of potency within limits, clustered transformation, and non-action over intervals external to its focal range. It is a considerable mystery, but it

The Eonic Effect

The eonic effect is a remarkable discovery of a mysterious dynamic in world history, but its study tends to be made difficult by the need to study multiple times and regions and in a comprehensive reading of relevant books. The task can rapidly expand into a large reading list of texts on the whole of the known history, and that unknown. We can try here to simplify the task and give a rough indication of the significance of what we call a 'nonrandom' pattern. The latter is known to us intuitively: whenever something disturbs a steady state field it draws our attention, we 'look' to see what is 'causing' that. A non-random pattern can be another causal event, e.g. a wave across a calm sea, or a willed event: we hear a rustling in the bushes in a nearby woods: is it a breeze, perhaps a bandit in hiding.

Googling historical topics

The study of world history is made difficult by the logistics of study and the many ideological barriers put in its way. The price of entry is a bibliography of a thousand books, equally spaced across historical space-time. The question of science also enters, as it should, but that complicates the question with issues of the nature of science and the place of causality. We must consider the issues of modern science, including the quantum area.

As to the study of history, the best resource is something like a university library, but now the question arises, can we use the Internet, viz. Google? Not yet, but it is getting better all the time. At each stage you can google given topics with reasonable success. For example, try googling 'world history', 'universal history', 'science or philosophy of history',...We will suggest further topics...

The world's best information appliance is a speedreader with good sneakers who chases down information in the stacks of a large library: in a bibliography of ten books, each with ten footnotes, and each of those again, each footnote will likely be less than a quarter mile away, and our researcher must proceed with haste.

cannot be theistic. The only known category is the physical question of fine-tuning: a cosmological action seems to switch on in relation to evolutionary sequences. It is intelligible as a form of 'creative energy'.

The question of evolution is equally contentious and remains mired in controversies over theory. But in the facile yet not inaccurate debate over 'fact' versus 'theory' the theory of evolution founders in a version of scientism while the 'factual' basis for 'evolution' thrives on the revolutionary discoveries of the fossil record. Although our account might almost be better off without using the term 'evolution', it is important to enter the discussion of its meaning because world history is the only case where we can glimpse the reality of the process referred to as a synonym of the word development which never evokes the same irate contention. History and evolution overlap and we should be the case we can detect it in world history if we know where to look.

The eonic model gives us a 'glimpse' of evolution (action over a region over several centuries), but we must note at once that we have no organs of vision to see history over a range of centuries. Instead we write books of history and attempt to reconstruct what happened. The result must challenge standard thinking because evolution takes place over a region and must integrate a process of speciation with something in place that is far more than random mutations. The problem is an unseen form factor that makes the mechanism of evolution impossible to decipher. But the eonic at least gives us a vital set of clues.

The question of 'seeing' is highly controversial itself and if we compare the situation with x-ray telescopes we can see the complexity of creating an 'optical' apparatus and that we have no such organ for history and must go to libraries and read books and thence in some fashion create an 'image' in our minds called 'what happened' at such and such a place in time. But the analogy shows at once a host of complexities.

This shows the problem with the 'eonic effect: to 'see' in quotation marks we must begin to assemble facts in memory of what happened by reading books and interpreting a set of facts. And that is a deeper reason for the problem with communicating the facts of the eonic effect. Factual knowledge is not a shared experience, or common knowledge and we cannot induce surprise here in an eerie discovery until the reader reads those books with a belated 'Aha'.

But the study demands at this point the attempt to create acceptable quick summaries of world history and zoom level subsets of that. This is a

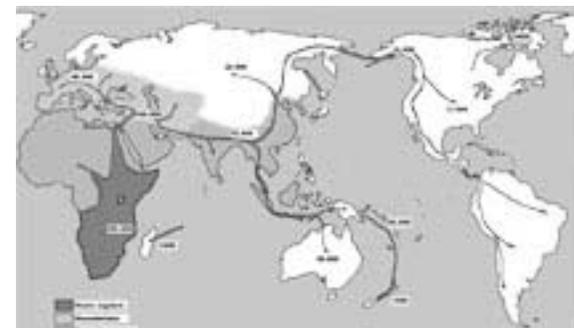


Fig. 1 The Human Diaspora (one version)

A short history of the world

We will present a series of world histories starting with a general outline as a 'Universal History':

Man emerges via evolution as homo sapiens in the wake of a progression of hominids with homo erectus as an early stage of a transition to 'homo sapiens'. This occurs in Africa in the period after ca. 200K BCE but is probably the result of some kind of rapid development, sometimes called the Great Explosion in the period from 150K BCE. Noone knows...

The 'great diaspora' from Africa occurs sometime after 70k BCE and soon man is a global constellation that soon reaches all continents. The so-called Paleolithic yields to the Neolithic ca. 10K in the Middle East but becomes very dramatic as ca. 8K BCE. The progression 'village, town, city' is the gestation for higher civilization which emerges in the last centuries before 3000 BCE in Sumer and Egypt. Each stage creates a diffusion field and that of Sumer and Egypt is soon a near global phenomenon and the relationship to the New World remains unresolved, yet diffusion is suspected. We cannot sort out the complexities without the eonic effect... The realms of Shang China, early Indic, Mesopotamian and the Egyptian field produce a series of diffusion starts in China, India, the Middle East and Europe.

The resulting 'epoch' of the diffusion field of Egypt/Sumer lasts until the first millennium BCE at which point we see the upsurge of a new stage of advanced civilizations in China, India, the Middle East, and Europe. We suspect elements of diffusion in the New World Mayan world. The occident shows the seminal worlds of Greece and Canaanite 'Israel/Judah' in parallel. The birth of two world religions in Canaan and India is matched with the birth of the secular type culture in Ancient Greece. The sphere yields to the empire of Rome and its extensive empire mixmaster. The long era of decline persists for hundreds

nearly hopeless venture, but something approximating seeing history can provide some information about world history and a mysterious process that emerges from that. The result is controversial and the reader may debate, attempt to falsify, or challenge any interpretation of the data in question, the objections of darwinists and the yawehists however given little credence here. But if interpretations are controversial the basic empirical foundation is far less so and constitutes a reliable base line. Our data for the eonic effect is the minimum necessary, as we have just crossed the threshold for an account of its discovery. The evidence is very strong, but what does it mean?

The empirical basis of the issue will slowly but surely present itself as 'Friday's footprint' and our exclamation of slow motion surprise. In the age of the Internet, history can be studied crudely via google, but nothing can compare with a large library of thousands of texts. The day is arriving however when the 'net' will compete directly with libraries of millions of tomes. Our discussion starts simple and then invokes thousands of books with information about our subject. We can however, if we are careful, crystalize a bird's eye view.

Our account will be short and somewhat abstract. This can't be helped and can forestall, for better or worse, sensational claims and hysterical visions of alien Fridays, white whales (Thar she blows) or divinities of strange concoction. We must nonetheless answer to design arguments and the speculative 'void' pointing to designers. The question is reasonably simple. Design can be a causal process or a willed outcome. Fortunately, modern philosophy gives us a new almost failsafed way to consider the 'will' in nature, which won't provide easy answers but which will present the Kantian stance to 'wilfully' indulging in metaphysics. Schopenhauer's famous thesis about the 'Will' in nature is a perfectly good case of 'design' with a new meaning.

The modern world is a mystery to historical analysis but a look at the eonic effect can clarify this immensely and then warn us as to the historical danger of our current time frame in history. But the day will come when the vision of history, if not an organ of seeing, will prompt us to take control of our history and evolution for the first time in technological entities that function over tens of millennia, far beyond current notions of 'hi-tech' bravura. We might consider that evolution has moved to the self-evolution of a given species, so far science fiction. The old saw, Man Makes Himself, assumes this is a fait accompli, but we need to consider that man is not yet able to 'design' his own history, in an ironic usage of the term, and that the

IN SEARCH OF THE BIG BANG

A passage from WHEE

4.2.1 In Search of the Big Bang

One of the great achievements of modern cosmology is the discovery of the Big Bang as a theoretical consequence of General Relativity and now as an empirically detectable process of expansion from a starting point approximately 13.7 billion years ago. Emerging as a consequence of Einstein's relativity equations in the work of such figures as Lemaitre and Hubble who discovered an expanding universe, Big Bang cosmology found its instant dialectical opposite in the steady state theory of Hoyle, then finding its empirical confirmation in the discovery in 1965 of the primordial background radiation left over from the $t=0$, or rather the $t>0$ moment. The remarkable reconstruction of this emergentist sequence beginning with a primordial atom at trillions of degrees has led to the crystallization of a new 'creation myth', one with a mysterious, and quite Kantian crypto-metaphysical, raggedness precisely at its curtain rise.

In the first second from Planck time to the separation of the fundamental forces to the drama of cosmic inflation and the appearance of quarks and antiquarks the spectacular first sequence proceeds in the first minutes to the appearance of hydrogen and helium nuclei. The first three hundred thousand years show the beginning appearance of atoms and the new universe is on its way toward the formation of galactic then stellar formations. By the period of four billion years ago the beginnings of life will initiate the planetary scale of Earth evolution. The ambiguous first instant of the primordial atom is not like the sudden explosion of a bomb, but is a more complex process involving the unfolding of the spatial matrix itself. The early form of the Big Bang cosmology was soon extended with the theory of inflation which demonstrated the rapid expansion of the universe, faster than the speed of light in a fantastic scenario of sudden origins completed within fractions of a second.

With the spectacular drama of creation complete, the world of galaxies and stellar evolution begins and our stage is soon set with the appearance of the sun, earth and planets 4.56 billions of years ago, followed by the emergence

of life less than a billion years later. By 1.5 billion years ago, the first cells are emerging, and then we have the dramatic beginnings of life as we know it now with the first multicellular organisms, and the rapid proliferation of basic body types in the Cambrian era over half a billion years before the rise of man. As we ponder the question of evolution, any dogmatism as to its dynamics must confront the mystery of the origin of life, to say nothing of the Cambrian explosion. In any case the origin of life via the random assembly of the first DNA molecule is a proposition difficult to accept, and this difficulty will stalk us every step of the way until we reach our story of the rise of civilization.

10-43 seconds: the universe is smaller than the Planck length.

10⁻³³ to 10⁻³³: onset of cosmic inflation

10⁻¹⁰: separation of fundamental forces, quarks, anti-quarks

3 minutes: nuclei of hydrogen and helium

300,000 years: atoms form, and galaxy, then stellar, formation begins

5.6 billion years ago: Our sun appears from debris of a supernova explosion

3.9 to 1.8 billion years ago: emergence of life as bacteria

550 million years ago: The Cambrian era

55-60 million years ago: first primates

3-5 million years ago: Australopithecus, emergence of hominids

50,000 years ago: homo sapiens

Despite the cogency of the Big Bang cosmology, there is something strange about this creation story, as a metaphysical murkiness lingers at the fuzzy edges of its account. The concept of a beginning in time betrays its lack of definition, as does its opposite. It is the object of a famous antinomy of Kant. Indeed it is the interplay with its antithesis, the steady state, and its resemblance to a classic antinomy of Kant, 'there is no beginning in time', 'there is a beginning in time', that should warn us that everything about the theory is quite acceptable, $t > 0$, and nothing better than head-scratching before that. We seem to be philosophers before we are cosmologists, and in the footsteps of Alice in wonderland. We are forced to the implicit question, unanswered, that lurks behind the Kantian challenge to our sense of space-time as a representation, and no easy resolution of that mystery. Although we cannot use Kant to solve the problems of physics, we do

know the symptoms of antinomial empiricism and are left to wonder at the characteristic dualism or dialectic that is clearly in some way a property of our instruments of thought.

Indeed, sure enough, in a recent new perspective, Endless Universe, Beyond The Big Bang, we have already the swinging of the pendulum in an attempt to proceed beyond the Big Bang by incorporating it in a scheme of larger, repeating, perhaps endless, cycles of cosmic evolution. The discovery of Dark Matter and Dark energy, and the attempted extension of the Standard Paradigm into the realm of string theory with its hyperdimensional implications has begun to suggest a new understanding beyond Big Bang cosmology of cyclical models of cosmic evolution. Each cycle begins with a Big Bang, but this is an event in time with a before and after, the exact same a priori form that we see in the eonic effect. We can only smile at this direct evidence of a Kantian antinomy in action.



INTRODUCTION

World history hides an elusive evolutionary dynamic, one that betrays its existence in a mysterious design: the stream of history shows an embedded sequence, climbing Mt.Improbable. We suddenly stumble on the real key to ‘evolution’ in one case: something that does the ‘uphill’, against the odds. ‘Civilization’ is very improbable, and there is some factor accelerating its emergence and development. In addition, this phenomenon shows synchronous action in different places at the same time, sometimes referred to as the Axial Age, and this suggests global coordination. We call this overall pattern the ‘Eonic Effect’, or better the eonic effect, a mysterious drumbeat in world history. It is invisible to the naked eye, so to speak, but gives itself away with its massive clustering of sudden innovations in given regions over short intervals. That is non-random and can’t be ascribed to chance. The classic example is that of early Greece in the period ca. 900 to 400 BCE. Virtually all the categories of modern culture emerge in this period in embryo: science, philosophy, democracy, etc, followed by the mysterious occidental decline and stasis we see that persists until the rise of the modern. We must be wary of the usual denigration of the medieval but that it occurs at all makes our point. And this example already shows that we are already aware of the eonic effect when we invent a term like

‘medieval’, or ‘middle age’. Middle of what?

The Israelites noted this effect in their history in the crystalizing prophetic movement and thought it ‘revelation’. The problem is that it happened to other histories, across Eurasia, in a strange synchrony. Innovations should be randomly distributed but in world history they are not. The majority of great advances are derandomized, the case of technological innovation being somewhat different. The term ‘innovation’ is not quite right. A work of art is not quite an innovation: we will later speak of the (eonic) ‘emergents’ in our transitions.

History and evolution are taken as random processes. The eonic effect falsifies this for history, at least, and constitutes a non-random pattern, a clue to a hidden dynamic of a new type: by a principle of sufficient reason, a step backward from causality, which means, what explains it? This dynamism shows directionality which raises the taboo issue of teleology, our troubles mount with conventional historiography. The overall result is a riddle inside a riddle but we can see from the overall result what it is doing: we are seeing the evolution of civilizations.

The term ‘evolution’ is controversial, save in ordinary speech where it means ‘some kind of development’. We can open with that simple usage, but the question will become more complex as we proceed. Darwinists are in retreat and selectionist darwinism is a scandal of bad science.

Fred Hoyle finished the question long ago, when he pointed to the statistical implausibility of random mutation producing the complex structures we find in nature. Natural selection can never be right.

The same is true of history, and we can see for ourselves the difference between the Paleolithic and the rapid development from the early point just before the Neolithic onward.

The eonic effect deserves to be widely known, but its existence is an untold story in a field of multiple propagandas, and the failure to study history, but becomes plain in terms of the idea of a ‘model’ or systems analysis. Such terms are almost too fancy for what is a speedreaders ‘perception after a balanced study of world history. The result requires an immense bibliography of texts, in multiple times and places. Students of history rarely study by this principle.

And we will not allow ourselves sensational claims, and simply demonstrate a non-random pattern. We are just at the exciting point where evidence suggests sequentiality. We are still on the threshold of discovery here: the eonic effect becomes observable as a two-term sequence

suddenly becomes three term. A skeptic may claim that three terms is not enough, and the reader may try to falsify or refute the basic claim. But a three term sequence is indeed some kind of progression, and teleology, or directionality, enters implicitly and we can't avoid it. The data induces recognition, like a small part of a puzzle, and we can proceed with incomplete data that is obvious in its own way. The claim for 'random' history collapses!

We are usually stuck somewhere between Darwinism and the Old Testament. The arrival of aliens from outerspace would be most remarkable, front page news. But the detection of a non-random pattern in world history, despite its seeming unimportance, is a smoking gun, and in reality a far more exciting puzzle because it shows the key to understanding the emergence and evolution of civilization, and a solution to the nature of freedom in the field of determinate nature. Human destiny as a species is bound up in this effect and yet we are as yet blind to its action.

This material first saw light in *World History and the Eonic Effect* and the discussion here is a commentary and short depiction of the model in that seminal work. The text will be used as an introduction to the book. But the text here contains original material and discussion. We present the subject on two levels: a bare minimum amounting to special of periodication, and then a more interpretative approach that is less certain but nonetheless empirically sound. Among other things, we will explore the issue of theory and ideology. As noted the empirical basis is hard to question, while interpretations can be speculative extravagance without changing those facts.

The reason for this ambiguity lies in the relation of observed and unobserved aspects of our phenomenon. A mysterious global process that is only in part detected, like the visible aspect of something in a different dimension, leaves us with the solution to one riddle by confronting us with another. As we proceed we discover that we are in the field of evolutionary models and thinking and that the emergence of civilization betrays a distinction of micro and macro aspects.

The debate over evolution persists because the origin of species in deep time is not observed save by looking backward. That has enabled a kind of hallucination to take the place of real theory. We see the factual history of life with increasing clarity, but theories of that are not so easy to find. We start with the critique of darwinism in order to rescue the idea of evolution. The question of 'evolution' in history is somewhat different but begins to ground the idea in specifics, among them the suddenly obvious fact that that an evolutionary process must take place over a region and that this occurs

We can try to fret our discussion in the context of physics as it is: the issue of causality was long a kind of absolute in the era of Newtonian reductionism and scientism. The question of free will was simply voided out. But now the field of physics is itself in a state of confusion. The realm of quantum mechanics (what to say of string theory) has confounded old certainties, but it has also induced a species of extravagant speculation based on the puzzles of that theory. We need not conform here because there is no real standard we can take as given. The idea that free will is an aspect of the quantum, along with consciousness, are ideas we don't need. We examine our subject sui generis with a Kantian background. We can be virtuous and cite a recent text detailing the history here of realism and anti-realism: Lee Smolin's Einstein's *Unfinished Revolution* gives an excellent history here even if it is strongly in the realist camp. Our model makes no claims about free will instead speaking of free agency. Choice is real, whether or not that is free will or not. The issue of consciousness in quantum mechanics won't go away and suggests a similar aspect of our model, cf. *The Quantum Enigma*.

The eonic driver is an obscure 'process' that mimics a state of consciousness and will, but we have made no claims at all there. Hallucinating 'god' in history is the 'mistake' of millennia from the Old Testament. We should try to move on and be wary of the endless confusions over design arguments and the equal confusions of their critics.

But we can speak of an Gaian thesis as the background for the planetary scale of the eonic effect. The science of planets in cosmology and their action as cradles of life is a field of science not yet in existence. If students of the eonic effect begin to refer to Mother Nature, we will look the other way.

in a kind of transition via that region. This process shows a resemblance to what is called 'punctuated equilibrium' although that term is not really specific and we will be careful not to use it. But the idea of punctuation, some impetus, followed by a settling into equilibrium, is a useful metaphor.

This idea indicates a novel way to consider the key concept for some kind of model. Previous attempts to explicate history have taken the idea of a civilization as the unit of analysis. Toynbee and Spengler, for example, take this approach, and look at the life span of a such an entity. But the problem is that 'civilizations' are amorphous entities with no real interior structure or overall dynamic. A better approach is suggested by the 'eonic effect' itself: a series of transitions in a pattern that generates overall evolution. We can detect these transitions in the way massive clusters of innovation suddenly appear in the course of a civilizational complex. Examples are the period of Archaic Greece or the suddenly take off of ancient Sumer.

We will explore the larger implications here: first we examine the eonic effect, and some steps toward a new kind of model. Next we examine the background of evolution, its significance and real meaning. Finally we explore the implications of our discovery in terms of cultural ideologies, and the stance of the futurist. The question of modernity is bound up in this issue, and the ideologies of darwinism and religious historicism blind us to our real historical situation. Man emerges from evolution into self-evolution. But the latter would require

A key aspect of our new type of model is the distinction of the action of a system of some kind and the action of a free agent. And this raises the paradoxical issue of the 'evolution' of freedom, and our discussion will suggest one part of an answer. If we propose science we think that a rule of causality expresses the behavior of that entity, but in history we confront the issue of free action by the agents of history. We need a new way to put the two ideas together, which is at first strange, but we can easily find examples already known to science. We cannot reject historical determination, but we can't scientize away freedom. The eonic effect shows an answer.

Since we are immersed in the system under study as in place creating new episodes for the general account it seems the whole analysis is preposterous. but the strangeness of the analysis in fact indicates a new form of coherence. But we must ask how we can arrive at an understanding of the greater whole in which we are immersed and in which we can alter the outcome. In fact that is a key property of the evolution of freedom and we need a new kind of model to study that.

Kant's Challenge

Kant in a famous essay on history asked for the solution to the riddle of history. The eonic effect points to the solution. Although we do not cite or endorse Hegel he was the first to try to answer Kant's challenge. Although he failed his account of history remains classic and he as we do challenges scientism with accounts of the emergence of freedom in history. His notion of Geist is a design argument we do not use but an aspect of the feeling omnipresence we often get looking at the eonic effect. Hegel and Kant are creature of the eonic effect and Hegel in his reerie brilliance challenges us with a design argument, Geist. The reader needs to learn how to consider that legacy that echoes the eonic effect without a new superstition of the Israelite type. In a cascade of rotten tomatoes, the generation of Marx challenged that to its foundations but we will end with a sort of multitasking of two opposites played out at the modern divide. Hegel's mystical history Note how Marx and Engels arise just past the divide and look to the suspenseful drama of system action passing into free action. The emergence of democracy demands a new formulation, socialism...This tale needs another book. But the left should be wary they don't create another confusion out of their historical materialism as a substitute for historical dynamics.

Marx and his generation were in revolt against Hegel and mysticism but went to the other extreme with a version of reductionism scientism, yet with a crypto-teleological historicism of economic epochs: e.g. feudalism, capitalism, communism. The scheme doesn't work but we should try to see behind his model to the issues he raised.

This discussion raises the issue of design arguments, and while that subject is the field of multiple religious dissenters from evolution we can actually welcome design arguments beyond any theological interpretation. The riddle of design pervades biological systems. The notion science must refuse such arguments is preposterous. Virtually every biological system known shows design and the explanation there is not an issue of theism.

We should note that 'eonic history' is universal in scope and includes the gestation of ideological perspectives. We must be adept to both seek the meaning of objectivity and the generation of rationales of action, something thought ideological. But the eonic effect grants no higher ground of analysis, and as we shall see science, and indeed religion, show what we call 'eonic determination'.

The reader can jump here to the next chapter.

A short first look at the eonic sequence

We already seem to know about the eonic effect: we talk of the middle ages, middle of what? We see the Greeks at the dawn of a whole cycle of history. We refer to our times as 'modernity', which is?

All of this can be explained by our incomplete perception of the eonic effect: we see fragments of three periods: A fuzzy fog prior to Classical Greece, a long long period with first the Roman republic turning into empire, and the long decline of that, then a medieval period, then the rise of the modern period. That's three periods, as we will see: the last part of the first, a whole cycle in toto, and then a new fragment, because incomplete or still underway. And we are inside the modern period, creating it, just near its beginning in the period from the Reformation onward.

Before the explosive rise of modern archaeology, the core historical chronicle, with religious conceptions in the background, tended to speak in terms of an almost mysterious epoch from the period of Homer onward to the classic period of Greece and Rome, or the Old Testament, in the Occident, and in the Orient, the legacies of Buddhism, Hinduism being an inchoate primordial backdrop, and the twin traditions of Confucianism and Taoism. A strange parallelism frets these 'beginnings' and buttresses a

sense of one's 'tradition' comprising a sort of epoch of proximate antiquity roughly centered in the first millennium BCE.

This period shows us in fact the creation of 'history' as a discipline or proto-science and we can see that figures like Herodotus and Thucydides invent the subject in Greece while in the case of Israelite phenomenon, religious historicism comes to the fore with an historical prelude to their actual history in classical times. We should note in both cases the history of the classic period and the complicated mythological wrapper that envelops the primordial beginnings leading up to the actual histories in real time: the Greek archaic period begins to take shape out of a fog that is assigned to Homer and his saga, which we now know to represent the Mycenaean period. In Israel we see a similar semi-mythological history of the era of the Canaanite world interacting with that question mark, Egypt. Let us note the double character of the Old Testament, whose history is in quotation marks until the period after the time of Solomon when an actual historical record emerges of the remarkable and strange saga of 'Israel' and Judah. We should note the period is closer detail to see that suddenly around 600 BCE, or so-called Exile, the question of 'Israel', put into quotation marks next to the twin states including Judah, became the object of blending with the Persian world and that the emergence of monotheism we now see is a hybrid, a most remarkable circumstance, an no coincidence as we will see. In Greece, we see in parallel the remnant mythological trappings of Herodotus yield to the revolutionary attempt at historical objectivity as Thucydides muses over the Homeric corpus, attempting to evaluate the Trojan war as an historical event. Let us note the resemblance to the issue of modernity where one again we see a kind of feudal and in some sense 'medieval' world suddenly give way to a new epoch.

There is something very odd about this as we note in two cases the historical myths of a kind of medieval predecessor yielding to a sudden onset of what constitutes in the end a new era in history. From around 900 BCE to the around 400 BCE we see the onset of new 'civilizations' or cultural complexes in both Greece (and as we will see, Rome) and the Middle East. These new beginnings coexisted with mysterious outstanding civilizations, in Egypt and Mesopotamia. And they did so at the fringes of those elder mysteries. The status of these older worlds was mysterious, yet taken for granted by the Greeks and Israelites, and we are left to wonder why, like acorns, near great oaks, these two upstarts become the platform for a new future while the older civilizations began a long decay. We should the

ambiguity of Persia: it was a novel cultural phenomenon, and yet mixed, if not entangled, with the legacy of the now ancient realms of the Mesopotamian enigma, whose origins were then lost to view, appearing like denizens from a past that had disappeared. We should note that just as Israel appears next to Egypt (with of course many influences from Mesopotamia) so Persia is a sudden upstart next to the Assyrian world. The puzzle here is that beside so many civilizations coming into being we witness the strange case of Israel/Judah and the strange 'disappearing act' of Israel and Judah, and the birth of a new idea of the transnational and the universal witnessing in the birth of a new form of religion.

The archaeological revolution of the nineteenth century has now revealed to us the world prior to Greece and Israel (Persia) and we can see the stunning solution to the riddle in the revelation of the sources of those twin worlds in the discovery of Sumer and the sourcing of Egypt virtually in parallel in the period just before ca. 3000 BCE in the beginnings of the dynasties that were to endure for millennia. This extension of our historical perspective constitutes a net addition to our sense of the eras or epochs of history and the classical to modern progression, still mysterious, shows us hints of an answer in the way Sumer and early dynastic Egypt fret a new time period in world history. We seem to have the following chronology:

the era of Sumer and Egypt...

The classical era

the modern era

We should note that both Sumer and Egypt both seem to 'start' in the centuries just before 3000 BCE but that they in reality have an earlier history of some kind, one that archaeology is also beginning to discover. But the period from around three centuries before 3000 BCE is decisive: a kind of take-off effect occurs in both places, and we see the invention of writing in both, in Sumer the sudden appearance of a constellation of city-states and in Egypt the first Pharaoh and the beginnings of the Dynastic era. Despite increasing evidence of earlier inchoate beginnings the period just before 3000 BCE shows a massive cluster of innovations, and what was often called the onset of 'higher civilization', a very dubious characterization perhaps but one that in fact shows the sense of rapid transition in the period indicated.

The world of civilizations is underway, leaving the question of what came before. We confront a sort of 'hey, wait a minute' here, because this looks like still another of our cases of a sort of medieval early something suddenly

spawning a new era in world history. And it is a new period indeed. Sumer and Dynastic Egypt for the next millennia will create a definite field of what we can call 'civilization' for the first time and their influence will spread globally as far as the far Orient, and even, as many suspect, the New World.

This leaves us with the question of what came before: but we know now the answer to that, the so-called Neolithic period. The lack of writing means there are no records but we can still begin to see the way the beginnings of agriculture and small villages seem to token the obvious beginning before the beginning. Some will argue this is also 'civilization' of some kind, and we can agree, but note that the difference in scale is one of degree and that many of the cultural forms created in this period constitute the framework of human political and economic culture. In many ways this is the birth of the State with all the implications of that construct, whose implications are still with us, and whose Middle Eastern histories were rapidly put into writing as the new technology created in Sumer and Egypt created what many call 'recorded' history'.

We should note that onset of the modern period, if it truly shows the onset of a new era, and the evidence is almost obvious that it does, is evidently still incomplete in comparison with our other two examples and if anything just getting underway. So there we have it: a world system with three eras, the last of which is our larger present. We have just stumbled on what we will call the 'eonic effect' which simply means we see a set of intervals or eras in world history. Once again we have the same format: a new beginning in the middle of a long stream of history. We think of beginnings as something absolute. But perhaps these beginnings, like Mondays in a year of weeks, are what we should call 'relative beginnings'. A 'Monday' is a relative beginning inside a year of weeks. In three cases we see a sort of medieval blur from which a sudden new onset of activity seems to create a new era. The factor of randomness is a falling stock at this point.

The implications of this utterly simple structure are at once obvious, and yet enigmatic. We will discover in its field the resolution of many of the mysteries of both history and evolution, and if the result is still not science it is nonetheless we will suspect a clue to such a science. Our procedure is designed to be transparent: examination of historical intervals, that is chronology, or periodization. This approach is not speculation and proceeds in the most obvious way...until it confronts the entirely unobvious, in plain sight. But let us intrude on something that is possibly controversial, yet still empirical: the observation that our first two intervals are equally spaced,

about just over two thousand years in length. Chance? One way to tell if something is random might be to try and see if it is connected in some significant way to other data, itself significant in some way. It is like a puzzle: the whole set of pieces remains unsolved but we can immediately see if one piece fits another piece. If the two pieces show a part of a face, it strikes us

FROM LIFE'S ORIGIN TO THE DAWN OF HUMAN CULTURE

4.2.2 From Life's Origin to The Dawn of Human Culture

The mystery of the origin of life, and the so far intractable character of the enigma, remains an invariant of discussions of evolution, and should caution us that without an understanding of the beginning, excessive confidence in the now standard explanation of evolution after its beginning, the Darwinian scenario of natural selection, is misplaced. Our eonic perspective suggests immediately what is wrong, as a red warning light goes on, but we cannot use it to solve a problem for which it wasn't designed.

A Noumenal/Phenomenal Mystery Our brief consideration of Kant's Challenge uncovered the way in which the dynamic of our 'eonic evolution' was not visible while the phenomenal aspect was visible as the eonic effect. We suspect immediately what is wrong with the origin of life debate, beset by the egregious claims of design theories. The dynamics of life emergence, whatever the biochemical details, may well have a noumenal aspect. That is very different from confusing the issue with supernaturalism.

There is something entirely odd about the beginning of life. It arises relatively quickly in the wake of planetary formation, in seeming defiance of probability. Within a relatively short period of time the passage to the RNA world, and then the DNA world of the cell is accomplished. In fact, the era of unicellular life is much longer, and the onset of the 'animal' in the era of multicellular life leaves us the clue, one we still do not understand, the sudden and rapid emergence in the Cambrian era of all the standard body plans that will fret the era of life to come.ⁱ

4.5 billion years ago: formation of the Sun, planets, and earth

3.7-3.8 billion years ago: origin of life

1.5 billion years ago: appearance of eukaryotes, sexual reproduction

550 million years ago: Cambrian era, multicellular organisms

500 million years ago: vertebrates appear

250-150 million years ago: first dinosaurs, mammals, birds, flowering plants

55 million years ago: first apes

From the Cambrian to the era of Primates seems a short progression compared to the far longer period of one-celled organisms since the dawn of life. We seem to confront precisely the kind of pattern, expanded to a larger scale, that we have seen with the eonic effect, a basic directionality on two levels in the course of development. It is the collation of the two levels that confuses us. This is the great heresy of evolutionary progress, but we suspect the obvious, an evolutionary ratchet effect, and our perspective suggests 'stepping progression' would be a better word, in the sense of an effect reaching new successive plateaus where microevolution takes over. This approach preempts the fallacies of teleology by keeping the different levels of action distinct, although directionality in the final analysis is a brand of teleology, save only that we make no statements about a telos, instead looking at the relative motions of successive steps. S. J. Gould, always so critical of the idea of progress, suggested nonetheless the right framework, that of punctuated equilibrium. That idea, however, is not the same as that of natural selection, and should be taken in a generalized and minimal sense, as a descriptive patterning of evidence.

In fact this stepping progression is visible at all stages of evolution, from the first step of the origin of life, to the Cambrian, and the emergence of man. We should consider one further such stage, on a tentative basis:

The Origins of Mind Although the exercise of seeing the unity of man and nature, man the third chimpanzee, is one of the great insights of biology, one we should embrace, at one and the same time the suspicion arises that the stage of man crosses a threshold in the origins of mind as significant as the origin of life itself. The physical realm, the realm of life, and the realm of the cosmic, for lack of a better word, a realm that transcends life, yet mixes with it, stand together in a complex unity that we so far fail to understand. The stage of mind is a threshold to a stage that brings history to evolution.

Ethical Action The evolution of man is more than a question of 'mind'. It is also a question of 'will', and the ability to make choices in a contemplation of potential action. No account of a naturalistic ethics has ever produced an adequate depiction of this aspect of man, let alone of its evolution. In our formulation the distinction of consciousness and self-consciousness is one avenue toward reconciling the contradiction, and mediating the transition, whatever it was, to man as we know him, in principle capable of freely chosen acts, and liable as such in courts of judgment. This is always coexisting with the slovenly and disorganized fluctuations of self-consciousness between willful action and mechanical

reaction that are so characteristic of man.ii

It is possible that the 'evolution' we see in the eonic effect is giving us a record of this transition. However, we should be wary of using the data of the eonic effect, to jump to conclusions about a problem it is not designed to solve, but we suffer a sense of déjà vu, and a frustrating realization that the standard accounts are probably backwards because they don't take into account the interplay of two levels we see in the eonic sequence.

Surely the emergence of a basic 'evolutionary toolkit', the world of evo-devo, in the realization of the potential of developmental sequences, should be a hint that the basic regime of natural selection is at best a secondary process. And yet we are led to believe that this tool-kit arises by chance, when many of the generated sequences themselves were once incorrectly ascribed to random evolution. Clearly the complex interplay of the two is precisely the kind of macro/micro level action that we have begun to suspect for historical development.

We can make such statements now without the dialectical intractability between directionality and randomness that tends to overtake all discussion as it founders at the limits of reductionism in the antinomies of teleology. Scientists are rightly bunkered down in purely causal analysis, but as the Kantian perspective reminds us this reductionist regime will nonetheless prove insufficient. This is seen in the 'symptom' of teleological action, namely, the unsettling discovery at so many points of so-called 'fine-tuning'. As to teleology, the mode of its realization is unseen, but we can at least see that ratchet directionality is not incompatible with the facts, for we see the evidence is open to the same two-level analysis we have discovered. Such discussions are so distracted by theological sideshows of theists and atheists that the probably obvious cannot be considered, the cosmic imperative, in the phrase of Christian de Duve.

Scientific wariness at this is more than understandable, but the plain fact of the matter is that the development of life falls as well into a pattern of directional evolution overlaid on the random. Once we grasp the pattern of two levels at work, the typical confusions of Darwinian analysis are seen for what they are. We can see that there can be an intermediate set of alternatives, such as the alternating or on-off directionality we see in the eonic effect. We need to consider that, just as with history, the greater evolution of life is operating on different levels, as this produces both differentiation and the relatively random play of forms via the microevolutionary processes such as natural selection, and a larger direction

setting process that always selects on strain of its multiple outcomes.

This perspective, taken with great caution as a range of hypotheses, without metaphysical extras, might help us to see that the evolution of primates into man is probably two kinds of evolution overlaid, a 'stream and sequence' effect, just as in world history. The branching outwards, the failed lineages, the plateaus of stasis, should not blind us to the way that, most improbably, a clear set of stages is visible in the record, leading to the final appearance of modern man.

The recent discovery of so-called *Ardipithecus* suggests the earliest stage before the emergence in parallel of man and chimpanzee. By five million years ago we see the separation of man from these ancestors of the chimpanzee, and in this strain of the bipedal ape visible in *Australopithecus* we see the beginnings of a series of relatively brisk steps up a ladder to the final crossing of a threshold to the first man-ape, *homo*, from *homo habilis*, thence to *homo erectus* 1.7 million years ago. With *homo erectus* we have first true 'man', a bipedal tool-making hominid who stages the first exodus from the African continent into Eurasia, differentiating into the Neanderthal in Europe. No coherent theory has emerged along Darwinian lines to account for this.

5-7 million years ago: separation of chimpanzees and first hominids

4 million years ago: first australopithecines

2.4 million years ago: *homo habilis*

1.7-1.9 million years ago: *homo ergaster/homo erectus*, first exodus from Africa

300,000 years ago: ?Neanderthals branch off

200 to 100,000 years ago: anatomically modern man appears in Africa

100 to 50,000 years ago: appearance of behaviorally modern man, second exodus

A stream and sequence argument would fit this data handily. The 'streams' of continuous evolution producing several side branches from *Australopithecus* to Neanderthal cross a threshold in the period ca. 200,000 years ago, and then somewhere in the period from 100 to 50,000 years ago a ratchet transition occurs that produces the finishing touches on behaviourally modern man, who then proceeds to migrate across the whole planet. This action must produce a creature that can use language, has a characteristic human consciousness, and the ability to innovate and create art. To say this has resulted from Darwinian evolution is a speculative claim. We can see the clear resemblance to the kind of evolutionary macro process in disguise that we are familiar with already.

It is once again from Africa that we see the next stage of man, and the final crossing of the threshold to *homo sapiens*. Around two hundred thousand years ago, or less, the first anatomically modern man appears. It is important to consider the distinction that arises at this point between the anatomical threshold and the subsequent, and still mysterious, threshold of behaviorally modern man who does not appear until after fifty thousand years ago. That leaves the period from around a hundred thousand years ago for us to find the explanation for a remarkably sudden appearance of the species 'man' in the sense that we now see him. The various multiregional hypotheses have yielded to a basic 'out of Africa' scenario, in which the new species, dramatically ahead of his ancestor *homo erectus* emerges from Africa in small bands and proceeds within a very short period of time to what is the first of several great globalizations of man.

This new man, it would now seem, is quite distinct from the Neanderthal, with whom he seems not to have interbred. And within a relatively short period of time we see the rise to sole dominance of the 'out of Africa' man who has achieved the passage to all of the characteristics of the human species, from language, to art, to conceptual thought. We have already broached our speculative suggestion that in the eonic effect we can see how this development of behaviorally modern man can occur via a macroevolutionary sequence that is more than genetic and that can operate on entire populations as whole units.

We can draw no final conclusions on this point, save to feel a little more comfortable with the facts that we have, clearly outlined, for example, by Richard Klein and Blake Edgar in *The Dawn of Human Culture*, suggesting that as of fifty thousand years ago a 'great leap forward' had occurred. Klein notes the clear application of the idea of punctuated equilibrium to the evolution of man and points to four such events in the descent of man:

1. 2.5 million years ago when flaked tools appeared
2. 1.7 million years, human versus ape-like body, more advanced tools
3. 600,000 years ago, the rapid expansion of the human brain
4. 50,000 years ago, the 'great leap forward', producing modern man

These stages roughly correspond to *homo habilis*, a somewhat questionable transitional figure, but one showing the first advance toward man the toolmaker in the so-called Olduvian phase, then *homo ergaster*, initiating the new phase of toolmaking the Achelean, and his immediate successor *homo erectus* who stages the first exodus 'out of Africa'. Next, we have *homo heidelbergensis*, and the accelerating transition to *homo sapiens* as a body

type in the period after 200,000.

This perspective on the last stage of human transition has been challenged by findings that show a more gradual emergence of the traits we now ascribe to man in the period from ca. 300,000 onward, but the two perspectives are not necessarily contradictory. In other words, still another continuity/discontinuity dilemma, grist for our mill. The stream and sequence metaphor is being confirmed here by the obvious pattern of double facts.

And the idea of the 'Great Leap Forward', or the 'Big Bang' of human evolution could have a slightly different meaning from the purely genetic evolution considered by biologists.

Out of Africa Klein and Edgar begin their account with the Twilight Cave. This cave in the East African Great Rift Valley shows artifacts of 40,000 years ago of advanced toolmaking, but more tellingly ostrich eggshell beads, whose symbolic significance is suggested by their persistence to contemporary !Kung who have maintained this technology as an exchange or reciprocity medium with neighboring tribes. This would constitute a token of the dawn of modern humans.

Our perspective on the eonic effect warns us that even with genetic innovations in place a larger transformation is required to effect the realization of the new potential. This is exactly what the facts suggest. And the question of language evolution simply will not go away. Our perception of the eonic effect should remind us that even at the most advanced level of human development a mysterious evolutionary macro process is detectable. How much more likely it is that this would be needed at the earliest stage of human emergence! And let us note that our statements here are not (necessarily) about genetic evolution. Jumpstarting an already present potential requires explicit action from a macro process.ⁱⁱⁱ Let us recall the clear evidence of the Axial Age, in which we can see rapid emergentist development across the whole spectrum of culture in relatively isolated regions, and this in short bursts on the level of centuries. Our feeling about what we see from the evidence of a 'Great Leap Forward' is that the religious, linguistic, artistic, and other, evolutions of man occurred likewise in some kind of concentrated evolutionary sequence, relatively but not absolutely isolated geographically, undoubtedly in Africa, and then that a small contingent of this new man became the basis for a new globalization of the result.

The beginning of our tale, then, is appropriately the second of the 'Out of Africa' sagas, beginning somewhere between 80,000 to 50,000 years ago. Out of the blue, modern genetics has given us in the analysis of mtDNA and the Y chromosome a complete set of histories that can locate and map the migrations of early man out of his African home. There are a considerable number of variant hypotheses here, some considering a migration through Northern Egypt to the Levant, and beyond. But the genetic data now suggests a single exodus, and the likeliest candidate is the crossing of the Red Sea at its southern end, the so-called Gate of Grief, from Africa to Yemen in a period when that still relatively easy to cross, most probably island hopping with boats or rafts. The evidence suggests one unique migration, by a small number of people, perhaps only several hundred. The great migration then proceeded along the coastal highway of the Arabian coast all the way to India, and then all the way to Australia. There are a number of timelines for this great migration, depending on just when man reached Australia, but the basic scenario is clear from the genetic record.

This shows that the first migrants followed the 'beachcomber' route all the way to India and East Asia. Significantly, a branch of this migration headed north in the vicinity of Pakistan and finally reached Europe, often known as the peoples of the Aurignacian period. Our basic framework is set for the transition to human settlement, then agriculture and the forms of higher civilization in the period after the Last Glacial Maximum.

50,000 years ago: the passage 'out of Africa' toward India, the beachcomber trail

46,000 years ago: first evidence of modern man in Australia

45,000-35,000 years ago: exodus branches in India takes over Eurasia, and enters Europe

45,000-10,000 years ago: Upper Paleolithic, Aurignacian, Gravettian

10,000 years ago: onset of Neolithic

This period is the first great flowering of modern man, despite the challenge of climate in the worsening fluctuations of the Ice Age until the Last Glacial Maximum around 20,000 years ago. This period of man the hunter-gatherer shows the capacity for general innovation, art, proto-religion, and the full capacity for language. It also shows the devastating impact of man's advancing technology on the environmental balance of species, in the multiple extinctions of man animals confronted by the hu-

man diaspora.

There is something remarkably convenient, and mysterious, about all of this. Man is repeatedly 'evolved' in Africa, and small subsets of the result commence their global migrations. Although we see microevolutionary effects in the Eurasian sphere, for example the emergence of Neanderthal in the European Ice Age environment, we see no real large-scale effects, with true speciation occurring only in Africa. Say what you will, but this is quite suspicious.

The hothouse evolutions of man in the African Eden, accomplishing all the major transitions, set the stage for all the rest. We can at least see this as confirmation of the basic spatio-temporal architecture of punctuated equilibria. We should consider the image arising spontaneously of a period in Africa, perhaps in some Ethiopian Eden, not far from the jumping off point, 'out of Africa', where man consolidated his linguistic evolution in a period not unlike that of our eonic series, in the emergence of his characteristic cultural forms, perhaps riding on the realized potential of music, song, and choral association. The man who will emerge is a storyteller, a musician and singer, a creature whose emerging self-consciousness will leave him at the threshold of what he will hallucinate as the 'spirit world'. It is very difficult for us even as modern men to correctly evaluate this side of man, since we are that man, and subject to the same limitations of consciousness. The data of the eonic effect can give us at least a suggestion of how this could be.

And 'after Eden' there comes into existence a hominid who begins to destabilize the global environment that he begins to discover in his movement across Eurasia, and then into the Americas. For the first time, unlike homo erectus, who seems to remain in relative equilibrium with his outer world, man has the edge in his dealings with that world, and this increasing mastery shows a want of his own self-mastery as he begins the long cycles of species extermination across Europe, Asia, and the Americas. This upset equilibrium impinges, of course, into our own time, as the species character of man provokes a crisis of his future evolution.^{iv}



DECODING WORLD HISTORY

As we close in on world history we discover a mysterious process ‘directing’ its development, and seeding and amplifying the evolution of civilizations. It is not the civilizations that are evolving, but selected subsets staging transitions that generate larger and larger, finally, global oikoumenes. It is thus not an inner process of civilizations, but a process at some independent level acting in its own time, like a drumbeat. This will make us distinguish two levels, macro and micro, the part from a larger template, and the part brought from free agency.

We call this the ‘eonic effect’: our non-random pattern of three structured turning points with a complex of synchronous parallels set it in the context of a universal history and a clearly evolutionary driver operating on a planetary surface. This is a hard nut to crack: no other dynamical process like this is known to us, but with a series of hunches we can more or less guess what is going on. And we get lucky: a process that stretches into the far past reaches our present, and as we consider our greater present we see that ‘modernity’ itself in its gestation will give us insight into the whole of world history, and, indeed, to history still evolution, before that.

The eerie and sudden appearance of this phenomenon in fine-grain at the centuries level given at the end of a preface of the evolutionary record at the level of millions of year is almost unnerving: we may have missed entirely the mechanism of evolution. To be sure, the earlier evolution of

organisms and that of civilization are two different things. But we will see that the two must be connected.

The connection can be seen as follows: history emerges out of evolution as animal forms show increasing agency, locomotion, consciousness, and finally 'will': clearly the two processes are janus-faced. Agents create a record of action, or history. The term 'will' is a mystery, but we can speak of 'choice' instead. Choice is real and changes history.

Everything seems to evolve slowly. Suddenly at the very end we see the action of a mysterious evolutionary driver. A sinking feeling arises, what are we missing? Evolutionary change may happen so fast that we don't detect and assume evolution is slow, not fast. Our perceptions of early eras is so coarse-grained that we see very little. Debates over slow versus fast evolution are confusing us: our data shows in world history how rapid evolution can happen, being wary of the term 'evolution' in two related but different contexts. But history and evolution overlap, so insights into one may well tell us a lot about the other. This said, we know almost nothing about the earlier evolution of organisms.

We can attempt to put the result in the context of a descriptive model, 'informal systems analysis on a napkin over coffee' model. The question of a science of history remains in the future, but we can see this phenomenon would enter such a discussion which shows immense complexity, and something different from the causal logic of physics. A science of history based on standard causality, biochemical processes, and reductionist methods is not going to work. We can retreat to the classic idea of a 'principle of sufficient reason', i.e. some brand of explanation. Our brand is a model that is empirical, suggests a dynamic without showing it directly. The issue of free agency, which may or may not be free will, enters to complicate causal explanation. Although the debate over free will is important, we can explicate our subject with the idea of 'free agency'. The antinomies explored by Kant enter: you may speak of the 'causality of freedom', but you will shortcircuit ordinary logic and parachute into 'Kant land' which is at points a bit like 'Escher land'. But the idea is not mystical. Kant's antinomies have been long studied. If you give someone a sum of money, you 'cause' an increased freedom of action, to spend, so to speak. If people play at a sport, they are free agents, but constrained by a set of rules, but they must choose each sequence. Finally, if free will is valid, then it must evolve by some process, which isn't natural selection. But we can bypass metaphysics, at the start, although a study of Kant's critique of metaphysics is important.

The 'Evolution' Category

We will adopt the term 'evolution' with respect to our model of history and this will create difficulties for those accustomed to the usage of darwinian biology. But the term simply means 'development', a point resisted by reductionists because it suggests teleology. But the alternative of random evolution has many difficulties and it will become clear that the usage, 'evolution' as development is the only right one. In addition we can see that 'evolution' is far more general than the biological category, a point clear from the extensive colloquial usage of the term. The term fulfills the requirements for a generalized category of 'evolution', and in many cases this follows a characteristic pattern reminiscent of the category of 'punctuated equilibrium, an interval of impetus, followed by a static phase, and this can be repeated in cycles to create 'driven evolution'. This characteristic pattern produces a new distinction of two level operation: the action of the driver and the relaxation phase, or in a frequent usage that arose intuitively, macroevolution and microevolution.

The Eonic (or Macro) Evolution of Civilization

From Evolution to History We can make the evidence of the type seen in the eonic effect explicit grounds for defining both the unity of and a distinction between evolution and history. We could call history the record of free activity rising in the wake of the passive evolution of volition. At what point has relative free action emerged for man to create culture as a free agent? This definition includes the possibility that this has not yet occurred.

The 'Eonic Evolution' of Civilization We can call the evidence of our three turning points the 'eonic' or intermittent evolution of civilization, as some form of 'macroevolution' turning into history. Then we can keep rough track of the two levels of history we detect in the eonic effect. This will create a puzzle of two distinct forms of action, one inside the eonic pattern, one outside. We will say that system action shows 'eonic determination', or macro-action, while behavior outside of it is simply 'free action', or 'micro-action'.

The Great Transition Armed with these distinctions we can call the passage from evolution to history The Great Transition, with a possible echo (or not) of The Great Explosion. However, we are immersed in this transition, and may or may not have reached the end of its clearly intermittent action, seen as a series of individual transitions.

We will start to introduce the terminology of our model, starting with 'evolution'. We use what we call a 'formalism' of evolution with a distinction of macro and micro....In organismic evolution, macro is speciation, and micro is the level of adaptation. In the eonic effect the macro is a higher blueprint of civilizations, and the micro is its realization by free agents. The macro can be detected only indirectly.

The eonic effect shows clearly why this distinction is necessary and was present at the start in the work of Lamarck who introduced two level evolution. We will call 'evolution + history' for man the Great Transition. The result is an empirical map, and not a 'theory'. We are so used to a 'theory' of evolution that an empirical map of evolution is at first disconcerting. But it is actually the best approach.

The effect unnervingly is suddenly visible, in part, after the invention of writing in Sumer and Egypt just before 3000 BCE and the bare minimum interval of ca. five thousand years that itself occurs in a period of what we call transitions (5000 years is two eonic intervals and the start of a third). World history is the only place we can detect macroevolution: it is invisible in deep time, save indirectly. This is the reason the 'evolution debate' is so chronic, and mostly hopeless.

A study of Archaic Greece will show the effect: a dose of massive creative action, followed centuries later by the great decline we see, the tale of Gibbon, etc..

However, our discussion is not solely about sequential evolution: we see a synchronous parallel effect is visible across Eurasia: beside Greece we see the same effect in Israel, Persia, India and China. Each case is unique and the action is not a similar effect from a similar cause, but an action adapted to each zone: for example, in the period in question (ca. 900 to 600 BCE) we see two religions emerge to become classic 'world religions': the monotheistic brand, and the atheist Buddhism. A critic will suggest this is all coincidence, but the likelihood of that is small.

In China we see Taoism, and Confucianism. In the Middle East we see Persian Zoroastrianism blended with Israelite proto-monotheism or Yahwehism. In Greece we see an immense set of innovations, in a 'proto-secular' mode at its birth. This differentiation of effects shows we are dealing with some very complex, and able to scan the Eurasian field and particular cultures. The first phase of this is 2400 years earlier in Sumer and (soon to be) Dynastic Egypt.

The parallel effect is matched with the sequential effect. We extrapolate that the explosive rise of modernity, so-called, from the sixteenth to the

Concepts for depicting the 'eonic effect'

We will develop a set of concepts to describe the eonic effect:

The Great Transition: the evolution of man, but including world history

The Gaian matrix the eonic effect shows sequential and parallel evolution: a matrix on the planet surface

A formalism of 'evolution' as in the eonic evolution of civilization: also macro and micro evolution.

The relation of 'history and evolution':

The idea of freedom and the 'evolution' of freedom

Free action and system action

Consciousness and/or self-consciousness

TP1,2,3: turning points in history: first heuristic idea of transitions

Transitions and relative beginnings, the unit of analysis

Stream and sequence, discrete-continuous distinction

Transition and oikoumene, fields of diffusion

Transition and divides

Eonic emergents, creative incidents and effects inside the transitions

Sequential Dependency: a cultural trait inherited by diffusion

The Frontier effect, also the 'acorn' effect

Econostream (economic histories)

Technostream (histories of technology)

These two terms are hardly used but invented ad hoc to remind us that eonic history, economic history and technological histories are not the same. Man has started to master economic and technological histories, but is blind still to the eonic history

The Eonic Sequence: the sequence of transitions

A Frequency Hypothesis Our system seems to follow a frequency pattern based on 2400 year intervals which are marked by discrete transitions three centuries in length in an eonic sequence overlaid on a stream universal history:

TP1: Transition 1: -3300 to -3000, relative rise of civilization

TP2: Transition 2: -900 to -600, relative 'Axial' interval

TP3: Transition 3: 1500 to 1800, relative rise of the modern

We see this stretching back into Neolithic, we suspect....This is like a glove: it fits over the data with too much precision but includes the key effects within the given range.

eighteenth century is one of these 'transitions'. The extrapolation, again seems speculative, but the evidence is strong indeed: the timing as a frequency pattern, the interior echoes of the earlier transitions, the same three century envelope, the issue, discussed later, of the 'discrete freedom sequence': the generation of democracy, etc...

This has nothing to do with 'Europe' as such but is clustered in a 'frontier effect', to be explained later in this chapter. The modern world echoes the transition in Greece, and many phenomena that barely survived the long era of decline are 're-amped' in the modern transition: an example is modern science, born in Greece, seemingly fading away in the 'middle period', and then jumpstarted all over again in the modern transition. There are many such re-amps, and the continuity of many processes seems the result of successive action: we call the sequence of transitions the 'eonic sequence'.

Suddenly we are in a situation where decades matter: many effects are in the short term. We are left to wonder what we are missing in deep time as we lose the fine grain in the span of millions of years. Although the scale in deep time is probably different the same compression most probably exists at all periods. The reason is that evolution must relate to the lifespan of the organism, by whatever scale. To be sure, the situations are not exactly analogous, but the point is that slow and fast evolution are mixed together in a way that makes slow evolution visible, and fast evolution invisible. We are in the presence of an evolutionary dynamic, but it is only partially visible. The analog of 'punctuated equilibrium' might be useful, wary however of its misused or multiple semantics. The term 'punctuated equilibrium' means little more than a 'principle of sufficient reason', what makes what happen? Something short acting creates an effect, and then stops. The sudden punctuations of the eonic effect are stunning in their action and very visible in the historical record.

The effects we see depend on the invention of writing, which occurs in one of the transitions, before 3000 BCE. We suspect such transitions in the Neolithic, but they had no writing and no records exist.

We should note that the invention of writing is itself the type of innovation or 'eonic emergent' and occurs in our first visible transition!

We must consider whether the invention of writing occurs in Sumer and then diffuses to Egypt or whether it occurs independently in concert.

Consider the effect here of writing: before we saw vast intervals with no fine grain, with writing, records start to accumulate and we see for the first time evidence at the level of centuries, and soon, decades.

Archaic Greece: Stream and Sequence

Our stream and sequence metaphor is especially apt, and illuminating, in the case of Greece, which has both a long stream history, and an intersecting history in the Axial period. The whole effect is almost eerie and, furthermore, shows us the real key to parallel history of Israel/Judah, strange as that might at first seem. The Greeks would seem to have separated from their Indo-European ancestors in the period ca. -2000, and then entered Greece to stage the Mycenaean civilization.

1800 to 1400	Cretan and Mycenaean civilizations
1260 to 1230	Mycenaean attack on Troy VIIa
1200 to 1050	Dorian invasions, a Dark Age begins
From 900	Axial Interval to about 400
900 to 750	Emergence of polis, the spectrum of Greek city states
800 to 700	Greek alphabet and the work of Homer
650's onward	The first 'age of revolution', republican poleis, Solon,...
500's onward	Late emergence of Athenian flowering, democracy, tragedy, a scientific revolution, philosophy, and much more, cascade in a spectacular display
400's onward	Clear waning of transitional effects, coming of Empire phase

Our model will suggest a 'transition' from 900 to 600 BCE, a divide and then a fantastic flowering up to 400 BCE. The rapid fall off is unnerving and eerie. The divide at 600 BCE seems artificial but later we will see that the appearance of Solon in the emergence of democracy shows a key property of our model: induction of freedom is still unfree but can switch from system action to free action: free action must realize a new freedom outside the transition. The timing of Solon is thus highly significant.

Although the reader may choke on our jargon, these examples add up to a hard proof roughly speaking of our thesis as defying chance. And in every case the reader already understands our terminology: consider the analogous situation of a third wheel on the first bike of a child: the third wheel reduces the degree of freedom of the child so the child can learn, then one removes the wheel for a higher degree of freedom, but the child is now free to fall. We process these mechanical situations at a glance. Applied to history in the large demands caution, but the analogies often work. The point here is that democracy arises as system action, and is realized by free action as the transition ends at the divide: and doesn't last long...

For example, what do we know about the years 40,000 BC to 39,990, a mere ten years? Nothing. What do we know about the years 480 to 470 BCE? We actually have records, and historians, for the first time, e.g. Herodotus, and soon Thucydides recording the Peloponnesian war.

There are many claimants to the 'invention of history', but the best perhaps (unless we say the invention of writing invents history) is the Greek invention (as far as we know) of 'historiography' with Herodotus, and then the spectacular Thucydides, and then a host of others...

We know something about Greek history at the decades level, sort of... Note that history in our modern sense is an eonic emergent of the early Greek period. We seem to have special periods of clustered innovations, the key to the eonic effect. The 'invention' of history has a dramatic moment here. In fact the invention of history, to debate the point, begins with oral records in the Neolithic (or Paleolithic), and, e.g. the Dynastic records in Egypt...

The idea of evolution is controversial and not necessary to depict the eonic effect, but we need the idea to grasp the way 'history' emerges from 'evolution' in a series of transitions in the 'evolution of freedom' (speaking formally), i.e. the increasing free agency of 'animals'...

We might say that history overlaps with and emerges from evolution as the 'animal' begins to show increasing degrees of freedom. This provokes the endgame question of 'free will' and its visible aspect as choice or free agency. But human will is still almost embryonic and the psychology of the animal and then man as 'some sort of animal' with conscious free agency is very complex and not common knowledge without some kind of 'meditation' on behavior. Note that the term 'consciousness' is not understood in depth by man despite the way 'evolution' has greatly increased his conscious states, and this far predates civilization. We are left to wonder if the emergence of man as a species (or two in succession with homo erectus) is a primordial version timed in an eonic effect of its own. We call the whole process the 'Great Transition', with periods when the active evolutionary dynamic is latent, e.g. the Paleolithic where we see man in an 'equilibrium' interval where he begins to act out his potential. We suspect the renewed action begins in the early Neolithic or before (e.g. the Natufian).

Our subject seems to begin we suspect with the Neolithic, but as noted we don't have sufficient data as yet, and no written records. We seem to have the following chronology, a sudden and utterly simple intimation of the 'eonic effect' as a series of turning points or especially dynamic periods

The Axial Age parallel transitions

The stream and sequence histories of five parallel zones across Eurasia, and then a series of transitions inside them is almost unbelievably complex, but in each case evidence of a transition stands out in the period ca. 900 BCE to 600 BCE.

Greece/Rome: We can take the Roman case as either an independent parallel or as reacting to the Greek diffusion field stretching around the Mediterranean. We have seen this clearest case already: the Greek Archaic. Note that the classical period to 400 BCE is 'free action' but under high octane and a picture of what man can do. By 400 BCE it seems over.

Israel/Persia: We forget the deep influence of Zoroastrianism on the double birth of monotheism. The Old Testament is in part a Persian hybrid with a Canaanite base. The blend of Indo-European and Semitic sources at the dawn of monotheism is breathtaking. Our 'macro' operator does something smart here. The 'Israelites' were stunned by the way 'history' seemed to subject them to conquest in order to complete monotheistic emergence... But Zoroastrianism was factored out of the Old Testament. We need to study similar networks or phenomena in the other cases. The case of 'Israel' (in quotation marks) is really about Israel/Judah in a mysterious drama of the disappearance of two kingdoms. This spawns the transnational effect of a gestating 'world religion'.

India: the case of India resembles the Israelite: its prime focus is on the generation of religious innovations. The stream history of India is very complex and carries from the Neolithic. Its transformation in the transition produces the Upanishads, a new version of Jainism, and the classic Buddhism straddling the divide. To amateur and specialist both, this case is baffling, but the precise appearance of 'Buddhism' in parallel timing with the Israelite is a good giveaway.

China: The transition that produces Confucius and Taoism remains hard to fathom but the result is a kind of special case of stream and sequence effects, but the passage beyond the Shang is clear. The surface data is a giveaway, the transition a complex blend of the stream from the Shang period...

The Greek case is really about a set of city-states, the 'polis' in a network of complex entities. Our eonic macro thrives on this, but also has a particular focus on Athens. This city state process seems true in each case, more or less, including ancient Sumer.

inside three broad intervals of world history.

the era of Sumer and Egypt...after ca. 3000 BCE

The classical era...after ca. 600 BCE

the modern era after ca. 1800 BCE

This periodization, still too vague, which we saw in the Preface, utterly simple and innocent of theory, hides the key to history and arises with the discovery of civilizations prior to proximate antiquity as the data for sequentiality crosses the threshold of a three term sequence.

Our turning points are really a series of 'transitions' and conceal a hidden dynamic and demonstrate a sequence inside the stream of history. Transitions generate diffusion fields, and new layers of civilization. They are characterized by emergent phenomena.

We must distinguish stream and sequence: the stream of Greek history is not the same as the embedded sequence seen.

This bird's eye view turns out to be far more exact than we could have expected and betrays that dream property of systems analysis: an invariant frequency pattern, but still only a three term sequence, just enough to see sequence. The sequence clocks at 2400 hundred years. But in a three term sequence that cannot be certain. A closer look shows increasingly complex detail that stands beyond chance as relevant to the analysis.

Our data for a three term sequence crossed the threshold of threeness in the last century and hints at an extension, still insufficiently documented.

We are just on the threshold of possible discovery:

This is really two and a portion of a third: we see two full intervals or 'epochs' and the start of a third: the modern age, and we are immersed in the third incomplete era, but just outside of its transition (which we will roughly demarcate as 1500 to 1800, with the latter a rough marker for what we call the 'divide'. We have an immense treasure lode in the modern transition: a fully documented transition for the first time.

Three is not enough for a full proof of the non-random, but if associated data, such as the transitions, and then their interior/exterior data, also falls into place. The odds avalanche in our favor. We confront a fragment of history, like a subset of a puzzle, but we can learn a lot from fragments and this one is truly a provocative mother lode of historical meaning. In reality the evidence for a sequence of epochs starting in the Neolithic or before and driving the rise of 'civilization' lurks on the threshold of hard proof. For those who pursue falsification, and haven't given up, we can try to 'predict' this extension, given a future archaeology. In part it is the interior data that

really gives the proof. The problem for skeptics is that world history suddenly makes sense with this approach.

The transitions take up a small part of an epoch at its start and we must distinguish free agency in two cases: system action and its effect on free agents, and after that free agency alone (as it realizes the innovations in the transition). We adopt a stylized account of the 'consciousness' of the free agents in a creative state.

This sequence, the stuff now of many a Table of Contents of world history texts conceals a subtle set of factors and can be given a simple 'glove' model. The first is that our systems analysis finds a frequency pattern of 2400 years, a most remarkable fact save only that we must wonder if it starts much earlier. But the core evidence is the presence of 'transitions' at the start of each interval. This is true in every case we can see, and rapidly increases the odds in our favor. Our falsification option predicts transitions ca. 5500 and 8000 BCE and quite possibly before that in the so-called Natufian, just on the threshold of actual agriculture, e.g. harvesting wild wheat or grains.

As we examine more closely we can see that this frequency pattern shows a driven sequence, and that a series of transitions around three centuries in length come at the beginning of these intervals. We exclaim about Classical Greece, but we may not see the period from 900 BCE to ca. 600 BCE as Greece transforms itself fundamentally in the period corresponding to what is called Archaic Greece. The core effect is in the eighth century. This will need more discussion later. Many scholars have puzzled over the sudden explosion: from *World History and the Eonic Effect*,

The unexpected suddenness of the Greek transition is remarkable. In *The Origins of Greek Civilization*, a study of Archaic Greece, C. G. Starr describes the inexplicable and truly extraordinary period of the Greek Archaic and is driven to feel that the common historical view on this matter [of the tempo of historical change] is faulty. It is time we gave over interpreting human development as a slow evolution of Darwinian type; great changes often occur in veritable jumps.

As Starr, in a further book on this period, notes at the beginning of *The Economic and Social Growth of Early Greece: 800-500 B.C.*, the Greeks in -800 lived in small rural villages on the Aegean, "three hundred years later Greek life was framed in a complex economic structure embracing much of the Mediterranean and centered in cities which were socially differentiated", creating the foundation of the great classical period.

As we wonder at the flowering of Classical Greece we are drawn to see its

sources in the Archaic period. Our model is a glove model that fits loosely over the data: we call the period from 900 BCE to 600/(400) a 'transition' which straddles the so-called Archaic period. Why the two dates, 600/400?

Later we will discuss the divide of a transition, at the end: 600 is the divide, i.e. the end of the three century transition. The next two centuries show an immense flowering for two centuries, the Classical period.

We can see the exact same effect in modern times: and our current moment is analogous to that of 400 BCE, two centuries of explosive growth, but less cultural innovation, after a divide ca. 1800.

To begin, the reader need not worry about the interval length, but the difference is like the germination of a seed and the the point at which the plant breaks through to the ground. The innovations of this period and its immediate succession is truly spectacular: almost everything we take as basic in our culture first appears in this transition and its immediate succession. We should note how fast the whole situation loses energy and moves into decline. We have distinguished technology and deep cultural innovations: the latter wane very quickly, in part because the Reformation, The Scientific Revolution, the birth of democracy, etc, occur uniquely at a staring interval.

In the middle East, the phenomenon directly in synchronous parallel with Greece shows 'Israel' or 'Israel/Judah' produce a new cultural religion and a set of texts between after 900 BCE and the mysterious moment of the Exile ca. 600 BCE. The remarkable clustering of prophets is astounding. In Sumer and Egypt the three centuries before 3000 BCE show a stunningly innovative relative beginning in Sumer and the birth of the Dynastic format of Egypt and its Pharaohs. Finally the modern era is almost a cinch: suddenly after 1500 a series of regions in the European sphere suddenly take off into an explosive development that by the nineteenth century show us a new era in world history. The modern case expands and we see a network of cultural 'nations' all clustered around the boundary of the old frontier of Rome: Germany, Holland, England, France, Spain, in a strange variant case, Northern Italy. Each switches on during the transition and makes its contribution...

These statements for conventional historians invoke so many potential controversies that we would seem hardpressed to make our case. But in reality we increasingly hold the upper hand: evidence, evidence however we can see contained in dozens of historical texts. Ordinary history is a jumble of confusion, not worth the defense historians give it. The eonic effect shows an effect and coherent unification of the study of world history. As we zoom

in and give these statements their empirical ground the result stands out like the sudden recognition of a small portion of a puzzle, and that sudden perception doesn't even require the whole puzzle. Indeed we suspect that we have only a part of the puzzle.

Note that the two transitions in early Greece and Israel/Judah are directly synchronous! It is uncanny, almost like clockwork (along with all the rest). As the Greek produce the Iliad/Odyssey, the Israelites produce the proto bible. Thus, the second aspect can be seen by asking why Greece, the Middle East, India and China show synchronicity in the centuries around 600 BCE. Study Archaic to Classical Greece and then the saga of the Old Testament's account of Israel/Judah up to the period of the Exile. Two flowerings occur in parallel. Then India, and China. Almost uncanny. We are at the threshold of a phenomenon that began to be discovered in the nineteenth century and then codified by a philosopher called Karl Jaspers. who described what he called the Axial Age from, to use his dates, 800 BCE to 200 BCE:

From his *The Origin and Goal of History*, we have Karl Jaspers' observation:

The most extraordinary events are concentrated in this period. Confucius and Lao-tse were living in China, all the schools of Chinese philosophy came into being, including those of Mo-ti, Chuang-tse, Lieh-tsu and a host of others; India produced the Upanishads and Buddha and, like China, ran the whole gamut of philosophical possibilities down to skepticism, to materialism, sophism and nihilism; in Iran Zarathustra taught a challenging view of the world as a struggle between good and evil; in Palestine the prophets made their appearance, from Elijah, by way of Isaiah and Jeremiah to Deutero-Isaiah; Greece witnessed the appearance of Homer, of the Philosophers—Parmenides, Heraclitus and Plato—of the tragedians, Thucydides and Archimedes. Everything implied by these names developed during these few centuries almost simultaneously in China, India, and the West, without any one of these regions knowing of the others.

The scholars who stumbled on this phenomenon were hard-pressed to make sense of it and Jaspers' account missed the correct interval perhaps: 200 BCE is far too late and what Jaspers is describing is long over by that date. But we should note our idea of a transition seems too short: the Classical period seems to come after the transition.

Transitions and divides Our model points to the end point of these transitions, they are ver subtle yet key to what is happening. Classical Greece, our example, has a divide at 600 BCE after which we see the Classical period. The gestation period is thus prior to this. If the purpose

of transitions is to produce take-off then the classical period is a first flowering in the immediate wake of the transition. But note how rapidly the situation passes into decline.

Transition and oikoumene Each transition creates a new diffusion field and this is a new layer of de facto civilization on top of the prior. The Alexandrian world is one instance. The European zone of the Roman Empire is a successor diffusion field.

The Greek, Israelite and Indic transitions are very different, yet show a deep similarity. The Israelite and the Indic transform religion, and the Indic period is inconsistent in its action: it shows a re-transformation, e.g. the Upanishads, of the 'hindu' and Jain streams which are very ancient and then just at the divide spawns a new world religion, buddhism (in exact parallel timing with the Israelite phenomenon). The Indian transition is a tour de force: it reforms 'Hinduism', Jainism, and produces a new world religion. Buddhism and Israelitism, soon to generate Christianity, are almost exactly synchronous.

We must address the New World, which suffers from a far less seeded set of transformations. But the Mayan phenomenon leaves us amazed: it is an exact exemplar of an Axial Age transition, ca. 600 BCE, but we are unsure as to its place overall, since its character is slightly different (hardly surprising, however). We must be wary of its distinct character, and not jump to conclusions. Noone who has studied the Axial Age has ever realized the Mayan phenomenon is in parallel here. Just like the Mycenaean precursor to the later Greece the Olmec seeds the field as then we have the rise of the Mayan. It is baffling indeed, and we can see clearly what most scholars have kept silent about: the independent appearance of transitions across Eurasia shows no interaction or mutual influence and therefore are the result of a transpatial effect!

The Greek transition is not the same as the Classical flowering which last two centuries after the divide. But as we proceed this will become clear: the gestation period of the transition is less spectacular. The case of Israel/Judah makes the point: the transition is clearly over by 600 BCE but the next two centuries show the consolidation of the material developed and soon we have the first versions of a 'Bible' or Old Testament.

Let us note the ominous two century flowering after the modern divide, and the sudden sense of decline at just this secondary limit: will modern civilization go into decline as in antitiquity? It is not deterministic, we can intervene...

There is a problem with Jaspers' account: it is focused on individuals but as we zoom in to study this phenomenon we begin to see these remarkable individuals are the 'icing' on the cake: the overall phenomenon shows a complex social transformation. That is completely natural and shows that the emergence of remarkable individuals has a cultural background.

The Greek sphere shows us that a network of city states is the real medium for the dynamic. We see similar situations in India, China. In Sumer we also see a network of city states, while Egypt, with its unification of north and south in the transition seems more like a 'state' in formation. In modern times we see a network of states in a frontier effect: Germany, Holland, England, France and Spain, (and Northern Italy) show a frontier effect and are the dynamic zones of the rise of modernity.

Noone has ever asked why this is, or what might be the reason. We can see directly why.

We thus confront two clearly related but seemingly opposite phenomena: a sequential and a parallel set of transitions. But the solution to that riddle will soon become clear, however much it seems to defy belief: what is the eonic effect doing? Taken to the long view it is driving the emergence of civilizations and is doing this globally. To establish a global unity it cannot concentrate on a single region or line of direction but must diversify to cover a whole global ground.

We note the way the 'Axial Age', a term we should move to replace, suddenly splits a 'mainline' into parallel tracks. A strange something is clearly producing parallel injections almost equally spaced across Eurasia: Rome Greece the Middle East, India, China... This means the eonic dynamic operates either beyond space-time or at its 'boundary', a point to consider, wary not to make a hard claim there.

Something global is at work here although the realm of Africa seems left out. That is not the case at all and we need to consider that ancient Egypt touches base on the African continent and begins the process of its developing history. If study the Neolithic and its diffusion we see at once what is happening in Africa. The Americas? We should consider again the odd synchrony of the Mayan (but not Aztec) phenomenon in our overall picture. We can see that total coverage is not needed: a series of hotspots will create centers of diffusion from which a new culture zone or civilization will emerge. In this fashion the whole of Eurasia is covered, along with Africa, whose civilizations are roughly parallel to the European prior to the coming of the Romans.

So what do we have: at the conclusion of the Neolithic a sequence of transitions move to create a global civilization with the case of modernity at the conclusion. Why do we see the 'Axial Age' parallels but only one transition in modern times. This puzzle has a suddenly obvious solution: let us note in antiquity it is still possible to seed civilizations in parallel but by the period of modernity that seeming inconsistency would create collision: global integration requires a different tactic. The point is that the modern transition creates a single diffusion field globally and the job is done. We see the result already and the movement of the center of gravity beyond Europe.

Let us note that Russian and the Americas, viz. the United States, are not transition zones but in the diffusion fields of the transitions. The North American sphere however comes close and is like Rome in relation to Greece: it echoes the core transition, to some degree. In the American case we see the obvious connection to England and France, and in North American we find a staging ground for a democratic experiment. It is thus a little of both and a part of the English transition just at its end. It is good for Americans and Russians to consider their marginal status as to the modern transition. Both have their own place and significance but not as transition zones.

This may be still unclear but our overall result is clear however strange in what it is doing: a driver of civilizations or Civilization is seeding a set of transitional regions on the way to creating a global oikoumene, as we call it. In our time every zone on the whole planet is entering that entity, even as they preserve their local cultural flavor.

These findings, and there are more, at first defy belief. The issue of sequentiality is not at first obvious. The student may certainly challenge, refute or attempt to falsify any such partial generalization in a 'mere' three term series, but the evidence speaks for itself as we move in closer and discover interior design factors. Falsifying the pattern we will find is soon almost impossible, even if interpretations are open to question.

We would not indulge in such a discourse without the massive evidence for its foundation. Unfortunately we can't do a data dump on our brains, we must read books of history, a lot of them. The actual data for a sequence, three terms, the first of which is barely in focus, would seem inadequate to make point but it is the interior evidence that adds up here. Once we see the actual histories of the whole case the evidence mounts and the probability of a speculative 'theory' falls away. In fact, we have not produce a theory, simply an empirical range of evidence from which we can now create a model.

We can conclude with the development of that model of our data. In fact

we have introduced the key ideas already. The rest can be a series of notes at the end of this chapter. That model will take up an idea of 'evolution' with a critique finally of Darwinism. That creates confusion and we have introduced the idea of the eonic effect without mentioning evolution, but we can't avoid the subject forever because history and evolution are related ideas and we can derive an elegant version of the eonic effect from that connection: we can start with a simple question, history and evolution are connected since man emerges from evolution into history (which is what?) and we can ask an artificial question, when does evolution stop and history begin. Clearly there is no instantaneous switch between the two, so there must be some kind of overlap with a transition between them. But that is probably still too sudden so there could be a series of transitions each in a kind of hybrid of evolution and history. But what does that mean? There is a simple answer: the evolution of the 'animal' (leaving the case of plants alone for a moment) seems like the key theme of evolution and we note that animal shows the first signs of historical action: it is a organismic complex that shows an early form of free agency: it is unit in motion making some change in its 'biography' with the primitive early versions of free agency, bordering on choice, or so we suspect. So the transition from evolution acutally occurs at the start with the emergence of the animal and its primordial early verions of 'free movement'. We have the main idea.

History, the human brand, emerges from evolution, in an overlap, in which a later verion of that free agency starts to impinge on the reality of freedom in some sense, speaking at the borderline of metaphysics: science speaks of causality and ends up allergic to the idea of freedom. It is not surprising that the idea of the 'evolution of freedom' creates cognitive dissonance, but we can see taking the long view that the evolution of organisms in some science still unknown to us, demonstrates the evolution of freedom, if only as locomotion. The reality has to show somehow a grounding of that beyond metaphysics. Thus we see a series of transitions (successive species?) inside the Transition to man,

A paradox confronts the distinction of evolution and history: when did evolution stop and history begin? This odd question is the clue to seeing that history and evolution must show an interconnection. Further this braiding together is likely to show a series of transitions between the two. With this clue we can rapidly find the evidence for just this, which we call the 'eonic effect'.

We end with a very elegant depiction of the eonic effect: as man evolves

into history, that history shows a series of transitions and we see these in actual fact archaeologically. There is more to say here but we will proceed to show how the idea of 'degrees of freedom' enters our picture. Isn't this different from the evolution of animals? It hardly matters because there is a deeper unity to the whole set of ideas.

We have a series of possible depictions:

man is still evolving, history hasn't started, and man is not yet free

man has left evolution and has entered history as a free agent

man is immersed in a series of transitions and is relatively free but still evolving freedom.

We should note that freedom and free will are different but related discussions. A democratic system may not be a matter of free will. The rightness of this approach will become apparent as we zoom in on our transitions to see what they do: they seem to inject a series of innovations but a closer look shows that man does all the work. He finds himself innovating in the context of a larger evolution but his own free agency has to be the basis for its realization. The point will be clear later. We have an overall system and the free action inside it. If some kind of creative energy suddenly enters that remains potential and the human agent must use his own free action to realize that. This hybrid situation is completely strange to human thought so far but there are clear analogues in life. The 'idea' of a novel has a set of defining elements (what is a novel?) but remains an abstraction. A human free agent takes the definition and carries out a realization of that.

The transitions are like that: a set of new possibilities end up being realized by man in history. We speak of system action, or evolution, and free action, or history. If you like, 'free' in quotation marks. But the distinction is omnipresent in life and as with much here we understand the idea perfectly until we try to explain it at which point we become confused, the plight of the tale of the centipede in Aesop. If we drive a car the mechanism of the car is system action, in our parlance, while the actual driving is 'free action'. 'Free action' is the issue of choice and choice is not as such the same as free will. The debate over free will is one of the most chronic in the history of thought and while the idea lurks like paper money near talk of freedom we have not resolved the idea and have used the simpler idea of free agency, the basic apparatus of the animal in the relative freedom of locomotion.

Let us interject a key idea of our model: transitions are discrete intervals in a continuous stream: they are short bursts. And they therefore terminate. We call that point the 'divide' of the transition. It is a mysterious moment and will show us many things.

We have spoken of 'transitions', but we can see that human evolution is itself a transition and we can call the whole thing the Great Transition and this still includes moments of evolution. It is important to see that transitions are relative beginnings. A 'monday' is a relative beginning in a series of weeks. This leads us to a new terminology, that of the Stream and the Sequence. The stream is easy: just the stream of history, like the flow of time. The transition is an example of a 'relative beginning' in the stream of given history, creates a sequence over time in series. If we examine Greek history we see that its history goes back to the period of Indo-European migration or before and that the era of the Mycenaeans is a part of that stream. But that earlier history doesn't show evidence of the type of 'eonic effect' we see in the other cases, a point open to discussion, but there is hardly a comparison of archaic/Classical Greece and the Mycenaeans. The Greek transition simply pops out of nowhere in a radical discontinuity that has no prior sociological explanation. And it occurs in parallel with other such apparitions and has no standard historical causality.

The idea of a stream versus a transition is crucial because over and over a sudden era of innovation occurs at the beginning of a new 'era' but not at the beginning of a given cultural history. If we examine the histories of Egypt we discover a long antecedent 'history of some kind' before era of era of pharaohs and pyramids: that is the stream. We noted the same for Greece. And this can clarify at once the strange history of 'Israel' in the Old Testament: there is a long tale of the history of the peoples of Canaan and their interaction with the Egyptians and Mesopotamians. But we see by the near mythological character of those early books of the Bible and then the sudden account of the three or centuries before 600 BCE change their character.

They are close to historical accounts in the real sense and sure enough they recount the period of a transition, such as it is to those who saw what was happening and tried to account for it via theistic ideas. Israel/Judah show a classic 'frontier effect':

The Frontier Effect: the eonic sequence never touches the same spot twice: and transitions are frequently acorned in the adjacent vicinity of the prior step.

This brings us to the idea of the 'Frontier Effect'. It can also be called the 'acorn' effect. A great civilizational oikoumene (sourcing in a transition) such as the Egyptian creates development its sphere as if to seed a new area with the sprawl of acorns and it is clear that the wild Cananite world in the

periods in question was a frontier zone relative to Egypt and post-Sumer (from which the Abraham myth or man appeared. In most cases we see that our transitions show a frontier effect springing up in the field of a prior civilization. The case of 'Israel' is a classic case: it acorns in the diffusion field of Egypt and Mesopotamia and then during the next epoch suddenly shows a transitional effect. The same is true of Greece/Rome. What of the first in the series, Egypt and Sumer, but we would have to extend our discussion backward into the earlier centuries before to see if a frontier effect occurs. We must defer that discussion. We should note then the puzzle of tiny Israel as a frontier effect successor to Egypt/Mesopotamia. To further the beautiful irony the 'Israel', really 'Israel, Judah' succumbs to its surrounding bullies and finally disappears leaving behind a 'biblical religion' and a book which will be a true first as an 'oikoumene' generator and diffusion via a Book; the full effect comes later with Christianity, then Islam. It is a strange destiny indeed, but entirely apt, that one of our prime transitions undergoes and 'incredible' disappearing act leaving behind an idea.

Finally we can see that the sequence of transitions in history is itself a Transition, part of the Great Transition, and we call that the 'Eonic Sequence' and the 'Eonic Evolution' of civilization. We have also introduced the idea of macro and micro evolution. The eonic sequence is the macroevolution while the microevolution is the historical realization of the the macro sequence, free agents create microevolution.

We have almost finished a short exposition of what we call the 'eonic model' of the 'eonic effect', and while the result seems difficult at first the basic ideas are reasonable enough. There is much more here but a rough sense of the mystery at the core of world history is a start.

We confront a dynamic unlike anything in our experience and we must confront the issues raised: the effects seen don't follow contiguous causal action but seem more the like the result of something that can 'focalize' on given regions. We must try to analyze 'design' arguments, and offer a warning not to hallucinate some kind of 'designer'. In fact, in the era of Kant and his studies of metaphysics, we are better protected in this sense and we will find that we can offer design argument all we want if we can define the issues of consciousness, aliveness, and will. Proponents of design^o always theize these terms in a muddle of all three. But they are distinct and don't generalize. It is more likely that our 'eonic effects' are something very different. In any case, we have to proceed with caution here and we can see

already that speculations about an 'active agent' for the eonic effects isn't going to work. As usual on the way to science we confront a naturalistic phenomenon unknown to us. Here however, instead of theistic mysticism we confront the 'danger' of a kind of Gaian 'mysticism' or hallucination: the eonic effect shows clear design at the level of planetary dynamics of some unknown variety. We will just have to let this 'metaphysical monster' lurk at the fringes of our model and proceed 'dumb' t design, for starters. The eonic effect shows all the hints of a new and unsuspected dynamic..

The key issue here is that as we zoom in the field of circumstantial evidences increases to the point that something like our model has to be the case, whatever the infelicities of our account inside a metaphysical jungle that turns scientists into nervous wrecks. The phenomenology of the eonic effect is empirical. In the end the evidence speaks for itself, whatever we make of it. And the idea of flat history, proceeding at random falls away as falsified. The last stage here will be to consider the issue teleology which is part of what causes design hallucinations. Our eonic sequence begins to 'smell' of teleology.

The distinction of system action and free action is crucial: the transitions suddenly inject new factors into history and that happens via the sudden creativity of the agents in place who then execute the result via human action. World history suddens clarifies with this distinction. The passage from classical Greece to the great decline of the fall fo the Roman Empire shows the dread distinction of system and free agency.

The study of macro history navigates near a trap: teleologies mixed with histories of human failing, evil, and primitive barbarism. A close look shows we evade this problem, and that the macro sequence remains at a high level of potential. The many problems with ethical history are man's doing. Consider slavery: higher civilization starts without slavery in Sumer, but the process emerges in the wake of that as 'free action'. It is man who invents slavery and it is the macro effect that induces 'abolitionism' many millennia later.

We need to learn the lesson here: man has nearly destroyed his own civilizations. The eonic effect is always benign and creates potentials as 'creative energy'. The failings of free agency require careful srutiny. This is a long discussion and must end with a warning about politicians and leaders who have fallen into the cult of Machiavelli. The eonic sequence produces a figure like Kant who is that rare figure, just near the divide, who takes on

the world's politicians with an ethical argument, mostly disregarded. That's a mysterious tragi-comic humor and a warning. The point here is to be wary of the facile judgments from incomplete knowledge. Free agency is fallible and may end up destroying civilization. We see that problem acutely in our own times. This planetary probably takes snapshot of all of its history, so an instant sermon creeps forth, watch your step, you be being watched.

This relates also to an idea we introduced but haven't discussed: the modulation of human consciousness as self-consciousness. This distinction is elusive and seemingly contradictory. Not every culture understands the distinction. There is a whole transition devoted to turning this issue into the core of a world religion: the religion of Buddhism whose core is the practice of meditation. Our own time shows the sudden appearance of the idea as the practice of mindfulness. We can call self-consciousness mindfulness consciousness to suggest that the term 'consciousness' always ends up turning into two things. In fact, the history here shows the postulation of four basic states in man: sleep, consciousness, self-consciousness, and a fourth unnamed beyond all these.

This raises the question of Hinduism in relation to Buddhism. We do not see the origin of Hinduism, nor do we have any adequate word for what it points to. It is a suspicion that the core ideas of Hinduism gestate in the Neolithic in a history lost to us. The 'transition' which induces Buddhism is actually a very complex mixture and 're-amps' via that transition the Hindu stream into an Upanishadic upgrade. It is a true tour de force. The subject is confused by the debate over the question of the Indo-European or 'Aryan' invasion and the way that the later traditions show only a Sanskrit or Indo-European (e.g. Pali) version of the religious texts. But the hopeless confusion here resolves itself if we consider that the earliest Indic traditions precede the entry of the Indo-Europeans and preceded writing as oral traditions in some earlier non-Aryan language. Careful scholarship suggested this from the start and the recent debate Hindu fundamentalists has confused the issue. The Indic transition in the Axial interval shows a complex triple effect that re-amps a stream legacy into the Upanishads, reamps the Jain tradition in what we now call 'Jainism', and many strains into the great Buddhist 'restart' that produces a first world religions in parallel to monotheism. Thus, the whole Vedic wrapper used is a red-herring. The Indo-Europeans picked up the indigenous traditions and put them into writing in the new language formats, e.g. Sanskrit, itself a peculiar product we suspect of the transitional era.

This pattern is very strange, but suddenly it is obvious what it is doing: a 'bouquet' effect that moves to include a spectrum of exemplars across a middle band of Eurasia. These areas then with their transitions generate larger oikoumenes which then diffuse into new cultural civilizations with neighboring descendants, a good way to develop the whole from a subset.

Note that the rate of movement at this period is still very low: multiple diffusion zones or civilizations can coexist without collision as independent, more or less, worlds unto themselves. China, India, the Middle East, and the occidental Greece/Rome: the latter case is obvious in the way, despite the rate of decline. it creates a new oikoumene via empire and conquest.

But in modern times that factor ceases to hold and we can see the way that the speed up of interconnection is such that multiple independent transitions would now backfire in the collision of effects. So in the modern case we see instead one transition area (with multiple cultural subsets along the frontier fringe), and the frontier effect jumps away from core Eurasia toward a barbarian zone that has nonetheless is solidly Neolithic but then becomes recipient of all the diffusion effects, first of Rome, then of Greece, and Israel.

Note that already in ancient times the proximity of the 'Israel/Persia' concoction we call 'monotheism' and the Greece/Rome diffusion field begin to collide with the strange outcome that we see of Greco-Roman and Judaic, soon, 'Christian', oikoumene generation. We should note that the original template suddenly stands out: braid a semitic 'monotheism' with an Indo-European 'monotheism' and create a universal religious template for a world religion. Unfortunately it didn't work out that way and we tend to be confused over the Semitic issue when in reality the original effect was a blend.

We may argue that the blend redounds to the advantage of both, yet still see that the collision leaves some strange anomalies in its wake. But the monotheistic diffusion field is in many ways tailor made for a head start toward globalization in a way that is less militarist than the Greco-Roman. The point for us is that these religions are oikoumene blenders and the limits of the Roman Empire become the frontier effect zone for the rise of the next transition. Its imbalance in relation to the whole is misleading. Its rapid expansion into a global diffusion field via economic integration soon creates the world's first global oikoumene, and that in rapid order visible already in the nineteenth century. We can see that overall this has nothing to do with

Europe as such. The modern transition is not about 'European' civilization but the appearance of nationalism creates a series of cultural subjects, like the Greek city states on a larger scale, and a disaster, in terms of regressive wars between states, weakening the whole effect in the same way the Greek city states exhausting themselves in strife, viz. the Peloponnesian wars.

We should note the elusive subtlety of our model: the effects of system and free agency explain many things: among them the way the whole can enter into counterproductive effects that are not the result of the higher developmental factor. A good example is 'empire' building and its degenerate tendencies. In antiquity the rise of empire begins in the wake of the transitional era, and is always a lesser process, whatever its long term effect of integration. We can see that the rise of monotheism in the Judeo-Persian mode created a hoped for challenge to this aspect by suggesting an ethical stance on issues of cultural action, with whatever limited success. In the modern case the very different but related problem of imperialism rises to curse each of our transitional areas. The macro process can't police its outcomes.

Note that system action projects ethical potential in the expansion of its action, never empire building. But it can't control the whole field of free action. We thus see in the modern case instead of empires a series of transient imperialisms based on capitalism that in each contribute to global intergration and in the process degenerate immediately into ethical nullity. The seeded emergents of the transitions are not sufficient to forestall the rapidly decaying ethical monstrosities arising in their wake and beyond the control of any larger action. We see the deeper reality and dilemma in the case of e.g. the British imperialistic globalization in India: it is seen at once as an immense extension of the diffusion field of the modern transition and one praised by many of its participants soon victims of the 'dark side' of the imperialism clearly never intended by the larger eonic sequence. Indians were often ambivalent here as they noted the good and the bad. Here the issue of capitalism arises in a similar ambiguity of effects to that of 'diffusion field degenerating into imperialisms (which are not the same as 'empires': empires can last centuries, the modern imperialisms usually finished in short order. We note then that the effects of system action and free agency go a long way toward explaining many things, not the least the rising degeneracy of field action in the expansion of the whole> Our eonic sequence operates at a high level of ethical action while its field of effects is less sanguine. We see the exact difference in the passage from the Greek transition, its last

Claims for teleology are very controversial and we will simply suggest without proof but plausible evidence that teleology is necessary to understand the eonic effect. For our account directionality is enough: step one to step two is directionality, step to last step, teleology. The idea requires caution: if we are embedded in a teleological system what of our free agency? We will discuss this and consider that directionality is all we can claim, but that if a system's 'teleology' points to freedom, then free agency is paradoxically an aspect of that system! How reconcile the contradiction?

Teleology was always the hidden theme of modern biology before its elimination in the ideology of Darwiniana scientism. A whole school plying this theme stands at the dawn of modern biology. Biological systems are pervaded with biological machiens that act with teleological mechanism still elusive for science, but clearly within the realms of naturalistic explanation.

As Timothy Lenoir notes in *The Strategy of Life*, "Teleological thinking has been steadfastly resisted by modern biology. And yet, in nearly every area of research biologists are hard pressed to find language that does not impute purposiveness to living forms. The life of the individual organism—if not life itself, seems to make use of a variety of stratagems in achieving its purposes. But in an age when physical models dominate our imagination and when physics itself has become accustomed to uncertainty relations and complementarity, biologists have learned to live with a kind of schizophrenic language, employing terms like 'selfish genes' and 'survival machines' to describe the behavior of organisms as if they were somehow purposive yet all the while intending that they are highly complicated mechanisms. The present study treats a period in the history of the life sciences when the imputation of purposiveness to biological organization was not regarded as an embarrassment but rather an accepted fact, and when the principal goal was to reap the benefits of mechanistic explanations by finding a means of incorporating them within the guidelines of a teleological framework. Whereas the history of German biology in the early nineteenth century is usually dismissed as an unfortunate era dominated by arid speculation, the present study aims to reverse that judgment by showing that a consistent, workable program of research was elaborated by a well-connected group of German biologists and that it was based squarely on the unification of teleological and mechanistic models of explanation."

echoes so clearly seen by the end the end of the fifth century BCE, followed by the reign of empire in the era of Alexander in the onset of the 'middle world' which is not yet 'medieval' but already closing toward a 'middle world'. This raises the question of the ethical nature of macro action. It is in one way a mystery, yet we notice that the macro factor always operates at high potential and evokes however successfully an 'ideal' standard of action, while the middle periods show rapid degeneration.

We should pause a moment here and consider the unsettling way that eonic effect has its fingers in all human cultural 'pies', leaving us to wonder what civilization would look like without that 'macro action'. Perhaps a lot like the Paleolithic.

A great suspense arises: how much of history can man claim as his own? And what is the implication here for the future? Could man learn to replicate the eonic effect, for example, with a new life form on another planet?

We are reaching the end of a first account.

The reader will notice how we start with a simple picture that moves into greater and greater complexity, and one feels lost. But the larger picture is already clear and provides a magnificent model of a simple way to 'evolve' civilizations, granting that its action is still mysterious to us despite its outer action. We need to explore 'reality' models, from the reductionist scientism of post-Newtonian physics to the noumenal/phenomenal discourses arising in the Kantian realm, and not least the peculiar mysteries of quantum mechanics. But in the end our subject is sui generis and fails to conform as yet to any known field of knowledge. But we do have already the basic elements needed in our simple model and its descriptive account of the mysterious action behind the evolutionary mystery of civilization, and behind that the mystery of human evolution itself.

We have raised a number of issues and barely discussed them, and there are many more. But we have resolved to a short account. The many issues are very tricky, and no doubt not clear at all. But the basic glimpse of the eonic effect is there. The main task here is a bird's eye view of the eonic effect, to start. Our snapshot of world history has uncovered almost without trying the presence of a non-random pattern of universal history by simple inspection. This pattern of self-organization can give us an empirical basis for considering the questions of human evolution. Instead of speculative theories like Darwinism we can discover a sense of universal history, thence evolution, purely empirically. To sure, 'facts' are seen from a particular perspective, but this doesn't alter the basic finding. Our suspicion is confirmed that high-speed change can

occur on the scale of just a few centuries, witness the Axial Age. And this effect shows us that evolution is hiding behind history in the form of a series of intervals of rapid emergence. World history yields its secret to simple periodization and shows from the invention of writing a clear developmental sequence, with a question mark about its probable source in the period of the Neolithic, the natural starting point for the rise of civilization. The great clue of the Axial Age suddenly provided the gestalt of a larger system at work. The Israelites were right, there is a process of greater evolutionary dynamism that frets the universal history of man.

It is at first illogical, it seems, to confound evolution and history. But with a little reflection we will see, first, that the two must be logically connected, and, second, that the data we are discovering directly confirms that logic. This evolutionary sequence is a robust empirical foundation for understanding world history, in the context of evolution. The relationship of evolution to history must resolve a paradox. The passage between the two could not take place instantaneously. It might show a series of transitional intervals that are evolutionary from one perspective and historical from another. But that is just what we are seeing: a series of 'axial intervals' or transitions that express a kind of evolutionary advance, and the epochs in between them that seem to express the historical carrying out or fulfillment of those transitions. What is remarkable is that we see this in historical times, and in a fashion documented by the rise of the technology of writing. It is futile to say that evolution must be purely genetic, since we can see that the 'evolution' of civilization is something more. We have the first glimpse into the nature of human evolution: it is a larger process than the purely genetic development of the human organism. And we can see its last stages in the emergence of civilization. There are many more things to consider here as we proceed, but we have the basic insight into how we can revise our views of the meaning of evolution.

We have barely begun, yet the reader has surely overdosed. We must press the reset button often retreat to the bare model. The simple starting point leads to a vast number of strange particulars, from the influence of Zoroastrianism on monotheism, to the diffusion if any of the Old World into the new.

The enigma of Israel

The question of 'Israel' is remarkable indeed but suffers a core confusion. The eonic emergence of monotheism (which had a prior history in the

stream) is directly clocked to the transition but the result which was noted by the Israelites was so extraordinary that they thought the effect could only be divine action. The Israelites were almost unique in noting the eonic effect but thought it something else. This springs from the way the sudden appearance of novelties (900 to 600) seemed miraculous. A similar effect occurs in the modern transition but in a reverse, secular fashion: note the way the philosophes sense they are detecting a new age in history, and they were correct.

The issue of Israel is a stunning piece, as its subjects well sensed. The Exile made them think of an agency that could direct whole civilizations, and their almost magical seeming disappearing kingdom made them begin to think in terms of a universal religion. Note that this model does NOT explain the particulars of Christianity which arises well after the divide even as it seems to carry out the implications of the Old Testament. The exact nature of the Christian emergence thus requires a different explanation: free act vs system action. Unfortunate confusions arose in this circumstance. We should defer discussion noting the parallel of a theistic and atheistic religion is exact and exotic 'eonic' timing.

Although the eonic effect shows the real dynamics behind the saga of Israel the whole subject remains beset with a decided obscurity. The question of Israel is a truly spectacular case of the eonic effect T at its trickiest but unfortunately it is confused by the issue of 'god' in history. We see from our model that theistic historicism doesn't work. The resolution is to see that in parallel with buddhism in india monotheism is an 'eonic emergent' process that turns into a world religion. But in a confusion of terms and processes the emergence of monotheism is confused with the explanation of the 'eonic interval' in Israel/Judah. But small wonder the Israelites thought they saw god in history. But unfortunately the whole subject is confusion. But who wouldn't wonder at the stunning blending of Zoroastrian and Israelite elements into a first monotheism in the Exile and just at the divide period.

The question of Israel is thus elusive but resolves itself if we consider two elements:

- the stream and sequence must be clearly distinguished: Moses, etc, is in the prior stream and the Bible shows this in the semi-mythical character of its saga. The period after ca. 900 given by our globe model shows suddenly something more like history in the stunning saga of Israel/Judah and the mysterious disappearing kingdom effect (whose implication seems to be the transcultural birth of religion)

- In parallel with India producing one world religion Israel spawns the genre of monotheism at first in a crude tribal god as Yahwehism
- the transition ca. 900 to 600 BCE shows a stunning fact: the Israelites began to sense the onset of a new era and created a myth of revelation which was then incorrectly applied to the eonic dynamic.
- the appearance of the Prophets is a remarkable case analogous to what we see in the many other cases. But if they correspond directly to a figure such as Homer they are truly innovators exploring the field beyond polytheism with a 'one god' construct.
- the concordance of the 'divide' boundary and the Exile is a stunning 'miracle', no, eonic effect, as it is the Exile which triggers the blending of Israelite and Zoroastrian 'monotheisms' (it is unclear whether the real source of the subsequent monotheism was in the Persian Exile)
- The Israelites couldn't believe what they were seeing and put two and two together in a superstition of Yahweh, yet a remarkable first: sensing discovering the eonic effect. We should easily be as confused ourselves, and hope for the brilliant intuitions of the prophetic era.

This is a truly extraordinary history but unfortunately the Israelites confused the output of the transition as the eonic emergent 'monotheism' and the dynamics of the transition, which they confused with theistic action. The age of Revelation is thus an eonic Axial interval effect showing the emergence of monotheism in an era passing beyond paganism (in the Occident) with the parallel Buddhism in India. we might also include Taoism and Confucianism directly although these superior idioms are not quite 'religions' in the same sense.

The case of Christianity is another issue: it is not the result of a transition and has a different character, as does Islam. Standing back we can see that the Israelite transition is set to generate an oikoumene field integrating cultures in a unity and this action passes into a secondary formation in the emergence of Christianity. The latter is an obscure mystery in its starting point and not easily analyzed by modern thought. But figure Jesus might be explicable in terms of a later phenomenon of the 'sufis'. We lack the real facts in any case but the overall gestation is a most appropriate continuation of the by then crystallized and still tribal Israelite constellation.

Note that the Israelite transition shows eonic determination, or system action, while the later Christianity shows 'free action' in a diffusion field.

But free action can include many mysterious possibilities. The source of Christianity thus remains a bit mysterious, and we have at least created an

overall framework. Not even secular humanists have figured out the case here. But we must point to the accumulating confusions of history, theology, and the cargo cult effect of detecting the eonic effect and thinking of 'god'.

We must be clear: if we consider that the eonic effect isn't theistic action, then what in effect is it?

We will leave this question for later, but the 'evolution' category emerges, as we have noted, and we observed that 'real evolution' is transformation over a region, and is clear thus in all cases.

Looking backward we have to ask if the whole Judeo-Christian sequence was a failure to realize the correct outcome of an initial potential. The whole affair was far too tricky for the executives of the eonic macro effect and the result would seem now too filled with superstition. But this problem has probably always been the case, even back into the Neolithic. But world history seems a series of cargo cults, one after another as man attempts to decipher his macroevolutionary field, if he observes it at all.

The modern transition

The implications of our model are that the rise of the modern is more than just some development from the middle ages but a subsequent transition in our eonic sequence following a frontier effect as it arises in a fringe corner of Eurasia, one of the last zones untouched by the macro effect. With almost uncanny precision 2400 years after the 600 BCE demarcation a series of zones take off into what is perhaps the most innovation and explosively revolutionary periods in world history. Between 1500 and 1800 the world system produces a new kind of civilization and creates a diffusion field that rapidly globalizes the effects of the transition.

Consider the parallel moment of the emergence of the Industrial Revolution. We have noted the way technology and economies are not derandomized: they occur in a more or less random continuous pattern, increasing over time, perhaps. But this is not always true: the reason is obvious: as man evolves technologies emerge and then become the objects of his free agency, and he begins to invent more like this, on his own. But the eonic dynamic we suspect was originally involved also. We see this in the Industrial Revolution, which suddenly has a technological leap into steam engines. We cannot quite say, but clearly a new kind of capitalism, the Industrial Revolution and a new technology of machines emerge in concert climaxing at the divide, ca. 1800. There is a boost here, but then the process passes into free action and in fact the capitalist era seems almost to take over the outcome we call the modern transition. So let us note at once that in concert with the new

kind of economy and technology the idea of socialism emerges. Let us note clearly the point: capitalism, and socialism appear in concert, although each has had partial appearances along the way. What does this tell us.

Let us note that this whole period is that of the Enlightenment, and again in parallel, the Romantic movement. The modern divide is thus almost fantastic in its complexity. Let us note that we are not speaking of European civilization. The modern transition occurs with stupefying precision as a frontier effect in the regions that were part of the frontier of the old Roman Empire: Germany, England, France, and Spain. In a ironic twist the north of Italy is and is not a transition area: it is part of older system but it is also itself a sort of frontier. The fascinating case of Italy requires a separate discussion. But overall this data shows us the strange precision of the frontier effect. It is hard to credit this, but our model simply 'works' and spouts an answer we find hard to grasp. Northern Italy...

Skeptics are welcome here and will tend to reject such a model, but the evidence is against them. The pattern as it expands defies all odds of being random. We have a host of arguments in our favor and a close look at what a transition looks like; we notice one of the properties of our model which led to some ambiguity in the earlier case: a transition is concluded with a divide, an obvious statement with some striking implications. A good example, to reiterate, is the phenomenon of transitional divide:

If we examine the period just before the modern divide, i.e. conclusion to the transition, ca. 1800, we see the massive clustering of innovations just before that date. It is almost unbelievable in its clustering of innovations, advances, art, literature, music, philosophy and science. The previous three centuries have been themselves remarkably creative but the effect intensifies just near the end of the transition and we see the period from the mid eighteenth century into the early nineteenth century almost like a packed suitcase of novelties, and revolutionary dynamism.

We should conclude this short account and move to a conclusion. We introduced two terms, econosequence and technosequence, forgettable terms to make a point. We can just think of economic histories and histories of technology. These histories are not the same as 'eonic history'. These histories are continuous and have passed into human action as forms of culture and self-development.

Compare the history of technology with the history of classical music: the first is now almost steady state or increasing exponentially. But ordinary cultural factors are steady, and cases like classical music,

perfectly correlated with the modern transition, climaxes near the divide and then starts to wane, by twentieth century exhausted, or else with a mutation into something different, viz. twelve tone music. Technology has thus become a human invariant. Undoubtedly that was not always true, although stone tools are perfectly good examples of technology that in their own time slowly became continuous possessions of cultural man. Modern civilizations show an explosion of technology but the basic structure of the eonic sequence is still not open to manipulation by human action. The scale is too immense. We would need a 'technology' that operates over tens of thousands of years, is able to scan whole civilizations, induce creative energy, and sort out ten of thousands of cultural streams and emergents.

The question of economies is also not a part of the eonic sequence, except as a component, with a probable exception that we noted, the onset of industrial machinery, the perfect example of a technology still an eonic emergent but then passing into human continuous streams. We can't quite say, save to note the amazing correlation of the Industrial Revolution and the modern divide. And this raises the question of capitalism which also seems to mutate at the same time as the Industrial Revolution.

The case of capitalism is tricky and ideological, but let's note that it is ambiguous: it has existed in all history yet seems invented in modern times. We see this many times in our account. Both views are right.

We should try to fret the ideological debate here: socialism and modern capitalism appear in tandem, a giveaway to some future development. In any case economic history is always continuous, man must live and consume. Ancient capitalism was clear in Greek times, yet seems invented or reinvented in modern times. We can safely guess that two things in tandem have a dialectic or duality in search of combination. The future is not yet there, how can we annex this our account.

Man is learning to construct and control economies, but only up to a point. But even if man merely tries to control economies our point is made. In fact, contemporary leftists would claim that capitalism has distorted the cultures in which they operate. It is confusing because it is set up to operate without intervention, so to speak. Understanding is required, as it were. The place of capitalism in world history is of great interest and the modern transition shows a stream and sequence effect to create a supercharged 'capitalism'. But the socialist duality/dialect arises in synchronous action simultaneously. We will explore something called the 'discrete freedom sequence' as a variant clarifying the 'end of history confusion' from Hegel.

End of Eonic Sequence?

As we start to notice the eonic effect its action is probably completed. Man is therefore on his own, an ominous state of affairs since man cannot control the creative action of the eonic sequence. Perhaps that knowledge is there but still latent. But who is to direct this? The religions are defunct remnants of the Axial Age and are waning in secular times. The politicians are mostly machiavellian psychopaths, beyond intelligent action. It remains to be seen how the future will thus unfold. The collapse of the Roman Republic is an obvious topic to be studied!

This eonic effect or driver operates very much like punctuated equilibrium with a sharp impetus in a set of transitions at the start of each new era. This process shows a directionality in the way it redirects world history as each phase. We hardly dare use the term since it has prior owners, but its basic semantics is useful enough. But there is a basic difference: equilibrium is not wanted and only a sign of falling away from development. A close look at our transitions shows often two centuries of rapid development and flowering after the divide, as with the case of Archaic to Classical Greece. If we see this then we should urgently look to see if our analogous two centuries past the modern divide shows any signs of sudden fall off in energy. The question is tricky because the factor of technology is now autonomous, next to a similar state of economy, two factors we wrote out of the eonic effect.

The process however is teleological in multiple and some very exotic meaning so of that term. The semantics of the term 'teleology' is often misleading. Real teleology can sacrifice a given unilinear direction to multiple parallel tracks and we see this in the so-called 'Axial Age'. The effect shows that a teleology of globalization cannot force one region or track on all others but must have a track in all regions in a preliminary to a final integration and this is what we see in modern times as the exotic frontier effect jumps to the fringe of Eurasia and creates a new global oikoumene at extreme speed and already after two centuries the planet as a whole is close to new oikoumene of globalization, a process barely complete, but in essence clear in the light of all its precursors. But the glue of capitalist economics and industrial technology is already open to a new challenge of social re-creation in new forms of democratic society, democracy being a creature of the Greek transitional era, and then once again the modern transition. But the Greeks also invented socialism and communism in bare speculation.

Mankind now confronts the probable ending of the eonic sequence and

the great gifts of that set of transitions are at an end as man confronts the existential uncertainty of his free agency in the construction and maintenance of civilization. Man must graduate from tinker technology to that of the eonic sequence itself, operations directed over a range of ten millennia! The industrial machines are altogether primitive by comparison with the mysterious technology of the eonic effect.

This future is not even conceived as yet and tokens a near cosmological scale of planetary action in a new kind of terraforming. It is clear that the kind of indifferent ecological destruction visible in capitalism shows its limits and the need for a reconstruction. Our modern transition provides all the seed ideas and the socialist milieu appears promptly in concert with the Industrial Revolution and the 'New Capitalism' (we invent the term to indicate that capitalism is present since the paleolithic trade in obsidian and is a factor at all stages of civilization. But the modern entity we call capitalism is almost a new invention. This is still another example among dozens of a stream element up-amped in a transition into something almost new)

One thinks of the classic book, *We are not alone*, discussing the idea of A-life in cosmology. The eonic effect strangely evokes a similar uncanny sense of some designing agent but it is very much a sense of planetary mystery instead of some cosmic process. But there is something far more elusive than a-life. Aliens are hardly going to be much different from man, in essence, or else have passed like buddhists beyond manifestation. The eonic effect is far more remarkable than alien life which appears to be so hard to detect lest humans cheat on their homework, which man has mostly flunked, an evolutionary basket case, laughing stock of the galaxy, yes?

We should therefore consider our account in Gaian terms or nicknames and note the way the surface of a planet shows us an aspect of nature in a mysterious action that induces most of the innovation in world history but which remains concealed as if in hiding. We must do a lot of work to accomplish this and such a study beginning with Kant's critique of design arguments to construct teleological machines able to operate of tens of thousands of years and to fully grasp the real psychology of human consciousness and the nature of creative action in the career of the human.

We have set aside the idea of 'god' not as a dilemma of atheism versus theism, but simply because the concept of god is incoherent and simply fails to grapple with the data we see. Nonetheless it seems at first a close call because the eonic effect betrays a strange sense of some presence at work behind the scenes and further forces the 'conclusion' that something

that induces intelligent creations must itself be at a higher level than what it induces. But we must consider the ambiguity in our result: does the eonic sequence impose a teleological destiny or does it merely evoke the creative action of man himself? The question is not easy to answer, but one way or another our account shows a teleological system at work.

We would have to consider that a figure like Hegel had a similar sense and invoke a concept of Geist in a post-reformation post-Christian notion of 'spirit' or 'mind' in nature. He also attempted to answer to Kant's Challenge that we have made the formal starting point of our discussion. And there our neutral account fares far better than the speculative lore of 'gaseous vertebrateology' that animated that great thinker who however promptly received a hail of rotten tomatoes in the gestation of positivism thence scientism and not least the fulminations of the materialist prophet Marx who was sufficiently of that time to have expropriated Hegel's dialectic to his materialistic fundamentalism. The problem is that Marx's theories of history based on economic categories are too reductionist as we see it now and his classic stages of production theory based on a set of epoch different from ours, viz. feudalism, capitalism and communism. We see at once the problem with this: feudalism is not an epoch and is a medieval phenomenon in the middle part ('medieval') of our second epoch of the eonic effect. Capitalism is not an epoch but a set of processes that stretch from the Neolithic to the modern era when the Industrial Revolution matched with capitalist finance and economic ideology made it look like a new invention. But capitalism in essence goes back to even the Paleolithic and the trade in obsidian. The ancient world of the Greeks shows financial instruments that clearly are in essence the precursors of the modern versions. Capitalism in primitive form was alive and well in antiquity. It is the massive explosion of scale in relation to new mechanized technology such as the steam engine and the factory that gives us a sense of capitalism as a new era in history. But our account suggests a different view: the massive innovations of the early modern or the 'modern transition' are so numerous and complex as to dwarf the capitalist interloper just at the end: the modern transition reinvents religion in the Reformation, reanimates the scientific revolution, produces multiple schools of philosophy, jumpstarts revolutionary actions in the re-emergence of democracy, in a list of innovations that would take pages to even list, let alone fully describe.

To conclude, man needs to master the eonic sequence and yet he seems as yet far from that possibility. The action of the eonic effect resembles a 'field'

action such as we find in physics, although we should be wary of any direct analog. However a computer built into an electromagnetic field is at least intelligible science fiction. We are in the presence of a mysterious planetary effect whose action can easily decay into false depiction of consciousness or aliveness. To be alive is a property of living entities in an ecological context and does not necessarily apply to the container of that life, i.e. a planetary matrix. To be conscious is related to but distinct from aliveness and remains a mysterious even to its own agents. We have suggested the distinction of consciousness and will in the terms of some still unknown psychology of man. The 'will' pace Schopenhauer is a cosmic phenomenon and would pertain to the laws of cosmic bodies, The issue of consciousness refers to a planetary organism and not a cosmic body. But just there 'consciousness' may have its own cosmic aspect, who knows? The transformations of consciousness have millennia of study and are especially present in the Indic stream. The reference of consciousness to larger realities does occur in that legacy, e.g. the equation of atman and brahman, but that is not grounds for any kind of simple conclusion.

We lack all these sciences necessary for understanding the eonic effect but that will change no doubt in this cycle of civilization which is given to understand the (eonic) evolution of both man and civilization, to see the connection of the two. It would seem appropriate to compare notes with alien civilizations, if such exist, and yet that might be disastrous in its effect. Outside help, like cheating in an exam, counts a zero. Man must master his own evolution and that requires an order of magnitude of knowledge beyond religion, politics, technology and economy. But since the decision has been thrust upon man, sink or swim, we have no choice in the matter but to swim.

History, eonic emergence, and ethical action

We should also note that the effects of the macro process are always benign, ranging through philosophy, religion, science, art. Slavery, war, empire, are never the objects of eonic emergence, as far as we can tell, with ambiguous actions where system action and free action blend in confusing combinations. The logic of war is complex, to be sure, and the eonic history is neither militarist or pacifist. But surely warfare is pathological in human history. Modern imperialisms are a close call but the situation is like a donation of monies: from that point no control is possible any longer. History has additional logics related to its becoming, and the eonic process is perhaps only an acceleration. The system can't police its own outcomes which default to free action,

which may even corrupt emergent entities at their start. But in each case those imperialisms, which start as generating diffusion fields, wreck the culture in which they occur, as the emergent process flows outward to larger and larger fields. To be sure, man gets caught up in the realization potentials of technology intersecting with war, now almost a cancer. It is hard to grasp eonic action, which seems unlikely to be an agent. The eonic period produces a first democracy, but the decline of the occident produces the Roman Empire, an object of sentiment to some, but surely a thousand wasted years. The contrast is dismal and it is important to consider the nature of ethical action. Modern politics tends to operate on the principles of Machiavelli, but on what grounds? Note that just at the modern divide we see the sudden appearance of Kantian ethics and a diatribe against political action, downright unnerving, but Kant seems to lose the argument to Constant. Yet a faint whisper of a warning. Kantian ethics shows its own flaws, but illustrates how ethical issues can have a higher mechanization. It is hard to conclude anything since macro action is not an agent but a higher mechanics we cannot understand. But the outcome of history should have its own last judgments, notions detected but garbled by theologians. We must suspect the gaian field sufficient to record history in detailism, and that of its agents. We wonder why aliens never appear. Why would they risk interaction with a species with the record of man? But man has at least the grounds that his history is a first draft, as it were, and he is learning the hard way. But man has no real leaders, so far. Machiavellian politics, capitalist predators, the dismal gang, have no real status in history as a profusion of psychopaths take control of civilization.

A first Conclusion

We have presented a short version of the 'eonic effect' and the model that goes with it. The next step is to reify the generalizations with studies of world history through study and reading: a gateway to *World History and the Eonic Effect*. The study of world history is hampered by a host of ideological obsessions and has left in its wake a limited set of perspectives, that in a period when the data arriving from archaeology has exploded and greatly extended the meaning of the term itself. Suddenly the data of world history has shown us the clue to a dynamic, that long sought key to a science of history. Most of our categories of thought are challenged by the eonic effect but we can attempt to consider the issue of science and the need or an extension beyond its reductionist perspectives.

Before drifting into complexity we should emphasize the simplicity of the overall patterned dynamic. It is only that we are at first confronted with

the unfamiliar.

The explosion of knowledge has suddenly produced a new insight into the question of historical dynamics, and the result is an exotic new interpretation of the classic question, What drives history? The long delay to any answer to the question now has a simple explanation: lack of data, and that over a sufficient period of time. The answer to this question suddenly stands out as 'obvious': we see a series of periods of concentrated innovation, like transitions, in a series, periods of fall off and decline, and a strong suggestion of directionality. But we also see this sequential aspect is compounded with a fascinating complication: parallel, synchronous transitions in a schematic that defies conventional assumptions.

The Eonic Effect: the hidden structure in world history We can call that sequence of three transitions and the epochs in between them the 'eonic effect', as a sequence of three epochs, and note the way that this pattern suggests 'evolution' at work, 'evolution of some kind'.

We are not alone, a phrase from a famous book on extra-terrestrials, comes to mind as we sense a mysterious presence, close to home, that seems to animate world history. The scale and focus suggests not some alien entity of sci-fi, but a planetary dynamic, a sort of Gaian field. We have ended up neutral but no longer scarified by 'design' arguments which no longer have a theistic semantics. We have left our data as is and then put three obstacles in the way of design arguments: distinguish and define three distinct terms and methodologies: life, consciousness, and will. So which is it we ask those who are predatory magpies of design thinking? Life is a matter of biology, and is the object of a higher cradle process. Consciousness is a mystery but is distinct form 'aliveness' and seems to require a context of explanation if taken beyond the limits of the organism. We simply can't answer and should be wary of ascribing consciousness to cosmic bodies. It is an old and tired trick of mystical 'nothingmuch-ism'. We will argue briefly that Schopenhauer stumble on part of the answer: his 'metaphysics' of the 'Will' as thing-in-itself, read carefully is not about the psychology of will but of a higher process in nature that is something like physical law but somehow more complex: a smart law. In that sense we could say that 'will' is cosmological and might apply to cosmic bodies, or Gaian fields. Needs more work, but such a tidbit can ground our discussion in something specific with a warning that design arguments are a long way from explanation and are very ill-served by theistic confusions.

As we examine the eonic effect we get a strange sense, in the classic

phrase, of the Voices of Silence. Some kind of design in motion with a mystery behind it animates world history but we must raise this issue if only to warn against mystical historicism and point to the way this sense confounds monotheism, which is not our subject.

A secular humanist once noted that the Bible was a great work of literature marred by its confusions over the idea of god in history. We must protect our stunning discovery navigating between the Scylla of scientism and the Charybdis of theistic religiosity. Our mystery is a variant of the design argument, but the implied deduction of a 'designer' has long cursed the design argument, so well exposed by Kant.

The idea of design is rejected by science and exploited by religion, but we must find a middle way armed with the simple observation that biological systems are pervaded by design, and must confront the need for science, one as yet unknown. The idea for a science of history has lurked in the background, often confusing its study. An examination of the fate of the idea of 'evolution' might alert us to the difficulties of theories about history. The question of science remains crucial but the example of causal physics tends to confused thinking and misconceive the crucial issue of historical dramatics: the presence of actors, or free agents.

In the end design arguments point beyond theology to issues of teleology and while this is not a part of conventional science it remains in principle not a spiritual but a potentially scientific concept. Since our account is descriptive we defer such an attempt at a future science. The system we are depicting suggests very strongly a teleological account but it is a very elusive. The eonic effect shows the action of a very complex machine in nature, and one that is in part cosmological. We must approach it in stages without mythology.

APPENDIX AND NOTES: THE CORE OF THE MODEL

We have tried to keep this account short and will move to a set of notes, ad infinitum. The reader needs to try and stay afloat as a rapidly expanding set of complications in the history re: the eonic effect begin to 'swamp the boat': stand back and take the rising flood of details in stride over time. Of all the things proposed as brain boosters, this one is the best. But a bird's eye view is possible as long as it doesn't generate fallacies.

We have stumbled into a vast subject that could take up dozens to thousands the tens of thousands of books. But we can equally attempt

brevity: a glimpse of the eonic effect. Which is a glimpse of evolution, which we see now is a transformation over a region over an interval of time, with a mechanical spectrum partially invisible. The darwinian idea of a mutation in a such a field not getting swamped and adding up to a change of species is ludicrous. But our subject is not as such organismic evolution in deep time, but our account nonetheless offers a few hints. However, we see that evolutionary action, in our sense, is incompletely observed, so far in terms of current science.

The Eonic Effect

We should stop here and try to digest what we have in a first portrait of the eonic effect:

1. a mysterious directional, or teleological sequence
2. with a set of parallel exemplars.

This process is hard to understand but it is clearly a way to set in motion the evolution of civilization, with repeated epoch interactions to keep the process from dying out. The parallel effect expands the reach of the process to a global whole. We see the last three transitions in a series probably starting in the Neolithic (or before). In the fifty thousand years or more of the Paleolithic man is in a static phase, then in the still fuzzy beginning just before the Neolithic (ten to twelve thousand years ago) civilizations begin to emerge in the middle east via a series of transitions which create diffusion fields, the Axial phase greatly expanding the larger field, until in the rise of the modern world we see the last transition ca. 1500 to 1800, and the rapid creation of a global civilization for the first time. System action alternates with free agency. We seem to be at the end of the eonic sequence in our present as we default to free agency in a hypercomplex system we barely understand.

The most likely explanation here is to consider that evolution is a cosmological process connected to the 'fine tuning' emerging from the Big Bang era. This is physics hiding teleology under the rug, apparently. But such a conclusion is not really part of any claim about an explanation of what we see. It is merely helpful as a temporary stay against bewilderment.

We should be wary of teleology and think of directionality relative to our greater present. We have no science of teleology, but it 'seems' obvious to inspection that we would more wrong to leave it out.

To conclude, world history shows a mysterious process of driven 'evolution' in a pattern of 'transitions proceeding sequentially and in parallel. The directed line seems teleological, but the logic of global integration

spawns parallel tracks which integrate a larger totality. These transitions express a 'macro' evolution and seem placed to generate implosion as globalized cultural integration. Each transition creates a diffusion field a s new civilization. Each transition is unique, moves to new spot adjacent to a previous zone or frontier and shows a divide point as the system action passes into free action. It is like a novel: the transition produces a template like a 'genre' and the divide begins the free agents realization of a particular instance, e.g. a novel. The hidden template or form factor is the missing ingredient in all evolutionary theories. Although a three term sequence (suspected of being much longer including the Neolithic) is a bare minimum, the interior evidence is so massive and on cue that we feel confident of our model. The rise of the modern is thus an extraordinary instance and perhaps the last transition given the way it has produced a first global oikoumene, and shown man a path to the creation of civilizations. The end of the eonic sequence puts the whole affair into suspense as the element of free agency inherits the whole process.

The Great Transition: the evolution of man, but including world history

World history and its eonic effect leaves us to wonder if man is still evolving in historical times; but that has nothing to do with darwinism. Evolution is more than genetic and the civilizational complex accompanies man's evolution in the same way that territory is always relevant to organismic evolution. The genetic effect due to emerging civilization is still an open question.

We have seen this before: anatomically modern man emerges but then a new phase appears as this is put into proto-historical motion.

The Gaian matrix the eonic effect shows sequential and parallel evolution: a matrix on the planet surface

Our phenomenon is a planetary phenomenon, and we should explore a possible science here, of planets as cradles of life. Many confusions arise in terms of concepts 'alive' and 'conscious'. And these are applied beyond organisms to more general entities, e.g. to planets, the 'living earth', etc... At least, it is not yet science, but we should at least note that planets are the cradle of life: is there some category beyond 'dead mass' that stands in correct 'higher' potential to life since planets harbor life...

A formalism of 'evolution' as in the eonic evolution of civilization: also macro and micro evolution.

The distinction seems artificial in some ways but in our case it is essential as the eonic effect generates macro evolution, while free agency generates micro evolution...But the micro effect might fail and leave decline in its wake. That is the 'evolving freedom' likely to be in practice.

The relation of 'history and evolution': We have seen the way 'history'

overlaps yet emerges from evolution in the construction of the 'animal' over the immense span of time. In history we see a series of transitions in which man enters the realization of some hidden component.

The idea of freedom and the 'evolution' of freedom

The evolution of freedom is metaphysical and unable to stand with normal science, but descriptively it is clear in our account.

Free action and system action

This distinction is crucial. We use it all the time in normal situations: a car shows system action, driving is free action

Stream and sequence, discrete-continuous distinction

The stream is simply historical time which is continuous while the sequence of transitions is a discrete series. The distinction is essential and it also helps to sort out the two types of history seen in practice: consider the Old Testament: it describes the whole history of the world since creation, mythologically to be sure, and this abuts on the tales of Abraham to Moses, whose tales are epic saga, with some possible factual basis. Then the period in the early first millennium shows a more factual account with the appearance of the prophetic literature, early versions of biblical saga. The almost peculiar tale of the politics of Israel and Judah make sense in terms of a larger process moving toward a universalist religion the movement beyond geographical place to a placeless conception. But the geographical Israel returns after the Exile as the Old Testament consolidates. The final disappearance of the place, Israel, in the Roman period seems despite its horrific character a clear concluding chapter in the tale.

Macro and Micro

Debates over evolution can be forestalled by adopting the idea of a 'formalism' of evolution.

We adopt the formalism of evolution to describe our subject and that implies the distinction of macro and micro evolution. The large-scale eonic sequence is macro evolution while the free action that realizes it is micro. The two connect as the macro process somehow injects a creative innovation into a transition zone. And that's a bit of a guess. But this is an elegant if first confusing distinction and it connects two opposites in a unity.

As an example we might consider that the idea of a novel enters culture and individuals begin as free agents to write novels realizing the abstraction, a 'novel'. The analogy isn't perfect but the point is the macro process seems to deal in abstractions as potential innovations and man realizes potentials in real time. The macro factor points to the whole field of innovations or transformations in a transition, and in the heated interval the creative energy involved seems to reach a peak.

From this explanation it is clear that we are dealing with a mystery we don't fully understand. History and evolution

We can repeat our derivation of the transition phenomenon by looking at the emergence of history from evolution in an overlap that expresses the evolution of freedom

Design arguments: approaching science?

And we might examine the issues of design arguments. World history shows a hidden teleological driver behind the emergence of civilizations, and this operates in a discrete/continuous progression of epochs, the third just underway, our present. The evidence is strong, but indirect and short of full proof.

This series shows clear but less visible evidence of starting in the Neolithic as the onset of the Holocene. But this point may be challenged: if we cannot be specific about the endstate of a given process we have no final way to claim teleology. This allows a prediction: backtrack 2400 years, twice and you find the Neolithic in two stages...?

Teleological systems need little more than the right mathematics. Some differential equations can work causality from the future???! An extra dimension makes the question easy.

Teleological goals are elusive. If your goal is X, you aim at X, but if your goal is to show qualitative something on the way to that goal, you don't need to complete the operation. The teleology is different. We need to consider this with the eonic effect since the 'driver' we sense seems at first to point to some 'end', but if the 'end' is autonomy, then the driver stops and leaves the 'end' to man, his free agency

Self-consciousness Any model of human evolution needs concepts that modulate the phenomenon of consciousness. Here none seems to know what they are talking about since it is a case of state of consciousness depicting another. In much literature this is via a distinction of consciousness and self-consciousness, the latter being a distinction discovered over and over, for instance in mindfulness exercises to puzzled participants unable to explain their different sudden consciousness. In addition we might consider something deeper: a creative state of consciousness. The transitions we see show the sudden expansion of 'genius', and we can formally that as creative self-consciousness in the context of the macro effect. Speculation.

The point here is that our transitions act directly on the consciousness of the free agent and it is almost obscure to say so, yet the point is on one level entirely obvious.

We should move rapidly to our conclusion warning the reader to perhaps skip some of the complexities introduced for the sake of making our case in its more difficult aspects, but which the reader steps into backwards as he explores the implication of a simple beginning.

System Action, Free Action

The eonic model is at first tricky because it moves from historical causality to historical potential. Our transitions create a potential which is then realized by free agents. We can see the difference without much trouble by looking at the historical record.

We should introduce an ominous question.

Can free agency rise to the occasion of terminated system action?

It is a shock to see how much of human achievement occurs in the transitions. Without the eonic effect human culture would have remained in the stage of the Paleolithic. Man has learned to become technologically innovative but is still not fully in control of economic histories. He remains blind to the eonic effect yet that factor is the source of virtually all the advances of civilization. This situation is changing, perhaps, but the mastery of the eonic sequence still eludes social control. But the modern period has still not fully realized its potential and we will see if some cultural realization of that will occur. This is like Faust with no Mephistopheles. Something is obviously missing in our account: the historical dynamic is purely phenomenal, but must have an unseen component.

End of Eonic Sequence?

The above suspected extension and the general 'eonic sequence' leaves the question, has that sequence come to an end? The answer is unknown, but the suspicion must be that it is: it would be hard to go through a transition and be aware that that is happening. As man begins to observe the effect it would surely dissolve. And our moment is the first in world history with enough data to detect a three term minimum sequence: the existence of records for three transitions, two intervals between them, and the onset of a third

Transitions and relative beginnings, the unit of analysis

We see that instead of some inner dynamic of 'civilizations' in the sense of Toynbee and Spengler, we have an external process that operates the space and time of a given civilization and its long stream. The Greek transition is unique and appears well after the onset of the stream history...The transitions are relative

beginnings. We use the idea all the time: each Monday in a week is a relative beginning in a year.

Stream and sequence, discrete-continuous distinction

The eonic effect is a complex blend of continuous and discontinuous effects.

Transition and oikoumene, fields of diffusion

Each transition starts a process of diffusion and this field creates a new form of civilization, often in layers one on top of another.

Transition and divides

The end of a transition creates a divide effect: this is especially noticeable in the modern case in the period around 1800 when a climax of effects finishes and leaves a new cultural world in genesis as it expands to become a global oikoumene, for the first time.

We have already discussed:

Eonic emergents, creative incidents and effects inside the transitions

Sequential Dependency: a cultural trait inherited by diffusion

The Frontier effect, also the 'acorn' effect

Econostream (economic histories)

Technostream (histories of technology)

These two terms are hardly used but invented ad hoc to remind us that eonic history, economic history and technological histories are not the same. Man has started to master economic and technological histories, but is blind still to the eonic history

The Eonic Sequence: the sequence of transitions

Freedom effects: discrete freedom sequence

This refers to the way that 'democracy' appears twice in relation to the eonic effect and just as the divide point. Consider Solon just before 600 BCE and the rise of democracy in the modern divide. There is a deep subtlety to this we can discuss later.

This correlation suggests the rightness of 600 BCE as the divide in Archaic Greece and has its own low probability 'proof' of the model: induced freedom in not fully free and the birth of freedom, induced or not, ought to occur outside the transition. But a nudge might help. It is like the third wheel on a child's bike: the degree of freedom of the child is reduced, to learn, then the third wheel is removed and the child rides 'freely'.

The discrete freedom sequence raises the issue of ideology. But our model is not a theory and there is no reason we can't raise issues of ideology since the system action itself creates them. The concept of freedom is both dynamical and historically ideological. That is not wrong, but tricky. Immersed in the system our judgments can be fallible but in any case our free action creates

history and the ideologies themselves are eonic effects. But this system has a mysterious ethical purity that never experiments with or induces evils. Since man's action are probably on record the notion of some kind of 'Last Judgement' in a secular definition rises from the field of dead concepts.

Transitions and Oikoumenes: diffusion fields

The 'evolution' of civilization is driven by transitions which create oikoumenes that set up a field of diffusion that in turn creates a new civilization. These diffusion fields spawn child civilizations which in some cases become transition areas later.

Over and over we see primary transition fields spawn secondaries that may or may not enter into the direct eonic sequence. The first phase of the eonic effect shows the primary field of Sumer and Dynastic Egypt with numerous secondaries in the diffusion field, from the realm of the Shang, the early Indic, the Minoan/Mycenaean, etc.. This is an immense field of study and a tricky one, and we can adjourn that to look at an ambiguous case

There is an immense amount of work needed to track the fields of diffusion created by transition and next to that the issue of diffusion as such. As we examine the Axial effects we seem to see instant synchrony across time and space: it happens so fast no diffusion could have occur. Two exceptions prove the rule or else both are true: the Roman realm is a clear instance of the diffusion field of the Greek transition and this happens within the time frame of the transition via simple geographical diffusion, i.e. the Greek city states in the South of Italy, for example..

Another example is the relationship, still insufficiently understood of the instant diffusion inside a transition between the Persians and the Israelites. And our transitional incidents include the case where the receiver, the Israelites, are physically transported to the realm of the Persians during the exile, with the result that a hybrid, still not understood, of Canaanite and Persian 'monotheisms' is effected, which then is passed forward via the world of the post-Exile judaic legacy. In both cases we see polytheism reduced to monotheism (the pantheon of proto-Zoroastrianism is especially interesting). And it is important to note that Zoroaster, like Moses, far precedes the transition, and that the world of the 'transition era Persia' is too imperial for the role bequeathed to the 'Israelites' who suffer the stunningly mysterious loss of their 'kingdom' as monotheism gets a dose of universalism in its sudden placeness),

In general issues of diffusion cannot be brought to the explanation and we confront the mystery of synchronous action defying space-time.

There is no diffusion we now of between Buddhism and monotheistic genesis, although a host of books claim otherwise, in terms of Hinduism: these are the Jesus in India studies, etc... But the fact is that diffusion could never explain the complex Indic transition, almost incomprehensible given the data available, comprising a host of dialects so to speak. The uncanny clock work of emergent judaic monotheism and buddhist dharmic religions allows no explanation via diffusion.

And the case of christianity is entirely different: christianity is not part of the eonic effect and emerges much later in relation to the later history of the Roman world in a collision of emergent factors. This strangely puts the judaic history in the realm of system action and christianity in terms of free agency. This seems wrong.

It takes a lot of thought to see that perhaps this is works right as explanation, but something is missing. It is entirely possible that a more primitive entity can show system action which a more sophisticated successor can show only free agency.

The answer we suspect is that any number of 'spiritual powers' can enter the christian explanation, if such exist. That requires evidence and we have none since everything is smeared over with 'god explanation'. This example may be too complex for our model which deals with ancient Israel/Judah and then stops. Let us note that we have very little data for the onset of Christianity although the top level surface explanation via the Gospels, however distorted, mythical or propagandized works fairly well. A spiritual jew in the direct legacy of the transition moves within the Roman milieu, whether as pure prophet of some kind, or a politicized Zealot in revolt against Rome. Such high level 'obvious' explanations might be our only path through the complicated and not truly recorded history. Many of the indications of Christianity show a direct unfolding of the potential in the Old Testament world as is proceeded from tribal cult to universal religion. At the same time it is clearly a case of 'free agency' in the many given details of its crystallization in the centuries after clock o year. Our model probably gives the right answer but suddenly it is tricky and we are left with something primitive at a higher level than something more sophisticated at a stepped down level and the end result is almost undecipherable. But the later world of christianity was already in two diffusion worlds, the judaic and the Hellenic.

There are many traps here and we can easily assume some spiritual power was behind the Israelite history, but our model enforces right thinking: the process that is behind the Israelite transition would have to be the same for Greece, to China and this is far beyond any human reckoning, or any putative devangelic power (which might well enter the christian beginning).

Let us introduce another controversial idea to make sure we stick to our model and not spoil it by moving beyond its range into christian explanations: the Axial Age as subcomponent of the eonic effect is so vast it needs a different brand of discourse. It is not hard to find, or guess that that is: some kind of planetary or Gaian effect. Some operation at the level of planets (speculation) is at work and this is connected to cosmic evolution, or some fine-tuning aspect in the general context of evolution. We have put the eonic effect into the category of the evolutionary, and the genesis of man and this is different from the genesis of a world religion. This is why the Christians were always critical of yet confounded by the Israelite saga, and vice versa. And the later history of this process which seems to point to one universal religion but ended up with two shows an undecidable outcome of simple premises. It would seem that as the eonic emergent factors move beyond the transitions they become things unto themselves and as free agency can act with strange outcomes: the strange jackknifing of the judaic legacy into two religions has been the object of endless recrimination and controversy, but the result is not open to our judgments using this model.

The issue then of some Indic influence by diffusion on the emergence of christianity is as possible within our model (which says nothing) but the same is most unlikely for the judaic transition. The christian saga explicitly pointed to three sages and it is entirely possible that diffusion enters here.

Neolithic extension

Our model suggests two earlier transitions in the intervals 5700 to 5400 and 8100 to 7800 BCE. A study of the Neolithic shows a very tantalizing premonition of this: an early and then a 'high' Neolithic. The frontier effect tells us where to look: north sumer shows the onset of early form of temple culture. The Natufian suggests something even earlier. The period ca. 8000 BCE suggests the birth of agriculture (possibly in multiple regions) in the Middle East, consolidating in a new type of village culture in the Levant and Turkey, moving to the larger sphere of the Middle East.

The Neolithic in the 'eonic sequence

We can see that the whole phenomenon includes the Neolithic because the model predicts the period ca. 5500 and 8000 BCE will show transitions if we backtrack using the frontier effect. Sure enough northern Iraq and the Natufian period in the Levant fit the pattern, but less clearly given the thin evidence. Let us introduce a short quote from WHEE which takes a suspicious look at the suspected larger eonic sequence.

Our model is highly artificial but works so unreasonably well in the range provided that we are hot on the scent of a more general pattern.

Transition 1 ?Mesolithic transitions

Transition 2 ?Proximate start of Neolithic ca. -8000

Transition 3 ?The Middle Neolithic interval ca. -5400

Transition 4: The birth of civilization, interval before -3000

Transition 5: The 'Axial' period, interval before -600

Transition 6: The early modern, interval before 1800

We are already suspicious of the period in the sixth millennium, and there is an already filling gap in our knowledge in the area to the north of Sumer in the Fertile Crescent, a frontier effect prediction. A highlands culture zone to the north of Sumer seems to flow outward into the Mesopotamian area, in a frontier effect, prior to the historical period. We nearly have a four beat sequence. (WHEE)

We should be wary here: the evidence is still insufficient, but our guesswork is more than plausible given what we know so far.

The birth of civilization? village, town, city

The concept of civilization is almost dubious: the first villages are an equal achievement. Planetary civilization originates in the Middle East, roughly equidistant from most zones of Eurasia, between ten to eight thousand years ago (we can however consider stepping backwards in 2400 year intervals, had we the evidence, to find incremental histories) and becomes the source of the the vivible sequence beginning in the first truly visible transitional pair in Sumer and Egypt. The latter create diffusion fields that we can use to study the rapid imitations across Eurasia in the middel period: Shang China, Indic, Minoan, Mycenaean, etc, and European secondaries in the diffusion field.

Secondaries versus transition zones

In the next epoch the secondaries China, India, Persia/Israel, and Greece/Rome, will experience the remarkable 'Axial' Age thunderclap of parallel

transitions (the Mayan case is entirely analogous, but difficult to analyze). The secondaries are in the diffusion field of a transition and construct sectors in relation to the source: the examples are endless, e.g. Mycenaean, etc semi-civilizations in the wake of the eonic macro sequence.

African civilization

The African legacy is often considered somehow primitive but that is entirely false. The nineteenth century shows directly, the San and Pygmies apart, the spread of robust Neolithic civilization throughout the subcontinent under the forbidding climate of Africa, that was a harsh challenge even to nineteenth century explorers. The realm of the Neolithic is barely explored and has its own rich factors. The European sphere before it entered the diffusion field of the Roman Empire was just such a Neolithic field. The exact history here is not clear but some source in Western Africa seems to have generated a continental diffusion of Neolithic civilization throughout.

Mayan Civilization

The instance of Mayan civilization is as fascinating as it is still obscure. Everything in the format of its history allows the possibility that it is a parallel long lost kin to the Axial Age synchronous transitions. But there is something anomalous here: the issue of human sacrifice emerges in a very retrograde cultural pattern, even as the Old World is moving rapidly beyond this. We are left with a set of puzzles like this with the Mayan case. The question of human sacrifice is poorly documented and preempts dealing with its appearances in any conclusive fashion.

Our model is very peculiar here, yet prodigiously acute. The point is that the evidence seems to point to a process of diffusion from the Old World to the New, the emergence of secondaries in the second millennium BCE such as the Olmec, and then the sudden synchronous emergence of the Mayan civilization via a transition ca. plus/minus 600 BCE. This explanation is so completely in tune with our model that we are tempted to take it as given. And yet the fact remains that we are unsure here. Was there diffusion from the Old World to the New? This is an old dispute but we should note how many scholars have insisted on the point (but, to be sure, on both sides). Note the way our model is perhaps the only one that could deal with this perplexity for we are claiming two things most scholars would find hard

to accept: overland diffusion as a secondary, but synchronous trans-spatial induction in a transition. We must merely catalogue these possibilities and let the question simmer since we are in uncharted terrain. Frankly the opinion here is that this rough explanation is right and that only a model of the type we are using can deal with the complexity of both overland diffusion and synchronous trans-spatial injection.

Two extremes of explanation

We can explore two extremes of explanation in terms of our model:

Devangelic powers...

We should introduce a side idea almost as a phantasm, a good way to break one's neck as to theory, but in a potential extension in fact to materialistic thinking. The point is we have some explaining to do with a creeping design argument, and we may as well go 'sci fi' for a moment, with the idea of AI in the background for future thought.

Our monster idea is that some form of evolutionary mechanism in a kind of learning software mode (AI) computes evolutionary form factors which then are tested against adaptation. This speculation is entirely illicit in terms of our mode of thinking, but if you think you think you see a monster looking in your window then it is a question whether a new Linnean category or psychiatric couch is our next step.

Unacceptable to secular thought but long since within the cultural sphere of human thought is the question (even referenced by Kant, the or 'a' demiurge) is the existence (sic) of powers within nature that function in terms of material but seemingly spiritual contexts. This discussion has long foundered in theological myth, but the point is that the 'laws of nature' fall into the category in some accounts of the factor of 'will' which is itself a part of the category of scientific law. Very smart laws in sciences that are unknown to us.

Skepticism is the materialist's response to the mythology of spiritual entities. There is no logical objection as such to such possibilities. Almost all cultures until modern times believed in versions of this, viz. the 'god realm' of positivistic buddhism...The Kantian speculation of a demiurge, etc... Note the distinction of consciousness and will and the closeness of 'will' in some writers (e.g. Schopenhauer) to the idea of 'scientific law'. The planetary character of cosmic evolution is undiscovered country.

We have to explain how an invisible 'something' can seem to stand at a higher level to the 'mechanical' generation of creative moments in the

intersection of free action and system action. No known explanation, yet...

We should note at once we have not the slightest proof of this, but as an extension of materialist thought it is a self-defense concept and hypothesis about archaic religions. The issue is not some superstition but the equivalent of intelligent machines in nature.

Look at our transitions: they have their finger in the pie of art, religion, philosophy, and seem to be the 'voices of silence' in some fashion. We simply note the concordance of creative action and transitions, and stop there, for the moment.

AI: artificial intelligence, learning machines

Although we have no science of history we are moving in that direction, and, for example, the sudden appearance of AI or 'artificial intelligence', while not directly applicable, suddenly extends our range of understanding of the possible and we begin to graduate from spiritual notions to new forms of suspected natural processes. Some unknown natural 'closing' or converging mechanics of information like AI suddenly incrementally frees us from design confusions as we begin to sense what is possible and what to look for. As we examine the mystery of our transitions we are increasingly alert to the vastness of natural explanations still untouched. But our transitions must in some way invoke the issue of consciousness...

Diffusion field secondaries

Frontier effects and the modern transition

World history exhibits a mysterious but remarkable non-random pattern showing both sequential and parallel and synchronous effects. The evidence may seem insufficient overall but the interior correlations are close to decisive. We see a system action in an apparently fixed frequency of epochs in some case with synchronous parallel transitions, especially the Axial Age, but the synchrony of Sumer and Dynastic Egypt is another such effect. In addition, synchronous action is stunningly obvious in the early modern transition as a frontier effect with respect to the prior Roman Empire's European boundaries in Germany, England, Holland, France, and Spain, and ambiguously northern Italy. (Northern Italy is a true mystery. It is seemingly inside the 'frontier' yet itself a kind of frontier, with respect to the old Roman Empire. It is strangely both at the same time, and it is starting

point of modern 'classical' music. The stupendous action in this mysterious synchrony is clearly explained by the frontier effect. But the case of Italy is strange and ambiguous. This reason is that Italy has a 'Renaissance' and this is not the same as the modern transition. This is confusing at first. But the Renaissance is not a transition. It is a different kind of phenomenon. Nothing in our model forbids 'free action' creating a creative period, it is in fact to be hoped for in the end. A close look shows the decadent character of the Renaissance behind an immense flowering of the 'fine arts'. The balance of effects is missing. We see the obvious answer: the fine arts have entered 'free agency' and show a remarkable moment outside system action. In fact, the real effect of the modern transition on the fine arts comes later: again 'modern art', so-called is outside the transition, but close to it. An utterly new and unexpected form of the fine arts begins with Impressionism and its succession. The logic here is at first obscure, but we suddenly see that, as any 'modern' artist would exclaim, formal art reached a climax on its own, and reduced painting, for example, to an almost mechanized state. This is an extraordinary achievement, but still half creative half mechanical but a genuine factor as of our era of free agency. So the Picassos et al. rightly mutated into something completely different. They even looked down on the immense achievement of perspectival art and its immense exemplars they considered a history of dullness. This is an example of the tricky aspects of our model and takes some figuring out with a warning of the strange complications of our analysis. Note that classical music has not undergone this transition to free agency. Outside the modern transition it wilts at once, but the realm of atonal music, a radical caesura, is itself a curious enigma, but outside our discussion, for the nonce. But we the strange case of Italy and its hybrid inside/outside divide aspect and the straddling of modern 'classical' music from roughly Monteverdi to Verdi/Puccini, and then not much, with the enigma of atonal music one for the future. But it clearly tokens the end of the end of the modern transition with respect to music.

Theories versus chronologies

We have produced chronologies with the first inklings of a theory, but none as yet: we lack the full scope of the phenomenon and/or the necessary data. But the interior coherence speaks for itself. But even a fragment gives us a 'glimpse' of evolution which

must operate over a selected region
inject creative process in relation to a form factor

We can see that a theory of evolution is still far off and that it must be the equivalent to a 'factory' that can provide generalized blueprints or patterns in potentia.

Teleology

We will raise issues of teleology but we cannot claim to resolve them, even as we give a portrait that overwhelmingly suggests some teleology. It is not likely that rejecting teleology is any less speculative. One way is to simply consider the issue hypothetically: even if a strong impression is not proof it can be less off the mark than views of flat history. So we can take teleology on provision, and directionality as a lesser claim with still more plausibility. Religionists will always take teleology as a design argument, but our model is 'god proof' (but not atheistic or theistic).

We note in passing Kant's 'antinomy of teleological judgment' in his third critique, and consider the grounds for combining a mechanical and a teleological argument...there are many ways to consider the problem with the primitive 'feedback device' probably hinting at one answer in a generalization of its action in the 'attractors' in some kind of system. A higher dimensional argument is the only way to ensure consistent causality.

If a second step follows a first, we can detect directionality. Many steps in the same direction cement our conclusion. But the 'final' step may remain unknown to us or in the future and might deviate at any point. Thus with teleology. But guesses can be powerful and sometimes vagueness carries its own proof: the vague 'purpose' of evolving civilization is easy to assess, clear by example and not subject to easy reversal as free action even by sudden outbreaks of barbarism. In our example of the emergent character of 'novels', the template implies implicit teleology but the resolution in actual fact as a novel is not predetermined.

The enigma of the eonic effect stands at the center of world history as the evidence now shows it, a low key yet utterly stunning result. That evidence is rock solid but incomplete, and hard to visualize, and perhaps in part unseen, as if noumenal. But we have a strong sense that the 'eonic sequence' goes back to the beginning of the Neolithic. How we interpret this is a difficult challenge, but the empirical foundation is sound and impossible to dismiss. Despite this, on the surface we can understand this because it is obvious what this system is doing, to a bird's eye view: it is like an amplifier in the stream of history that accelerates development. But it is also a source for

much of the creative novelty of developing civilization. It also resembles 'punctuated equilibrium', if we take the term as a conceptual analog, wary that the term has no real scientific definition.

We see a system operating in a long frequency, or series of epochs (noting that a three term sequence is minimum evidence backed up with interior correlations), each with a transitional interval at its beginning, and sometimes with parallel synchronous transitions, we see a kind of evolutionary driver repeatedly jumpstarting the development of civilization at given intervals of brief duration after which the system is under its own steam, the point of our distinction of system action and free action. Parallel transitions are causally incomprehensible, yet they make thorough sense: the time track must divide to encompass a greater area and diversity of a planetary surface.

The action is via the consciousness of historical agents who become creative in a given context of the transitional phase. This does not preclude the same in other periods, but then the free agent works alone and the result is the frequent barrenness of the intermediate periods. We remain unsure of the degree of real innovation: is the macro effect injecting de facto blueprints into history or is it injecting a kind of creative energy or potential that induces creative categories. It is like the novel (or a play): the genre emerges at one level, as an abstraction or form factor, while its realization is done by a free agent in a creative state, outside the transitions, perhaps. The eonic emergents in a transition are like this, potentials open to free agents as realization.

None of this is fixed determination. Although transitions dominate the phases of creative history, they don't preclude free action doing the same in the intermediate phase. The point is essential. The eonic sequence is not fixed or stable: as man learns the effects of the transitions pass into general history as free action. And many eonic emergents are picked up in fact from spontaneous creative acts in the intermediate phases. A good example might be the case of monotheism. Assuming some history of polytheism from early cultures the idea of the 'one god' emerges as a new idea. It is said to appear first in Abraham, a myth perhaps but one with a point, someone in the diffusion field of Sumer, or Egypt. The idea of the one god emerges in stream history (or consider Egypt) and then like a thunderclap it is picked up from the stream and becomes the amplified emergent in a whole transition constituting monotheism which then passes into general history thence to become a world religion, or several.

This example illustrates the way religions emerge in history and the

case of 'Israel/Judah' is remarkably parallel to the emergence of buddhism in India. How strange, and mysterious. It seems our 'system action' is dialectically inconsistent yet operating beyond a distinction of theism, atheism in generating a kind of cultural bouquet of a given historical stream, on the one hand the Canaanite milieu of 'Israel/Judah' and the long historical stream of what is conventional called 'hinduism', a misleading term. This case shows how the eonic sequence can recycle its outstanding tradition and yet bring something new. The history of the religious core of Indic 'dharma's' is ancient indeed, and it is an important speculation that this history begins in the Neolithic. The Buddhist distillation of this legacy is elegant and yet itself mysterious and the resulting collision of soon to be rival legacies is a tragic outcome.

A similar caution must attend the case of emergent monotheism in the Occident. The legacy of Judeo-Christian traditions suggests something like an unintended set of consequences and a collision or jackknife effect in the outcome of two religions instead of one. The universalism of the later monotheisms is clearly latent in the Old Testament corpus and the writings of the Prophets, but the strangely tribal enclosure of the starting point spells trouble for the future and the unforeseen emergence of antisemitism. We need to stand back here and see the refutation of theistic historicism: a divinity would never generate such a messy outcome as the deliberation of omnipotent will.

But if we caution against theistic historicism we must forgive the Israelites their confusion if the outcome of actual incidents is almost spooky in its uncanny logic. A good example is the way the Judaic transitions at its divide suddenly scramble a geographical basis with its intersection with the drama of empires, in the phase of the Exile and then the clear mixing of two monotheisms, Canaanite and Zoroastrian. This nexus of incidents is stunning in the way it defies the odds of chance and shows an effect at the level of whole nations and empires moved on a chess board, just as the 'jews' themselves exclaimed as they puzzled over their extraordinary fate.

We should remind ourselves of the way the Zoroastrian legacy tends to disappear from western accounts as the long lost factor behind the genesis of a world religion. The elegance of this chessboard sequence in mixing Indo-European and Semitic stream cultures at a time when the two strains were in collision is impossible to reckon with sociological explanations of causal succession. The question of Zoroastrianism is under-studied here, and it is hard to be sure of the exact history. Zoroaster is not a transitional figure, rather an earlier figure not unlike Abraham, if not fictitious, and by

the time of the Axial Age intervals his 'religion' is already a kind of state religion and figment of empire. Zoroastrianism shows clearly the emergence of monotheism from a pantheon of paganism, and its blending with a Semitic version in the artifice of the Exile is eerie in its effect.

The idea of the frontier effect is key here. The Persian milieu seems to bound up in the drama of empires even as the gist of the case seems to be allergic to empires and 'intending' a challenge to the monotonous entrop of civilizations. The Persian world is caught in the politics of empire when the Israelites are underdogs and most ironically deterritorialized in the very transition focused on their 'sacred' territory. The later collision with the Roman Empire is clearly foretold in this collation of historical moments. We must wonder at the true nature of monotheism, and in the view of a later era the tremendous effect of a monotheistic religion in the passing of paganism tends to blind us to the core similarity of the two 'opposites': monotheism is a pantheon of a 'one god', male and by hindsight still too entangled in the very paganism it claims to transcend. If we compare the brilliant abstractions of Taoism, and the almost poetic confection of Greek polytheism we are at a loss momentarily to find any simple synthesis in the dialectical spread of the 'Axial' Age. And yet in a larger perspective the whole bouquet of effects is a prodigious display of cultural 'sampling' that will serve an epoch of developing plural civilizations still sufficiently isolated to exist in their own world with the World. There we see ultimately in montheism a vehicle of cultural integration that will mismaster an immense cultural variety under the aegis of a religious generalization. This outcome will, for better or worse, end in the field of developing empires, that perennial endstate of so many transitional declines.

We should note that with almost no exceptions our macro process never creates empires. It always serves to honor the diversity and autonomy of regions and cultures while in the periods past their divides the onset of empire resumes in the wake of the creative starting point. No more dramatic example can be given than that of the occidental empire sequence. From Athens and the constellation of city Greek city states we see the grim progression of empire beginning so ominously in the wake of the great Greek archaic and classical period, with the onset of the Alexandrian period moving with geographical momentum in the world of the Roman Republic devolving into empire. Whatever our judgment here it remains crucial to see that empire building is never the effect of the creative transitional period. Witness the birth of democracy in the wake of the Greek transition with

its field of city states, republican experiments, and the stunning moment of Athenian flowering as a first democracy (although most things are already preceded by something in the field of Sumer, another such constellation of vigorous city states. And similar effects are visible in China and India.

We should note given these two examples and the rest that the so-called Axial Age, in our redefinition, does not show as such similar outcomes to a unified cause. Instead we see that different worlds emerge in a balance of possibilities. For example, the Greek transition is synchronous with the Israelite, and in turn with the Indic and Chinese, yet the outcomes are unique in each case. It seems that our macro process exploits a locality for its unique contribution. In the Greek case we see all the parts of a balanced cultural totality, while with the Israelite we find a specialized focus and outcome. And a similar judgment might attend the Indic case. In fact the transitional era in this case is not even consistent as it reamps Jainism, confects a Upanishadic corpus then moves in the novel direction of Buddhism. We should note in passing the futile quarrel of 'Out of India' and 'Aryan Invasion' perspectives, the later apparently winning the whole case. But if so then we must grant the great antiquity of so-called Hinduism with, however, its earlier manifestations being non-Sanskritic. The legacy of religion in India is a prodigious mystery and a veritable encyclopedia of different experiments.

In the Occident we witness the spectacle of decline and fall in a gruesome sequence, from the realm of city states to the consolidation into empire and mixmaster diffusion fields. Rome, we should note, begins essentially as a city state of the type of the early Greek field and its great republic is cousin to the vast field of Greek colonies and diasporas. The wearing out of that republic and the onset of empire needs its own concept as some metaphor of entropy stalks explanation with a facile, yet compelling, explanation. There is a strange inevitability to this devolution which nonetheless is a great stage of world integration and diffusion of the results of creative civilization. We confront the almost inexplicable moment of transient creativity at the dawn of the Roman empire as its integration spawns its own literature, to say nothing of the colossal generation of the downfield religion of Christianity as if detined itself to be a 'religious empire' digesting the barbarism of the Roman juggernaut.

We should note the decline in the Occident is extreme and severe in its effect and after a millennium of brilliant civilization, things indeed fall apart. We confront in this context the mystery of slavery and its partial redemption in the context of a Christian 'meta-civilization'. As with empire,

our transitions never as far as we can seed slavery, which is we suspect a later degeneration of the civilizations in the wake of Sumer. Slavery is not a fundamental of civilization but a degeneration and in the Greek transition we see a continuity of increasing slavery challenged on the spot with the overlaid birth of democracy and the entry of the concept nexus of freedom. We can lose the bird's eye view and fail to see the unified action of a whole epoch and the gestation of a new type of culture beyond slavery, if not class.

The question of slavery is tricky because it suddenly reamps in the modern transition and evokes the final dramatics of slavery in the modern transition as it gives birth to abolition. This requires a study of the history of capitalism in our account and also the observation that slavery had long died out in the European sphere, more or less, and the regression if visible only in the dispersion and diffusion field of the modern transitional arena. It must therefore suggest the conclusion that the eonic sequence never generates slavery and moves as able and timely to proceed beyond it. The time span here is gruesome but a reminder that the scale of the eonic sequence is millennia and that a problematical outcome can require arduous waits as system feedback takes effect.

Our model is very powerful but tends to sound like a foreign language. But the overall perception of the eonic effect comes into view and we cut short our discussion which tends to go into a ffigure of dozens of concepts mixing into an increasingly obscurity of the account.

We will move to a conclusion in the next chapter but note the way the above discussion shows how exercising the model tends to turn into a ffigure where abstractions overtake all discussion. And the detail expands rapidly in almost exponetnial fashion, as a book with footnotes leads to dozens of new books each with footnotes, etc...It is important then to reground discussion in the basic perception of the data of the overal eonic effect and to continue with historical studies in the nearly infinite scope of the whole phenomenon shown without succumbing to metaphysics.



CONCLUSION

Our account, while not complete, is sufficient as a first introduction to the eonic effect. The reader might note the way we started simple and ended in an expanding flood of details. We can press the reset button once again, to attempt a conclusion which will itself start to take off into more and more detail. The relevant material has expanded steadily and now suddenly we confront a floodtide of tens of thousands of relevant texts. However the reader has by now a rough picture of the phenomenon indicated. The reader can begin to look at WHEE and especially to start reading works of history cited there.

In essence the eonic effect is fairly simple to a bird's eye view.

The evolution of world civilization shows a hidden macro driver operating in a frequency sequence that shows teleology. This sequence can split into parallel tracks operating synchronously. The reintegration appears in our own time as a first global oikoumene. The result appears to be a planetary or Gaian 'cradle' effect for the final stage of human evolution: The Great Transition. Man must confront the fact that almost all the achievements of higher civilization are system generated, but with the realized outcome due to free agency. It appears that this driver will

disengage at which point man confronts the realization of his freedom at the end stage of his evolution as it becomes history.

Based on past history man is in real trouble once the macro driver disengages, as it did following the 'Axial' interval transitions. The whole system went into decline and never recovered.

We have discussed design issues, and even 'intelligent design' several times. Now armed with the right warnings, we can declare that this process looks superintelligent, with a computational capacity that is stupendous. But we have distinguished life and aliveness, consciousness, and 'will'. None of them will work: this is something that stands beyond 'life' as a cradle, is not likely to be conscious in our 'human' sense. Surprisingly the best match is the 'will', but in the sense of Schopenhauer: the idea of cosmological 'smart' laws that connected with fine tuning physics and some kind of teleological mechanics. And finally the obvious suspicion: a supercomputer of Gaian proportions as a biofield.

Note what seems the stupendous action here: this process can function over tens of millennia, induce creativity in all categories, not least art, scan cultural fields, focus on particular regions, make ethical computations, operate at the level of individuals, and more. We will leave it ambiguous, for this is the point at which a cargo cult emerges. Not on our watch. The rest is silence? This paragraph is the caution to speculative, theological, or even reductionist arguments. Let us note further that in the age of AI the term 'intelligent' starts to take on a mechanical meaning, so much for design theology. But clearly we are missing something. These remarks might stall the impulse toward enthusiastic mysticism of 'conscious' planets, and the creation of a religion. Well we might with what we have so far. After all if the Israelites created a religion of the eonic effect why shouldn't we?

We see the onset of higher civilization in the three or so centuries before 3000 BCE in Sumer and Egypt, but we can see clearly that this is really a tale 'in media res' and that sometime after ca. 12000 BCE homo sapiens begins to discover agriculture in stages, and then in two eras of the Neolithic beginning in the Levant of the Middle East ca. 8000 BCE and then ca. 5500 BCE in northern Iraq and spreading diffusion regions, a phase at the threshold of what then becomes the thunder clap the full flowering of higher civilization. We suspect that all the basic categories seen later emerge in the Neolithic but we do not have a documented transition here, although our model shows us clearly the basics of an account. The diffusion of the Neolithic is probably planetary, entering and covering the field of Africa, Far Asia, Europe, and we suspect the New World. But the hypothesis of

independent discovery of agriculture should be considered. However, our model reminds us that technical advance and the cultural transformation in tandem are two different things. High Neolithic culture is not the same as the diffusion and/or independent discovery of agriculture. But man had tens of millennia to discover agriculture independently (and may well have noticed the 'seed' phenomenon, but within two millennia after ca. 8000 BCE it suddenly becomes a fact almost everywhere. Not a good argument for independent discovery, expect marginally.

We suspect that our story really begins at the dawn of homo sapiens and that our model of fast evolution had to apply in some fashion to the emergence of man. The reason is the interconnection of so many different processes, the 'spandrel' effect: consciousness, mind, language, an ethical and aesthetic spectrum, with intimations of a 'soul'.

The question of 'soul' is so botched by religions that the idea has been almost eliminated in the secular age, but it won't go away. We can easily adopt a minimal version by noting that the term 'soul' really refers to the whole package of evolutionary innovations as 'mind' which is the outer tip of the iceberg of mind/soul or the basic brain apparatus in full, which seems to impinge on spooky physics just at the threshold of space-time. We need not adopt anything as belief here, noting also the Kantian critiques of such notions. We must suspect that if atoms have spooky aspect, so does the 'mind' complex of homo sapiens.

We are missing the factual data for what we can infer as the source of many later things: the period of the epoch after 5500 BCE gave birth we suspect to the complex mystery of Egyptian religion and in India the first versions of the great yogas to come later. Such statements are not 'official' in our model however. But what we see later, a prolonged 'medieval' religious preoccupation and then with the dawn of a new epoch, take off into a higher type of civilization. The term 'secular' doesn't work, but the analogy is notable.

The temple complexes of northern Iraq in this earlier period seem to demonstrate also this religious factor followed by the more 'secular' period of later Sumer and the mysterious Dynastic Egypt which is by no means 'secular' in any sense. We remain ignorant of the mystery of Egyptian religion save that it seems to propose a kind of 'soul' factor that will pass beyond the degeneracy of Egyptian civilization by the time of the Axial Age. The gestations in pre-sand Egypt, so-called, and early India are notable but barely documented. It seems likely that Egyptian elements entered into early Christianity and then were lost. There seems however to be some such

factor in the case of Islam, that has endured.

As civilization progresses the direct line of development can split into parallels, thus we see the great breakthrough of Sumer with a parallel in Dynastic Egypt. Then in the next phase a spectacular parallel emergence across Eurasia, in Greece/Rome to China This greatly increases the range of the advance and bestows immense variety on the gestating Eurasian field in China, India, Persia, 'Israel', Greece/Rome. This is the last chance for diversity in isolation, before the modern global oikoumene requires a single transition zone to bypass collisions of inconsistent effects.

This garland of civilizations is then integrated as we see in our own times in the wake of the modern transition which has created (in part due to the capitalist process) for the first time an integrated global culture which still preserves many elements of diversity, a strangely brilliant outcome of our eonic sequence. But each of our transitional areas have devolved into a phase of imperialism (not the same as 'empire'), which was never necessary.

The modern transition is at first hard to understand but it follows our logic directly as a set of Frontier effects as all the regions at the frontier of the old Roman empire suddenly take off after 1500: Spain, France, England, Holland, Germany, and the ambiguous half and half case: northern Italy. Each of these start as diffusionist tutors of the exterior planet and end in imperialisms of greater or lesser degrees of exploitation. The ability of the Christian tactics of cultural assimilation were actually more successful as less violent but were long forgotten in the modern christianity at the frontlines of the genocide in the New World.

The confusion of capitalism and modernity is a serious one, one that tends to influence the modern left. The modern transition goes through an almost stupendous sequence of innovations long before anyone had heard the term 'capitalism', which however in various forms has been present from the beginning. The periodization can certainly be debated, but the real capitalism in tandem with socialism explode in parallel. That is a strong sign they will end in mutual interaction on the way to a new synthesis: the crisis of climate generated. This is hardly leftist propaganda: the whole human experiment is at risk suddenly from global warming greatly accelerated by capitalist processes.

We will include two selections from WHEE at the end of this chapter, to help get a bird's eye view, first of world history, and next of the modern transition, which has thousands of elements of discussion. If we talked about the non-random we weren't kidding can see the modern periods up

to the divide period is so massively clustered as to be almost an apparition.

Perhaps the most spectacular 'eonic effect' of all is the flowering of 'classical music' in the visible period from the seventeenth in Italy to the end of the nineteenth century but with the climactic moment with uncanny timing almost exactly at the divide straddled by Mozart and then Beethoven ca. 1800, before and after. It is hard to grasp how this could be a derandomized outcome with such spectacular timing. But soon system action passes into free action, and we see the world of Wagner, Verdi, then Puccini, and then nothing. We see the change already in late Beethoven (and then Wagner) who seems to tire of the melodic sweet shop and move into something almost discordant. This is to say nothing about the sudden appearance of tonal music post-Puccini save that it creates a dramatic caesura and moves into something totally different. The reader should brace himself to consider the mysterious derandomizing factor moving even into the realm of music. It is a glimpse of a technology stretching over millennia in a medium still invisible to us and still incomprehensible to us.

This is perhaps a warning at our conclusion that technology as we know it is not sufficient to the creation of civilization. Many intangible factors as we have seen are the deeper reality and so far we don't see them at all, but we can now detect their effects, the eonic effect, singular or plural.

NOTES : LAST AND FIRST MEN

We have completed a basic introduction to the eonic effect and the result is an exciting insight into the evolution of civilizations. Man has passed through ten thousand years of developmental realization, much of it still barely visible and coming into view especially with the invention of writing in Sumer, and Egypt. We suspect the real beginning lies in the 'rapid' emergence of man (the question of homo erectus left open) in what must have been a spectacular phase of hominid emergence followed by a diaspora across the world that set the basic framework of man throughout the Paleolithic.

Although the interpretation of our results is open to challenge our initial goal of pointing to a 'non-random' pattern is complete and that is very hard

to ascribe to chance and can't be glossed away. Since we are immersed in the system the question of objectivity becomes critical. The modern transition is a spectacular symphony of effects and we are likely to be realizing many aspects of it in our own lives. The sudden reappearance of democracy at the divide is no accident, although a long gestation is visible from the period of Thoman Munzer to the English Civil War. As we affirm democracy we are taking up our immersion in the historical eonic effect and we are not metaobservers of what is happening.

We should note the resemblance of the modern transition to the Greek and also the way that two centuries after the Greek divide ca. 600 (in our model) the waning of democracy was underway, soon to disappear. Occidental antiquity never recovered after that point. Suddenly in our own time the enemies of democracy are active. Note that we affirm democracy as eonic observers and in the mainline of the transition.

We should note also however the limits of realized democracies and the critiques applied to them. Figures such as Marx have long since shown the way capitalism tends to take control of democratic states and vitiate the grounds stated in their constitutions. If we study the modern divide we see that capitalism in its modern form (i.e. matched with the industrial revolution) comes into existence in tandem with its opposite, socialism, as this is born just near the divide and after as capitalism takes off. This kind of situation is grist for our eonic model and we can foresee that the socialist 'chase plane' in hot pursuit of the massive capitalist explosion will come home to roost at some point. Capitalists became entranced by the phenomenon of markets (a point discovered in the initial difficulties in replacating their action via planning) but whatever the case it is clear from our eonic history that markets cannot generate civilizations through 'let go', laissez-faire.

But the nature of the interaction and its outcome remain for the future and the failure of the Bolshevik era is a warning but not a safe guide to the future. The issue of climate change and the failure of capitalism to adapt foretell clearly what is to come. The point here is that socialism is simply a variant of democracy that can control capitalist domination with a structure of equality, shared resources and economic rights and civil liberties. Better democratic socialism than the inexorable decline into dictatorship already underway in the exact timing of two centuries from 1800. This outcome is uncanny and unnerving. But let us remember that the eonic sequence is not a deterministic system and if we can see its processes we can intervene. The powers of tyranny are stalking democracy once again. And the confusion over

capitalism could spell the end of any resolution. In the current time frame the basic processes of regulation are actually under attack due to capitalist ideology which begrudges intervention against lead in the water supply. That is close to insanity, Adam Smith saws in the minds of hopeless idiots.

Man seems poised to discover outer space and a larger universe of alien life, if it exists. But until man can come to understanding his own evolution he is better off staying home. There is something far deeper and elusive to discover in planetary science, that of the earth, and that doesn't require rocket ships to distant worlds. No alien world could welcome a species that has wrought such havoc of its home planet.

But understanding doesn't come easily. As we have shown the eonic effect is clear at the start then takes off into a thousand details, and ten times more. We need to hone our capacity to learn, know and remember and beyond that realize the built in capacity for self-consciousness. The verdict then seems to be a Zen slammer, and/or locked in a very large library.

Of all the monster computers animating the plots of the sci-fi writers none can compare with that of the eonic effect. We see basically what is afoot but our minds gyrate into metaphysical hallucination confronting categories with which we are unfamiliar. We have we hope forestalled metaphysics run riot by simply pointing to a 'non-random pattern'. The result is probably far more exciting than the shennanigans of dna permutations in alien blobs.

In a secular era, that outcome of the modern transition, the legacy of religion is severely eroded. Let us note that in each phase of our eonic sequence the religions of a previous cycle fade away, but often slowly. The world of Mesopotamian religion endured well into the new era, and the enigmas of Christianity and Islam were slow to displace the prior phase. In India the onset of Buddhism ended up in a failure to do that at all as the Hindu world's momentum carried over.

In the case of proto-Judaism we see as secular observers an anthropologist's dream come true: a completely documented history of the eonic gestation of a religion and its passage into general history. The Israelites were able to observe their own local 'eonic effect' in the way the sudden Biblical innovations and prophets accelerated and then crystallized near the divide in the interaction with Zoroastrianism. They then noticed the waning of the process after the divide and dubbed it an age of revelation. They were right in a way. But the outcome of the transformation, monotheism, was confused with the action of the transition to produce that result, an eonic effect. The whole history is a cargo cult of the eonic transformation process.

The modern transition is stupendously rich in effects and we will place one selection about its diversity from WHEE at the end here. The complexity of effects is stunning: religion, science, philosophy, art, music, politics, revolution, economics. We could end in our own cargo cult of modernity, but the ironic appearance of postmodern reflections might seem to challenge that. But if our perspective on the modern is correct, modernity can't come to an end for another 2400 hundred years, while the end of the transition if already complete. We don't quite need a postmodern era: we can hardly deal with the one we have, such is its richness. Our complaints focus on the dismal way we seem to vitiate our own modernity. And the frightening prospect of a decline on the order of what we see in the classical Occident. We have a lot of failsafes and historical perspective here. But the acid test is something quite hard to even imagine. We seem to take pride in technology but can we induce the stages of a musical movement in a whole population at the level of the Mozarts?

In fact we have already lost the innovation of the tragic genre. Appearing suddenly in the Greek world (with mysterious antecedents in the transition) of the fifth century it flowered and then was gone, even as the Roman playwrights tried in vain to replicate the effect. The suddenly in the modern transition it reappears in Shakespeare and Racine, again ever so briefly and then is gone, leaving literary critics among others to wonder what exactly is a tragedy, taken as a dramatic artifact?

It may be that man is unable to reach the stars until he can project an eonic sequence on a novel world of hominids. A tough requirement. I once heard a tired student of Kant proclaim that anyone who could figure out his transcendental deduction would leap out of his skin and astral project. Nonsense, of course. But then, perhaps he had a point: if the space-time matrix is a construct of the categories of mind, then the realization itself might point beyond space time. If the noumenal is beyond space time, well, we have a new kind of science fiction and a new kind of rocket ship. Spooky physics indeed.

We should reiterate that we seem to be at the end of the eonic sequence and that we are left to ourselves to create a future as 'free action'. A fitting topic for an existentialist lament. From what we have seen that is a scenario for tragedians. But perhaps the latent effects of eonic history may come into human consciousness in a transition into almost a new species. That or extinction, to make way for the next hominid. All the elements are present, and we can thus hope that convergence of effects can save us, or point to

a path into a right future. At the moment we seem already heading into another long decline. But we can foresee that and take action. A revolutionary transformation then, another innovation of the modern transition.

But at least we are now eonic observers, and we can begin to make sense of world history. From there the steps are still through a haze, but the goal is perhaps starting to become visible.

Is homo sapiens the 'last man', with or without Nietzsche's gloss on the term or the hominid to be the first man?

Our account is one of 'evolution' but the term is so overstressed with wrong information that we are almost reluctant to use it. But we needed the term to derive the 'transition' from the relation of history and evolution. our model also shows the way a form factor operates over a region in a short interval. Punctuated equilibrium is also a good term, but never defined, so we must provide our own meaning.

Two obstacles stand in the way of understanding here: the darwinian paradigm and the religious history in the Old Testament. We have discussed these at length. Our idea of 'evolution' is completely natural and simple but defies the darwinian conception. In fact, it is a 'brown paper bag' that is without meaning until we produce data for it. The darwinian theory is a crackpot thesis that has fallen into the grip of a politics of culture that must have a cover story for anything not yet a basic science, and a means to 'refute' the design arguments of the theologians with a loony theory of random evolution. Few ideologies have done more to perpetuate religion than darwinism.

We have shown the overall format of an evolutionary transition, but by no means have we resolved the mystery of evolution and its reciprocal first born, history. It has a powerful 'form factor' invisible to us that impinges on man's self-consciousness to generate the creative energy for the realization of cultural forms. We can see finally that this process is not 'god in history'.

But its mystery remains as a potent generator so abstract to view that we can barely depict its action, and not as yet its essential core. Modern artificial intelligence has suddenly produced suggestive explanatory frameworks and although not directly applicable they can suggest that the range of naturalistic explanation remains an undiscovered country. But such analogs can also mislead us. We are confronted with a higher type of unknown mechanics that seems to mimic consciousness, is able to scan whole civilizations, inject creative energy leaving art and literature in its

wake, and induce man himself to do this.

We must be wary of the term 'consciousness' and while the myths of science fiction often construct monster machines that are 'conscious' we must rather stand in reserve here.

We confront the legacies of philosophy and the innovations of modern philosophy, such as transcendental idealism or the philosophy of the Will in nature from Schopenhauer. Our system often leaves clues near the divide it seems and we should be curious about these. But Hegel with strange but flawed brilliance seems to have dumbed down the Kantian achievement into 'absolute idealism', castigated by Marx. The idea of the noumenon or 'thing in itself' seems relevant: we note that the core of the eonic effect is not visible to us. The Will in Schopenhauer is not psychological but more like the idea of 'smart laws' of nature, and this is often confused with 'consciousness' but they are different. We have seen enough to keep our eyes peeled to the 'divide' and the appearance of figures like Kant is no accident, make of him what we will. He gives a powerful warning to the rising scientism in the wake of Newton that man has an ethical will, and this is not so far reducible to causal language.

The range of possible explanation to our primitive minds would be a kind of biofield with computational omnipresence able with a sort of territorial scanning to analyze stupendous data sets and generate continuations via the creative action of human free agents. Science fiction? We should be wary of naming the nameless. And we must note make the kind of blunder we see in the Old Testament. But we cannot evade the implication of stunning scales of computation that can survey cultural totalities. That throws the problem into a planetary scale and a kind of Gaian cult of the 'earth computer' able to process civilizations and their species. If that's preposterous we can file it away and expect the next hypothesis arriving soon. The puzzle resolves around a science of planets, a master psychology of man and organisms that yields a science of consciousness, a deeper understanding creativity, art, including music, and the nature of creative action in fields spanning centuries in given geographical regions. Evolution takes place over a region where some form factor becomes active. That is the key to our idea of transitions.

We have proceeded across the span of world history to discover there a mysterious logic or design we called the eonic effect, given its resemblance to a frequency system generating 'eons' or epochs, i.e. fixed wave length: the Sumero-Egyptian era, the Axial Age era and the rise of the modern. A three term system is not enough, and the reader is free to attempt falsification or

from the state becomes the realization of individuality as a social person.

One of the most majestic aspects of the modern transition is the flowering of so-called 'classical' music rising from the transitional interval to a climax at the period of the divide, followed by a brief continuation, then a sudden fall off in the twentieth century. The correlation to the eonic effect is almost uncanny and leaves to wonder at how much we have to learn.

This is also a reminder that our riddle is more than technology which is in take off in its own but still short of the action of the eonic effect as such which shows 'techniques' far beyond our current abilities: e.g. seeding a musical creation sequence over several centuries!

The eonic effect like most theories of evolution induces a strong 'design' sense, which has been very controversial. Scientific biologists have fumbled the ball here and their hysteria and fright over design arguments is unnecessary. As we have seen, contrary to much current thinking, the first casualty of design arguments is the idea of 'god' in history. This is the strange case where something that 'quacks like a duck' is no duck at all. The issue forces us to examine the wider range of philosophical/scientific thought to consider, in one direction of many, the factor of 'will' in nature which confuses us by inducing hallucinations the 'eonic effect' is some personal entity, is alive, or conscious, or all of the above. Although such intuitions are par for the course we hardly dare trust any of them. In Schopenhauer we may in fact be in a near miss in pinning the tail on the donkey:: the factor of 'will in nature' in that philosopher's brilliant account is closer to the idea of a scientific law than to a psychological faculty of 'will' and might well be a factor in the generation of cosmic bodies which clearly are not 'alive' or 'conscious' in the usual sense. And this is therefore not the same as saying something is 'alive' or conscious. The point is that, as speculation, we might consider that will is universal cosmic law in a metaphor of involution and this generates cosmic bodies that have planets that cradle life emerging via evolution. The search for this science is in fact already under way. The question of design is thus either refuted once and for all or else kicked upstairs into some thinking about the 'will' in nature which indeed generates a sense of design.

We are left to wonder if something like the eonic effect is not present in all worlds where hominids emerge from evolutionary sequences, thence to a future still unknown but perhaps beyond 'man' to the degree man is beyond his precursor 'animal' forms.

If the saga of man is thought a 'cosmic' comedy we would do well to

absorb the data on the 'tragic' genre as this appears as an 'eonic emergent' in Greece (and we would conjecture in some form first with the Sumerians) in the realm of Greek drama with its spectacular flowering in the fifth century BCE, notably in Athens. This genre leaves behind the key question, what is a tragedy? The riddle persists to this day and we confront still another portrait of the limits of our understanding, yet left with the record of Shakespeare (and Racine) in the early modern replicating and advancing the genre, followed by its near disappearance in an age of Hollywood and Netflix. The tragic genre is still another of the riddles of eonic effect yet stands transparently as a warning to man to be wary of any cocky assumptions about his 'will'. But by the same token we are left with the riddle of the 'will' in hominids next to that of 'consciousness' itself, in turn next to the life sense of aliveness. Are these not all distinct elements of a real human psychology?

We have found we suspect the key enigma of world history even if we have not as yet solved it. The crisis of the times is already a grim foreboding of the rapid decline of classical antiquity save that we have progressed we must hope beyond the sterile barbarism of the Romans to be able to manage our own rescue operation in a civilization that to slip away from our control.

If our analysis is correct we are probably moving out of the eonic sequence and left to our own devices must rescue ourselves from our own declines. We must document the evolution of civilization to a fine grain, to start, in a question about solving the riddle of the eonic effect thence to the now superhuman task of reproducing its effects and range.

The ideological issue of capitalism and socialism is a fitting idea for a conclusion. In fact, we won't conclude anything save to note our observation that economic and technological sequences are not part of the eonic effect. They have passed long since into human culture as given: that makes sense, man the toolmaker makes tools, but he may or may not know himself, and man the economic agent creates economies but these are secondary processes. The point is that these are continuous processes in history and not part of the eonic effect. The issue of capitalism is however somehow between the two: it emerges in the period of the Industrial revolution in its modern form, although in many ways it has always existed.

The point to consider here is that capitalism is overplayed as a phenomenon of markets subject to mystification and propaganda. We should simply note that the phenomenon of markets is very limited and at no point was the source of complex civilizations. We cannot therefore assume that capitalism can generate the future of civilization. The point should be obvious from

our account. It is therefore not surprising that many attempt to ponder something beyond the capitalist legacy. A simple observation with a simple yet very significant conclusion. The path to terraforming is not confidently assumed by an alienation of the will to a market mechanism now despoiling the Amazon.

This leaves us with the mysteries of the modern transition and the way it spawned revolution as a path to foundational government. Here the legacy of democracy we saw as fundamental yet fragile. The obvious conclusion is that an emergent process is still in the process of discovery and foundation. In an era mesmerized by capitalism we have yet to ask even elementary questions about the nature of social organization and power and find ourselves with an overheating economic field still in need of basic definitions for a real state. The endgame here is likely that modern invention, the 'revolution'. But such as elusive as the eonic effect itself.

It is an old saw of the historian, man makes himself. Looking at the eonic effect we are left to wonder if instead man is a passive being in an historical generator. In fact we saw from the beginning that everything in the end depended on man's free agency. That is the verdict of the past, and now of the future. But the spectacle of planetary burnout, economic endgame, and political villainy leaves at first little prospect. But if we consider man beyond passive toss and turn in economic alienation we can hope that the riddle of civilization might become clear to us and point to the emergence of real man in the Great Transition, still incomplete, and stalled in a primitive techno-economic age of inexorable decline. That is the case only if we are passive objects in history. To become active agents in history is the arcanum of the first men contemplating the fate, perhaps species extinction of the last men.

