Descent of Man Revisited

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World History: The Hidden Clue To Human Evolution

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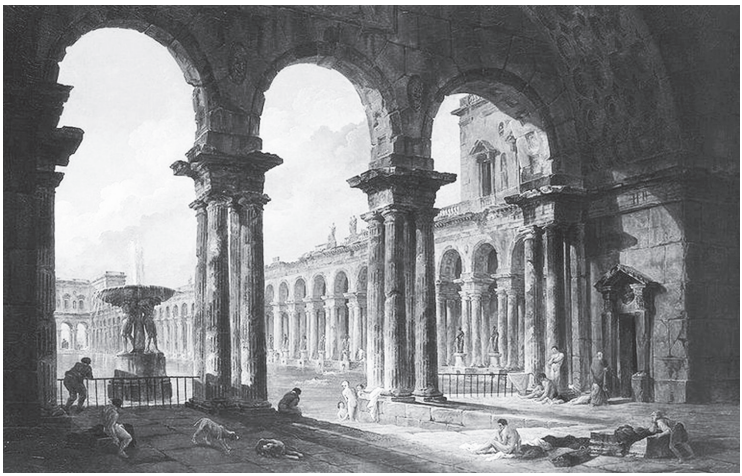

PREFACE

It is remarkable that in an age of advanced technology, science still has no coherent account of human emergence. The riddle has not been solved by modern Darwinian theory. It is not a simple question! The purpose of this book is to demonstrate the discovery of a new perspective on evolution, and to also serve as a reminder of our ignorance near the presumptions of Darwinists that the basic problems have been solved. The alternative is a dangerous oversimplification used to enforce conformity to a narrow, and quite false, definition of science. The result is to cripple human potential. We can offer one hint, via a look at world history: the realization a clue is right under our noses, if we know where to look. The fuzzy perception of evolution in deep time is clear enough. But the attempts to produce a theory of that set of processes is a task for the future. The problem lies with insufficient observation. Here historical chronicles offer a hint.

This is the first edition of *Descent of Man Revisited*, (with a website at *descentofmanrevisited.com*), and was intended as an introductory companion to *World History and The Eonic Effect* (online and in its Fourth Edition, with a projected fifth edition of the original under a new title and imprint). But it has become a new work, with a new terminology and an extended perspective beyond that of the previous book. This is the first volume in a

series, and began as a 'net book' at the *history-and-evolution.com* website, but has remorphed into a completely new form. It also echoes another 'net book' there, *Last and First Men,* in a discussion evoking the classic by Olaf Stapleton, with a sort of pun on Nietzsche's dark semantics of this phrase. This book will touch on these issues, as it examines the question of evolution reaching our present, thence future. How can we cure the bad habit of bringing 'evolution' into our present as Social Darwinism? Answer, by bringing evolution into our present, but doing it right! A close look at world history suggests a way to do this. We should consider that evolution is hyper-complex, that our primitive theories will always be wrong for some time to come. We need a theory failsafe to stop the propaganda of Social Darwinist lunatics in their tracks.

It is normal in all fields of science save biology and Darwinism for given paradigms to be challenged, extended or replaced. The tenacity of the Darwin brand suggests an ideology in play. Since critiques of Darwinism are marginalized, the demand for outsiders to take up the task generates its own supply, and the new world of e-books and POD self-publishing is, in any case, set to challenge the constricted realm of Big Publishers. It is no accident the Darwin paradigm is weakening under these conditions. The critique of Darwinism is not hard, but is virtually impossible in the context of the Darwin Propaganda Machine, and is probably better done by a non-professional, if he is careful to evade the pitfalls.

The design debate has come to haunt Darwinian ideology. The whole question of design needs a new perspective. The attempt to use the theory of natural selection to coopt design arguments has backfired, so we are in the crossfire, and will clearly point to areas where 'design' is indicated. This makes no claims about 'intelligent design' or 'theistic designers'. The so-called macro effect in world history will generate an overwhelming sense of 'design', stunning in its details, but we must remain cautiously neutral with a default 'systems analysis' that looks at a particular type of model. But we must acknowledge the almost uncanny precision and detail of the 'design', which corresponds to no known mechanical system. There is a stage beyond the genetic, or even the epigenetic that corresponds to something like 'bio-fields', global systems able to assess and pinpoint geographical regions, induce high-level cultural change, and operate over tens of thousands of years. Small wonder that design issues won't go away. The phenomenon of the Axial Age, especially, precipitates a crisis in our views of what mechanical systems really are, the more so since the Old Testament gives a theistic rendering

The design debate, design vs. natural selection, is destined to be deadlocked. The strategy of reductionist scientism has failed here. But so has creationism trying to use design arguments as proofs of the existence of god. 'God' cannot 'exist' inside space-time, and is 'outside' of 'existence' in a different mode, being, beyond knowledge. This makes the whole debate nonsensical. And we cannot speak of 'intelligent' design in predicates for 'god'. Monotheists have lost the distinction between 'supernatural' and the 'spiritual' inside the realm of the material/natural, but it is present in the Old Testament as '*elohim*'. That then would be an empirical issue, a 'phenomenology' of 'spirits', the 'heavenly host' of the Christians, perhaps. Outlandish, but logical. In a sense the design argument should be a natural sideline to scientific research, since teleological machines are a staple of biochemistry, now confronting the epigenome. But this has nothing to do with theism, necessarily. The 'natural teleology' of Kant suggests that 'design' begins as a naturalistic phenomenon, whatever the mysteries of unknowable divinity. And there is a third possibility, as noted: a natural demiurge (plural?) acting within space-time, science fiction perhaps, but logical. The materiality of the 'spiritual' resolves the questions of material soul, short of the supernatural, which is beyond knowledge. The idea of a material soul (as opposed to an enlightened being beyond soul) is unknown to Christians, but is known in the Sufistic and Indic traditions. The problem with design arguments is, ironically, the way in which religious mythology has distorted the use of the term 'god', leaving it dangerously ambiguous, and design arguments fairy tales. The ancient prophets warned severely of the use of such terms of pop theism, reserving reference to a 'pointing to', as in the abstract referent IHVH. The strange record left by the Old Testament has actually lost the thread of its deep discovery of historical 'evolution', which can indeed impinge on design questions. But this record conceals a revolutionary discovery, which the creators of Israelitism did not yet understand.

of one part of that period. A very confusing situation. We will, however, discipline ourselves to our genre of descriptive systems analysis to try to 'see' an evolutionary dynamic in motion. The debates of theists and the so-called 'New Atheists' tends to be counterproductive: we can invite both parties to use our neutral account to come to a better understanding of evolution in the current confused debates. Thus the designist is challenged by a systems account, the reductionist scientist by a provocative design argument. The two sides need to find a common ground, as strange as that might seem.

> The problem with design vs mechanism debates can be seen by considering some sci-fi: the case of a super-advanced race of cloaked technologists constructing planet-level 'evolutionary machines', technically 'engines', and/or creating the appearance of fake designers as cover stories. These machines would fake-pass a Turing test and seem alive. This example shows why the design issue may be insoluble, as yet. This may seem outlandish, but the point is that the 'designer' in the Old Testament looks 'designed'.

The prophets of Israel were onto something, as with our macro-effect, but our neutral interpretation is far more exciting than the primitive concoction that has muddled later monotheism. The Old Testament lost the thread of its own 'miracle', and the real history of Israel/Persia up to the Exile is simply beyond the reckoning of normal causal sociology. Better than science fiction, for it has outstripped theology!

It should be noted that the current Intelligent Design movement is a conservative interest group often plying anti-modernist reaction, and the rest of it. It should therefore also be noted that Marx has recently been criticized for a design argument! It should be more generally the task of secularists to take up design arguments and discipline them, and to take up the perception that modernity is simply another in the series of transitions in the unfolding design of civilization. It is important to see, contra religious reactionaries, that modernity, secularism, indeed democratic revolution, and the world historical tilt toward the left in the wake of the Reformation are part of the 'design' of greater world history.

The public needs a self-defense against the Social Darwinism in disguise legitimized by Darwinism. The recent #OccupyWallStreet movement has energized the awareness of inequality in the current economic system.

> The book contains a clear and useful default naturalistic fuzzy 'evolution' framework that can be used by leftist groups as a self-defense against Social Darwinist ideology not crippled by the usual kowtowing to the Darwin paradigm.

The hidden place of Social Darwinism in the framework of biological theory, Darwinism, deserves a critique from the left. The concealed abuse of biological theory as economic ideology goes unchallenged by mainstream science. I hope that the framework of 'evolution in history' can help to see beyond the Darwinist regime imposed on political discourse. Social activists need a perspective on evolution that is not burdened with the theory of natural selection, and this without the metaphysical debate over design or other religious issues. The way to do that is to see that our evolutionary past stretches into our present, and that evidence of macroevolution must show its hand in history itself.

Although the material here is the same as that treated in *World History and The Eonic Effect*, the term 'eonic effect' has not been used, and we refer only to the data in question as the 'the evidence of macroevolution in world history', the 'macro effect'. The issue of macroevolution and microevolution has been with us from the beginning, as in the version of Lamarck. It is completely sensible to think, as he did, that there are two levels to evolution, his drive toward complexity, and what Darwinists make the sole process, an interaction of emerging forms with their environment.

> This perspective enforces an interesting exercise: a discussion of evolution that makes no reference to genetics. The result curiously resembles distinctions of high-level software vs machine code languages. Since we do not know this higher 'language' we must start sifting the data with a frequency hypothesis to see if clusters of data echo these 'voices of silence'.

In the Introduction we set the basic goal, and list a series of requirements that a theory of evolution must satisfy. In the second chapter, evoking the title of a classic by Greene, we explore the problems of 'science, ideology, and world view', in relation to Darwinism, and this in the context of ideologies of Social Darwinism. And we begin to consider the context of history. In Chapter Three we present our argument, and provide an outline of world history, and the implications for issues of the 'random' and 'non-random' found there. The evidence of rapid evolutionary transformation in world history is the stunning confirmation of this suspicion. In Chapter Four we look at the issues of Darwinism, and natural selection, and the real significance of 'punctuated equilibrium'. The problem with Darwinism is seen in the context of 'scientism' and the positivistic closure of science in the nineteenth century. Then in Chapter Five we produce another short world history, again in outline, showing the clear sequential logic visible since the invention of writing. The demonstration is left fuzzy, yet is decisive, a de

facto falsification of Darwinism.

> The reader can read the first three chapters, which present the whole argument, and the conclusion, and use Chapters Four and Five as reference. The text is designed to be somewhat repetitive, and the reader can also jump between the mulitple textbox summaries.

The issues of Darwinism are also the focus of the blog, *Darwiniana*, by nemo/nemini and here the author should acknowledge and thank the many (almost always anonymous) commentators there (and online readers of *World History And The Eonic Effect*) for feedback, and advice, that has helped greatly in the exposition of the material here. The original book on the eonic effect was judged as too difficult. In fact, the treatment is robust, but requires perhaps a course of reading and would make a good outline for the study of world history. Nonetheless, a simpler approach might be useful. The 'macro' effect in history is elusive, and requires some new habits of thought. It also requires some new methods of exposition, for something that is in between an exposition of systems modeling, and a discussion of aesthetics! We set about a simple task here: demonstrate the non-random in world history.

The reader is left with an extraordinary suggestion: world history shows the clue to evolution, and the process is 'meta-genetic', with a teleological aspect, and two levels of action. Many will persist in thinking that evolution cannot be found in history, and that the 'real thing' is the account of random evolution and its genetics in deep time. But the case that this is 'evolution' becomes transparent, leaving the suggestion we have found an episode of the real process. It is hard to avoid this conclusion, since the discovery of the non-random, supposed to not exist, must caution our Darwinian assumptions and legacy. It was the philosopher Kant who warned that biology was not physics, and that it seemed wrong to hope that 'one day there would arise a second Newton who would make intelligible the production of a single blade of grass...' The science of biology is a vigorous research program, but it suddenly goes dead on the subject of evolution. Our historical analysis suggests why. We make no claims to a final theory, but we can put the issue into its correct context of macroevolution, and directionality, suggesting a teleogical wild card missing from sciences based on the triumphs of physics.

INTRODUCTION

> I believe that one day the Darwinian myth will be ranked the greatest deceit in the history of science. When this happens many people will pose the question: How did this ever happen?"
> Soren Lovtrup
> *Darwinism: Refutation of a Myth*, p. 422

The question of human origins is a great mystery, and the dogmatic application of Darwinian theory to its study has produced a great confusion. The reductionist character of Darwinism has been made to work by postulating a creature of fiction, the survivor of the 'survival of the fittest' scenario, a kind of Social Darwinist *untermench*, also an expert, apparently, at economics of the capitalist brand. This creature has been stripped of his humanity and made into a mechanical object with no soul, free will, ethical agency, or much in the way of consciousness. Especially problematic are tendencies toward altruism. In a market economy, greed is good. A theory to make this plausible is an object of supply and demand. As the saying goes, it's the economy, stupid.

But there is a another agenda here: the attempt to make Darwinian theory the foundation for atheist humanism, and the excellent legitimation mystique offered by selectionist theory. But evolutionism is not finally a

tie-breaker on the 'notorious' god-question, a degenerate descendant of the original IHVH question, as if theistic monotheism were a final phase of polytheism. If atheism and theism will not define 'god', debate will be intractable! And reflect classic antinomies. Atheist humanism in the legacy of Feuerbach has become a cult of scientism. In any case, we cannot use theology to settle questions of evolution, and vice versa. The collision of so-called 'New Atheists' and Intelligent Design advocates is a distraction that must be set aside to focus on the question of evolution in a fresh way.[1]

The confusions of the Darwin debate have gone on too long. In no other field has dogmatism in the service of an ideological agenda taken hold to such a degree. Many of the problems with the theory of Darwinism were understood better by the first generation of thinkers surrounding Darwin, among them its first champion, T. H. Huxley, whose prior acquaintance with the work of a generation of developmental embryologists led him to warn Darwin of his over-reliance on selectionist thinking. Significantly this did not alter his sense of the revolutionary character of the discovery of the fact of evolution and its relation to the awesome spectacle of deep time. The history of the subject has confused two questions, that of the chronicle of evolution, and the far more elusive question of the theory to explain that data. The study of history can remind us that we must first establish the chronicle of an historical sequence in real time, whether or not any theory is forthcoming given the complexity of our findings.

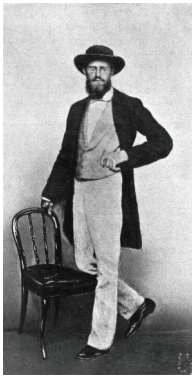

Fig. 1.1. Alfred Wallace Singapore, 1862

The Darwin Conspiracy The evidence is cogent that Darwin plagiarized the key ideas of his theory from Wallace. Darwin's near creationism and retarded understanding of evolutionary dynamics until as late as 1855 when he began to receive a series of letters from Wallace is misunderstood by many students who see Darwin's early use of the term 'natural selection'–with a different meaning.[2]

That Wallace should have changed his views, and become less sure of the

1 Peter Bowler, *Monkey Trials and Gorilla Sermons: Evolution and Christianity from Darwin to Intelligent Design* (Cambridge: Harvard University Press, 2007). Henri de Lubac, *The Drama of Atheist Humanism* (San Francisco: Ignatius Press, 1995).

2 On the question of the relationship of Darwin's work to that of Wallace, and the suspicion of plagiarism, cf. Roy Davies' *The Darwin Conspiracy: Origins of a Scientific Crime* (London: Golden Square Books, 2008).

place of natural selection in the evolution of man, is therefore important, since if Darwin could not alone produce a theory it is hard to see how he could alone have gone beyond one. It is thus unclear whether we should be talking about Darwinism or Wallacism.

This ambiguity, where the facts are clearly being suppressed, next to Soren Lovtrup's charge in our epigram, leaves us with the unnerving sense the Darwin 'conspiracy' could be far larger, if more diffuse, than we suspect, and in the history of the subject the project of eugenic genocide has already once occurred, therefore, fear is never ungrounded. Is the world of Big Science 'Machiavellian' in a political, not scientific, standard of truth, waiting the moment for a project of the 'new man'? Once you have made Darwinism dominant the next steps are logically inevitable. As with the too often whitewashed views of Nietzsche, such a project, based on Darwinian assumptions and the 'superman comics' mentality, is totally misguided, and the danger to the human gene pool remains. That is the danger in Darwinian assumptions: people believe them, and true believers become Social Darwinists on principle.[3]

Fig. 1.2 Watteau, *Le Singe Sculpteur*: "Man make himself, the ape makes the (wo) man"

We are left with the lingering feeling Darwinists cling to an oversimplification as a crutch near the limits of understanding. The facile over-explanatory character of the theory should make us suspicious. This situation also forces us to ask if the promotion of Darwinism is really a deception or rather the self-delusion of ideological fixation.

In fact, the question of evolution is prone to mythological thinking. The reason is that the limits of observation leave the contours of evolution elusive. The mythology of natural selection has gone on so long it must come as a shock to suspect that we don't know what we are dealing with. Is there a way out of this dilemma? We must begin by asking who man is, and what we mean by a theory of his evolution. Then we must ask if there are any really solid observations of that evolution, at close range. This approach

3 John Mearsheimer, *Why Leaders Lie: The Truth About Lying in International Politics* (New York: Oxford University Press, 2011). Abir Taha, *Nietzsche, Prophet of Nazism: The Cult of the Superman (*Bloomington, In: Author House, 2005). John Richardson, *Nietzsche's New Darwinism* (New York: Oxford University Press, 2004).

comes with a surprise.

Another intractable difficulty, beside the problem of actually observing evolution in action, can be seen in the abdication by reductionist science of the fact/value dichotomy. If the distinction of facts and values is absent in purely mechanical explanations of evolutionary processes, the result, in search of value-free science, might be misleading. We are thus left with the suspicion the act of doing science is falsifying the reality of evolution. It is merely an assumption that evolutionary theory must conform to a physics standard. If the evolutionary process deals in values, perhaps even with an aesthetic, Darwinism is in trouble! A mysterious triad of mechanics, ethics, and aesthetics haunts the philosophy of Kant. Is that a hint?

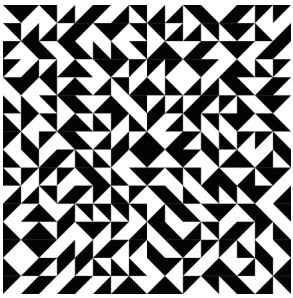

Fig. 1.3 Random Truchet tiling

We must proceed by indirection, mentioning the forbidden topic of teleology. Will we be forced to discuss it? Teleology was rightly banished at the dawn of modern physics by the 'New Scientists', but the verdict, it seems, was never final, and here again the philosopher Kant, at the dawn of modern biology, noted both the need for a 'natural teleology', as he spawned a cadre of 'New Biologists', the teleomechanists, whose legacy threatens biological science with a sudden reversal of fortune, so to speak, demanding a new foundation for science altogether. This question is an invitation to all sorts of confusions, from Aristotle to theology, but the real issue is whether we can detect an empirical phenomenon symptomatic of teleology. How would it appear to us? We will thus proceed by indirection toward evidence of 'directionality'. This approach is also a good foil to fend off theologians attempting to hijack the issue with the now revived 'design arguments'. We have designs of our own. To hint at the stunning answer suggested by history: the phenomenon of teleology (with a noumenal aspect) would appear as an oscillation in time. We will be forced to discuss it.

But science has decreed its own banishment to a one-dimensional brand of answers. Darwinism's account of ethics is almost baffling in its oversimplifications. And this is at bottom the reason for Social Darwinist ideologies passed off as theories. Perhaps there is no science of evolution in the usual sense. Perhaps our science worship has led us astray. We need only conclude that our sciences remain primitive, and that evolution eludes such a science. Whatever the case, the study of history can help.

Problems with random evolution, and How would we detect teleology?

The perspective of Darwinism is that of random evolution, and this framework has always concealed a host of problems, however attractive the concept is for proponents of reductionist science. Random evolution

1. must skirt severe improbability, as the scientist Fred Hoyle warned,

2. overcome without a template, system memory, or feedback control the inherent tendency to peter out, deviate, or retrogress,

3. operate in partial steps to construct complex objects at random, with no direct connections between steps, in constructs with tens of thousands of parts,

4. effect infinitesimal, geographically isolated innovations into species level change over large regions or whole species.

This is but a short list. It should remind us that Darwinism is implausible from the start, and yet seems to be scientific because the fantasy of natural selection is never tested against reality and thus avoids the really difficult implications in our list of problems. At the same time, our four problems point to something that must be complex beyond our understanding. It is not surprising biologists cling to an oversimplification like natural selection that makes these difficulties vanish.

Detecting Teleology It is not hard to deduce what evolution should look like from these difficulties, which must leave their signature in the data of any given chronicle. The problem is that these issues imply something controversial: teleological sequences. What form would teleology take, and how would we recognize it?

There are very few solutions to this set of contradictions: one is that of an explicit evolutionary driver, a sort of macro process that operates *intermittently* over the long range, and acts on wholes via transitional areas of reasonable size. That's a tall order. But sure enough world history will give us an example.

In the study of history these issues are well-known, and prevent the creation of an historical science in the conventional sense. There the question of free agency is the stumbling block to a causal science. The hint that this situation must also inform the study of evolution is provided by looking at the evidence for a 'macro' factor in world history, which turns on these questions of free agency. If free agency is real, then what caused it? How did it evolve?

That history is thus subject to some kind of dynamic, yet requires understanding in terms of free agents, is the paradoxical, one should say 'Kantian', turn of the screw that might lead to the resolution of the issues of both history, and what leads up to it, the evolutionary. That the two are closely linked is the solution to the puzzle of human emergence. And that puzzle requires asking if the idea of the 'evolution of freedom' has any meaning. In fact, the relationship of evolution in the large to a kind of 'self-evolution' in the small, 'man makes himself' (or perhaps, 'the ape makes the man').[4]

Remarkably this issue turns out to be related to another issue, that of random evolution. The promotion of Darwinism is concentrated around claims for random evolution. But the question of non-random evolution won't go away. Not only does history stubbornly exhibit values in 'evolution', it also demonstrates non-randomness of a remarkable kind. This study performs a very simple task: that of demonstrating a 'non-random pattern' in the chronicle of history since the invention of writing. And this evidence of the non-random is the gateway to a deeper discovery. The term 'non-random' is an abstraction, but its gist is something we reckon with all the time.

Fig. 1.4 Homo erectus? A play on the 'random background', the rustling in the bushes

What is the non-random? The non-random, or a non-random pattern, is something we understand intuitively: when something attracts our attention and we turn to look, when there is some event visible against a backdrop, a sudden noise, a rustling in the bushes, and so on. As we examine world history this simple situation becomes more complex, but only because we must study history books in order to 'see'. As our data increases, one particular 'rustling in the bushes', e.g. the spectacular phenomenon of the Axial Age, alerts us to something mysterious at work.

4 This refers to Gordon Childs famous phrase, and book, *Man Makes Himself*. But does he? We need a new concept that balances the 'evolution makes man' with 'man makes history' in a dialectical hybrid or synthesis.

Defining 'Evolution'

The use of the term 'evolution' in world history will be a stumbling block for some, even as they accept its 'Social Darwinist' usage in that context. We will settle the question, 'by definition': the word comes from '*evolvere*', 'rolling out', and is appropriate for evidence of developmental sequences, whether in deep time, or in history. This definition is not inherently genetic, and the study of history will make clear that 'evolution' operates at a higher level than the genomic. As we move to examine world history, we discover that the non-random patterns it exhibits, as with the Axial Age, are best described as 'evolution', by definition. This usage then provokes a suspicion that what we find in history is also the case for the earlier 'history', i.e. evolutionary emergence, of man as *homo sapiens*. And the evidence for a 'great explosion' at the dawn of human speciation is tantalizing. We need not jump to any conclusion, but we must demand that Darwinian assumptions be withdrawn: they are speculative, and less plausible.

Our usage will also seem to impinge on 'design' arguments, and will collide with theistic interpretations of the Old Testament. This usage is completely open-ended (in the endnotes we use the metaphor of evolution as a 'brown paper bag', or conceptual container). And anyone who can prove a design argument can reinterpret our data! Ay, there's the rub.

This approach can help to decondition the 'upside down' Darwinian usage, which is actually NOT about evolution. We will introduce the distinction of macroevolution (with a developmental sequence and driver) from microevolution (which is what Darwinism is about). This usage is, ironically, close to that of the first and most original evolutionist, Lamarck.

Our usage will be 'Janus-faced', with 'history emerging from evolution' (like a student graduating from school) as the 'evolution of freedom' creates a free agent who steps beyond evolutionary passivity into historical free agency. Thus 'evolution' and 'history' overlap. Consider the visual metaphor in the endnotes.

The irony of debates over Darwinism is that it might be history that can explain something about that evolution. As our knowledge of world history expands we are confronted by a spectacle of 'evolutionary something' in the emergence of civilization, and this forces the question, what do we actually mean by the term 'evolution'? We might thus 'revisit' the descent of man in the study of world history. This project was foreseen implicitly in the discovery of the Axial Age, or more accurately, the discovery of the data that Karl Jaspers dubbed the 'Axial Age'. This data shows clearly something that is both surprising and almost revolutionary: we catch a glimpse of a global developmental process at work, and its level of action far transcends the genetic fundamentals we had assumed drove evolution.

Even as we move beyond genetics toward dynamical perspectives, we should keep anchored in the biochemistry of evolution, a hiding place for many exotic processes. We might thus include a fifth problem, not related necessarily to randomness issues, but a reminder that evolutionary thinking is often 'clueless':

> 5. Here's the problem, the lonely-hearts hominid mutant is without a mate. How can mutations in an organism, male or female, pass into the general population if they don't occur in both sexes? How is it that Darwinists never mention such problems? In fact, this question has a different and intriguing kind of (potential) answer in terms of recessive genes. This example is a reminder that many of the problems with Darwinism are never mentioned until an inkling of their solution arrives. A host of hidden problems like this plagues Darwinian myth-making.[5]

Such issues are a reminder that we project 'evolution' as an abstraction onto the past, and the results forget the complexities so invoked. Biologists avoid the hard questions of real evolution by chanting the mantra of natural selection, to focus on single element aspects (like the gene) to keep their life simple. To reiterate what we noted in the Preface:

> Despite genetic issues, the study of historical evolution can be useful because it forces us to consider 'evolution' without the crutch of genetics, for we suspect that genetics is a lower level issue. This is not easy, and resembles attempts to visualize higher dimensions.

The question of what constitutes evolution has been thoroughly confused by the Darwinian monism of natural selection, and the realization that a

5 Jeffrey Schwartz, *Sudden Origins: Fossil Genes, and the Emergence of Species* (New York: John Wiley, 1999), p. 356, suggests the way recessive traits as innovations can spread through a population prior to manifestation.

real process of evolution is something larger than that 'microevolutionary' secondary process has always been an underground view since the first real theorist, Lamarck. The discussion can be reduced to a simple question: demonstrate a non-random pattern in world history.

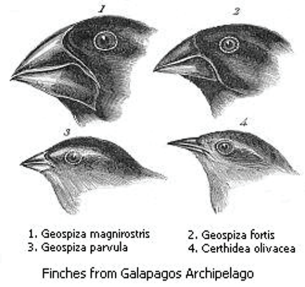

Fig. 1.5 Darwin's finches, micro or macro?

Besides offering a demonstration of 'evolution' in history, by constructing a set of outlines, we can also provide the tools to make use of the many world histories already in existence. These histories always show the result we have indicated, if the reader can penetrate the accounts to see what they plainly show. World history since the invention of writing is a unique chronicle, and it has offered a surprise in demonstrating the existence of something that is not supposed to exist. And this situation is unsettling since it warns us we may have missed the real meaning of evolution altogether. Many will protest this new usage for the term 'evolution'. That is fine. But the term is a 'brown paper bag' used for data showing developmental coherence. If history shows just that, with no connection to genetics, then our new usage is appropriate. And we will close in on the suspicion that it is more than just appropriate: it suggests a clue to the 'descent of man'.

The question of evolution in history is at first confusing. And we are left with the suggestion that man's evolution may yet be incomplete, witness the resumed march of world history, as greater nature leads man to the threshold of his real humanity in the final stages of the speciation of *homo sapiens*.

These are some relatively hard requirements that must be reflected in the data, somehow. And we will see that these questions are directly related to the conundra we have already discussed in our list of 'nasties', paradoxes that shred Darwinian pretenses on the spot. Before we begin: we can unwittingly derive our empirical result from a theoretical 'guess'.

> Like Babe Ruth pointing to the bleachers, we can attempt to solve the problem of evolution by asking a set of questions about its relation to history (that is, since we are less cocky than Babe, discover how nature solves the problem). Are evolution and history separated? If not, do they overlap? If they overlap how do they interact? Is this interaction visible in history? Further, if man is a free agent (with something like 'free will' or choice) then that property must have evolved. Can we find the evidence of this?

We should also be on the trail of the Darwin critics, long lost thinkers condemned to the shadows. We can begin with the famous muffled dissent of T. H. Huxley, who saw through Darwinism on the eve of Darwin's book, and saw the gist of the need for a macro account, and of Alfred Wallace, whose 'smarts' rescued Darwin's career from Platonic ideas, and whose later rejection of his own theory led him to demand a new account of man. And finally we should note, as Samuel Butler noted, the original thinking of Lamarck whose insights, wrested from their own muddle, provide the real foundation for evolutionism. Sometimes first impressions count, and his sense of the obvious need for a two-level theory of evolution was lost in the crystallization of scientism that arrived in the generation of Darwin.

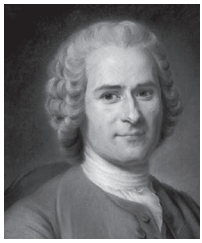

Fig. 1.6 Jean-Jacques Rousseau

Notes

While unusual as a candidate for evolutionary precursor, the philosopher Rousseau must head the list, his often 'discredited' speculations about the Noble Savage being a prime 'Just So Story' bordering on theory, with his protest that the 'descent of man' revisited by him found 'man everywhere in chains'.

Fig. 1.7 The Noble Savage
A 19th century idealization

Fig 1.8 Drawing from *Avatar* motif

Rousseau is a notable case of the savage in question, perhaps we so should nominate him. Perhaps the nineteenth century idealization should yield to that 'hi-tech primitive', *homme moyen sauvage*, the homo *nasa-ensis*. But then again, we have seen the coming of 'Evolution The Movie', *Avatar*, prophesy the 'technology of soul', coming full circle past the detour of scientism to the avatars of astral projection, the last of the Mohicans redux.

In the context of the Noble Savage, Olaf Stapleton's classic, *Last and First Men: A Story of the Near and Far Future*, should be

mentioned, as a futuristic science fiction work written in 1930. This book projects a future set of speciations for man, and demands consideration, and perhaps a critique: Nietzsche missed the point, with his notion of the Last Man. Man will not likely spend another million years as eighteen separate species. The book is useful as a backdrop here with its cycles of progress and decline, and overall progression.

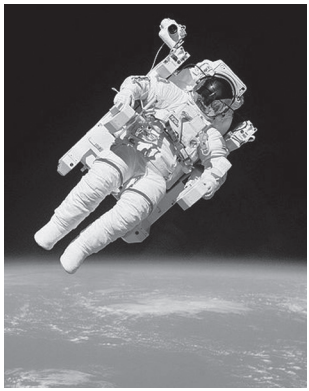

Fig. 1.9 Homo nasa-ensis

On the question of science fiction, there is a scientific 'unconscious' expressing evolutionary myths and archetypes that seem to influence beyond scientism. We should ask then if Darwinists have not succumbed to the Dark Side of the 'Force'.

We should reference Jared Diamond's *The Third Chimpanzee*, since we are counting hominids on our fingers, with its discussion of the Great Leap Forward.[6]

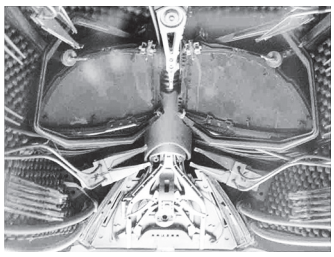

Fig. 1.10 Darth Vadar mask, from the inside

A good exercise is to make a hobby of collecting world histories, and seeing what makes them tick.[7]

Our basic account of 'evolution' has been turned into a simple task: examining the Table of Contents of various world histories, which simply don't follow random patterning, and, more, showing an invariant structure of mysterious 'macro' action hiding behind the scenes (since the invention

6 Jared Diamond, *The Third Chimpanzee: The Evolution and Future of the Human Animal* (New Yok: Harper, 1992).

7 A short list: William MacNeill, *The Rise of the West* (Chicago: University of Chicago Press, 1963), J. M. Roberts, *The New Penguin History of the World* (New York: Penguin, 2007), Cynthia Stokes Brown, *Big History: From the Big Bang to the Present* (New York: The New Press, 2007), David Christian, *Maps of Time: An Introduction to Big History* (Berkeley: University of California Press, 2003), Chris Harman, *A People's History of the World* (London: Verso, 2008), Michael Cook, *A Brief History of the Human Race* (New York: Norton, 2003), Cyril Aydon, *A Brief History of Mankind: 150,000 of Human History* (Philadelphia: Running Press, 2003), Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: Norton, 1997), E. H. Gombrich, *A Little History of the World* (New Haven: Yale University Press, 2008), Peter N. Stearns, *World History: The Basics* (New York: Routledge, 2010).

of writing). They are always built around a set of three transitions. Consider a world history taken at random, William MacNeill's Table of Contents in his *The Rise of the West*, the riddle shown in plain sight:

Part I: The Era of Middle Eastern Dominance to 500 B.C.

Part II: Eurasian Cultural Balance, 500 B.C. to 1500 A.D.

Part III: The Era of Western Dominance, 1500 A.D. to the present

The enigma is right in front of us, asking for a solution, if we can penetrate this murky book logic, repeated over and over again.

Here is another passage from the Introduction to Soren Lovtrup's (hard to find) book:

> This theory [of natural selection] was professed *ex cathedra* when I went to school, and for many years I accepted it without contemplation or dissent. Now and then I read literature dealing with evolution, but being an embryologist I did not think that evolution was of direct concern to me. I do not know when I first began to suspect that there is something questionable in the state of current evolutionary thought, but I know who aroused my suspicions – Karl Ernst von Baer and Richard B. Goldschmidt, and it is because I am an embryologist that their teachings had this effect. These two zoologists quite clearly demonstrated that the origin of the major animal taxa must be sought in modifications of the epigenetic, and notably the morphogenetic processes…

Peter Ward, in *The End of Evolution: A Journey in Search of Clues to the Third Mass Extinction Facing Planet Earth* (New York: Bantam, 1994) indicts the destruction of ecological balance inducing a new mass extinction. It is odd that noone can connect Darwinism with this: its suggestion of random, purely local action blinds us to the global, perhaps Gaian, control system securing environments of life. Darwinism is quite unnatural, an artificial plastic, and a poor survival ideology! Kirpatrick Sale in A*fter Eden: The Evolution of Human Domination* (Durham, NC: Duke University Press, 2006). seems to find *homo sapiens* less environmentally acute than *homo erectus*: the instability of man's biospheric evolution suggests that his speciation might be incomplete, prophesying the 'descent of man revisited'.

The suspicions against Darwin are carefully studied in Roy Davies' *The Darwin Conspiracy*. The existence of shipping records for the British mails exposes Darwin's 'near perfect crime', p. xviii:

> The delivery of the India and China mails is an immensely important detail in the apparent coincidence of Darwin and Wallace cracking that evolutionary code at precisely the same time from such different starting points.

Darwin's fog began to lift after the receipt of a first letter from Wallace, in 1855. Darwin's mendacity as to these letters can be inferred from the shipping records.

> **Evolution: The Brown Paper Bag** Challenging Darwinism exposes the incoherence of the idea. We are forced back to near slang usage, and can use the idea of evolution as a 'brown paper bag', a conceptual container that can start over with the simple dictionary definition, from 'e-volvere', a 'rolling out'. If we have data showing strong developmental sequencing the term is ours, as Darwinists go begging, with their myth of magical 'do nothing' random evolution.

One problem with evolutionary discourse is the failure to distinguish different levels of evolution, a feature present in the original theorist, Lamarck. But the discovery of levels is reappearing with the research into epigenetics, cf. E. Jablonka & M. Lamb, *Evolution in Four Dimensions: Genetic, Epigentic, Behavioral Variation in the History of Life* (Cambridge: The MIT Press, 2006). The distinction of macroevolution and microevolution will re-arise spontaneously in our 'brown paper bag' approach, and this idea could have clarified the confused debate over the coloration of moths, a classic: Judith Hooper, *Of Moths and Men: The Untold Story of Science and*

A visual metaphor of history emerging from evolution

the Peppered Moth (New York: Norton, 2002). We will see this in the way history and evolution overlap, as noted in our Babe Ruth tale. The idea is that evolution is to history as macroevolution is to microevolution as passive man evolving is to active man in history, with in-between hybrid situations, and 'transitions' in a macro sense.

That's Kant's work should have trifurcated into the study of physics, biology, and art is significant. The question of the evolution of art is obscurely related to that of ethics, a point Kantian discourse clarifies. Thus Darwinian accounts miss the point. Denis Dutton, *The Art Instinct: Beauty, Pleasure, and Human Evolution* (New York: Bloomsbury, 200) is

forced into selectionist constructs, but this induces a mechanical fallacy. The nature of human creativity, and its appearance at the dawn of *homo sapiens* is a mystery unsolved by science. In a way, the title is right at least, the creative impulse, although more than instinct, is intrinsic to the emergence of human culture: David Lewis-Williams, *The Mind In the Cave: Consciousness and the Origins of Art* (New York: Thames and Hudson, 2002). And is 'evolution' itself 'creative', in some Bergsonian sense? To say so will get us into problemas of metaphysics, but the question is crucial. A problem in the title lies in the use of the term 'consciousness', a problem shared with many New Age works on 'conscious evolution', cf. Barbara Marx Hubbard, *Conscious Evolution* (Novato, Ca: New World Library, 1998). The classic distinction of consciousness and self-consciousness tends to be lost. The New Age writer, J. G. Bennett tried to correct the confusion here with an idea from Schopenhauer, who solved the terminological problem of categories if you like: a triad of 'being, function, will' replaces the near mystical confusions of materialism and spirituality, with 'consciousness' in a limbo in between. The connections with archaic *Samkhya* then stand out. We will not pursue these issues, save to be forewarned of the incoherence of both scientific and spiritual psychologies. The distinction of consciousness and self-consciousness remains essential (viz. the power of attention in consciousness) to evade useless discussions of the human evolution of consciousness (present in all animals).

Many of the nineteenth century classics of evolutionary literature, otherwise out of print, are available on the spot via the new technology of e-books. We can cite several, which are free:

Philosophie zoologique (French Edition) by J.-B.-P.-A. Lamarck (Kindle Edition - Sep 30, 2011), *Evolution, Old & New Or, the Theories of Buffon, Dr. Erasmus Darwin and Lamarck, as compared with that of Charles Darwin* by Samuel Butler (Kindle Edition - Mar 17, 2006), *Evolution and Ethics* by Thomas Henry Huxley (Kindle Edition - Mar 30, 2011), *Zoonomia, Vol. I Or, the Laws of Organic Life* by Erasmus Darwin (Kindle Edition - Apr 25, 2005), *Darwinism* (1889) by Alfred Russel Wallace (Kindle Edition - Jan 2, 2005).

2. SCIENCE, IDEOLOGY, AND WORLD VIEW

Although a large majority of biologists accept Darwin's theory with few qualifications, many were dubious of it from the time Darwin proposed it until well in this century, when it was systematized in the Neo-Darwinist synthesis. The orthodoxy became very firm, especially in the 1960s. Recently, however, there have been increasing tendencies to doubt that the role of natural selection is as great as has been assumed, and a growing number of biologists believe that it is not wholly satisfactory answer.
Robert Wesson
Beyond Natural Selection (1993), p. xii

The controversy over evolution endures as one of the most intractable of modern civilization. Fueled by the agendas of those ambitious to control the defining ideology of human origins, the debate has obfuscated the real meaning of evolution, and created a set of competing propagandas, religious and scientific. The fact of evolution is clear empirically as a set of facts about the fossil record, but becomes entangled in the confusion of theories

ambitious to explain those facts. Darwin's *Origin of Species* induced the sudden public realization of the fact of evolution and ignited the revolution of thought we associate with the idea of human emergence from nature. But the theory of natural selection that came on the back of that breakthrough was problematical and ignited a controversy, 'one long argument', in Darwin's phrase, that continues to this day. The subtitle alone is a provocative ideological confusion with dangerous implications.[1]

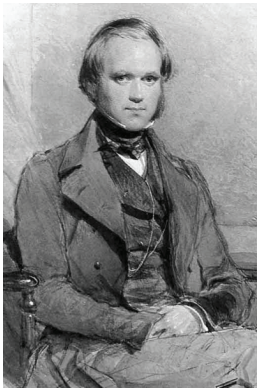

Fig. 2.1 Charles Darwin Age 31

The debate has produced a deadlock that cannot be resolved by appeals to science, if the canon of science is flawed. The confusion is compounded by religious ideologies determined to foist a theistic or creationist perspective on the data. More recently the so-called Intelligent Design movement has braided a sophisticated new brand of the old design argument onto a conservative anti-modernist religious agenda. It was the theory of natural selection, hence of random evolution, that caused many, even of those who embraced the factual discovery of evolution, to challenge Darwin's claims. The problem here is not religion but bad science, the metaphysical character of the theory, and the difficulty of observing its action in practice.[2]

The fixation on natural selection has fueled the endemic Social Darwinism and ideological economics spawned by the mythology of conflict and competition grounded in Darwin's oversimplification. This aspect leaves the suspicion, not just of bad science, but of deception. The problems with Darwin's theory have been pointed out many times, but the resistance to change, unlike other fields of science where paradigm shifts are almost the norm, is unreasonably strong. An intellectual culture armed with the assumptions of Darwinian natural selection has a powerful tool of

1 The full title has the classic Social Darwinist subtitle: *On the Origin of Species by Means Of Natural Selection, Or the Preservation of Favored Races in the Struggle for Life*. Ernst Mayr, *One Long Argument: Charles Darwin and the Genesis of Modern Evolutionary Thought* (Cambridge: Harvard University Press, 1991). Loren Eiseley *Darwin's Century: Evolution and the Men Who Discovered It* (New York: Doubleday, 1958).

2 Michael Ruse & Joseph Travis, *Evolution: The First Four Billion Years* (Cambridge: Harvard University Press, 2009), Stephen J. Gould, Stephen Rose (ed.), *The Richness of Life: The Essential Stephen J. Gould* (New York: Norton, 2006), Ian Tattersall, Jeffrey Schwartz, *Extinct Humans* (Boulder, Colorado: Westview, 2001), G. J. Sawyer & Viktor Deak, *The Last Human: A Guide to Twenty-two Species of Extinct* Humans (New Haven: Yale University Press, 2007).

social control and ideological enforcement. Another possibility, of course, is the 'will to believe' reminiscent of religious conversions in the faith-like certainties of an intellectually challenged Darwinian mindset.[3]

The Darwinization of history and culture constitutes a dangerous legacy. Eugenic calamity in the wake of Darwinism is already historical fact. As we will see, the study of history, a clear record out in the open, provides a clear falsification of selectionist claims, made sight unseen about the whole of deep time. History does not proceed in Darwinian fashion. But the ideological pseudo-science of natural selection persists as a dogma applied to all forms of cultural study. Another side effect has been the delusion of eugenic 'man-made' evolution, and the danger of misapplied evolutionary concepts doing damage to human populations. And the indirect propaganda in the name of science for the debunking of altruism and thence the promotion of selfishness as the basic cast of evolutionary situations is clear evidence of the promotion of capitalist economic ideology in the background.[4]

The illusions of natural selection tend to arise from the observation of life in the wild where the spectacle of jungle survival suggests a universal mechanism of evolution. Natural selection is omnipresent in the drama of life, but that doesn't mean that it produces 'evolution'. It might produce regression, ironically in the survival of the 'fittest', the strong eliminating the relatively weak innovators, a phenomenon clearly visible in history. What is evolution? The meaning of the term has been lost to Darwinian confusions.

> **What is historical evolution?** In what follows we will discover 'evolution' in history in a more cogent sense than that of the Darwinian. But this usage is a 'brown paper bag', a cover term, containing evidence of 'coherent development' over a discontinuous interval, with or without genetics, to refer to the last stages of human speciation, now and in the coming future, echoing a similar evolutionary interval at the dawn of man. This usage will also adopt the term 'macroevolution'. Natural selection becomes 'microevolution'.

Darwinists have hopelessly confused the meaning of evolution, and created a myth of reductionist magical thinking using 'natural selection', whose semantic echo, ironically, is that of animal breeding and artifical

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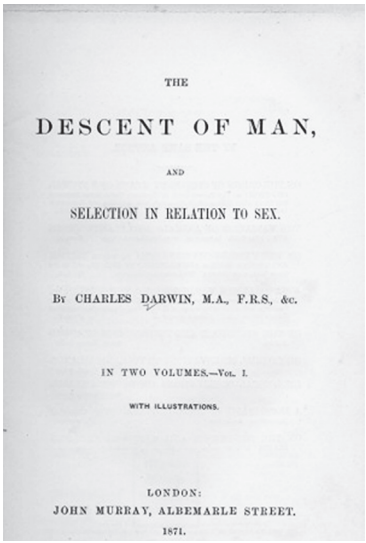
3 Larry Witham, *Where Darwin Meets the Bible* (Oxford: Oxford University Press, 2002). Richard Hofstadter, *Social Darwinism in American Thought* (Philadelphia: University of Pennsylvania, 1945).

4 Edwin Black, *War Against the Weak: Eugenics and America's Master Plan to Create a Master Race* (New York: Four Walls Eight Windows, 2003), Richard Weikart, *Hitler's Ethic: The Nazi Pursuit of Evolutionary Progress* (New York: Palgrave, 2009).

selection, a 'design' term! Speciation, if that is the real meaning, remains a riddle, and the fossil record shows a set of ambiguous results, sometimes depicted according to the notions of 'punctuated equilibrium'. The frequent phenomenon of the sudden appearance of species, followed by relative stasis, could be a warning that something is missing in standard accounts. Here the potential distinction of macroevolution and microevolution can help to sort out the confusing Darwinian collation of different processes.[5]

The emergence of man cannot be thrown into the same category as the rapid species differentiation of insects in a jungle scene, leaving the concept of speciation ambiguous as the core idea of evolution. Human consciousness is a complex instrument baffling to its owner himself, and its arising as an instrument of hidden potential could never be explained by scenarios of adaptation or survival. And the questions of free will and the human soul, however muddled by religious traditions in decay, simply won't go away. Beliefs in the 'soul' are confused, but the elimination of the question cannot succeed in a reductionist program.


THE

DESCENT OF MAN,

AND

SELECTION IN RELATION TO SEX.

By CHARLES DARWIN, M.A., F.R.S., &c.

IN TWO VOLUMES.—Vol. I.

WITH ILLUSTRATIONS.

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1871.

fig. 2.2 Frontispiece, 1871

Descent of Man Revisited The question of human evolution is completely misunderstood by Darwinists, who cannot produce a proper description of man, let alone an account of how he evolved. Darwin's other book on the descent of man is completely inadequate scientifically with still another fanciful mechanism, sexual selection. The issues of language, mind, spirituality, consciousness, and ethical agency are not even acknowledged to exist by reductionist science. We need a radical post-Darwinian agenda: to 'revisit' the account of human emergence, now also transformed by the new genetic 'out of Africa' scenarios. But we must acknowledge that we do not have answers because empiricism is denied us. There is, however, one resource that can give us an unexpected hint: we will discover world history can help us here.[6]

5 Robert Reid, *Evolutionary Theory, The Unfinished Synthesis* (New York: Cornell, 1985), Robert Wesson, *Beyond Natural Selection* (Cambridge: MIT, 1991), Michael Denton, *Evolution: A Theory in Crisis* (New York: Adler & Adler, 1985), Kevin Kelly, *Out of Control* (New York: Addison-Wesley, 1994)

6 Douglas Palmer, *The Origins of Man: An Illustrated History of Human Evolution* (London: New Holland, 2007). Spencer Wells, *The Journey Of Man: A Genetic Odyssey* (New York:

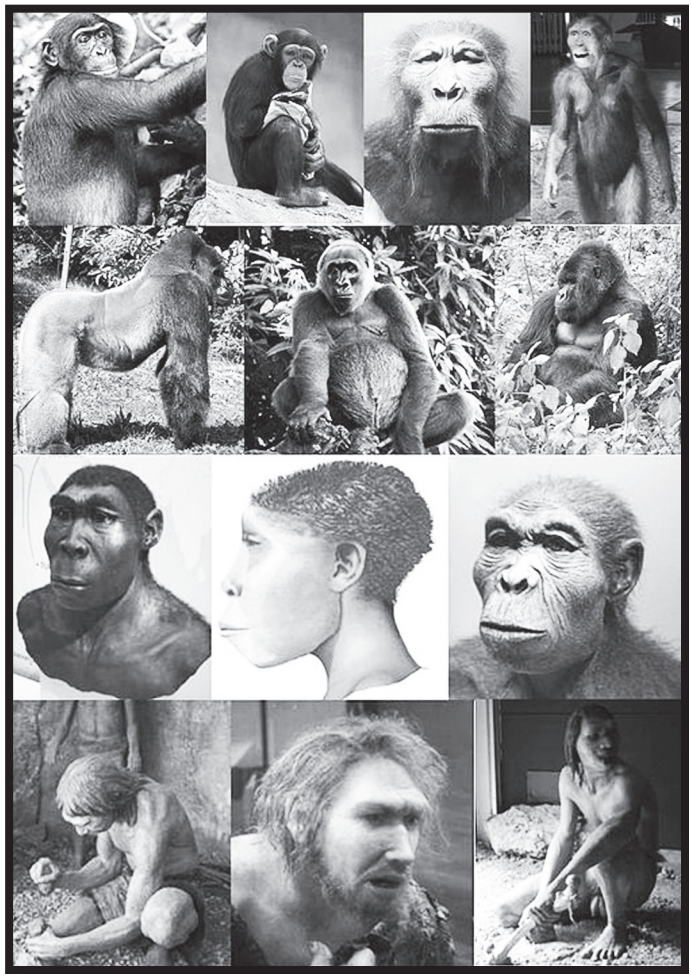


Fig. 2.3 Chimp to Man
Chimpanzees, Gorillas, *Australopithecus, Homo habilis, homo erectus,* Neanderthal, *homo sapiens*

The dimensionality of the human organism is a mystery that reductionist biology is in danger of missing, whatever the confusions of human 'species' beliefs here: that's the irony, such beliefs come into existence with human speciation. Why? Man begins to experience a new 'software'. The construct of the man-machine evolving by a law of natural selection, like a dead object tracked by a law of physics, is an illusion of modern science.

> **The Evolution of Religion** Scientists armed with Darwinism exhibit something close to obsession in their attempts to reduce religion to Darwinian genetics, in the process mechanizing explanations of ethical agency. The search for the god gene, and the scenarios of evolutionary psychology are desperate attempts to save the reductionist viewpoint. But the question of the evolution of religion is clearly seen from the study of world history.[7]

Here Alfred Wallace is an important, but neglected, figure in the emergence of evolutionary theory. Let us note, in the context of the 'descent of man revisited', that one of the co-discoverers, if not actual source, of selectionist theory later dissented on the question, as far as the descent of man is concerned. Wallace (who started as a super-selectionist) saw something that severely challenges Darwinism, that is, the appearance not of adaptive traits, but of potential 'traits' that emerge through *self-realization* (making the term 'evolution' ambiguous). His classic observation was that

Fig. 2.4 The Shiva Seal 2600–1900 BCE

> ...in creating the human brain, evolution has wildly overshot the mark. An instrument has been developed in advance of the needs of its possessor...Natural selection could only have endowed the savage with a brain a little superior to that of the ape, whereas he possesses one very little inferior to that of the average member of our learned societies....[8]

This sentiment springs to life once we see the way Wallace's dilemma reflects on history. We are confronted with questions about the meaning of evolution, if history shows yogis exploring consciousness in traditions as old as the emergence of civilization. It is entirely possible such men came into being in times unseen in the Paleolithic. Religions such as Buddhism

Random House, 2003).

7 Dean Hamer, *The God Gene: How Faith is Wired into Our Genes* (New York: Anchor, 2005).

8 Arthur Koestler, *Janus*, (New York: Hutchinson, 1978), p. 174.

point to another dimension of religion, one that might clarify the confusions over 'naturalism'.

> **The Buddha Phenomenon** That close observation of historical facts might uncover some surprising indications of what is left out of Darwinism can be seen in the history of Indian religion. That Wallace was righter than he knew is obvious to any student of world religion. Man in his ordinary state is unaware of the potential of his 'self-consciousness', let alone able to produce a theory of its evolution. History shows the extreme antiquity of explorations of self-consciousness in the discovery of the famous cylinder seal possibly showing a meditating yogi from the period ca. -2000 (denied by some scholars) in a possible hybrid with Shiva mythology. That what we find in later Buddhism should be discovered much earlier was to be expected, and makes us suspect still earlier forms of such explorations stretching backwards into the Neolithic, or before.

A simple question haunts the Darwinian account. At what point do we first see the Buddha phenomenon and what evolutionary process can account for it? In fact, we don't know, and this is an instant theory killer for Darwinism. The most outrageous, and exasperating aspect of Darwinism is to completely ignore such issues, to promote its oversimplification, and then suppress all venues of discussion. We can mention this particular case as a falsification noone heard of, apparently, and a reminder that Darwin's theory only exists in a culture of ostriches.

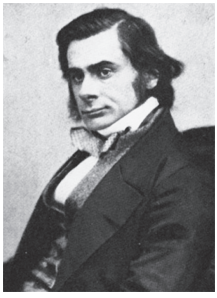


Fig. 2.5 T. H. Huxley, 1857

The real founder of evolutionary science, Lamarck, was careful to distinguish different levels of evolution, and this more nuanced real beginning to evolutionism was lost in the demands for reductionist conformity in the post-Enlightenment coming of scientism. Darwin's theory was a step down here, even as it was a step upward in the professionalization of science. The problem is that biologists wish to emulate the successes of physics in the banishment of values, the idea of freedom, and the complexities of consciousness from science. But biology is not physics. The question of evolution is not so simple, for the emergence of life shows a curious pattern of developmental sequencing. And cosmology with its evidence of 'fine-tuning' warns us we may be missing a teleological aspect. Lamarck's two-level concept was muddled by his confusion over acquired characteristics, but shows how two types of evolution overlaid tend to both express and veil that directionality. Physics and cosmology have in fact stumbled on the evidence of directionality in the emergence of life. And yet the implications for theories

of random evolution are banished from discussions of Darwinian dogma.[9]

T. H. Huxley's Critique One of the ironies of the Darwin debate lies in the skepticism of its most vocal defender, Huxley, who warned Darwin on the eve of publication of the overemphasis on natural selection. He also later saw the flaw in the theory by asking why, if natural selection is the case, we always oppose it in practice? This question forces us to look beyond Darwinian assumptions for the evolutionary source of our social values and ethical sense. There must be something else! And it must surely be visible in history (which includes the 'history' of evolving hominids), suggesting that history and evolution are not rigidly separated.[10]

Fact/Value Dichotomies Related to this is the way that, looking at history, we see direct evidence of the emergence of values as key to development. That is a powerful clue to the limits of reductionist explanation. Is a 'science' of evolution in the usual sense really possible? The Darwin debate is almost endless, but the standard paradigm fails here at the first step.

An Archaeological Revolution The question of history remains a puzzle for science, as the issue of values, and the free agency of those who espouse them, makes clear. We are left with a paradox: the need for a science of history, and the contradiction that generates. We ask what the data of nature shows here. And the developing answer can be found in the transformation of our knowledge of ancient civilizations. We can begin to detect a pattern of dynamical action in history that answers to both the evolution question and to the fact/value issues. We can find what Huxley unwittingly said must exist.

The latest episode in the debate over evolution is the appearance of the Intelligent Design movement attempting to revive the classic design arguments in the face of Darwinian claims for random evolution. The design argument has a long tradition, and champions as venerable as Socrates, and some powerful critics, such as Hume and Kant. We should be wary of thinking that critiques of natural selection are tantamount to endorsements of design arguments. The design argument, by making assumptions about issues of religion or divinity, tends to fail at the first step. But we cannot rule out more sophisticated versions of such thinking as naturalistic versions of teleological processes.[11]

9 Pietro Corsi, *The Age of Lamarck: Evolution Theories in France, 1790-1830* (Berkeley: University of California Press, 1988).

10 T. H. Huxley, *Evolution and Ethics* (*The Romanes Lecture,* 1893).

11 The philosophy of Schopenhauer, the Indian *Samkhya*, theologies of a 'naturalistic'

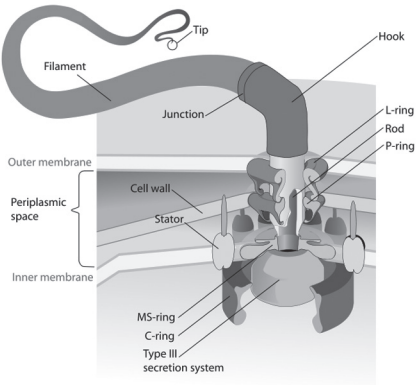


Fig. 2.6 Bacterium Flagellum

The Intelligent Design Movement The critique of Darwin's theory has been hijacked by religious groups whose theological perspectives tend to confuse the real issue: the debate over natural selection and the correct theory of evolution. And the simplistic equation of design with theistic belief systems tends to beggar the subtle meaning of the design question. Design arguments are far too primitive as religious apologetics in disguise to be viable. But they remain on the sideline as speculative venues.

The design argument is an ancient, and legitimate, philosophical tradition in itself, but its association with a simplistic theism has tended to discredit it. It is a very cogent challenge to selectionist constructivism, and its mythology. Thomas Behe's already classic, *Darwin's Black Box,* considers the remarkable 'irreducible complexity' of biochemical machines (with many Darwinian challenges to their irreducibility). He notes:

> Inferences to design do not require that we have a candidate for the role of designer. We can determine that a system was designed by examining the system itself, and we can hold the conviction of design much more strongly than a conviction about the identity of the designer.[12]

If this is true we should stop using 'noun-verb' terms that imply such 'designers', as nouns. 'Design' thinking can fool us, and we are not always sound judges. Is the Old Testament a tale of designers? It would have to be about hidden designers using fake divinities as fake designers! The real issue is not so much 'design', a term loaded with puns and double entendres, but the inability of natural selection to create complex objects.

> **Our question, again**: what is (historical) evolution? Many will ask if the term 'evolution' will work for the religion-generation we see in the so-called Axial Age. It is very hard to account for the Old Testament history in the Axial period either with design arguments (those of

demiurge, Spinozistic or Hegelian philosophies of 'spirit' show how a spectrum of design perspectives, mostly non-theistic, can arise, leaving the issue in limbo. Noone has finalized a single claim here. It would seem that 'mechanism' and 'agency' are transcended in the subtle complexity of nature, exposing our dualistic logic for what it is, primitive.

12 Michael Behe, *Darwin's Black Box* (New York: The Free Press, 1886), pp 195-6.

> religionists fail!) or evolutionary accounts. But, our usage is that of the 'brown paper bag', to hold a data set referring to a developmental sequence, and is thus correct, whatever its deeper meaning. The data often induces 'spooky design hallucinations', and we cannot also rule out the possibility of 'evolutionary engines designed to look and mechanically. But this too goes into the 'brown paper bag', awaiting answers. Our usage is not a theory, but will become an empirical chronicle of 'evolutionary sequences'.

But Behe is perhaps righter than he knows, and the 'artifacts' of the 'will' in, say, (the notorious atheist) Schopenhauer's 'Will in Nature' are certainly 'derandomizers', whether or not designers. The net equivalent of a 'designer' could be a teleological process.

> **Hegelian science fiction** Behe's idea of 'complex specified information' points, beyond design confusions, to 'laws' of evolution that could do nothing less than the specification of, for example, 'art objects', this without any design nonsense. This is an idea of natural law beyond current monotonic conceptions. Like computational software, the 'laws' of evolution must themselves be evolving. From Hegel to the sci-fi fringe the theme of self-evolving software has suggested an unknown computational dimension to naturalistic processes. The dawn of quantum computation forces a question about 'nature's brand' of computational processes in nature.

Engineering texts often note in passing that systems that 'act from the future' (teleological analogues?) are not contradictory, but not seen in nature, or are they?! Much of the discussion is thus from the perspective of our primitive technological culture, next to the allergy to Aristotle that banished teleological systems from physics (to the great, temporary, benefit of its science). The complexity of biological machines reminds us of Samuel Butler's *Darwin Among the Machines*, which raised the possibility that machines were 'mechanical life' undergoing evolution and that eventually machines might supplant humans as the dominant species. He notes:

> We refer to the question: What sort of creature is man's next successor in the supremacy of the earth likely to be? We have often heard this debated; but it appears to us that we are ourselves creating our own successors; we are daily adding to the beauty and delicacy of their physical organisation; we are daily giving them greater power and supplying by all sorts of ingenious contrivances that self-regulating, self-acting power which will be to them what intellect has been to the human race. In the course of ages we shall find ourselves the inferior race.

Time-outs for theological science fiction...

Although the project of scientific naturalism has born fruit over and over in the hard sciences, the solution to the evolution question remains stubbornly metaphysical, with 'design' questions that won't go away. Naturalists are often accused of agendas. So, to the charge of dogmatism we can answer with a clear set of hypotheses:

1. The 'design' hypothesis, and a related 'god hypothesis'. There are multiple versions here...

2. An hypothesis of 'meta-nature': nature in an aspect that transcends space and time. This possibility would solve many of the problems with reductionist pseudo-naturalism...

3. A 'soul' hypothesis: there exists a (natural!) bio-field behind the organismic phenomenon that transcends standard space-time. This entity may or may not be 'egoic',... Tibetan buddhists thus speak directly of the 'clear light' and it is standard in many traditions to speak of awareness during 'death' / 'sleep'. This joker in the deck makes 'evolutionary theory' (except for our 'brown paper bag' brand) difficult (we didn't say impossible)!

4. Some theological science-fiction: there exists a 'natural' theistic entity or entities in the form of a (possibly in some alternates) self-conscious bio-field (sci-fi versions posit 'beings made of light' and/or 'consciousness'). There are numerous traditions of beings (Demiurgic powers) of natural scope, less than 'god'(?), but beyond the realm of ordinary humanity. This is the second joker in the deck!

Like wild dogs bordering on domestication at the fringes of a camp of hominids this set of hypotheses shows the possiblity of wild metaphysics conceivably becoming tamed as science. Our project of empirical history cannot resolve these questions, even as the intangible begins to haunt that data. There is a demand for science here, so far the domain of science fiction.

The 'descent of man revisited' must include this twist to man's final stage of speciation, once he grasps the riddle of machines, and man the machine, to pass to the riddle of the 'real man', the free agent in history. But this issue also brought Butler to doubt 'mechanical evolution', and Darwinism. His idea, however, of evolving (meta-) machines is an important clue to the riddle of evolution, as is the science fiction of Hegel's notion of 'evolving Geist', and the rapid proliferation of computational models of evolution (mostly still chained to natural selection, but potentially far more general, as the flagellum warns us must be the case).[13]

The question of the evolution of the human eye, as Darwin confessed, troubled him, while the sophistical claims for natural selection rampant indicate a near tragedy of bad science education. The problem of design is hard, and gets worse: as we will see in the study of history, the progression from machines to fluid-like flows in historical streams, that seem designed, yet mechanical, confronts us with 'designs' no human is smart enough to have designed. This warns us that 'evolution' must be more than simple mechanics.

The real problem is simply that we cannot arrive at any empirical demonstration of the agent in a design argument. It is all an inference based on misleading theological assumptions, or beliefs about the history recorded in the Old Testament. As we move to examine world history, we will rediscover the subtle design logic lost to history that is hidden behind the decayed theism of Israelite historicism, which was deeper than monotheism. The point here is that design arguments have lost their original meaning, and are in any case muddled by religionists, while never refuted by Darwinists. We should give this other debate a wide berth as we stumble on the real thing, so to speak. We need a new strategy beyond the fiction of theories masquerading as science or the metaphysics of design: simple chronicles of evolutionary fact that can simply demonstrate 'evolution in action'. The first candidate for this is world history itself.

The debate is biased by the attempts to define secularism using biological foundations: a brand of positivistic scientism is taken as the defining ideology of the Enlightenment, then modernity. But the reality is far more

13 "*Darwin among the Machines*" appeared as the heading of an article published in *The Press* newspaper on 13 June 1863 in Christchurch, New Zealand. Cf. also, George Dyson, *Darwin Among The Machines: The Evolution Of Global Intelligence* (New York: Basic Books, 1888).

complex. Next to that an aggressive atheist movement now claims Darwin as the legitimation of their founding cult of scientism opposed not just to monotheism but to all religion. This is a misunderstanding of secularism, indeed of atheism, and can never succeed thus.

The question of theism and atheism is cursed by confused scientific concepts and infantile religious beliefs, and cannot be resolved by adherence to Darwinian fundamentalism, or its critique, as with the current Intelligent Design movement. This is in part the result of figures such as Richard Dawkins claiming that Darwinian beliefs entail a kind of proof of atheism. The bottom line is that allowing evolutionism and the god debate to become entangled is the recipe for endless chaotification, the more so as the term 'god' is never even defined. The crude theism of much Christianity is, ironically, open to the same challenge against idolatry that confronted ancient polytheism. This issue haunts the great transformation of the Protestant Reformation, so reminiscent of the similar 'reformation' described in the Old Testament.[14]

Fig. 2.7 Luther posting 95 theses, 1517

> **Protestant Reformation** The term 'secularism' has shifted its meaning, and refers to the 'new age' or *saeculum*, the *novus ordo seclorum*. It is not a synonym for 'anti-religion' or atheism. We forget that the 'secular' began with the Reformation, in a revolution against theocracy. And we fail to see the later 'outcome' of the Reformation, in the period of Kant, Hegel, and Feuerbach, the successors to Luther. And the complex unity of transformation ending in the Enlightenment is an aspect we will explore with a 'finite transition model'.[15]

Religious anti-modernism tends to be armed with a critique of the limits of scientism taken as a reaction to the Enlightenment. But the best critique of the Enlightenment lies in the Enlightenment itself, in its full scope. The

14 Victor Stenger, *The New Atheism: Taking a Stand for Science and Reason* (Prometheus Books, NY: Amherst, 2009). John Haught, *God and the New Atheism: A Critical Response to Dawkins, Harris, and Hitchens* (Westminster John Knox, Louisville, KY, 2007).

15 Diarmaind MacCulloch, *The Reformation: A History* (New York: Penguin, 2003). Forrest McDonald, *Novus Ordo Seclorum: The Intellectual Origins of the Constitution* (Lawrence: University of Kansas Press, 1985).

rise of modernity is more than the Scientific Revolution. The emergence of modern freedom is an independent historical process emerging in parallel to the Scientific Revolution. There is a clue hidden here in that the emergence of freedom is itself an evolutionary process, and its relation to the transition to modernity shows the crux of this process very close to home. Secularism has an equal, if not superior, potential for clarifying the issues of religion than medievalism and its theocracies.

Fig. 2.8 Isaac Newton, by William Blake

There is a curious irony to the conflict of science and religion: the basis of secularism is as metaphysically engaged as that of religion, and demands, as with the idea of freedom, an extended view of science. The philosopher Kant was the primary figure in the challenge to scientism that was latent in the Enlightenment. His classic discourse on freedom in the context of Newton reposes the issues of modernity. The rise of the modern world was larger than the coming of science. We forget that modernity was the tandem emergence of a duality of parallel ideas, causality and freedom, as science and liberalism double-teamed the spectacular transformation of culture. The debate with religion can be a distraction, and yet the dilemma of nature and supernature is embedded in the very texture of secular ideas of freedom. The irony here is that the idea of freedom, as the keynote of secularism, has no place in science. That should be a reminder that 'sacred' and 'secular' distinctions are misleading. This leads us at once to the core difficulty with scientific theories of evolution. Here a Kantian framework appeared promptly as one of the foundational insights into the nature of the modern, and its scientific leitmotiv.

> **Secularism and freedom** We forget that the basis of modernity itself is more than the reductionism it has become in a positivistic age. The Protestant Reformation was itself the first stage of modernity. The very basis of the idea of freedom, at the core of all modern liberalisms, has a metaphysical character that would in principle be excluded by scientific explanation. The transition from Reformation to revolutionary liberalism can be seen in the English Revolution of the seventeenth century.[16]

16 Anthony Arblaster, *The Rise and Decline of Western Liberalism*, New York: Basil

Fig. 2.9 Storming the Bastille

Modernity: A Finite Transition Model

The question of modernity is beset with a host of critics, and much confusion created by its friends. Postmoderns and New Agers attack the modern, expecting a 'new age' after the modern. Traditionists seem it as decline, while self-styled secularists see modernity as purely a field of scientism, atheism, materialism, and, too often, Nietzschean nihilism. But the 'modern', to anticipate our coming outlines of world history, is better seem in analog to the so-called 'Axial Age', using a finite transition model, with a complex 'transition' from the sixteenth to the nineteenth century, followed by the 'modern age' as such. This approach clarifies many of the confusions, and also warns us that the 'secular' includes the factor of religion, witness the Protestant Reformation. The secular realm of 'freedom' is a clue to the real future of religion, as it moves beyond tradition to a new 'secular' re-creation.

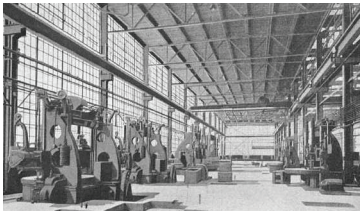


Fig.2.10 The Factory; the modern temple

> **The Enigma of Modernity** One of the puzzles of world history is the sudden emergence of modernity and secularism. The sudden take-off in the sixteenth century to produce a new era and a novel civilization proceeding toward globalization has long been an historical mystery. How can we explain this phenomenon, with its resemblance to punctuated equilibrium? Current so-called postmodern attacks on modernity have foundered in a misunderstanding of its dynamics.[17]

The classic issues of freedom in the philosophy of history, and the parallel emergence of liberal and then socialist ideologies, are some of the prime correlates of modernity, and arose at dawn of modernity, but have become orphaned in the tide of positivism. The question remains: can reductionist science explicate human nature or the questions of free will? The ambiguous status of the idea of freedom, as explored by a philosopher such as Kant, becomes a key foundation stone for secularism itself. Yet reductionist science can see no avenue here, save the elimination of the very concept. Thus a disguised reverse metaphysics haunts Darwinism: it must derive the nexus of freedom issues from its selectionist assumptions. We need look no further for the difficulties of universal biology.[18]

> **Is There a Science of History?** The question of a science of history, and/or laws of history generates a contradiction that the Darwinian framework never addresses. The question is at the core of a Kantian critique of metaphysics and demands a way to reconcile the so-called antinomy of freedom and causality. We will discover the ironic solution to the paradox in the issue of a science of history by introducing the idea of the evolution of freedom to create a new definition of science.

> **Big Histories, Universal Histories** We are confronted with three choices: make all histories causal, make all histories about freedom, or resolve the 'dialectic' in a higher mode, perhaps of the one evolving into the other. Kant's challenge will ask for the third, the classic paradox of the 'science of freedom'.

A clue to the problem lies in the failure to produce a science of history, where the facts are visible, even as Darwinists claim a science of evolution, where the facts are not visible. And at what point do we divide history from evolution? This situation is altogether odd, and we left suspicious Darwinism is failing a photo finish test. Not a single hard result has ever

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Blackwell, 1984. Michael Braddick, *God's Fury, England's Fire: A New History of the English Civil Wars* (New York: Penguin, 2008).

17 Jacques Barzun, *From Dawn To Decadence* (New York: HarperCollins, 2000).

18 Stephan Körner, *Kant* (New York: Penguin, 1962).

been achieved for a science of history. That should make us suspicious of Darwinian claims at the onset. We indulge in far too much idle talk about evolutionary theory in the abstract. These discussions are impoverished, but brilliant sounding speculations about something we never observe. It's time to take a long, slow motion look at the one good data set that we have, world history. We will soon be cured of Darwinian fantasies. The scale of evolution is tremendous. Even the record of world history, five thousand years over the whole surface of a planet, is nothing compared to deep time. That is a reality check. We see at once the fallacy of throwing generalizations at such a complex system. It is primitive behavior.[19]

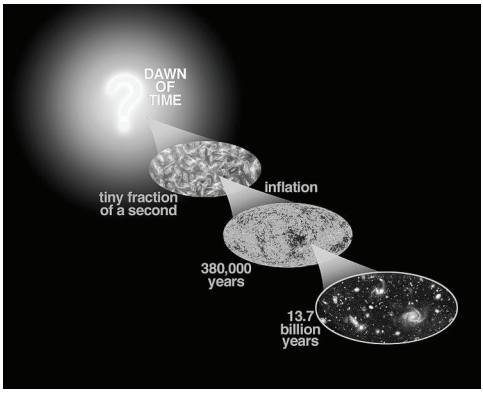


Fig. 2.11 The Big Bang

> This question is the classic curve ball for standard science. The difference between a depiction of a causal machine, and, say, a 'drama', which is an historical chronicle of free agents, is crucial, non-complex, and yet one that defies simple scientific resolution. From this problem we can in fact infer something important about evolution, which must evolve, somehow, this freedom factor. As we proceed we will make use of two 'genres' of historical writing, so-called 'Big History', history since the Big Bang, a recent innovation, and so-called 'Universal History', a genre pioneered by Kant, whose theme is the status of freedom in the emergence of history.[20]

As we see from the issue of free agents in history, the emergence of man (and the issue is most probably latent in the whole progression of animal evolution) cannot be thrown into the same category as the rapid species differentiation of insects in a jungle scene, leaving the concept of speciation ambiguous as the core idea of evolution. Human consciousness is a software complex its owner finds hard to use, and it is hard to see its evolutionary emergence as an adaptation. And the questions of free

19 Isaiah Berlin, "Historical Inevitability", *Four Essays on Liberty* (New York: Oxford University Press, 1969), Karl Popper, *The Poverty of Historicism*, (New York: Routledge, 1991),

20 David Christian, *Maps Of Time: An Introduction to Big History* (Berkeley: University Of California Press, 2005).

will and the human soul remain as enigmas. The sense of 'soul' is species specific in man, however confused. The organism has a larger dimension, beyond perceeption. That the human and animal frame is a complex partner in the construction of space and time was early suggested by the philosopher Kant at the dawn of modern biology. The construct of a man-machine evolving by a law of natural selection like a dead object tracked by a law of physics is an illusion of modern science.

It was on the basis of this theory that the claims for a totality of scientific knowledge came to seem plausible. The theory purported to resolve all the key metaphysical issues that block the way to a comprehensive scientific world view. The suspicion arises that an oversimplification has been used to make all the really hard problems seem solved for science. The reality is that Darwinism is a dumbed-down ideology with all the appeal of an oversimplification that can bypass the need for careful science.

With hindsight, we can see that the true nature of a science of evolution is not easy to arrive at. That reductionist science cannot resolve the fact/value dichotomy is perhaps the most basic confusion: the question lingers, can there be a science of evolution at all? Is there a way out of this dilemma? Our reference to the question of history itself suggests an answer. And here a surprise awaits us, which we will begin to explore in the next section: endless efforts are made to reduce the historical to evolutionary Darwinism, but world history gives us another and deeper clue. Perhaps we should reverse the game, and try to see evolution in the light of history. We have a hunch: the traces of evolution must still be visible in history, and the transition from one to the other must have left its signature in the overlapping transition between the two. This hunch is confirmed by the long puzzling oddities of the data of world history, whose resolution we suddenly realize lies in an evolutionary interpretation. The only conclusion is that this overlap is still the case, and that human evolution is ongoing in the emergence of civilization.

It is time to begin to explore world history to see if it can tell us anything. The irony is that the solution to the evolution riddle lies in the solution to the riddle of history.

> **World History: The Clue** Darwinists constantly trumpet the reality of random evolution. But world history ironically shows us a massive structure of non-random patterning, something declared to not exist. This pattern shows further a sequential logic of developmental transitions, a smoking gun clue. The Axial Age, in the middle, shows the phenomenon in remarkable detail.

Fig. 2.11 Genographic Map of 'Out of Africa' Migrations

Out of Africa:

The Y Chromosome and Mitochondrial DNA

Geneticists now claim that the trees based on the Y chromosome and of mitochondrial DNA point to a unique exodus from Africa. It appears that the first modern humans left Africa in a single group, crossing the Southern end of the Red Sea and slowly spread around the coasts of Arabia and Iran until they reached India. Because of the lower sea levels during the Pleistocence ice age, the archaeological evidence of this trek is now lost underwater. Cf. Nicolas Wade, *Before the Dawn: Recovering the Lost History of Our Ancestors*, NY: Penguin, 2006, p. 76.

For example, the question of history and evolution has been transformed by the modern discovery of the so-called Axial Age, the massive discontinuity in world history in the period of classical antiquity. The term 'evolution' has been so confused that we can focus instead, to start, on the clear perception in history of an instance of the non-random, and of a developmental process of some kind reflected in that. The Axial Age stands out as just such a non-random pattern crying out for some revision in our Darwinization of historical thinking.

> **Discovery of the Axial Age** The question of evolution in history is confounded by the discovery of the massive synchronous discontinuity at the start of classical antiquity, in the parallel emergent phases or transitions visible across Afro-Eurasia in Greece/Rome, Israel/Persia, India, and China. This phenomenon contains the key to understanding both world history, and the distinction already suggested between macro and microevolution. With this clue in hand we can rapidly piece together a more realistic account of the meaning of evolution. The best explanation for this is that it is part of a larger sequential pattern.[21]

> **Design Arguments Redux** The stunning evidence of the Axial Age will strike many as incomprehensible if that period is taken as a dynamical event. But the Biblical design arguments that, indeed, reflect an awareness of the Axial Age are too primitive and end in contentious argumentation with religious claims for an age of revelation. Revelation indeed, across the board throughout Eurasia. We should persist in dynamical explanation, but attempt to upgrade design arguments as a dialectical side perspective. The suspected non-dual unity of design and dynamics then begins to dawn on us. The point here is that 'design' arguments are not theological, and are hopelessly muddled by speculations about 'god' agents. It is often teleological dynamics that induces the design 'spookiness'.

The point here is that complex and detailed macroevolutionary effects visible in the Axial Age, down to the level of cultural artforms and literatures, are not easily explained by mechanical arguments of the standard type. But injection of 'god' ideas can wreak havoc with understanding. The evidence eludes theistic interventionist models. The redactors of the Old Testament were nonetheless suddenly aware of a stupendous event in which they were immersed. The meaning of the term 'god' arises among the Isrealiates in a new definition as an action that can act over geographical regions to effect change, precisely the dilemma we face with the geographical action of the

21 Karl Jaspers, *The Origin and Goal of History* (New Haven: Yale University Press, 1963).

Kant's Challenge

Kant's classic essay, *Idea For A Universal History* (1782), stumbles on a solution to the 'science of history riddle' by asking for a 'science of freedom'. Universal Histories, and Big Histories are the mirror image genres of historical/evolutionary theory. Theories of evolution cannot avoid this issue. We need to set up an 'idea for a universal history' to complement a theme of evolution, and Big History. Even as we construct our evolutionary framework we should also attempt to consider an 'idea for a universal history', a phrase from the philosopher Kant who wrote a short essay, *Idea For A Universal History*, with this title. In this essay he proposes a challenge, which we can call Kant's Challenge. We will simply take the first paragraph from this essay, as all we need.

> Whatever concept one may hold, from a metaphysical point of view, concerning the freedom of the will, certainly its appearances, which are human actions, like every other natural event, are determined by universal laws. However obscure their causes, history, which is concerned with narrating these appearances, permits us to hope that if we attend to the play of freedom of the human will in the large, we may be able to discern a regular movement in it, and that what seems complex and chaotic in the single individual may be seen from the standpoint of the human race as a whole to be a steady and progressive though slow evolution of its original endowment.

This passage suggests the solution to our puzzle: find the 'causality of freedom'. This paragraph deduces almost 'a priori' the requirements for a science of history, but doing so by collating 'free will' and a search for laws, but with a twist: it challenges us to find a regular movement in the play of freedom! We will find some spectacular examples, but this, just as Kant indicates, force us to consider 'what causes freedom?' type questions. That repackages the enigma, with or without solving it.

Axial Age transformation. But concepts of divinities simply fail: a theistic process implies omnipotence. What we see is far cruder, despite its high-level action on complex culture. Back to our brown paper bag.

> **Crackpot Darwinism?** The reader will persist in thinking this can't be 'evolution', because it is not genetic. But that is simply the illusion promoted by Darwinists, who have missed what 'evolution' is. The idea that 'evolution' proceeds by random mutation is a fantasy of bad science. Our 'brown paper bag' form of evolution in civilization may not be exactly the same as what we find in deep time, but it is a strong clue, where the Darwinian assumptions are crackpot. Once we see how a teleological system works (with a frequency driver) we have a major clue to what's going on in previous eras. The 'template' for a teleological system is not directly visible: only the cyclical driver. We can guess at it, e.g. the template here is 'civilization' (?) and the exemplars civilizations (to oversimplify, no doubt). In fact, we suspect the template is 'evolving *homo sapiens*', Act II, from first to last men! This gets tricky because this must 'evolve freedom' by generating *history from evolution*. Evolution must stop to let history self-enact freely: just what we see! We suspect that the genetics randomizes until it matches a template, and in any case the genetic components are following the macro action, we suspect.

It is easy for biologists to get away with a Darwinian bluff. But we can see that in the one case at short range that we have the randomness hypothesis fails on the spot. Nothing like some facts to show where we were going wrong..

We must retreat to simple dynamical descriptions, starting with pointing to the non-random. *We cannot say how evolution works in deep time because we don't observe it.* Our different claim actually seem more plausible. Once we see evidence of the non-random, our views of the way we construct evolutionary theories undergoes a change. The reality is that the history of men suggests the history of apes and both ought to be analogous, or cousins. If one shows 'evolution' so should the other. In fact, Darwinists (and economists) invoke 'evolution' in history all the time, implicitly, even as they denounce the Social Darwinism they indirectly legitimate, and the result is an ideological confusion sowing tares in all forms of social theory. The key issue is to see that evolution refers to some kind of macroevolutionary process of development. If we can detect such a thing in historical terms, our point is made. The connection of evolution to history arises from the relativity of the two, as one shades into the other. The transition between the two must somehow show itself, and this is the clue to the whole question.

The stubborn persistence of the Darwin debate is therefore no mystery, and is not the result of Creationist conspiracy. The rise of Darwinism has produced a false view of man, we see the long-predicted limits of the modern

System Action, Free Action:
Determinism vs Creativity

Related to the issue of Kant's Challenge is the issue of creative history, and we need to set a distinction, before embarking in the next chapter on a study of world history. The data of history is confusing unless we distinguish a causal factor from free agency, AND be sure to keep the two together, in tandem. We have evoked Kant's Challenge, and we must distinguish historical dynamics from free will, since *both* are operating, and we can call this the distinction of a system and the free agents inside it. Think of a ship and its passengers: the action of the system, the ship, and the action of the passengers on board is a hybrid system of mechanics and free will. It is important to see that history is not determined: it shows many hybrid situations where behavior is partly determined and partly free in the creative action of individuals. This distinction of system and agents might seem confusing, but we already know all this: the simplest example of the many we encounter every day might be the 'system action' of a car, and the 'free action' of the driver. The point is that 'history' has a mind of its own, so to speak, and we are inside it operating with our agendas. But the two intersect. We need a looser version of the duality of causality and freedom: system action and free action. Free agency is not always 'free will'. You can be a free agent in an earthquake, but not free to do much of anything while it happens!

Some analogs The simplest example here is that of a driver in a vehicle. The situation shows the tandem action of a causal machine and a free agent, with our without free will, in control of that machine. Another example is that of an ocean liner and its passengers. Still another is a computer with a mouse, a clear tandem situation of 'system' (computer) and 'free agent', user with mouse.

scientific worldview. In a nutshell, there is, as yet, no methodologically sound basis for a theory of evolution. That's a surprising statement, but the point will become obvious as we look at the gray area between history and evolution. We should recall the reservations of Kant, as to the hope 'that one day there would arise a second Newton who would make intelligible the production of a single blade of grass in accordance with the laws of nature the mutual relations of which were not arranged by some intention'. Darwin's theory, at least, does not resolve such doubt.

Fig. 2.12 From Darwin's *Descent of Man*

Notes

The Descent of Man by Charles Darwin (Kindle Edition - Mar 24, 2011) - Kindle eBook

The title of this chapter echoes John C. Greene's classic *Science, and Ideology, and World View: Essays in the History of Evolutionary Ideas* (Berkeley: University of California Press, 1981). His *The Death of Adam: Evolution and Its Impact on Western Thought* (Ames, Iowa: Iowa State University Press, 1959) is a classic history of the idea of evolution, and contains a useful discussion of the lead up to Darwin's second book, *The Descent of Man*, "Darwin was pleased with Huxley's views on man, but was disturbed by those of Lyell and Wallace. His alarm increased when Wallace, reviewing the tenth edition of Lyell's *Principles of Geology* in 1869, asserted that neither natural selection nor the more general theory of evolution could explain the origin of conscious life or the moral or intellectual nature of man", p. 320. There is also Wallace's "The Limits of Natural Selection as Applied to Man" in the final chapter of his *Contributions to the Theory of Natural Selection*. Cf. Charles Smith & George Beccaloni (eds.), *Natural Selection & Beyond: The Intellectual Legacy of Alfred Wallace* (Oxford: Oxford University Press, 2008). Darwinism is beset with an invisible variant of the invisible hand 'theory gimmick': "Smith asserts the apparently self-contradictory notion that capitalism transforms selfishness into its opposite." From Duncan Foley, *Adam's Fallacy: A Guide to Economic Theology* (Cambridge: Harvard University Press, 2006), p. 2. The confusion over Darwinian evolution in the schools is discussed in John Campbell (et al.), *Darwinism, Design, and Public Education* (East Lansing: Michigan State University, 2003).

The new findings of genetics have resolved the 'Out-of-Africa' vs. 'Multiregional' controversy. In the words of Stephen Oppenheimer, in *The Real Eve: Modern Man's Journey Out of Africa* (New York: Carroll & Graf, 2004), "The Out-of-Africa view now wins the contest because the new genetic trees lead straight back to Africa within the past 100,000 years", p. xx.

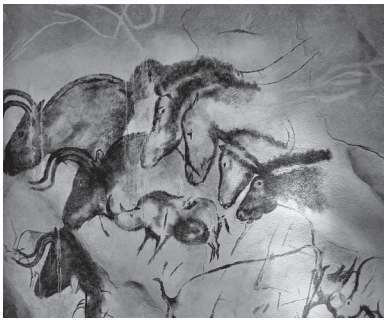


Fig. 2.13 Chauvet Cave Horses

Susan McKinnon discusses evolutionary psychology, and its ideological biases, in *Neo-liberal Genetics: The Myths and Moral Tales of Evolutionary Psychology* (Chicago: Prickly Paradigm Press, 2005), "According to theory of mind developed by the evolutionary psychologists, the human mind operates through a multitude of psychological mechanisms, that were developed in the Pleistocene environment of evolutionary adaptation". Works such as Nicholas Wade's *The Faith Instinct: How Religion Evolved and Why It Endures* (New York: Penguin, 2005) would make better sense extracted from Darwinian thinking. And the later monotheisms of the Axial Age are very streamlined social ideologies for transcultural globalization.

The Shiva seal indicates, controversially, given the well-known Aryan invasion theories and their debates, a very ancient source to the classic yoga/tantra traditions of India, these being the source of the Buddhist tradition. Alain Danielou, in his histories of India in such works as *Shiva and the Primordial Tradition: From the Tantras to the Science of Dreams* (Rochester, Vermont: Inner Traditions, 2007), despite often dubious scholarship, unwittingly gives us a set of hints as to origins of religion in polytheistic wrappers (Shiva, Krishna), in materials we suspect to be more primordial than even the author suspects. The sexual basis of religious consciousness in primitive Paleolithic 'tantras' should be an obvious line of research. The works of Gopi Krishna, such as his *Kundalini: The Evolutionary Energy in Man* (Boston: Shamballa, 1997), beyond the pale in conventional evolutionary research, nonetheless show the key (which the author himself seems to lose in the muddle of kundalini myths) in plain sight to the unlocking of 'evolutionary (higher) consciousness' in man. These are eminently realizable techniques for even the most 'primitive' of men. The art of the Paleolithic is discussed in Gregory Curtis, *The Cave Painters: Probing the Mysteries of the World's First Artists* (New York: Random House, 2006)

A classic critique of Darwin (1941) almost predating the emergence of the 'Synthesis', and before the Reign of Terror by the 'Paradigm' over most academic scholars, is Jacques Barzun's *Darwin, Marx, Wagner: Critique of a Heritage* (New York: Doubleday, 1958), p. 107:

> When the *Origin of Species* appeared, Butler was on his way to New Zealand... He read the book there in the solitude of his ranch, and at once became a convert to the idea of evolution. The hypothesis even spurred him to write for a local journal a sketch called *Darwin Among the Machines*, the leading idea of which—that of machinery evolving by itself and ultimately conquering man—has since acquired the taste of an unpleasant truth…Further reflection and several rereadings of the *Origin of Species* made Butler dissatisfied with the Darwinian theory of Natural Selection. Perhaps his own fancy about the machines gave him the clue to the weakness of Darwinism—what he ultimately came to call the "the Deadlock in Darwinism". The deadlock was simply that machines, having no purposes of their own, could not evolve, and since animals and plants were treated by Darwin as if they were machines, evolution was impossible.

The ideological character of selectionist theories is well depicted in Adrian Desmond's *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago: University of Chicago Press, 1989), p. 2:

> The situation in the 1830's (when Darwin was secretly devising his theory) raises a whole set of questions. Could it be that the sorts of evolutionary sciences openly imported from France into Britain at the time were not so much unworkable…but that they had disturbing social and political associations? …Was not France itself a cautionary tale? Had not the Parisian demagogues included Jean-Baptiste Lamarck's execrebable evolutionary theory in their arsenal?...Darwin himself deplored the turbulence of the 1830's and shuddered at the mention of revolution. In his notebooks he actually talked of the natural, lawful processes of change in nature and society obviating the need for any sort of violent interruption…

Darwin's social darwinism is much denied, but the facts speak for themselves. Consider the following passage (http://www.evolutionnews.org/2005/12/suppressing_the_truth_about_da001682.html):

> With savages, the weak in body or mind are soon eliminated; and those that survive commonly exhibit a vigorous state of health. We civilised men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile, the maimed, and the sick; we institute poor-laws; and our medical men exert their utmost skill to save the life of every one to the last moment. There is reason

> to believe that vaccination has preserved thousands, who from a weak constitution would formerly have succumbed to small-pox. Thus the weak members of civilised societies propagate their kind. No one who has attended to the breeding of domestic animals will doubt that this must be highly injurious to the race of man. It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race; but excepting in the case of man himself, hardly any one is so ignorant as to allow his worst animals to breed. *The Descent of Man* (1871 edition), vol. I, p. 168).

Darwin ideological abuse of biological theory to defend capitalism has been discussed by historian Richard Weikart: Darwin drew on natural selection to criticize the work of trade unions and cooperatives. Richard Weikart, "Laissez-Faire Social Darwinism and Individualist Competition in Darwin and Huxley," The European Legacy (1998), vol 3, No. 1, pp. 17-30, pp. 19-25; and "A Recently Discovered Darwin Letter on Social Darwinism," Isis (1995), vol. 86, pp. 609-611.

J. Fodor & M. Piatteli-Palmarini produce that rarity, a belated academic critique of Darwinism in *What Darwin Got Wrong* (New York: Farrar, Straus, and Giroux, 2010). This work aptly compares the Paradigm to the phase of Behaviorism in psychology, finally challenged by Chomsky, who has observed about selectionist language, "It is perfectly safe to attribute this development to 'natural selection' so long as we realize there is no substance to this assertion; that it amounts to no more than a belief that there is some naturalistic explanation for these phenomena' (*Language and Mind*, 1972). It is also true that 'selection' is a design term, for the artificial selection of animal breeders. As Chomsky seems to realize, the evolution of language, and we might consider related the question of ethical behavior, is entirely beyond current forms of scientific explanation. As we will discover, a clue to the emergence of language must be suspected in the evidence of the Axial Age with its spectacular evidence of the emergence of art in macroevolutionary correlation. William MacNeill, in *Keeping Together in Time*, considers the element of dance and song in human evolution. But this process is right under our noses in world history in what must be a very late form. William McNeill, in *Keeping Together in Time* (Cambridge: Harvard University Press, 1995).

Erasmus Darwin, grandfather of Charles, in The Temple of Nature sums up the process of evolution (Desmon King-Hele, Erasmus Darwin, (New

York: Scribner's, 1963):

> ORGANIC LIFE beneath the shoreless waves
> Was born and nurs'd in Ocean's pearly caves;
> First forms minute, unseen by spheric glass,
> Move on the mud, or pierce the watery mass;
> These, as successive generations bloom,
> New powers acquire, and larger limbs assume;
> Whence countless groups of vegetation spring,
> And breathing realms of fin, and feet, and wing.

3. WORLD HISTORY: A HIDDEN TELEOLOGY?

> There can be no question that Darwin had nothing like sufficient evidence to establish his theory of evolution…Darwin was quite unable to demonstrate the infinitude of connecting links, the existence of which he admitted was crucial to his theory.
> Michael Denton
> *Evolution: A Theory in Crisis,* p. 69

3.1 The Limits of Observation

The issue is not science versus religion, but the promotion of Darwinian pseudo-science beyond the limits of observation, and the metaphysical projection of natural selection as a universal law of biological evolution. In reality those limits make the empirical demonstration of the mechanism of evolution very difficult. We can see that there are degrees to the discovery of the *fact* of evolution. We might detect evolution, but even so we must zoom in to study the process in detail before we can get a sense of how it works. This is a tremendously difficult thing to do. The task assumes we can observe the entire record of a species over a vast terrestrial space and over many

thousands, or millions of years to verify the claimed mechanism. Put that way we see that actually observing evolution in full is close to impossible, and the result is that we are left with inferences. It is here that the temptation to make natural selection a 'law of evolution' not requiring verification in all cases arose as if in imitation of physics. But there is no such universal law. If we are to have 'laws of evolution' they must be something far more complex than what science currently considers. A study of history shows at once the fallacy of this kind of thinking. We take for granted the need for a continuous chronicle of all events. But with evolutionary histories a lesser standard has somehow become the norm. The situation is almost preposterous, and there is every possibility we have missed the key to the dynamics altogether. We must retreat to the stance of chronicling evolution, wary of premature speculative theories of its mechanism. In fact, this is what scientists actually do, if we observe the reality beyond the endless debates.

> **The Limits of Observation** Darwinian speculation greatly underestimates the difficulty of observing evolution, and tends to substitute assumptions about natural selection for the hard work of observing evolution in action. Once we really begin to observe 'evolution' we see that it is a non-random process that stands out against the backdrop of deep time.
> **Observing Speciation?** The Hurricane Argument (inset box) shows the problem with 'jungle surface' observations of life (the source for Darwin/Wallace of their theories). That surface suggests natural selection. But the reality of speciation is 'seen' only over millions of years in diverse sections of a global environment. Not surprising the problem is confusing.

The problem of evidence is especially critical in the case of the descent of man whose emergence is a mystery still unresolved by the speculative assumptions of current reductionist science. Further, man is still a mystery even to himself, what to say of how this mystery evolved. The facts working biologists themselves have uncovered don't inspire confidence in the Darwinian interpretation. The appearance of man is uncomfortably sudden in the reckoning of periods enforced by the evidence we have.

If the observation of evolution in deep time is difficult, we are left to ask if there is any data set available to us that can demonstrate evolution in action. The answer is a surprising one: world history itself.

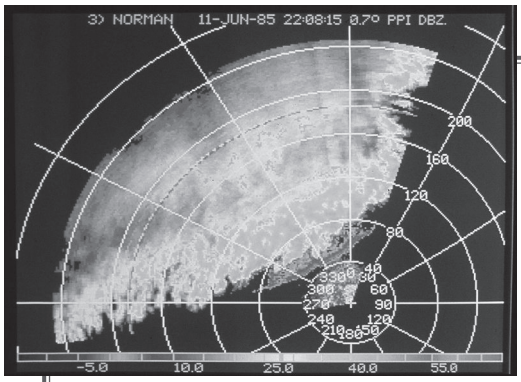


Fig. 3.1 Tracking Hurricanes

Darwin's theory is a wild guess applied to the immense vistas of deep time. Those unobserved intervals can fool us badly. One way to see the problem with claims for natural selection (which is, of course, always present) is to look at history, another to consider the way metereologists study weather.

The Hurricane Argument Consider a hurricane, a very brief event by comparison, as a global 'system evolution' on the surface of a planet. We know a hurricane when we see one, but its dynamics, mechanism, and full progression require incremental 'closing' on degrees of evidence and observation, a task not fully accomplished until the advent of satellites able to map global coordinates. In the same way we know evolution when we see it, roughly speaking, given the fossil evidence, but its dynamics, mechanism and full progression require incremental 'closing' on degrees of evidence and observation, a task not fully accomplished. Note the analogy suggests global positioning satellites over the entire planet over millions of years, to observe drifting species and their changes. Suppose an observer in outer space only had loosely sampled data on pre-Neolithic man, and post-twentieth century man, and then conjectured that some mutation caused this dramatic change.

This analogy shows at once where Darwinism departs from scientific practice. Historians routinely assume they must close on the facts in such an analysis, yet Darwinists wish to claim exemption. We have no fully observed datasets in Darwinian deep time. It is an insidious trap.

History and Evolution: Some Empiricism The problem with the theory of Darwin lies in the verification of its claims for natural selection, and random evolution. We need an independent test of the issues. The study of history might help. Properly documented sequences of evolution are rare to non-existent. *The only intensively observed historical/evolutionary sequence, one with data in real time and at the level of centuries or less, is that of world history since the invention of writing.* As we examine world history in the light of recent discoveries since the nineteenth century the suspicion arises that the clue to evolution lies there, if we can understand it.

Some systems analysis The Axial Age might confuse us. There is another approach, which we will try in this chapter. Any complex entity can be analyzed with a generalized systems analysis (which is looser than causal analysis). Does the system show coherent behavior or have any structural properties? That is an important tactic since given the diffuse chaos of world history we might not think to try this. One technique is a frequency analysis, does the system show cyclical behavior of any kind? To our stunned surprise we can see that it does, in the interval where we have continuous data at the centuries level, showing a clear baseline cycling.

This unique data set, five thousand years in length, with less complete intervals rapidly filling in, is just barely long enough to put the idea of natural selection to a test. Lo and behold, we do see a process of evolution in action, a statement requiring careful delineation. The result suggests something entirely different from the mechanism claimed by Darwin: innovations appear discontinuously in a non-random fashion. At first, it seems preposterous to bring the term 'evolution' to history. But it is not hard to derive a rationale for this: evolution and history must overlap, so to speak, and the resulting transition should be visible empirically. With this clue we discover to our surprise the secret to world history.

3.2 World History: The Non-random In Plain Sight

It was the biologist Dobzhansky who noted that 'nothing makes sense' except in the light of evolution. But the corollary we suspect is that nothing makes sense in the light of natural selection and the perspective of random evolution. It is suspiciously the kind of theory those who have never truly

observed evolution might adopt.[1]

We must discover the meaning of evolution, its real dynamics, by seeing it in action. And here, as we have suggested, a surprise is in store: the evolutionary and the historical are going to overlap in some fashion: we can catch a glimpse, perhaps, of evolution if we can decipher that overlap.

A Non-random Pattern World history flunks a randomness requirement. Not only that, it yields to a bit of systems analysis, using a frequency test, taken as a question, Does world history show evidence of general sequence? The unmistakable pattern of an alternation rhythm or discrete series is there. The resulting transitions are clearly visible, and we suddenly realize the Axial Age is evidence of one of them. We are suspicious at once of statements glibly made about deep time. World history is the only close-tracked data set we have and it fails to conform to assumptions of randomness!

Some Hunches Those who claim the sole validity of random evolution should ask themselves how a diffuse and dispersing chaos such as the display of cultures globally could ever 'evolve' or proceed beyond a primitive state. Our list of the problems was devastating. As a sort of hunch, we think, it would require some form of advancing mainline to set the future for the rest, the kind of thing that Darwinists categorically reject. But it is not hard to detect just such a mainline in the emergence of civilization! One that we could never have detected in deep time, where the intervals measured are too large and coarse-grained.

Axis points...In the Introduction we considered some reasons the 'non-random' will appear in world history. We need to examine world history for turning points, discontinuities, regularities, and non-random incidents (rustling in the bushes). In the nineteenth century something odd began to be observed. Karl Jaspers has summarized this research, and his term 'axis' of history means a kind of turning point. Jaspers was a philosopher of history, still focused on the Christian legacy here, a useful starting point. The modern philosophy of history is reborn with Kant!

Even as Darwinian dogma endures as the reigning paradigm, the anomaly of the evidence for speciation, with its frequent contrast of sudden emergence followed by stasis, lurks as a caution to claims of natural selection and has been the object of a new style of theory, that of punctuated equilibrium. And this leaves the phenomenon of sudden emergence the suspicious wild

1 "Nothing in Biology Makes Sense Except in the Light of Evolution", American Biology Teacher, Vol. 35, pp. 125-9.

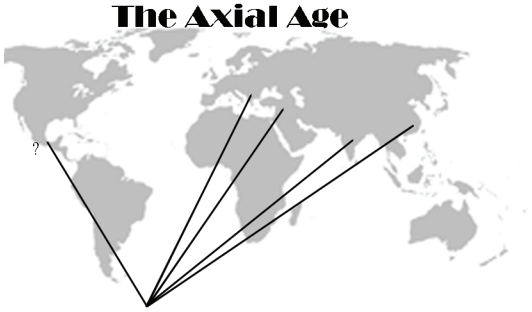
card of the whole account of evolution.

> **A Devastating Question** An unsettling possibility surrounds the claims of standard evolutionists: how do we know that evolution does not occur in high speed bursts on the order of centuries or a few millennia, thus essentially beyond observation? This question makes the study of world history significant, for it is the only source of data seen at close range, at the level of centuries. And sure enough, this holds some surprises for the study of evolution!

Thus, ironically, the study of history can remind us that we cannot omit the details in continuous time of evolutionary histories with sweeping generalizations applied to immense intervals of time. World history can give us an insight here into where we are going wrong. Darwinism flunks a world history test, and suggests a picture of man inconsistent with the result seen in history. We constantly assume evolution is to explain history, but perhaps it should be the other way around.

> **The Evidence of World History** Our increasing knowledge of deep time and of the fossil record has been accompanied by an equal transformation in our knowledge of world history. Ironically, it is world history that can assist us in answering our questions about evolution, the evolution of man. We can see that the issue, for example, of facts and values is intrinsic to development. This fact alone should alert us to limits of reductionist accounts. But there is more, a surprise: world history is actually beginning to show us a mysterious dynamic behind its seemingly random chronicle.

> **An Empirical Breakthrough: The Axial Age** One aspect of our transformed view of world history is the discovery of the data of the so-called Axial Age. The question of evolution has been confounded by this discovery of a massive non-random process at work in world history. This discontinuous global process gives evidence of a dynamics of history that we had not suspected, and which throws light on the history recorded in the Old Testament. The Axial period shows us
>
> 1. a clear example of the way discontinuity can arise in a temporal historical stream,
> 2. how synchronous emergence can occur in a parallel, multitasking set of processes,
> 3. that there is global aspect to historical 'evolution', contradicting the standard insistence on local micro process,
> 4. purely cultural transformations are central, beyond the assumptions about purely genetic change.



The phenomenon of the Axial Age shows synchronous effects across Eurasia

Karl Jaspers called the global transformation from -800 to -200 BCE the 'Axial Age', and its effects are visible in Greece/Rome, Israel/Persia, India, China, with probable effects in the New World and sub-Saharan Africa

Karl Jaspers discovers the non-random

An axis of history, if such a thing exists, would have to be discovered empirically, as a fact capable of being accepted as such by all men, Christians included. This axis would be situated at the point in history which gave birth to everything which, since then, man has been able to be, the point most overwhelmingly fruitful in fashioning humanity; its character would have to be, if not empirically cogent and evident, yet so convincing to empirical insight as to give rise to a common frame of historical self-comprehension for all peoples–for the West, for Asia, and for all men on earth, wihtout regard to particular articles of faith. It would seem that this axis of history is to be found in the period around 500 B.C., in the spiritual process that occurred between 800 and 200 B.C. It is there that we meet with the most deepcut dividing line in history. Man, as we know him today, came into being. For short we may style this the 'Axial Period'. From *The Origin and Goal of History*

This phenomenon provides an immediate challenge to the assumptions of reductionist scientism, and by association the claims of random evolution for the evolution of man. We become suspicious that the question of evolution is closely reflected in world history, providing us with the missing clue.

Old Testament Histories The classic universal history inherited from the Old Testament is now both confirmed and challenged by the larger portrait of the Axial Age. How are we to understand the core Old Testament history that intersects with the interval of our Axial period (i.e. the rough three centuries before the Exile)? We inherit a classic and beautiful puzzle that will, almost outlandishly, transmogrify into an evolutionary puzzle. We have lost the meaning of the beautiful Old Testament glimpse of the evolution of world history, one that devolved into a religious superstition and became the opposite of its starting point, we suspect. This historical episode will tell us most of what we need to know about the enigma of the evolution of religion, next to the preposterous nonsense of the 'god gene' and other Darwinian ploys to 'explain everything' with nothing, natural selection. Note: this refers solely to the Axial Age period, from ca. -900 to the Exile and its immediate aftermath.

As Steve Mithen notes in *After The Ice*, "Human history began in 50,000 BC…Little of significance happened until 20,000 BC…Then came an astonishing 15,000 years that saw the origin of farming, towns, and civilization. By 5000 BC there was very little for later history to do; all the groundwork for the modern world had been completed. History had simply to unfold until it reached the present day." This sounds like another 'Axial Age' lurking in the data. Steven Mithen, *After The Ice* (Cambridge: Harvard University Press, 2003), p. 506.

IHVH The ancient Israelites, or the unknown sources behind them, were reluctant to use the terms of divinity, knowing the confusion that would arise. We must be adopt a similar stance. The 'design' visible in history cannot be resolved by theological debates.

Jaspers' Book The title *The Origin and Goal of History* is far too ambitious. We cannot be sure of the origin, nor can we know, yet, the end point. But we can detect directionality, and probably teleology, with limited subsets, as relative transformations (for example, tree rings show relative growth). By a stroke of good fortune the data falls into the one predicted in the Preface: an intermittent macro driver, with easy to detect transitions clustered at the start of each frequency beat! The Axial Age is confusing: it may be an 'axis' in a series, starting in the Neolithic (?).

The Axial Age as a piece in a larger puzzle

The rapid growth of archaeological knowledge since the nineteenth century has greatly expanded our views of world history and, significantly, crossed a threshold of five thousand years, the bare minimum interval, we are about to see, for grasping the logic of historical evolution. This data begins to show the unmistakable evidence of a non-random pattern in world history since the invention of writing This pattern was discovered in two different ways:

1. The basic discovery is of the so-called Axial Age, the enigmatic synchronous emergence of cultural innovations and advances across Eurasia in the period of the Classical Greeks and early Romans, the Prophets of Israel, the era of the Upanishads and Buddhism in India, and Confucius in China. The sudden discontinuity of its onset, and geographical separation of its manifestations, confronts us with a process that must be global in scope. Trying to understand this phenomenon leads us to suspect it is part of a larger pattern:

2. The solution to the riddle of the Axial Age is found in the suggestion of a frequency phenomenon. Further, the perception of a long-range directionality to world history has occurred independently to many observers. We can formulate an hypothesis on this basis, that of the mysterious sequential logic of turning points or transitions proceeding down a mainline of the diversity of civilizations. Looking at the Axial phenomenon we are forced to consider if it is really a step in a sequence, and moving backwards and forwards we suddenly discover the full pattern. Note that these turning points are equally spaced, with an interval of about 2400 years, clear evidence of a cyclical phenomenon.

Teleology and free will One problem with teleology is that, in our present, we are free to change the 'end' point. That doesn't prevent other forms of teleology, including the type where the 'end point' is just this stage of 'freedom'! Another solution to the paradox is in our 'play' analogy: the 'plot' is the teleology, but the realization as an improvised plot is subject to free agency. Note that Hegelian philosophy of history toyed with this paradox in another way (the idea of the 'end of history').

We are ready to explore the non-random in world history. This history is visible to the naked eye. We have the facts, but we must understand them. As with the Old Testament our perceptions are veiled by preconceived myths. How can we claim a science of evolution, with insufficient evidence, and no science of history, armed with a plenitude of data? This contradiction haunts Darwinism. The point is that historical observation sets the standard. Observation means a complete chronicle of past events, at the level of centuries, decades, years, or less.

In a nutshell, history shows us the problem with the assumptions of randomness: it follows an unmistakable sequential logic of intermittent punctuations and equilibria. One of the most persistent dogmas of the Darwinians is the assertion that evolution is a purely random process without directionality. We will explore a simple outline of history to see the reality.

Confronted with the data of the Axial Age we are left to wonder if it is an isolated phenomenon. As we move backwards and forwards in time we soon discover that it is most probably a step in a larger pattern, a sequential logic. We confront the additional insight that the discontinuities are in a series: we suddenly realize how development occurs, a continuous micro history and a discontinuous macro history, which we can label 'evolution'. We suddenly stumble on the most obvious solution to the evolution riddle: it is a two-level process with a hidden driver that operates in an intermittent sequence. And it operates on cultures top-down, not genes.

It is time to look at an outline of world history and the non-random patterning that stands out at once if we look closely at the evidence.

2.3 An Outline of History

In the controversy over evolution, the evidence of world history has gone unnoticed because we never associate 'evolution' with historical chronicles. But it is the Darwinian usage that is wrong, and our suspicion is that 'evolution' and 'history' must overlap, whatever that means. Logically

that is a reasonable inference: we should go in search of how that might be. We rapidly find the evidence inferred: the overlap takes the form of a set of intermittent 'transitions'. The term 'evolution' as commonly used is a botch. Therefore the term should go into free fall until we get some indication of what it really means. It is a good guess it is related to the evidence of non-random patterning.

> **The non-random** As we indicated in our discussion of the non-random, it indicates a 'rustling in the bushes': something is tampering with world history. Like a feedback device (but with regular beats), something switches on in a periodic series. The data of the Axial Age makes this stunningly obvious: a massive discontinuity in a synchronous band. The best hypothesis to explain this is series of such periods, and these we can find.

It is useful to lay out a simple outline of world history, to see the clear evidence of the non-random in plain sight since the invention of writing. This is both easy and hard: the Table of Contents of almost any world history will show immediately a disguised hint of a sequential logic. The phenomenon of the so-called 'Middle Ages' is confusing because we see it in isolation, but as we expand our perspective it becomes a clue. The pattern of epochs with explosive beginnings and 'medieval' periods in between is now unmistakable and occurs twice in a row, with additional examples suggested.

It is hard because the data is incomplete, a three-term series, at best, and hides a complex system with elusive dynamical properties. It is a smart system that tweaks us with a hide-and-seek design riddle, and whose action would seem implausible had we not the evidence before our eyes (in fact, even with this evidence an almost willful blindness has beset historians). Again, it is easy because the phenomenon of the Axial Age, most probably a fragment of the larger pattern, is a dead giveaway: it sticks out as a massive exception to our assumptions about how things happen. And this data has only recently come to light, beginning in the nineteenth century. Even so, a taboo against any reference to this data remains in effect.

Our pattern is so basic that it almost blends into the random, almost. It is like a ripple structure left in sand, or a wave motion detected in a mysterious oscillation: leaving the immediate question by the principle of sufficient reason: 'What caused that?' The 'principle of sufficient reason' ('the explanation for something', a generalization of causality if you like, but more general since we must examine the issue of free agency which transcends causality) is almost instinctive, part of our in-built perceptual

equipment. The power of attention moves to zero in on 'non-random events' which create a contrast with their background. The swelling tidal motion of world history is like that, save that our 'vision' must be a construction created by reading history books, no doubt the reason for the delay in 'seeing' the obvious, in the mind's eye. As we zoom in on this pattern, we discover to our surprise a massively complex system at work, a surprise indeed. But that's the problem, zooming in. Our perceptual equipment can't zoom in on or 'see' five thousand years of history. Instead it requires hundreds of hours of reading, study, and mental reconstruction. In fact, the very pattern we discover greatly assists in the study of history, because a principle of coherence emerges.

The crucial issue is data in real time *at the centuries level*, and world history is the only such dataset we have. That may be where we are going wrong on evolution: we never see short-acting events in deep time. We examine intervals of millions of years, then state how something evolved in that interval, sight unseen. We got a warning about this from the oddity of the Axial Age: *in a matter of three centuries massive sudden changes are apparent*, and visible to the naked eye, so to speak. A mere three centuries, and not just some minor innovations: massive social transformations on a planetary scale. By comparison genetic change would seem trivial. This centuries-level scale is a hard standard to apply to deep time, for it means *we may have completely missed evolution*. To be sure, the scale of deep time is different, so we must be wary. But in our historical example we can see that anything less focused than at the centuries level is immediately misleading, as far as history and human evolution are concerned. If we didn't have centuries level data the Axial Age would vanish and we would back to the old treadmill of wrong explanations. But even with world history we are just on the threshold of observation: the Neolithic, for example, is still beyond this standard. As we proceed we will observe that everything seems random until we arrive at world history since the invention of writing, which has a surprise for us.

1. Big Histories, Universal Histories: From the Big Bang

Let us set our outline as a short 'Big History' turning into a Universal History, revealing the stark contradiction that lurks in the data, the contrast of causality and freedom. The most obvious issue here is the anomalous character of the data. There are three points, at least, in this 'Big History' that are suspicious:

A Timeline for 'Big History'

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 Big Bang, 13.7 billion years ago
10^{-43} seconds: the universe is smaller than the Planck length.
10^{-43} 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, galaxy, then stellar, formation begins
5.6 billion years ago: Our sun appears from debris of a supernova
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*
10,000 years ago: onset of Neolithic
5,000 years ago: rise of advanced civilization in Egypt, Sumer
2500 years ago: the era of the so-called Axial Age
1500 C.E.: the explosion of modernity

1. The origin of life
2. The Cambrian
3. The emergence of hominids, and man

Such data is in fact a candidate for two level interpretations, with the phantom of teleology lurking in the wings, and our method should attempt to solve the 'representation' problem for teleology: we sense that it is mixed with its opposite, and there are two levels. This is the reason we end up confused. The point is merely to be clear that the evidence is ambiguous. Non-random breaks in the chronicle of evolution are in plain sight. As we move to examine world history this factor will be stand out.

In any case, what we see is an intermittent effect. Our account proceeds, almost by definition, from this causal Big History to a Universal History of hominids becoming 'free agents', as a cosmic history turns into a chronicle of freedom. The connection between the two types of history is indicated by Christian de Duve in his *Vital Dust*, where the emergence or evolution of the human will in relation to values becomes a challenge to purely reductionist views. Reductionist science simply disregards the demand for any account of this aspect of evolution.[2]

> **Fine-tuning** Paul Davies in *The Goldilocks Enigma* asks, Why does the universe seem so well-suited to life? Is this not really the answer to its own question: the transition from Big History to Universal History is effected by this 'fine-tuning' emerging in the Big Bang itself. Physics itself, although physicists are reluctant to admit it, gives us a hint of the mechanism beyond natural selection. This insight has been confused by metaphysical design arguments. But the empirical basis for a consideration of evolutionary directionality is there.[3]

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 macro 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, but we suspect the obvious, an evolutionary ratchet effect, and our perspective suggests 'stepping progression', in the sense of an effect reaching new successive plateaus where

2 Christian de Duve, *Vital Dust: The Origin And Evolution Of Life On Earth* (New York: Basic Books, 1995).

3 Paul Davies, T*he Goldilocks Enigma: Why Is the Universe Just Right for Life?* (New York: Houghton Mifflin, 2006), Nick Land, *Life Ascending: The Ten Great Inventions of Evolution* (New York: Norton, 2009).

microevolution takes over.

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.

Our two-level perspective 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.

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

An elusive mainline of continuous evolution producing several side branches from Australopithecus to Neanderthal cross a threshold in the

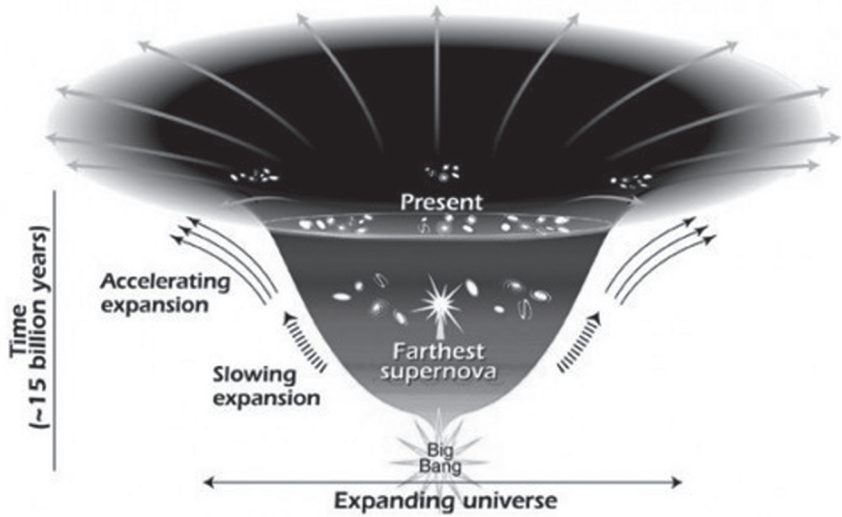


Fig. 3.2 The Big Bang

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 behaviorally 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.

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 Olduwan phase, then *homo ergaster*, initiating the new phase of toolmaking the Achelean, and his immediate successor

Fig. 3.3 World Map, 1689

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.

Our perspective on history 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 macro effect should remind us that even at the most advanced level of human development a mysterious evolutionary macro process is detectable.

We will be helped by 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 was 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.

And here begins the great surprise: with the rise of civilization, we can isolate to observation an emerging pattern of what we can call macroevolution, visible in two historical intervals or epochs, and the three transitions between them, visible as cycles of cultural and social innovation on a scale of millennia, roughly 2400 hundred years—emerging as a pattern in and of itself, and as the last visible aspect of an earlier structure originating in the Neolithic. This tantalizing fragment allows us to decipher the riddle of evolution, albeit here something embedded in the historical.

The pattern shows a striking resemblance to the dynamic of punctuated equilibrium, in the dictionary sense of those terms.

This non-random pattern is a challenge to more simplistic views of historical evolution. Any law of history, theory of cultural evolution, religious teleology, transcendental explanation, or political action script, or

Timeline for the Rise of Civilization

The factor of 'ten thousand year explosions' is clearly at work in the emergence ('evolution') of civilization.

From 50,000 years ago: dawn of human culture

20,000 to 15,000 years ago: the Last Glacial Maximum, transition to interglacial

15,000 to 12,500 years ago: Bølling-Allerød Interstadial, warming

12,500 years ago: Younger Dryas, 1300 years of renewed cold

11,500 years ago: onset of Holocene

Then around 9-10,000 BCE we see the first beginnings of the agricultural revolution with the Natufians in Western Asia. Then a new 'Great Explosion' takes place.:

The period of the Neolithic beginning ca. 8000 BCE in the Fertile Crescent is still too coarse-grained to detect the 'hidden transitions' we suspect, but we can plot the basic outline very easily:

-8000 to -5500 BCE is the first phase,

-5500 to -3000 BCE is the second phase,

leading to the take-off period of 'higher' civilization

ca. -3300 we see Sumer and Dynastic Egypt crystallize

A great field of civilizations and histories arise in the diffusion fields of these two great starts, but the basic framework is in place until the Axial period:

-900 to-600 BCE: we see a synchronous parallel emergence field across Eurasia, with ambiguous data for Africa and the New World. This massive convulsion of transformed culture sets the stage for the first stage of globalization.

1500 to 1800, another rapid transition to a new age period. The lack of synchrony here in the single focus of Europe is totally misunderstood. Our analysis suggests the obvious reason: parallel transitions would collide.

This almost miraculous pattern of data, alternating between fast advance and 'medieval' middles is a dead-ringer for the term 'punctuated equilibrium', and shows a clear frequency pattern of about 2400 years, as hard as that can be to accept. But this kind of action, totally unexpected, fulfills our requirements for an 'evolutionary' driver. Almost all the great advances of civilization occur within these 'axial' intervals.

theory of economic determination ought to explain this pattern if it claims superstitious or pseudo-scientific authority.

Fig. 3.4 Sumerian Cuneiform Godlist ca. 2400 BC

2. Onset of the Neolithic

The era of the first man, the hunter-gatherer, ensues and persists until, in the interstices of the various Ice Age rhythms, human cultural evolution begins to take off with the discovery of agriculture. Man emerges from the Paleolithic and sometime around -8000 we see the Neolithic underway. Perhaps our sequential logic begins here, but even this earlier period still fails our 'centuries level' test. We should note that the bias against cultural evolution in favor of genetic fundamentals is probably misleading us. It is not a question of some mutation opening up a new possibility, but of a directional logic in the macroevolution of culture that leads the genetics. The onset of higher civilization is suspiciously the 'next episode' in the total evolution of man, which we might begin to suspect is still incomplete!

The Neolithic, in any case, is the true beginning of 'civilization', in the progression, village, town, city, and we arrive at the emergence of complex states, often called the 'rise of civilization'. It is probably in this era, incidentally, that we are to find the birth of 'religion' in the later sense of what we see as the 'world religions'. Five thousand years separate the onset of the Neolithic and the rise of higher civilization. We are drawn to a distinction between the 'discovery of agriculture', a technological advance, one that may or may not have happened independently several times, and the crystallizing cultural formations that transform Paleolithic man as he enters into an entirely new stage of social evolution. There may be several beginnings here, but we can see, as we predicted, the emergence of a mainline setting direction. This mainline has a surprise: it can split into parallel lines, an obvious strategy to increase diversity.

And this is related to the fact that the prime focus of the Neolithic lies in the Fertile Crescent of the Middle East, despite multiple discoveries of agriculture. In fact, the remarkable technological complexity of irrigation societies that we see in the coming world of the Sumerians is already an

advanced descendant of these earlier advances. Now something strange happens.

3. History since the invention of writing

Fig. 3.5 Narmer's Palette
ca. 3100 BC?

With the rise of 'higher' civilization in Egypt and Sumer, the historical record begins with the invention of writing. We can apply some systems analysis to this data: does it show any system properties? The answer to our question is obvious, once we ask it. A clear sequential logic stands out: it is familiar to us in the way our traditions start suddenly in the classical era, followed by a long medieval period. And then we see that this happens twice in a row. The smoking gun is there. We zoom in, and the details begin to speak eloquently of a system at work. Please note that with this approach we instantly rediscover the second stage in our sequential logic to be none other than the Axial Age.

Our delineation of the transition from evolution to history has flown in the face of the standard definition, based on the invention of writing. While that definition of the 'beginning of history' begins to seem wrong, the fact remains that with the invention of writing we at last arrive at the centuries level standard we indicated as relevant, perhaps crucial, to understanding the real dynamics of human emergence. Note that this has given us an almost tantalizing five thousand year data set. A bird's eye view begins to detect the bare minimum of a sequence, as we cross the threshold of this five millennia worth of data. That's enough for two cycles about 2400 years in length and the beginning of a third, which, we will soon see, is precisely what the data shows.

> **History since the invention of writing:** Now we come to the remarkable pattern of three 'epochs' initialized by transitions of some kind, visible since the invention of writing: three periods in a row of rapid innovation, equally spaced, inside the slower current of world history, relatively static by comparison. Three complex transitions 2400 years apart fret the whole of world history. This sequence probably begins in the Neolithic, and we are talking about a relative beginning starting in the middle. We must be wary of thinking the onset of writing is the onset of civilization. If the Neolithic still flunks our standard, due to

the lack of records, it remains nonetheless the suspected starting point for our emerging entity: civilization.

Suddenly around toward the end of the third millennium we see the 'rise of civilization' in the dramatic, and synchronous emergence of the Sumerian and Egyptian complexes.

Relative beginnings Note the resemblance here to the question of the rise of modernity. The rise of Egypt and Sumer is not the absolute beginning, as with modernity, which is a kind of relative beginning.

Fig. 3.6 Gudea of Lagash c. 2120 BC

Thus, the phrase is not quite right, and this 'rise of civilization' is really a sudden punctuation or relative beginning in a continuous history, like the later so-called Axial Age. These two civilizations cross a threshold into a stage of higher social complexity, indicated by the scale and complexity of their social and political formation. In about three accelerated centuries before -3000 twin advanced civilizations appear in parallel. They will prove the dynamic sources for millennia of descendants in the oikoumenes or diffusion fields that they generate.

We had thought that this was an ad hoc advance based on contingent factors as described in the various unsuccessful theories attempting to explain the phenomenon (e.g. Toynbean 'challenge and response'). But in fact we detect, to our astonishment, an element of timing in a process that has a mysterious 'scheduling' or cyclical period. Notable, of course, is the invention of writing, the beginning of the historical record, and as we proceed to examine this era in relation to what follows we will be surprised to detect the beginnings of our non-random pattern. Three times in a row we will see this phenomenon of three or so centuries of sudden advance, the achievement of a plateau that is never matched its immediate successors which are relatively static or even moving into 'medieval' decline. Nothing in this gainsays prior slow development. But the sudden jump to a new social formation has always been a puzzle, and we will see that to our surprise the timing is non-random. Here is where we find the resolution of the Axial paradox. The Axial Age is simply the next in our series of such sudden jumps, transitions, or turning points.

Onset of first period: A mysterious discontinuity

We are really talking about the emergence of complex forms of the State. This occurs in the centuries before and around 3000 BCE, and we have the invention of writing, and the sudden onset of two classic advanced civilizations, Dynastic Egypt and the world of Sumer. Two (relative) starts in parallel. This period is conventionally described as the 'rise of civilization', although the slow transition, village, town, city that defines the Neolithic is all too obviously an earlier stage of gestating 'civilization'. But a new threshold of human social complexity clearly comes into existence very rapidly at the end of the third millennium BCE.

Fig. 3.7 Parthenon, 5th century BCE

An 'Axial' effect To the best of our knowledge the solution to the Axial Age riddle is seen in the phase before: as Egypt and Sumer accelerate (not begin) in relative beginnings *in parallel*, we see the paradoxical behavior obvious from the Axial Age. The solution seems to be a sequential logic, confirming our 'frequency' hunch using systems analysis. Note the similarity to the relative beginnings (not absolute) in the Axial period.

This initial burst of advances rapidly becomes fixed in place until the next phase. Nothing can quite match the creative phase of early Sumerian city-states, and the large oikoumenes generated show the drift into empire formation that characterizes the coming centuries. The world of Egypt produces its theocratic state and then remains almost frozen in place for two millennia. This transitional period generates an immense diffusion field across Eurasia, and we can clock the rise of complex states almost in proportion to distance and time in the wake of this phase: the Indic and Chinese systems are underway within a millennium. This period is still a bit murky, just on the threshold of our centuries-level test. We can see that slow and fast evolution are reconciled in practice. Both are true. And we realize why we are unclear how to refer to the 'rise of civilization'. It has been rising since the Neolithic. We are referring to the sudden transition that takes place in our series. This point becomes clearer as we examine the next phase, the Axial Age. After this initial transition, an immense interval of civilizations proceeds in a kind of semi-static series, until the next great period of transformation.

Another discontinuity: Turns out to be our 'Axial Age'

The next rapid burst has been noticed many times, and is often called in isolation the so-called Axial Age, without seeing its larger context, from around -900 to -400, the period from -900 to -600 being the key fulcrum period. Around a center of gravity ca. -600 we have the beginnings of our classical traditions, the world of the Greeks, the core Old Testament and its Prophets, the world of Buddha and Confucius. We see independent sourcing areas suddenly undergoing transformation in synchronous timing. From this period springs the constellation of great traditions that lay the foundations not only for 'western' civilization, but the civilizations of India, China. The Axial Age can be confusing because of its wide dispersion of effects from Rome to China. But this is because we think in terms of 'civilizations' while our pattern respects and acts only in relation to diffusion fields. The areas that respond in Axial phenomenon already lie in the wake of the diffusion field from the first transition.

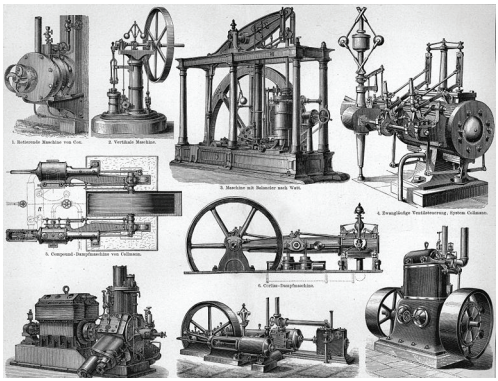


Fig. 3.8 The Steam Engine

The diversity of the Axial Age is remarkable and we see not only the birth of two world religions, but the world's first democracy, and the first Scientific Revolution in Greece.

> **Archaic Greece** The short explosion of rapid evolution in the three centuries of Greek history from ca. -900 to -600, followed by the flowering of Classical Greece is the clearest and most spectacular instance of the dynamics of the Axial Age. Similar episodes suddenly become understandable in the cases of China, India, and the Middle East.

This period reaches a plateau, as innovation becomes less intense, and in fact many of the innovations die out as this period wanes rapidly and we enter period of the Occidental Roman Empire and its long decline, followed by what we call the Middle Ages.

We are confronted by a stunning fact: the synchronous emergence of parallel Axial intervals from Rome to China is strong evidence for a mysterious global unity to the process.

The Rustling In the Bushes: Detecting Teleology?

Our outline has turned into something more, the detection of a non-random pattern, and this pattern at the same time showing signs of a complex system operating as a unity over thousands of years. It is the clear non-random effects that suggest the action of a teleological system. The massive discontinuity of the Axial Age is the clue to everything. The most reasonable interpretation of this, however, is that it is part of a larger pattern. Thus we have:

A sequential series showing a developmental logic. This series transcends the civilizations it works through, and always jumps to a new starting point.

A contrast of transitional bursts of rapid change, followed by 'middle periods' that proceed on their own. This pattern is almost the definition of 'punctuated equilibrium', so-called.

A global character to the dynamism, visible in the way our periods of transition shows parallel areas suddenly advance together, and independently.

In fact, the sequential logic is that of globalization, cultural rather than economic.

This pattern is rich in deep structure. We notice that the vast majority of innovations in the emergence of civilization are correlated with our transitions. The in-between periods tend to go into decline. It is hard to believe that a developmental process that can induce change in whole civilizations would leave genetic change to random chance. However, we have no clear picture as yet of the genetics of our series of transitions.

This sequential logic shows us how a teleological process might operate (we don't have a full run of data to conclude anything but 'directionality').

The period following the Axial Age shows once again the semi-static continuity factor contrasted with discontinuity and in the West we see the unmistakable evidence of decline and medievalism. As before. Suddenly we see another phase in our series.

We could almost guess the next step in the series. The only period that resembles the Axial transition is the sudden rise of the modern.

An Enigmatic Series: discontinuity #3?:

Then once again quite suddenly we see the remarkable rise, with uncanny timing, of the modern world, a great take-off about 1500. In three centuries starting in the sixteenth century the world system is transformed and reaches a new level of civilization and cultural organization. All at once we realize that the progression from the Axial period into a protracted medievalism, followed by the sudden rise of the modern world is no accident. It is part of the precise timing of the macro effect.

The idea of discontinuity is highly controversial, but our usage here is straightforward. It is empirical description, not a theory, and is like acceleration in a car when you step on the gas pedal. There is a discontinuous change in speed ('so to speak'), and we can see from the earlier case, dubbed the 'Axial Age' that the discontinuity is starkly obvious. Sometime after -900 BCE massive cultural changes suddenly occur, and in the case of Greece this becomes especially clear. Something violates standard sociological causality. The case of the Axial Age shows this is true in synchronous fashion: there can be no common cause in a sociological sense.

The pattern we have is therefore clear, but still controversial. We have promised only to show a non-random pattern. But if that pattern shows sequential logic, a pattern in which we are moved to 'connect the dots', we are driven to more than patterning into the study of an organized complex system. You may dissent from this, but the evidence is clear enough to make Darwinism irrelevant. That's because, whatever it is that we are seeing, it is a lightyear beyond the simplistic action of natural selection. The sequential logic shows clear developmental staging. What seems like a speculative generalization connecting the dots can be taken both determined interest, and skeptical reserve. Short of that taking the Axial Age in isolation shows the basic result, without any sequential logic. But with careful study the larger meaning of that will begin to stand out. There is no going back to Darwinian logic for history: social ideologies fail at once, because we can see that some other dynamic is at work. Our systems analysis with a frequency test may be incomplete, but it is enough to warn ourselves that random collisions of

A frequency hypothesis works beautifully!

We stumble on a stunning discovery (as we predicted in the Introduction): the data of world history since the invention of writing correlates with a frequency hypothesis:

We see three clusters in a punctuated equilibrium pattern:

Just before -3000, several centuries leading up
Just before -600, this is the Axial Age median
Just before 1800, the period from 1500 is clear

Try a series of period timelines, using intervals of 2000 to 3000 years: there is a bull's eye wavelength of 2400 years. How can this be? Only a macro effect can explain it. This pattern is too strongly correlated to be chance, and explains why we see civilization go into decline twice, as it moves away from its 'jumpstart' phase. The 'Middle Ages' is thus clearly an aspect of this cycling (as many suspected, but couldn't understand why). Still, three beat series are not enough to conclude a long-term frequency. Therefore, you can stick with the incontrovertible second phase, the Axial Age, to start. The larger gestalt will jump out with time (and study). Note that this only makes sense if a mainline sequence sets the advance region for the whole. Again, that is precisely what we see: a series of transition zones (often in parallel) that trigger a new era of civllization, as the results diffuse. Israel, Archaic Greece show clearly this mainline directionality.

Too strange? Unbelievable? Perhaps, but a pattern this strongly correlated is impossible to dismisss. The hypothesis of randomness fails badly. A closer look shows a dead-ringer system tinkertoy at work, an intermittent driver moving down a mainline. The term 'punctuated equilibrium' would be perfect here, but is already used with a different meaning by Darwinists.

This is how 'evolution' would have to act on an amorphous entity, a civilization, or a species. So, even though the result is like science fiction, and defies belief at first, it is empirical and sits there out in the open, awaiting observation. It is the random evolution hypothesis that is actually counterintuitive.

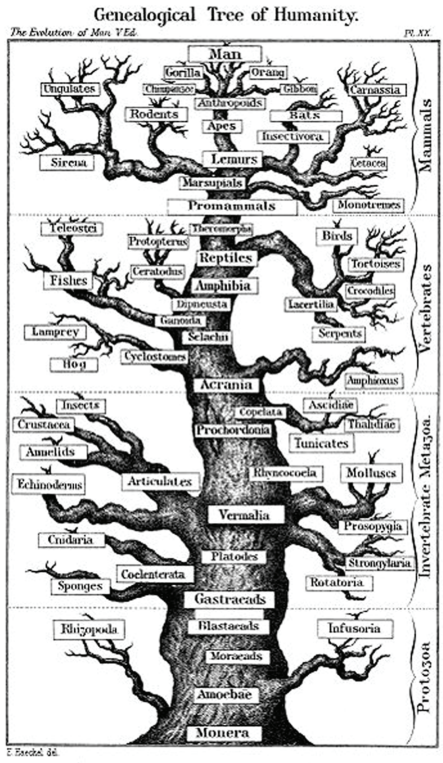


Fig. 3.9 Human Evolution, Haeckel

competing entities in the survival of the fittest isn't the name of the game here. Instead we see a clear pattern of directed, probably teleological action, meaning our 'system' is not proceeding at random, but with a clear realization of a template of some kind.

We have used the term 'brown paper bag' for the term 'evolution'. And we should put our data into that bag, that is, call it 'evolution', qualified as the 'evolution in long steps' of civilization. It seems confusing, but if Darwinian logic fails, the term 'evolution' goes begging, as a 'brown paper bag'. We can put our data into that bag, calling it 'evolution', with a question, what does it tell us about other times and places, and their evidence of 'evolution'? The answer is that our data resolves the paradoxes we listed in our Preface. It is beyond the scope of our argument, but we can see that it leaves a hint about the rest of the larger record: over and over we see something seem to switch on, show a discontinuity of rapid action, followed by a stable aftermath: the origin of life, the Cambrian, and, finally, the origins of man, suddenly have a 'dash of yeast' for some new type of theory or explanation. We should turn to the question of human emergence again, armed with the insight of history. The 'evolution' in our brown paper bag may be a cousin to the clear discontinuity at the dawn of *homo sapiens*.

3.3 Descent of Man Revisited

We should conclude our discussion, and outline, by elaborating on the suggestive indications for earlier human evolution in our historical discovery. What have we found? A suspicious case of 'evolutionary' dyanism that seems to switch on at the dawn of civilization in the Neolithic, as if

to continue something incomplete, tens of millennia before: perhaps our suspected 'great explosion'.

This is not random evolution, it is 'guided' evolution, and we can see that every phase of higher civilization shows an 'assist'. Our suspicion: this is chapter two of the descent of man. It seems all of a piece in the evolutionary drama of globalization starting with the 'out of Africa' scenario. And a long range evolutionary driver operating across spatial and temporal boundaries is the one thing that can rescue explanation from confusion, but something that seems too speculative, until we see an example.

Our sequential logic in world history is a snapshot image of how such a system might work, and it suggests itself as a candidate for the emergent phase of early man. We can easily imagine a variant of our macro effect morphing the speciation of *homo sapiens*. None of this gainsays some aspects of microevolutionary happenstance, and the complexities of the various stages of proto-sapiens hominids is an additional chapter of the story, and as we have insisted repeatedly, there are two (at least) levels to the evolutionary process. But the suspicion by many of a 'great explosion' seems more and more the correct interpretation. We can see now how in less than ten thousand years an action can serve to transform man and his culture.

That said, without the details we must remain open. But we have effectively sent Darwinian nonsense packing, at least. The data, we should note, most appropriately distinguishes the development of anatomically and behaviorally 'modern' man in two phases of his emergence, our explanatory matrix being just about right for the latter. That distinction is apt and the next act in the shaping of 'behaviorally modern' man dawns with our macro effect, indeed, the modern transition is a fitting coda. The point is that it would be absurd to think the earliest, and most difficult, phases of human evolution were random, when the last phases, to put the icing on the cake with embellishments of advanced culture, show a direct macroevolutionary influence. And we can see from world history that what man is potentially is one thing, the actual realization of that potential requires additional macroevolution!

What an elegant and 'simple' solution to the evolution mystery, at the price of a deeper mystery! That deeper mystery is a question about a teleological dimension unknown to science. That depth demands from science a methodology to deal with it. Man emerges we suspect in an African 'great transition', a series of 'axial intervals' driving his transformation in ten thousand year spans in a frequency. Then the series switches off perhaps,

as a subset of the 'new man' begins the Out of Africa migration. Our study of world history has the data to show this. For the earlier phase of human emergence it is merely a strong suggestion. But the real point is to escape from the false perspective of evolutionary psychology. Such Darwinian explanations are barren confronted with man's complexity. But our model shows us direct examples of transformations in art, religion, politics, religions of consciousness, the endless emergent effects of our macrosequence. We cannot transfer these examples directly to early man, but we can see that cousin processes are clearly sensible candidates for the so-far totally incomprehensible evolution of human language and consciousness.

We have completed our argument in survey. The next two chapters will amplify our findings. Before we proceed, we need to examine the question of evolution in more detail since we have discovered something is supposed to not exist, a non-random pattern, and a most provocative one at that. Is the foundation of Darwinism really all that sound? Does world history provide a superior insight? We need to review the Darwin debate in more detail, and consider the issue of a science of history and its relationship, if any, to a science of evolution.

Notes

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Our emphasis on the empirical (at least by comparison with the endless lacuna of deep time) has paid off in spectacular fashion—in world history. We stumble on a sequential logic. The Axial interval is the clearest case or starting point: the radical discontinuity and massive transformations of cultures in such a short interval tells it all. It is an argument stopper. But taken alone that was not enough. Zooming out we see its real significance. Thus, almost by default, the pattern falls into a sequential pattern, and demands the category of 'evolution'. In one way this usage isn't even controversial. We have the pattern given by history. We can call it anything we like. This is the kind of data for which the word was intended. But it begins to dawn on us that this is the real dynamics behind evolution. It answers to all the impossible difficulties we saw with random evolution, and Darwinism.

This is as yet unconfirmed, obviously, but the stock of Darwinian natural selection plummets and is no better than our alternate conjecture.

The Ten Thousand Year Explosions And Punctuated Equilibria

This is the title of a book on the subject of recent historical evolution, G. Cochran & H. Harpending, *The 10,000 Year Explosion: How Civilization Accelerated Human Evolution* (New York: Perseus, 2009), a suitable title for our quite different discovery of the 'macro' effect. This book is really about microevolution, in the evidence of natural selection. But we can see that the 'historical evolution' of civilization is a macroevolutionary and teleological process of mysterious origin, but clear in its effects. The book cited also has some controversial and speculative Social Darwinist speculations about the increase in intelligence in the Judaic group due to economic competition, a dangerous fallacy of economic ideology. We can see that there might be a kind of Axial Age macro effect instead. The driver of higher civilizations is rapidly 'creating intelligence' for a future man, and the genetic components of this remain to be discovered. This is suspiciously similar to the claims for a 'great explosion':

The Great Explosion That the emergence of man was very sudden in a process like punctuated equilibrium has been pointed out by writers such as Richard Klein. Although the issues are complex and open to both 'slow' and 'fast' interpretations, it defies easy understanding to see how a creature as complex as man could appear in a set of random mutation events. The macro process in world history with its directed character operating on large species level units looks suspiciously like what we are looking for. Richard Klein, *The Dawn of Human Culture: A Bold New Theory on What Sparked the "Big Bang" of Human Consciousness* (2002).

> **A Challenge to Natural Selection** Let us consider the implications of our data. We have a non-random pattern in world history, visible since the invention of writing, and the perception of such a pattern points to a dynamic entirely different from natural selection.

It is an elusive question, yet one that, once uncovered, gives us a clue to the real evolution of man, a process still incomplete.

> **First and Last Men** We are stumbling onto the real meaning behind Nietzsche's distortion of the 'last man'. The first man, in the emergence of *homo sapiens*, is not yet the true exemplar of the species to come, and the first threshold of human beginnings is matched with the continuing evolution of the first men in history as they become the real 'last men', the real appearance of the species, *homo sapiens*. The emergence of civilization is a new stage of man becoming man. The Nietzschean Darwin thug, beyond good and evil, is a demented social Darwinist delusion. Man must aspire to a difficult test of greater intelligence, and pass to the highest, not simply survive as the lowest. No Darwinina scenario will work: evolution requires super-advanced technology operating over tens of millennia, via bio-fields.[4]

Confusion arises from the fact that the evolutionary process brings man to the threshold of freedom, leaving him to complete the process on his own, in history and as history. These issues, as noted, are tricky, but they are extras, so to speak, and our basic discovery is, once glimpsed as a whole, transparently simple and overwhelming.

We can debate this choice, but we can't avoid the data set behind it, now visible in the historical chronicle. Something that was not supposed to exist, long used to justify Darwinian assumptions, is now seen to exist. And this usage of the term is both natural and intuitive, even as it points to a mystery behind the facts of evolution in action. In fact, a frequent distinction between macroevolution and microevolution might be useful to adopt here: we see a 'macro' process operating over a vast scale. Companion 'micro' processes we had confused with real evolution are also operating.

> **A Glimpse of (Macro) Evolution** Where least expected our data gives us a snapshot glimpse of (macro-) evolution in action. This will provoke

4 Ann Gibbons, *The First Human: The Race to Discover Our Earliest Ancestors* (New York: Anchor, 2008), Clive Finlayson, *Humans Who Went Extinct: Why Neanderthals Died Out and We Survived* (New York: Oxford University Press, 2009), Brian Sykes: *The Seven Daughers of Eve: The Science That Reveals Our Genertic Ancestry* (New York: Norton, 2001).

a useful debate over what we mean by 'evolution', with the question, how can 'evolution' apply to history?

Our outlines have left us with a surprise: we have most probably discovered the kind of process that produced the onset of early man which shows a sudden emergence of modern man.

> **Out of Africa** The sudden emergence of modern man, followed by his rapid spread across the planet the period ca. 50,000 BCE leaves us to wonder about the strange laboratory of evolution in Africa. Human evolution comes to a stop (even as a kind of microevolution continues as expected, producing for example different races), man is man, and the drama of human history begins. Genetic change has been continuous, but the basic architecture of human nature has remained invariant.[5]

Fig. 3.10 Pastime in Ancient Egypt, Sharpe

This is not the task we have set ourselves, to conclude this. Our focus is on world history: the descent of man is 'revisited' in world history and is evidently an ongoing process still driving human speciation to its conclusion. The discovery of the non-random, as evolution, in history, makes the stock of Darwinian thinking plummet. Seeing an example of non-random emergence in action is an eye-opener, and we are suspicious our series of transitions is just the kind of process that could explain the emergence of man. As we examine our outline we realize it makes logical sense on its terms: we can derive its logic by deduction:

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5 Nicholas Wade, *Out of Africa: Recovering the Lost History of Our Ancestors* (New York: Penguin, 2006). In works such as Cochran and Harpending's *The 10,000 Year Explosion: How Civilization Accelerated Human Evolution* (New York: Basic Books, 2009), the author's try to show how evolution has continued into the era of civilization. But this is most probably not the real evolution that we have indicated. Man as man has remained basically the same all the way through, even as various genetic adaptations have emerged in response to civilization.

> **From Evolution to History** Since, we think, evolution and history are connected, we can ask how one passes into the other. But this could not be instantaneous, and ought to occur as a transition between the two. But this 'transition' might itself be too abrupt, and show a series of transitions broken up into a series. Presto, we have a clear rationale for what we see in our outline. We can see that we need to take evolution and history together, Janus-faced. We see 'evolution' (which is also history) in our transitions, and history as the chronicle of human freedom in response.

Thus we are probably seeing the transition and overlap between evolution and history, so to speak: world history shows a non-random pattern in action, one whose significance is clearly 'evolutionary' as it turns into history. It makes complete sense if you think about it: a set of processes on two levels, with a macro process directing it. All of our problems with the standard theory of random evolution find an answer, a very strong plus. And it is not even genetic at all. We must therefore be careful, but suspect that macro innovations precede and induce genetic frameworks. It is not the purpose of our argument to claim that however. We can simply follow the logic of an evolutionary chronicle 'as we see it'. Further, we are getting suspicious that we have a clue to the earlier emergence of man.

> **Lamarck Revisited** It is ironic that we have stumbled all over again on the perspective of the first real theorist of evolution, that of Lamarck, who posited two levels to evolution, a drive toward complexity or the emergence of form, and the process of adaptation that shapes the result to its environmental context. It is sobering that Darwinism has distracted us for so long from the clear first perceptions of that seminal thinker, whose formulation was still so inchoate and mixed with disparate confusions that it fell by the wayside in the rise of Darwinism.

It is a strong confirmation of our thinking that our simple derivation on purely logical grounds is reflected by the data, data latent in the historical chronicle but only now becoming clear, in part because the question of the Axial Age forced the issue. Since we can see the probable continuity between evolution and history (the sagas of the earliest men are clearly also 'historical') even as one transitions into the other, the question arises about the genetic issues of human emergence. We are suspicious that random mutations are fictions, and that mutations are distinctly less than random. The potential latent in the genetic code may express itself as a series of experiments, and in general follow the larger template of cultural evolution. That is a drastic

change from standard views, so we can simply formulate it as an hypothesis.

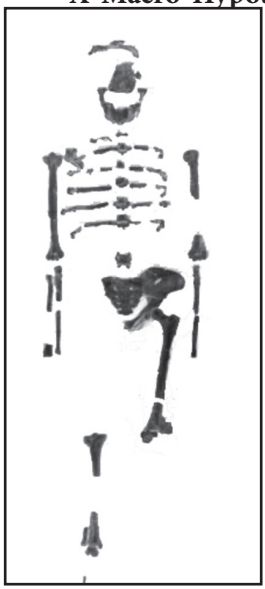

Fig. 3.11 Lucy

A 'Macro' Hypothesis We are suddenly suspicious that genetic change follows macro-cultural processes such as we see in our sequential logic in world history. The factor of natural selection would then help to fix a set of potential genetic structures in place. It is not our purpose to claim this as our thesis, or to speculate further. But it defies logic to think that a macro series we have just found that can remorph whole civilizations would leave genetics to chance.

Descent of Man Revisited We might adopt an operational hypothesis that human speciation is still incomplete and that a new macroevolutionary chapter in that saga began with the rise of civilization, and is not yet complete. We must analyze the effect of man coming to understand his own evolution, and his increasing participation in that. This relation between passive evolution and the birth of the 'self-evolution' of man by man in history is the key to the whole question: mankind evolving is freedom evolving, and that freedom becomes active as history unfolds.[6]

Our outline shows us what seems like purely cultural evolution, but we suspect now that real evolution is top down, and integrated: that genetic and cultural evolution operating at a species level are the same. However, our discovery strictly speaking refers only to the world history, even if we suspect it tells us something about the descent of man, and in fact, what we have found probably applies to earlier evolution also, but in a more general way: evolutionary directionality can't be ruled out so easily after the manner of standard theory. Whatever the case, it is clear that we must call into question the Darwinian dogmas here. The perception of a real non-random pattern of the evolutionary type in world history shows up Darwinism at once for what it is: a speculative theory.

The issue here, first, is that this is evolution because we define it that way. But then we realize that while our discovery applies strictly speaking to recent history the scale of the structure we have found is such that it must

6 Jon Cohen, *Almost Chimpanzee: Searching For What Makes Us Human, In Rainforests, Labs, Sanctuaries, and Zoos* (New York: Henry Holt, 2010). Jeremy Taylor, *Not A Chimp: The Hunt to Find the Genes that Make Us Human* (New York: Oxford University Press, 2009).

collide with our usual definitions of 'evolution'. The existence of a non-random development process, observed at close range, throws Darwinian assumptions into severe doubt. Our result at the very least insulates world history from the misleading application of Darwinism.

To reiterate: as we see the relevance of evolution to history, we also see the relevance of world history to man's earlier evolution, and can consider the implications of what we have found for the question of the descent of man. We have already indicated that something doesn't add up.

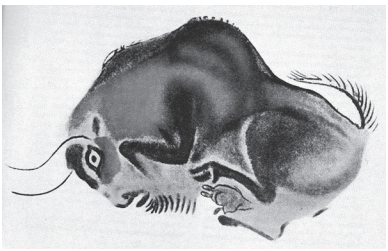

Fig. 3.12 Bison, Altamira Cave

The Axial Age again: this period in world history shows us the basic format for the evolution of culture, of religion, and of much else, from the birth of science to the first democratic government.

The God Gene?? The Axial Age shows us two types of world religion, the great monotheisms, and the atheist Buddhism/Jainism, being born in parallel and this 'evolution' in a rapid materialization during the Axial Age should warn us that Darwinian attempts to account for the evolution of religion are superfluous. As the Axial Age intuition of the Israelites shows, the phenomenon of evolution, if perceived at all, shows that primitive man would perceive it as the action of a divinity.

Consciousness, Self-consciousness The real issue of most religions, such as Buddhism, is human potential, the nature of human awareness and its development of latent self-consciousness from normal consciousness. And this in turn relates to the question of 'soul' and the sense of supernature, too often superstition no doubt, that comes into being at the dawn of humanity. Many have asked themselves how this complex instrument of human awareness could have arisen at all. The question s not understood by reductionist science which ignores the whole dimension of human nature that makes man into man. This aspect of man is discussed in other disguises, such as that of the sudden birth of human creativity.[7]

7 An immense number of confused New Age works have muddled these issues. A reasonably coherent exception, albeit speculative, is that of John G. Bennett, *The Dramatic Universe* (London: Bennett Books, 1997), Volume IV, 'History', which contains one such account, but with the term 'consciousness' used for 'self-consciousness', and with the speculative view that 'consciousness' is a cosmic energy that exists outside of the evolutionary process. This work is marred by its own New Age extravagance, and bizarre

There are three broad types of explanation for human emergence, evolutionary psychological, religious, and New Age. The religious myths have fallen by the way side, despite hints of ancient understandings in the Adamic corpus. The New Age/Indic accounts are highly suggestive. Consider:

The attempts by evolutionary psychology to explain human evolution are almost more mythological than anything in religious or New Age speculative literature. This area is a void on all sides. But the evolutionary psychologists may well have insights into the microevolutionary adaptations of already existing 'man', often inducing decline of real potential. The suggestions in *Big Brain: The Origins and Future of Human Intelligence* (Lynch and Granger) are that at some point *homo sapiens* was more intelligent than he is now. The regime of adaptational natural selection is under strong suspicion as an eroder of human intelligence.

The design argument lurks over the void of science: J. G. Bennett, in *The Dramatic Universe*, Vol. 4, gives an inteteresting if near science fiction account of the emergence of man via *homo erectus/sapiens,* and is unique in its suggestion that the dimension of consciousness (beyond animal awareness), creativity, and mind, as the foundations of language, purposive action, and ethical agency, are the breakthrough stages that jumpstart *erectus* to a new speciation. And Bennett, in a unique argument about demiurgic agencies, suggests that early man could only have achieved the passage with help from evolutionary guides, appearing as 'avatars' inside the species zone. Avatars, a quite obscure category (!), are well-known in the Indic tradtion, most accounts being now myth. That the phenomenon of jump-started self-consciousness, well-known in Indic religion, resembles that relation (too often in superstitious decay) of guru and disciple, is a possible clue to the conundrum of human emergence.

Language and Evolution The emergence of language remains almost a closed book, a puzzle that defies oversimplifications. It is one of the most obstinate difficulties in the way of a standard scientific theory, and the claims for Darwinism are almost mythological here. A look at our outline shows the direct correlation of advanced linguistic behavior and our transitions! The issue of art and language, to our surprise, has a macroevolutionary component.[8]

After Eden Some have speculated that the contrast of *homo erectus* and *homo sapiens* corresponds to these different octaves of consciousness. The long existence of *homo erectus* and his stable adaptation as a higher hominid, followed by the explosive and environmentally destabilizing appearance of *homo sapiens*, is hard to account for without an understanding that two hominids, erectus and sapiens, could be identical, yet different (beside possible differentials of intelligence, etc,…).[9]

If we have the evidence for 'evolution of some kind' operating in history and we have already mentioned the question of the so-called Great Explosion,

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brand of 'design' argument, but mixed with some sober common sense about what is really required for an evolutionary account of man. This is a warning we should be wary of all questions of the evolution of consciousness: we have so far failed to understand the issue, and have very little understanding of our own being, let alone how it evolved. But the suspicion that the higher octaves of consciousness, self-consciousness and beyond, standard in all religions of the Buddhist type, came into being with *homo sapiens* makes a great deal of sense. That *homo erectus* (or indeed the chimpanzee onward) was already 'conscious', but lacked the full instrument of self-consciousness and its potential resolves at a stroke many of the headscratchers that haunt the hopeless muddle of human evolution.

8 Christine Kenneally, *The First Word: The Search For the Origins of Language* (New York: Viking, 2007), gives an account of the work of Chomsky, language 'deep structures', and evolution. Robert Pennock, *The Tower Of Babel: The Evidence Against the New Creationism* (Cambridge: The MIT press, 1999), discusses the questionable analogy of Darwinian evolution and the process of language change. In fact, the dispersion of language since their common source most probably in the 'Out of Africa' scenario and before suggests something entirely different, but veiled from us by the lack of any hard data.

9 Kirkpatrick Sale, *After Eden: The Evolution of Human Domination* (Durham, NC: Duke University Press, 2006), gives one take on this. The confused myths of forgotten origins in the Bible in the sense of 'original sin' (the explosion of intoxicating self-consciousness as the 'will' in embryo), and the departure from an 'edenic' state prior to the dawn of freedom, suddenly make sense (albeit still myths!) here. Sale's book is controversially speculative but unwittingly raises questions about the real meaning of human emergence as *homo sapiens*.

Using our model

Our frequency hypothesis might strike some as speculative or strange at first, but the result is robust, however eerie. It is not a theory or a new belief, but a test for the non-random. It makes sudden and complete sense of a difficult and mysterious data set. But it is also true that a three term sequence, with the first term somewhat fuzzy, is not enough to be conclcusive. The answer is simple: take it under advisement as a test of the data, one that shows a stunning correlation with the facts. It may well point to something deeper or more complex, so we can simply take it as probe of the world system. The reader will remain baffled, for a while: how could 'civilization' oscillate? The answer seems to be that a 'macro' process overlays on the continuous in a discontinuous mainline that guides an amorphous diversity of spreading civilizations.

It is enough at first to see that our strategy has uncovered a non-random pattern, and that this allows us to infer a macroevolutionary process at work. We have, please recall, derived a set of requirements for an evolutionary process. A system frequency operating intermittently over time and space is one of the few solutions to the riddle. To our stunned surprise world history shows precisely what we predicted. So bear with the at first counterintuitive frequency hypothesis as an operational test of randomness. The gestalt will suddenly become clear.

The reader can adopt a simpler approach, look at the Axial Age in its unmistakable dynamism, and then adopt a provisional hypothesis that is a phase in a series. We can streamline our conclusions to note that 1. history emerges from evolution, and the two overlap in a transitional sequence, 2. evolution must inject values into the outcome, and these operate in history, 3, evolution must 'evolve' and history 'realize' 'free agency' which is essentially the threshold 'free will' that distinguishes history from mechanics. Our system is one of the few that can match these requirements, and the evidence is there, however strange at first.

the evidence of a sudden crossing of a threshold in the emergence of modern man. Darwinism has offered no reliable account of this phenomenon, except as an additional instance, by prior assumption, of the action of natural selection. We are suspicious that something more complex is involved, something unfortunately without sufficient evidence to arrive at a definite conclusion. To be more specific, we can propose an hypothesis to the effect that something like the historical sequence we see might have accompanied the Great Explosion. Imagine a ten thousand year sequence of transitions driving man into his current state.

> **Creative Man** The appearance of *homo sapiens* has a direct outward manifestation in the appearance of art. Unlike the intangible 'will' and its 'mind', the action of art is directly visible.[10]

Let us close with another look at the question of free will again. We can't solve this problem with a theory, but we can point to the evidence that nature is solving it. And there is a further paradox, suggesting indeed the descent of man revisited, a problem the 'current ape' must solve through self-evolution in the future:

A very complex difficulty haunts this early speciation: the free will factor. Two opposites have to be true at the same time, a classic Kantian situation. Evolution leads into history and somehow connects (?), and history, well, it is a chronicle of 'free' agents who are descendants of amoebas, and therefore we will have to reconcile a contradiction between causal explanations, and explanations that explain how free agents evolved from amoebas, assuming free agents really exist.

> **Can the paradox be solved?** There aren't many solutions to the paradox: one of them is a causal or determinate 'evolution of freedom' in potential, after which evolution stops and free agents self-evolve alone. Most remarkably world history gives us the hints to close in on this type of solution. We can restate this:
>
> **From Evolution to History** If evolution evolves 'free will' then at some point, humans will free themselves of 'evolution', stop being passive, and 'self-evolve' by themselves, so to speak. As we examine world history this overlooked aspect of freedom evolving suddenly explains what is going on, as we will see. We will say that man is evolving into history.

10 David Lewis-Willians, *The Mind In the Cave Consciousness and the Origins of Art* (New York: Thames and Hudson, 2002), Steven Mithen, *The Singing Neanderthal: The Origins of Music, Language, Mind and Body* (Cambridge: Harvard University Press, 2006)

Passive evolution turning into active history, with many situations in between.

As Kant made clear, the case for free will is difficult to make, but the consequences of denying its existence are worse. Free will need not be absolute: there are all sorts of solutions to the question. However, even if free agents are only relatively free, the problem still exists. That is the great catch-22 for theories of (human) evolution: either we deny free agency or we create a theory of the 'evolution of free agency', which is not standard science. Some future science may well show how 'free agency' lurks in primitive form in amoebas, but for the moment we will consider that this comes to fore with full force in man, if not chimpanzees. Our arguments can be relative, about relative degrees of freedom, leading up to 'free will'.

Freedom Evolving One of the ironies of the endless debates over free will lies in the possibility that it is a kind of evolutionary prophecy of the future that barely exists yet. Thus we might speak of the 'will' and its degrees of freedom in the context of future evolution, again, the issue of our first and last man. So, just because we see relatively little 'free will' in action, the potential there is emerging over the course of evolution-history! Ok, we have pulled the rabbit out of a hat. We don't see anything whatever, at first, that looks like this, but we put two and two together and decided it must exist.

Self-evolution? The idea of self-evolution can be dangerous, because it can degenerate into Social Darwinist ideology or confusions about genetics. The macro effect shows that human self-evolution as macro requires a super advanced technology, and a micro requires realization of self-consciousness, not an easy task. The issue is not one of a subset of superman isolated against a totality. The first forms of this 'self-evolution' or re-speciation arise in religion, which need to transit into a hybrid with science.

Thus the unity of big history and universal history proceeds logically with a 'trick': the science of history becomes a science of freedom, and the enigma of Kant's essay will be reflected by the facts of the case as we contrast the system dynamics (e.g. the 'Axial Age') and the individuals creating the details. Please note that we don't have to fully construct this 'science of freedom'. All we have to do is deduce its basic logic, and then follow the historical sequence that we see from our data.

The mystery deepens. If we look at our non-random pattern, we see

that emergent democracy has a correlated emergence, a very curious clue. Freedom evolving indeed!

> **Democracy's curious history** As we systematically analyze our outline, we notice that the appearance of democracy is not random, and that it seems to appear on schedule, die out, then reappear in the next transition. Nature must be telling us something, and giving us a mysterious form of help! We note that this ironically answers to the phrase, 'regular movement in the play of freedom'.

4. THE EVOLUTION CONTROVERSY

> Most biologists have believed for over a century that selection is the sole source of order in biology, that selection is the tinkerer that crafts the forms. But if the forms selection chooses among were generated by laws of complexity, then selection has always had a handmaiden...If all this is true, what a revision of the Darwinian worldview will lie before us! Not we the accidental, but we the expected!
> Stuart Kauffman,
> *At Home in the Universe*, p. 9

4.1 Darwinism and Scientism

The modern discovery, or rediscovery of the idea of evolution, was one of the greatest turning points in the development of human thought. First appearing during the Axial Age, in Greece and India, then reemerging in the period of the Enlightenment (note how it follows our non-random pattern), it begins a complex development in multiple dimensions, beside its track toward science, from the Kantian philosophy of history, the teleomechanists,

Hegelian *Naturphilosophie*, and the embryologists. The work of Lamarck and Erasmus Darwin foretells the coming of evolutionary science with the first theories. The marriage of Darwin's theory to population genetics will lead in the twentieth century to the Neo-Darwinian Synthesis.[1]

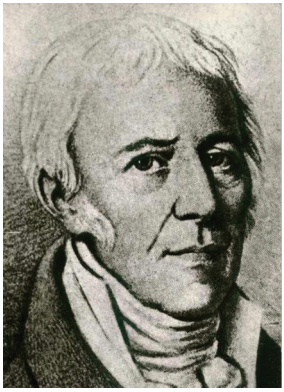

Fig. 4.1 Jean-Baptiste Lamarck

Lamarck, especially, had the gist of a true theory of evolution, despite his thinking about acquired characteristics. But in the next generation, in the fall-off of the Enlightenment *kleiglight* we see the onset of positivism, and the crystallization of Darwinism as a brand of reductionism.[2]

As in the tale of the blindmen and the elephant, we find a dialectical field of candidates, each with a piece of the answer, and then a collapse into an obsessive reductionism armed with a fragmented piece. The result is the classic metaphysical deadlock of the Darwin debate, effectively depriving the public of any clarity or viable options on the subject of evolution. The sudden crystallization of positivism reduced science to what is sometimes called 'scientism', the obsessive application of reductionist universalism to all forms of explanation. This is part of the mystique of natural selection. The result is, for example, a disregard of the fact/value distinction. But if this distinction is essential for understanding evolution, then a new category of methodological science is needed.

Darwin's seminal publication of his *Origin of Species* consolidated the revolution in thought we associate with 'evolution'. But this was a highly flawed triumph of publicity, as the reality of evolution went mainstream. The resulting theory has left the endless Darwin debate in its wake, a debate that has become a central feature of modern culture itself as it downshifts into the conflict of science and religion. Darwin's theory of evolution became a defining moment in the emergence of a distorted pseudo-secularism, and resulted in the twentieth century opposition of fundamentalist religious

1 Bowler Peter. *Evolution: the History of an Idea* (Berkeley: University of California Press). 2003. Julian, Huxley, *The Modern Synthesis* (Cambridge: MIT Press, 2009). Foreword by Massimo Pigliucci, editor of *The Extended Synthesis* (MIT Press, 2010). Leon Harris, *Evolution: Genesis and Revelations, With Readings from Empedocles to Wilson*, (Albany: State University of New York Press, 1981).

2 Samuel Butler, *Evolution, Old & New: Or: the Theories of Buffon, Dr. Erasmus Darwin and Lamarck, as compared with that of Charles Darwin* (Charleston, SC: Biblobazaar, 2008).

groups whose challenges to Darwin have grown into a series of skirmishes in a cultural war.[3]

Much of the controversy over evolution predates the work of Darwin and it was Darwin's achievement to create an almost packaged formulation of gestating ideas of evolution, one that the public was prepared to accept. In many ways, the real founder of evolutionary science was Lamarck whose more cogently intelligible, but still inchoate perspective never survived the radical associations of evolution in the wake of the French Revolution. Accounts of the history of biology tend to put the central focus on Darwin, even to the point of suggesting indirectly that the idea of evolution was his achievement. But in fact all of the main ideas, even that of natural selection, preceded Darwin, and the real source of the new biology was in the period of the Enlightenment at the end of the eighteenth century, a period replete with a host of innovations in all fields.

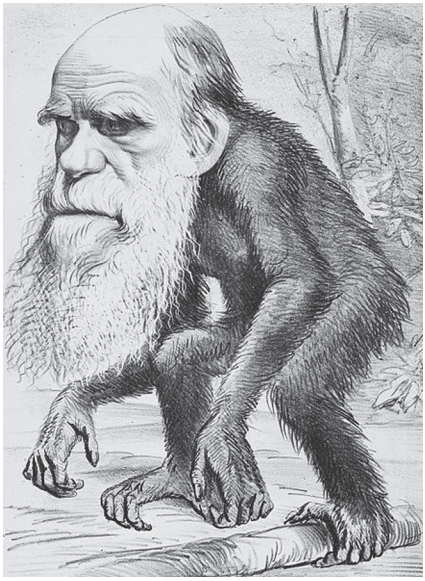

Fig. 4.2 Darwin caricature, 1871

There is something almost mysterious in the creative career of the Enlightenment, especially in the last half of the eighteenth century. This period, which should include the Romantic reaction, and much else, creates a sort of great divide in which a whole new culture comes into being. We see the Industrial Revolution, and the birth of modern capitalism, the triumph of liberalism in the era of the French and American Revolutions, a cascade of technical innovations, and the crystallization of the secular society struggling to be born since the equally seminal period of the Protestant Reformation. We have a tendency to produce univalent descriptions of this rich and many-sided period of bursting change.[4]

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3 Janet Browne, *Darwin's Origin of Species: Books That Changed the World* (New York: Grove Press, 2008). For the idea of 'deep time', cf. Stephen Baxter, *Ages in Chaos: James Hutton and the Discovery of Deep Time* (New York: Forge Books, 2006).

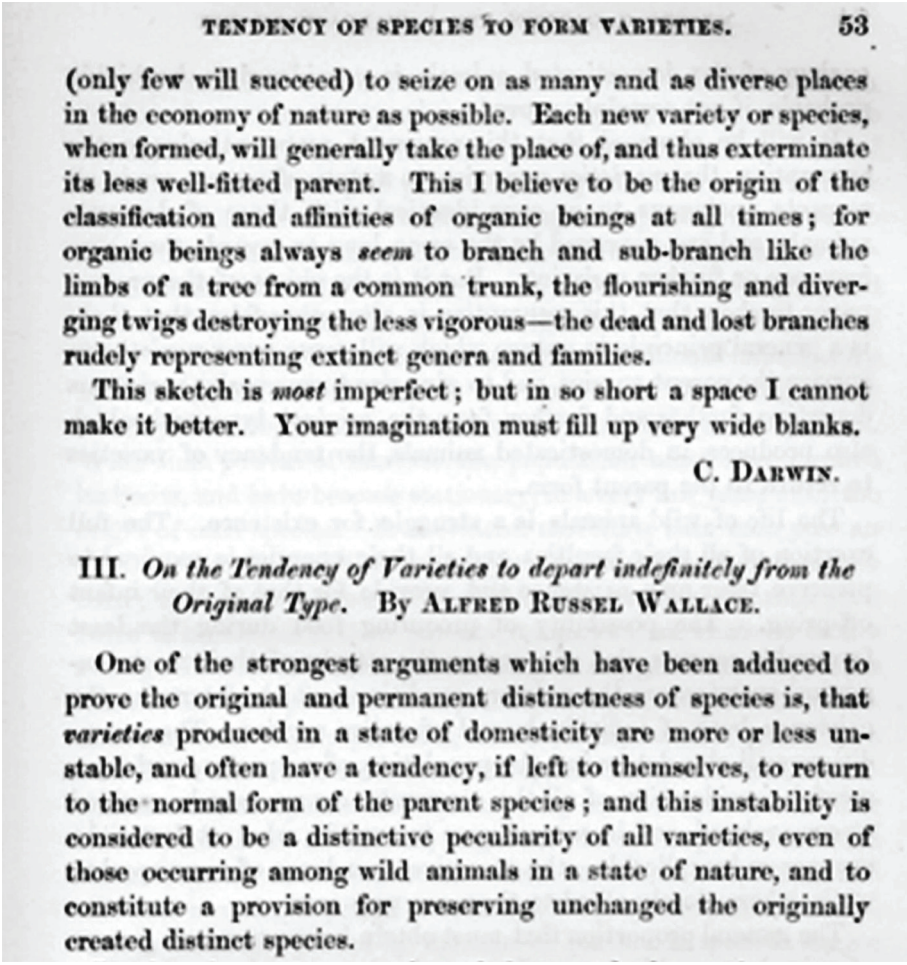
4 Peter Gay, *The Enlightenment* (New York: Norton, 1966), Vol's I and II, Norman Hampson, *A Cultural History of the Enlightenment* (New York: Pantheon, 1968), Ernst Cassirer, *The Philosophy of the Enlightenment* (Boston: Beacon Press, 1955), Paul Hazard, *The European Mind* (New York: World Pub. Co., 1963).

It is significant that the idea of evolution appeared in concert with the era of the French and Industrial Revolutions. After the groundwork of figures such as Linnaeus and Buffon we find the foundations of evolutionary thought in Lamarck and Erasmus Darwin, the ancestor of Charles Darwin, first formulating explicitly the idea of transmutation or development. To see the inherent ideological character lurking in the idea of evolution, we can look at the birth of the idea under the specter of Jacobinism in the wake of the generation of revolution. The conservatizing Darwin all too obviously fixed the idea of 'slow evolution' from its association with 'revolution', in the match with emergent ideologies of classical liberalism, managing to pass this off as 'science'.[5]

And then suddenly the period of reaction set in created by the turmoil of the revolutionary generation. The period of the Restoration indirectly conditioned the confusions over evolution, and the association of the idea with revolution made the idea highly controversial, even politicized. The dilemma over slow and fast evolution arises here. The very idea of progress or revolution was subject to concerted attacks by the forces of reaction, and this seems to have delayed the acceptance of evolutionary thought for a full generation. In fact, it was in many ways Lamarck who first formulated a theory of evolution, and yet by the end of his life he was almost a forgotten figure. In the background the new biology of the embryologists, such as Von Baer and Geoffrey St. Hilaire, was creating the foundation for a new conception of evolutionary development.

Then came the famous *Vestiges of Creation* by Robert Chambers whose immensely popular but anonymous bestseller paved the way for the work of Darwin twenty years later. In this context we have a better sense of how Darwin managed to succeed where these earlier figures had failed, and the conservatizing of evolution was one of the keys to his success. We can thus see that Darwin's theory was successful as an unconscious reaction to this political background, and the attempt to fix the idea in association with a triumph of liberalism in its classical version made for an easy passage at the

5 A. Desmond & J. Moore, *Darwin: Life of a Tormented Evolutionist* (New York: Warner, 1991), p. 295, "The Atheists had already founded an illegal penny paper, the uncompromising *Oracle of Reason*, a year old and still selling in its thousands. It vilified rich priests and armed infidel missionaries with geological tidbits to use against them. One of the cadre, the working class printer William Chilton, fashioned a revolutionary Lamarckism, driven from below, pushing nature towards a higher, brighter, co-operative future (a meaningless concept to the port-swilling nobility). The hard-bitten editors were fitting evolution into their militant credo. Materialism was given revolutionary class overtones."



TENDENCY OF SPECIES TO FORM VARIETIES. 53

(only few will succeed) to seize on as many and as diverse places in the economy of nature as possible. Each new variety or species, when formed, will generally take the place of, and thus exterminate its less well-fitted parent. This I believe to be the origin of the classification and affinities of organic beings at all times; for organic beings always *seem* to branch and sub-branch like the limbs of a tree from a common trunk, the flourishing and diverging twigs destroying the less vigorous—the dead and lost branches rudely representing extinct genera and families.

This sketch is *most* imperfect; but in so short a space I cannot make it better. Your imagination must fill up very wide blanks.

C. Darwin.

III. *On the Tendency of Varieties to depart indefinitely from the Original Type.* By Alfred Russel Wallace.

One of the strongest arguments which have been adduced to prove the original and permanent distinctness of species is, that *varieties* produced in a state of domesticity are more or less unstable, and often have a tendency, if left to themselves, to return to the normal form of the parent species; and this instability is considered to be a distinctive peculiarity of all varieties, even of those occurring among wild animals in a state of nature, and to constitute a provision for preserving unchanged the originally created distinct species.

Fig. 4.3 The Ternate Letter
On the Tendency of Varieties to Depart Indefinitely from the Original Type
Wallace 1858

right time. This association of the issues with ideology and the development of modern politics would seem to be irrelevant to the question of science. And yet it can help us to uncover the chronic confusion of cultural and biological evolution that has always been a notable feature of Darwinian thinking.[6]

The explosive generation of industrialization, emergent liberalism, and revolution is the hidden context of Darwin's theory. Darwin's social position and genealogy, scion of the family of Wedgewoods so prominent at the birth of the industrial revolution in England, colors his thinking, and his strategy proved to be brilliant in the way he packaged his theory and timed its publication. In fact, the curious phenomenon of the delay in the presentation of a theory that was essentially tabled in the 1840's has many different aspects. It was sudden appearance of the famous Ternate letter of Alfred Wallace that forced the issue and drove Darwin to make public the nexus of ideas that he had long kept private, even from many of his friends and colleagues.

But the idea of evolution was in the air, always with the built-in ambiguity between social and biological development. One of the transparent influences on Darwin's thinking can be seen in the work of Herbert Spencer whose views on cultural evolution produced the classic phrase 'survival of the fittest', beginning the career of 'traveling concepts' between evolutionary and cultural categories of development.

The crystallizing classical liberalism was a natural companion of Darwinian theory, and the still more vexacious Social Darwinism arising in the wake of Darwin's work springs from this incestuous constellation of mismatched conceptual themes claiming the title of evolution. The work of Herbert Spencer, now a very dated figure, is often made to take the blame for the Social Darwinist implications of evolutionary ideology, but these deflections of the essence of the problem away from Darwin tend to make us fail to see the ideological core of Darwin's theory.[7]

The point should be clear from the direct influence of Malthus on Darwin's formulation of his theory. Malthus was the founder of the science of demography, but he was also a highly contentious conservative figure, one of the most blatant in his propensity to use theory for social legitimation. The polarized and acrimonious debate over Malthus' work went on for an entire generation, and in many ways prefigured the more complex and subtle Darwin debate, still colored with underground strains of class struggle, revolution, and the reform bill. It is easy to lose sight of a simple fact: the

6 James Secord, *Victorian Sensation* (Chicago: University of Chicago Press, 2003).

7 J. D. Peel, *Herbert Spencer: The Evolution of a Sociologist* (New York: Basic Books, 1971).

mechanism adopted by Darwin under the influence of Malthusian thinking is open to severe challenge on its own terms. The struggle of populations, and the incidence of natural disasters or sudden population fluctuations, is seldom seen as a very weak candidate for an evolutionary theory. It is very doubtful if what we mean by evolution is really caused by anything like a Malthusian scenario. Certainly the factor of natural selection is a given, but there is no inherent reason to assume that this generates the emergence of complex forms that we see in the fossil record.[8]

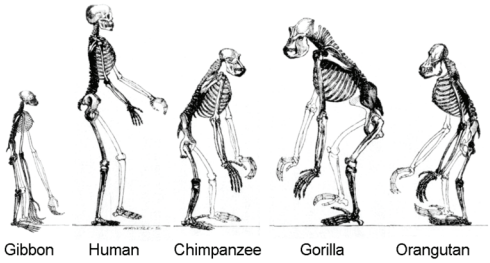


Fig. 4.4 Ape Skeletons, from Huxley, *Man's Place in Nature*

The Triumph of Positivism The nineteenth century produced an immense proliferation of the methods of scientific reductionism in the biological and social sciences, as the onset of positivism led the way to a monolithic consolidation of scientific viewpoints. A symbolic influence is seen in the figure of Comte, and his somewhat idiosyncratic Positivism, which influenced Darwin at the early stage of his career. One of the problems here is that Comte's work exhibited its own metaphysical tendency, and the historicist philosophy of history in which the Age of Positivism was to succeed those of theology and metaphysics induced a sense of an irreversible progression of thought, with the methodology of science in the starring role.[9]

It is significant that the formulation of Darwinism and the so-called Age of Positivism followed directly in the wake of the collapse of the great era of German philosophy. The end of the reign of Hegelianism, which began with Kant, was very sudden and the history of the 1840's shows us the drama of Feuerbach and Marx challenging the legacy of idealism and championing the need for sciences of society. This period produced a clear delineation of the human and natural sciences, with a challenge to the reductionist implications of the expanding scientific revolution. A kind of amnesia has overtaken science in the stubborn regression, fueled by spectacular, but misleading, technological wonders, to reductionist obsessions dressed up

8 Harold Boner, *Hungry Generations, The Nineteenth-Century Case Against Malthusianism*, (King's Crown Press, New York, 1955).

9 Neal C. Gillespie, *Charles Darwin and the Problem of Creation* (Chicago: The University of Chicago Press, 1979).

in scientific methodological jargon. It is nonetheless true that Darwinism thrived on this sense of the epochal transition of modernity attempting to establish the foundations of a new age of secularism. This is not an unreasonable view, once its tacit assumptions are brought out. The problem is Darwin's selectionist metaphysics, which cannot sustain the task of defining secularism. A strong case can be made for the 'new age of science', but this is not something fixed or defined by a passing phase of evolutionary theory.

In this context the triumph of the theory of natural selection became a driving force to legitimate an immense passage of culture across a threshold but in the process upheld a kind of naïvete about culture, history, and evolution itself. The mechanization of the principles of biology under the reductionist perspectives of positivistic science blinded its champions to the sudden contraction of thought created by their own advance. Just as science wished to take over a sudden narrowing of vision occurred, and the result has produced many false starts, bogus paradigms in social science, and the restive underground of puzzled dissenters watching the triumph of secularism turn into a nest of adders.[10]

> **The Coming of Scientism** In the wake of the Enlightenment a contraction of thought occurs, reflected in the emergence of positivism, and the new brand of science called 'scientism', a reductionist universalism that cannot do justice to evolutionary realities, as the phenomena of mind, consciousness and ethics are treated like phenomena of physics. It is not surprising that the debate lapses into a debate with religion, given the extreme positions generated by reductionist oversimplifications. Many warnings emerged here, from Rousseau and the Romantic Movement to the phase of German Classical philosophy initiated by Kant.[11]

> **Is There a Science of Evolution?** The issue of scientism casts doubt on the status of a science of evolution. The coming of reductionist thinking in the formation of a science of evolution was almost a regression from right understanding, and produced a dumbed-down mechanics almost

10 Gertrude Lenzer (ed.), *Auguste Comte and Positivism: The Essential Writings* (New Brunswick, NJ: Transaction, 1998). George Steinmetz (ed.), *The Politics of Method in the Human Sciences: Positivism and Its Epistemological Others* (Durham, NC: Duke University Press, 2005). Neal Gillespie, *Charles Darwin and the Problem of Creation* (1979), Terry Pinkard, *German Philosophy 1760-1860*: *The Legacy of Idealism* (New York: Cambridge University Press,2002).

11 Richard Olson, *Science and Scientism in Nineteenth-Century Europe* (Chicago: University of Illinois Press, 2008). Gertrud Lenzer (ed.), *Auguste Comte and Positivism: The Essential Writings* (New Brunswick, NJ: Transaction, 1998). Susan Haack, *Defending Science–Within Reason: Between Scientism and Cynicism* (Amherst, NY: Prometheus Books, 2003).

silly in some of its extensions. The question has a one-punch knockout: the failure to take into account the fact/value dichotomy makes theories of evolution one-dimensional. But we must suspect an entire dimension is missing in standard theories.

The Iron Cage The sociologist Max Weber cogently depicted the onset of scientism in his chronicle of the Iron Cage.[12]

Beyond the public promotion the reality is that Darwinism is an incomplete account. And the theory of natural selection has become the keynote for a series of agendas. Some very obvious issues are ignored in the promotion of a science of evolution, such as the disregard of the fact/value distinction, beside the failure to fully account for the enigma of consciousness, and the agent of human ethical action, with an intangible element of will.

These issues should remind us that no real theory of evolution in its complete form as yet exists. This situation should be common knowledge, by the testimony of scientists themselves. Instead we see the constant promotion of reductionist ideology as a completed science able to resolve all questions. A kind of religious metaphysics has taken hold, and the theory becomes the object of a series of agendas.

4.2 Beyond Natural Selection

From the onset the real issue of the Darwin debate has always been the status of the theory of natural selection, and the related fallacies of random evolution. The polarization of the debate over science and religion tends to obfuscate the real issue, which is the inadequacy of the science behind Darwinism. Many of the first reviewers of Darwin's *Origin* accepted the evidence of evolution, but had difficulty with his claims for the mechanism behind it. The strength of the evolutionary hypothesis tends to mask the weakness of the claims for natural selection and random evolution. In Karl Popper's cogent depiction, the Darwin project is a 'metaphysical research program'.[13]

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12 Mitzman, Arthur. *The Iron Cage: An Historical Interpretation of Max Weber* (New Brunswick, NJ: Transaction, 1985). Scaff, Lawrence. *Fleeing the Iron Cage: Culture, Politics, and Modernity in the Thought of Max Weber* (Berkeley: University of California Press, 1989).

13 T. H. Huxley himself, ironically, warned Darwin on the eve of publication of the problem with natural selection. Sherrie Lyons, *Thomas Henry Huxley* (1999). Soren Lovtrup, *Darwinism: Refutation of a Myth* (1987), Robert Reid, *Evolutionary Theory, The Unfinished Synthesis* (1985), Robert Wesson, *Beyond Natural Selection* (1991), Michael

It is simply not true that Darwin provided voluminous and convincing evidence for his theory of natural selection. Such claims require a form of empirical demonstration that is very difficult, if not impossible, since any such process would occur over immense intervals of time. Frequent reference under challenge to the evidence in isolated instances, e.g. of bacterial samples, where Darwinian thinking seems confirmed, is taken as proof for all cases, in a preposterous set of generalizations about the whole of evolution. Such examples should properly be considered 'microevolution'. The question of speciation remains elusive and is subject to incorrect generalizations. confusions over animal breeding, the classic instance of 'designed' evolution, are well-known. If we examine the research of both Darwin and especially Wallace (the probable source of the theory) it is based on the cataloguing of the immense diversity of species, especially in insect genera, seen in jungle environments. But that is perhaps misleading. It seems that incorrect generalizations about species arise from this initial research. Certainly the nature of the 'species' *homo sapiens* eludes correct analysis.

In general, isolated instances of seeming success for natural selection are taken polemically to confirm an entire theory. One of the illusions of the evolution debate is to think that the question of natural selection is an arcane complexity, when in fact Darwinian theory fails here at the first step, the statistics of natural selection. In general, severe, almost certainly fatal, mathematical challenges have always stood in the way of selectionist assumptions. In a now classic text, *Evolution From Space*, Hoyle and Wickramasinghe give one version of this objection.

> Darwinian evolution is most unlikely to get even one polypeptide right, let alone the thousands on which living cells depend for their survival. This situation is well known to geneticists and yet nobody seems prepared to blow the whistle on the theory.[14]

This viewpoint has been 'refuted' so many times that we forget genetic research has essentially confirmed it with the discovery of new developmental structures and processes. The result is that a majority of scientists are confused by statistics, their thinking often corrected by religious critics!

Denton, *Evolution: A Theory in Crisis* (1985), Kevin Kelly, *Out of Control* (1994), Stephen J. Gould, *The Structure of Evolutionary Theory*, (2002), Mark Kirschner & John Gerhart, *The Plausibility of Life* (2005). Popper's essay, "Darwinism as a Metaphysical Research Program", can be found in his intellectual biography, *Unended Quest*, (1976). Jerry Fodor & Massimo Piatelli-Palmarini, *What Darwin Got Wrong* (2010).

14 Cf. F. Hoyle & N. Wickrmasinghe (1981), *Evolution From Space: A Theory of Cosmic Creatinism* (New York: Simon & Schuster, 1984), p. 148.

The distortion of probability understanding to challenge this logic is an ominous sign of the havoc created by Darwinian dogma. The antithesis of the selectionist theory is not a design argument. The full random run is in fact 'compressed' by the existence of some other process of development. In general, we must be wary of statistical reasoning applied to evolution. Current thinking has quietly shifted to claims for the emergence of some 'evolutionary toolkit'. Now it is claimed *this* arises by chance alone. The dominance of selectionist Darwinism has crippled the statistical reasoning of a whole generation of students.

The rise of molecular biology shows a complexity of structure that cannot easily survive statistical challenges to claims of random emergence. The new genetics and the emergence of developmental biology have exposed the limits of Darwin's original theory, in the remarkable findings of complex biochemical systems and evo-devo.

Evo-devo Although the findings of developmental biology have already been grafted onto the mythology of natural selection, they raise the question of a particular kind of teleological interpretation of evolution. As we examine world history a developmental sequence unconnected with genetics emerges with a demonstration of evolutionary directionality visible as macroevolution over five millennia. The representation of teleology as intermittent directionality suddenly gives meaning to the idea of 'punctuated equilibrium'. World history has its own 'evo-devo', with no connection to genetics.[15]

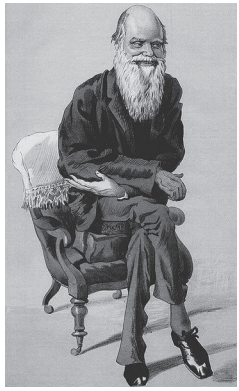


Fig. 4.5 Vanity Fair caricature: caption read 'Natural Selection', 1871

Epigenetics The recent discoveries in the realm of epigenetic inheritance point to a major new perspective for the Neo-Darwinian Synthesis. DNA sequences remain invariant during development, but cells can acquire information they can pass on to their progeny, creating a new avenue for evolution beyond genetics.[16]

15 Sean Carroll et al., *From DNA to Diversity* (New York: Blackwell, 2001), Rudolf Raff, *The Shape of Life* (Chicago: University of Chicago, 1996), J. Gerhart & M. Kirschner, *Cells, Embryos, and Evolution* (New York: Blackwell, 1997), Jeffrey Schwarz, *Sudden Origins* (New York: Wiley, 1999), G. Miller & S. Newman, *Origination of Organismic Form* (Cambridge: MIT Press, 2002).

16 Jablonka, Eva, et al. *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life* (Cambridge: MIT Press, 2006), Chapter 4, "The Epigenetic Inheritance Systems".

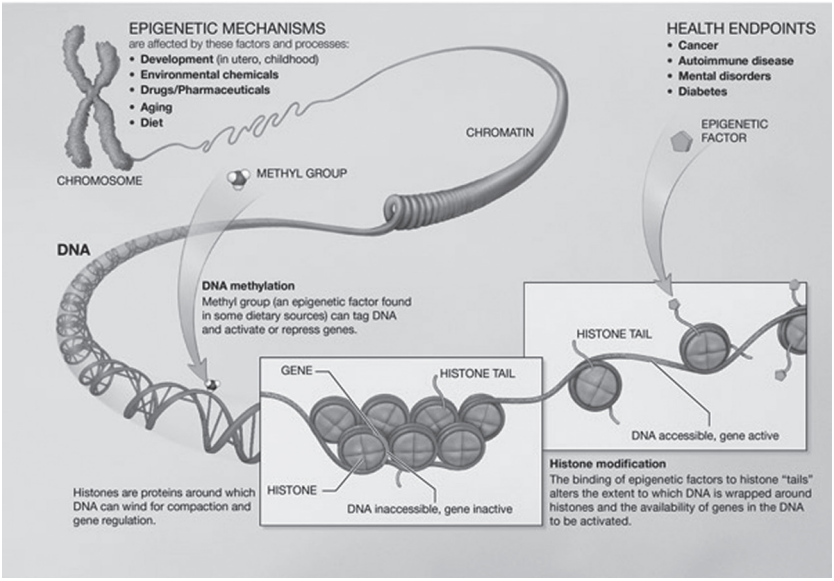


Fig. 4.6 Epigenetics

The debate over natural selection has gone on too long due to the attractiveness of an oversimplification, and the indoctrination of young students via the rhetoric of reductionist omniscience. The factual basis of evolution, without theoretical dogmas, gives ample leeway for the interpretation of evolutionary histories. Darwin's theory is a provocative generalization applied to immense vistas of time that are unobserved. Those unobserved intervals in deep time can fool us badly, as the study of history will swiftly remind us.

We can exit the chronic debate by simply demanding proper evidence for selectionist claims. For human evolution the evidence is simply not there. History itself gives us an immediate antidote because we can find the real sources of much cultural transformation in forms that could never be explained by simplicities of selectionist thinking, making us suspicious that Darwin's theory is prized because it bypasses the hard work of 'historical', thence evolutionary, research. The demand for evidence of the fact of evolution is far less stringent than that for natural selection. It is a strong inference from the fossil record that evolution in some fashion has occurred. Demonstration that the process of natural selection is the key to all forms of higher complex structure has never been demonstrated scientifically. The task is exceedingly difficult, for starters. The difficulty may preempt easy hopes for a theory of evolution.

The point here is that observing animal life in jungles over the span of an observer doing field research produces a misleading impression: all you see is natural selection, the struggle of swarms, and never the long *durée*, of some macroevolutionary sequence. In fact, the latter is beyond our imagining, we have never seen an instance. This analogy shows at once where Darwinism departs from scientific practice. Historians routinely assume they must close on the facts in such an analysis, yet Darwinists wish to claim exemption. We have no fully observed datasets in Darwinian deep time. It is an insidious trap.

> **Observing Global Phenomena** We have already discussed the problem of observing global phenomena. Darwinists assume local observations of surface jungle scenes is enough. But we can suspect that macroevolution can produce parallel effects in separated regions: a global 'bio-field'.

It is a confusing circumstance in so far as the visible aspect nature shows the struggle for existence, and this leads us to infer, perhaps, incorrectly that we are observing 'evolution'. Natural selection is the bottom line, the test of survival. But does it generate 'evolution'? Verifying that it does so, and does so in all cases without exception, is immensely difficult, perhaps impossible, leaving the claims of theory, and the ambitions of social ideologists, in limbo. Darwin observed these innumerable cases of natural selection, through Malthusian lenses, but none of these conclusively established a true theory of evolution. The theory of natural selection was also the linchpin for the claims of non-random evolution, and denials of directionality or progress in evolution.

We should consider how the confusion arises, and note the way that both Darwin and Wallace were influenced by jungle scenes where the process of rapid differentiation of types, especially insects, seems to suggest a law of speciation in general. In a way Wallace's observations here were of temporary benefit to science, as the law of divergence became understood and swept away false abstractions about species as Platonic forms in essence. But those observations were perhaps better labeled 'microevolution' with a caveat that universal laws or generalizations about speciation may be false: there is no single process called 'speciation'. Certainly the speciation of man is, and remains, a perplexity of emergent mysteries.

As we observe nature in the wild, its teeming spectacle induces us to see a kind of natural economy of competition and survival. That surface aspect visible in the jungle scenery is misleading, intervals too brief to really

Evolutionary algorithms The many efforts to produce models of natural selection via computational biology have never succeeded in their goal. Richard Dawkins' blunder here is a notable set of fallacies, exposed many times, and yet the fallacy continues. This reasoning is actually teleological, with a hidden 'cheat' factor. But the example is suggestive of our directional logic, which increases its probabilites via a teleological feedback. There are innumberable web essays on the issue, viz. http://www.detectingdesign.com/methinksitislikeaweasel.html. Darwinists have handed the issue to designists and religionists.

'Methinks it is like a weasel'

In his book *The Blind Watchmaker*, Dawkins gave the following introduction to a program, referencing the well-known infinite monkey theorem:

I don't know who it was first pointed out that, given enough time, a monkey bashing away at random on a typewriter could produce all the works of Shakespeare. The operative phrase is, of course, given enough time. Let us limit the task facing our monkey somewhat. Suppose that he has to produce, not the complete works of Shakespeare but just the short sentence 'Methinks it is like a weasel', and we shall make it relatively easy by giving him a typewriter with a restricted keyboard, one with just the 26 (capital) letters, and a space bar. How long will he take to write this one little sentence?

Generation 01: WDLTMNLT DTJBKWIRZREZLMQCO P
Generation 02: WDLTMNLT DTJBSWIRZREZLMQCO P
Generation 10: MDLDMNLS ITJISWHRZREZ MECS P
Generation 20: MELDINLS IT ISWPRKE Z WECSEL
Generation 30: METHINGS IT ISWLIKE B WECSEL
Generation 40: METHINKS IT IS LIKE I WEASEL
Generation 43: METHINKS IT IS LIKE A WEASEL

observe speciation. The debate is thus really a metaphysical contest that is conducted beyond the limits of observation. Study books on evolution here. It is always a 'gedanken' experiment, how evolution might have happened rewritten as how it did happen. Further, the metaphysical windfall here has always fueled the ideology. Grant the premise of natural selection, and a host of philosophic issues might claim resolution. The claims for natural selection have turned into an ideology short of real science, a kind of metaphysical reductionism.

The most notable example here is the reduction of ethics to various forms of selectionist explanation. And the result has thrown the study of history into confusion, and handed an ideological pseudo-science to many with Social Darwinist agendas. History should instead be the antidote to this kind of speculative excess, for it enforces the discipline of observation at short range, a century or less, something entirely absent in the study of deep time where generalizations about immense intervals of time are taken for granted without direct empirical observation.

As to claims that natural selection is responsible for real evolution, say, that of man, one has but to count the number of skeletons of hominids over time in the past several million years to see the extreme thinness of the record. The subtlety of culture and consciousness is entirely unobserved from such fossil records. That record strongly suggests 'evolution' of some kind, due to its length and rigors, and yet many obscure questions arise about the details of language, consciousness and ethics, and the need for something more than random chance as explanation. Consider how little such fossils tell us. These skeletal remains are silent about the process of development as it actually occurred, and the social situations that accompanied these physiological events. Our focus is thus always the issue of the bodies connected to these fossils, omitting the possibility that cultural evolution in a larger framework was the prime evolute, after which genetic evolution followed. It is merely an extravagant projection to say that natural selection produced language as an adaptation and then maintain this dogmatically.

The study of world history shows the limits of natural selection directly: we can point to the historical record and attempt to show how natural selection is suddenly and disconcertingly upstaged by quite different processes. The survivors, the strong, are too often the problem, not the solution. History shows us the tendency of random processes to deviate in their own direction, and the need for a mainline of development to ensure an outcome, bypassing the 'survivors' with protected innovators. We suspect

that Darwinian monism is collating two separate processes. The result is confusion over the meaning of historical development and the sudden transformation of a theory into an historicist ideology in the variants of Social Darwinism.

Theories as Ideologies One of confusions of natural selection is the way it can become a subjective ideology in a conscious agent who thinks he should act out the theory to advance evolution. This is what causes Social Darwinism: we should compete to evolve. But this subjective brand of the 'theory' is ideology, not science. It is dangerous because the presumption to know how things evolved in the past is unrealistic.

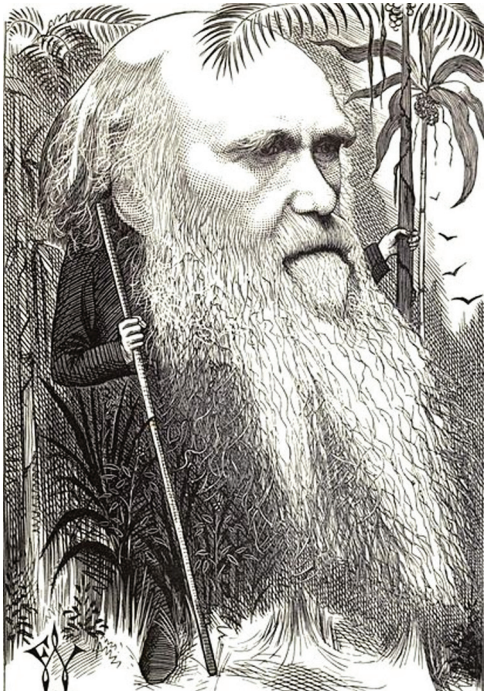


Fig. 4.7 Darwin...

One of the most confused claims made by Darwinists concerns the randomness of evolution by natural selection. It is obvious that Darwin's theory is about evolution by accident, but since the improbability of this begins to demand some account we are given a revision in the works of Richard Dawkins where it is said that while mutation is random, natural selection is non-random. This odd way of restating Darwinian assumptions about chance is a suspiciously convenient change in the original meaning of the terms used, and seems little more than a rhetorical finesse designed to throw critics off guard. As Dawkins notes in *Climbing Mount Improbable*, "It is grindingly, creakingly, crashingly obvious that if Darwinism were really a theory of chance, it couldn't work. You don't need to be a mathematician or physicist to that an eye or a haemoglobin molecule would take from here to infinity to self-assemble by sheer higgledy-piggledy luck." But it is quite as obvious that Darwin's theory is one of chance, so we are done.[17]

Dawkins proposes that the problem is resolved by the accumulation of small steps, then bets his argument on a completely incorrect analogy to

17 Richard Dawkins, *Climbing Mount Improbable* (New York: Norton, 1996).

computer programming. Beyond the hype, it would cause a feeding frenzy in the stock market if any computer program was found to do what is claimed. It would revolutionize industry. We would certainly know that this was the case! Instead we see a sheepishly heuristic wishfulfilment at work in the Darwinian mythological fantasy world.

The simple fact is that Darwinism really is a theory about chance! Dawkins proposes to embrace the theory's fatal flaw by changing the terms of discussion. The term 'random' has changed its meaning. The problem is that while natural selection might be non-random in the sense of its equivalence to the process of adaptation, it is still random in the sense that there are no macroevolutionary or directional processes over and above the incidents of random mutation and, yes, random, directionless, natural selection. Detecting a teleological process behind evolution would immediately force us to reconsider the whole question. The problem is that teleology is an abstraction. We need to observe, or attempt to detect, the representation of teleology in nature. But the very examples claimed, incremental small changes, might show a directional representation of teleology.

We are left with a question, at what range or interval does evolution occur? The very nature of the question challenges the assumption of some kind of continuous slow evolution. How do we know that some kind of 'intermittent rapid evolution' doesn't take place in the vast and undocumented intervals of deep time? The answer is we don't, and the one crucial case, the emergence of man, shows unmistakable evidence of a sudden transition, the threshold period ca. -50,000 of the appearance of modern man. The alternatives may not be mutually exclusive. We could hardly conclude anything given the evidence, but the case for natural selection is by no means established. Here Lamarck's instincts were better than Darwin's, keeping in mind that we are not referring to his theoy of adaptation, but to his intuitive division of the problem into double levels.

It is here that the intriguing history of evolutionary theory suggests the loss of a crucial insight with the coming of Darwinism. The history of biology has virtually written out the figure of Lamarck, but he is in many ways the real founder of evolutionary theory. Furthermore, his formulation, despite its less polished scientific character, proposed a far more realistic version of the idea of evolution, with two levels of action. These were reduced by Darwin to a single monistic explanation that suffers inherent contradictions. Unfortunately Lamarck's other theory of adaptation tended to discredit his contributions. Lamarck's insight corresponds directly to what we have found in our outline: two levels of evolutionary action.

Many of the problems of evolutionary theory disappear if we posit two levels of action, natural selection or other processes and a direction setter operating over long-range intervals, perhaps even intermittent in its action. The problem of observing this makes the suggestion problematical, but the one-level brand of Darwinism is equally problematical, and forever counterintuitive. As we will see there are clear examples that can illuminate this distinction, and make us realize that we have confounded the meaning of evolution all along. The simplest version of this would be an intermittent macro process operating in short bursts on continuous random evolution. Since directionality suggests teleology (although the two are different) and is taboo in current science, biologists disallow this second possibility, which is very difficult to observe, but the opposite result is riddled with difficulties. We are forced to live in a theoretical environment of fantasy, where random chance becomes a source of the miraculous. We have already stumbled on this two-level braiding of different processes in history itself. Finally, as Wesson notes:

> Pointing out the need for a better explanation means attacking a theory that scientists find useful, if not always satisfying. They certainly do not want to surrender the accepted doctrine unless they have something better. A natural rejoinder to criticism is, What do you have better to put in its place? Natural selection is credited with seemingly miraculous feats because we want an answer and have no other. There probably cannot be another general answer—certainly no equally broad and basically simple answer. Biologists must do without a comprehensive theory of evolution, just as social scientists must make do without a comprehensive theory of society.[18]

We can to a large degree proceed, as we do with historical chronicles, by looking at evolutionary sequences historically, that is, as empirical data sets telling a story in time. By the same token we can approach history, as we do with evolutionary accounts, by looking at historical sequences in the light of evolution, if we can find the clue to what we really mean by that word.

4.3 Evolution and Ethics

We have already noted the way Karl Popper let the cat out of the bag: Darwinism is a metaphysical research program, and a very strange one that claims to eliminate the metaphysical. Sadly, for all this metaphysics, it

18 Robert Wesson, op. cit., p. xii.

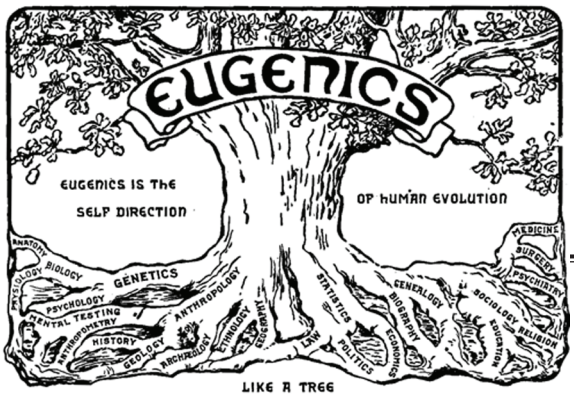


Fig. 4.8 Eugenics conference poster

It was not sociologists who invented Social Darwinism ...it was rather the biologists themselves who dreamed it up, and thereafter continually referred to it in order to justify their biological Darwinism. These biologists thus constructed the ideological support they needed in order to sustain a vacillating biological theory. Unable to prove the capacity of natural selection to explain biological evolution (The *Origin of Species* does not contain a single example of an evolution explained in this way), they illustrated this by a social metaphor that was all the more effective in that it conformed to the dominant ideology. From Andre Pichot, *The Pure Society: From Darwin to Hiteler* (New York: Verso, 2009).

Fig. 4.9 Nazi Eugencics

Hitler was inspired by evolutionary ethics to pursue his utopian project of improving the human race... Hitler's ethic was essentially an evolutionary ethic that exalted biological progress above all other moral considerations. He believed humans were subject to immutable evolutionary laws, and nature dictated what was morally proper. Humans must adapt to and even model themselves after the laws of nature. From Richard Weikart, *Hitler's Ethic: The Nazi Pursuit of Evolutionary Progress* (New York: Palgrave, 2009).

can't truly address, let alone resolve the issues of either free will or therefore of ethics. There is nothing mysterious about the limitations of Darwinian explanation: value-free science must eliminate questions of the value domain. But is this legitimate for the question of evolution? Related to this is the attempt to produce purely causal explanations of ethical behavior and its evolution.[19]

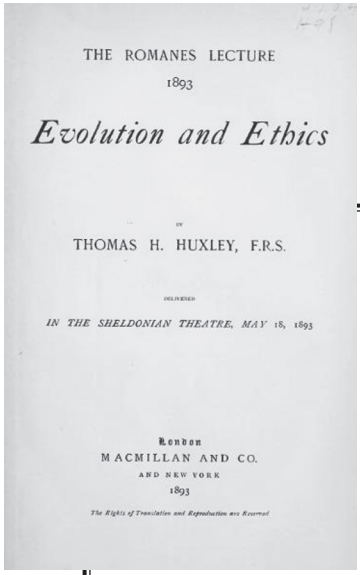
> **The Axial Age and Values** As we move to examine the historical dynamic behind history, and especially the data on the Axial Age we see the explicit transformation of values in a complete and balanced spectrum of opposites. Religion, philosophy, science emerge together in a mysterious seeding process that occurs very rapidly, and over independent cultural regions. Remarkably, this seems to show a balanced spectrum of values, a shotgun approach.
>
> **Evolution and Religion** The Axial period shows clearly that the evolution of religion is more than genetic. Attempts to explain religion and its evolution are forced by Darwinists into a series of ad hoc extrapolations based on the value of religion in the game of survival. But such thinking is stopped in its tracks by the evidence of the Axial Age, where we see two world religions emerge in a complex transformation of short duration.

Thus, one of the reasons for the confusion of the Darwin debate is that the right way to do science might be the wrong way to do evolution. These issues remind us that the attempt to do science produces the wrong result at the first step. We need an extended view of science. If the reductionist program demands the mechanization of all phenomena, then ethical behavior is a big problem, and must become an epiphenomenon for a physical process, in this case natural selection.[20]

The philosopher Daniel Dennett speaks of 'Darwin's dangerous idea', almost in a Nietzschean boast, with a rebuke to our cowardice in failing to meet the challenge of realism in 'hard men'. It would seem a dangerous

19 The study of ethics is vast, but is best seen via the classic transcendental idealism of Kant, who begins with a critique of 'pure reason' and proceeds to a series of perspectives on free will and ethical rationality. There is no ethics without free will, even if that is a limited version of that concept. Kant's formulation is one of the most brilliant, but incomplete, and at some points contradictory, attempts to discuss freedom in relation to causality, hence causal behavior. The introductions to the Silber edition (Open Court, 1934) of Kant's *Religion Within The Limits of Reason Alone* (reprint: New York: Harper & Row. 1960) have a good history of the often baffling development of Kant's thinking on ethics, a work in progress, and not clarified by canned academic courses on the subject.

20 Elliot Sober and David Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (Cambridge: Harvard University Press, 1998), chronicles the kin versus group selection theories and their sagas.


THE ROMANES LECTURE

1893

Evolution and Ethics

BY

THOMAS H. HUXLEY, F.R.S.

DELIVERED

IN THE SHELDONIAN THEATRE, MAY 18, 1893

London

MACMILLAN AND CO.

AND NEW YORK

1893

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Fig. 4.10 Frontispiece
Evolution and Ethics

Huxley's perspective

As one biographer of Huxley notes, "Huxley was defending a rational explanation of life, not the nuts, and bolts of selection. He was not equipped to talk on Darwin's ecological approach. He was no field naturalist juggling messy variables: he had no time for variation, survival rates and island isolation. He was rooted in embryology, with its belief in innate developmental pathways. There were other obstacles in his way to accepting natural selection. Many critics saw in Darwin's Nature the 'sordid motives' of utilitarian society. Its *core* was naked survivalism: overproduction, struggle and death, a free-for-all with every individual clawing down his neighbor. In Darwin's 'horridly cruel' nature every part must serve a purpose or be cut down; only from death on a genocidal scale could the few progress. As Hell fell into disrepute, Nature was becoming more hellish. Huxley wanted competition, but not this utilitarian shadow of workhouse society. He had never accepted Nature as a sweated 'slave-mill' run 'for mere utilitarian ends'. His was a nobler vision of 'Harmonious order'. Raised within the romantic tradition and a rung lower than Darwin's great folks, Huxley had seen society at the sharp end. He could not afford to share his friend's heartless image. Even as he championed evolution, he softened selection." Adrian Desmond, *Huxley, From Devil's Disciple to Evolution's High Priest,* (Reading, Mass: Addison-Wesley, 1997), page 271.

idea deserves a second look, there to see Darwin's dangerous goof, and the misapplication of theory to social complexity. Freedom evolves? In another work, Dennett exposes a critical weakness in selectionist Darwinism: anything like 'free will' must explained in terms of the rubric of natural selection and adaptationism, a highly implausible claim, given no evidence. As we examine our historical outlines, we will detect a counterexample, a macro component to the emergence of freedom.[21]

One of the ironic twists of the legacy of Darwinism lies in the evolution of T. H. Huxley's own view of this issue. Later in his career he began to point to the paradox that, while we ascribe man's emergence to evolution, our behavior in the present reacts against the implications of this evolution. We are impelled to contradict the very basis of what we claim is evolutionary. It is as if a second evolution has come into being to challenge the first. How do we account for this? What is the source of this second evolutionary process?

> **Huxley** It is significant that T. H. Huxley, Darwin's great defender, began to sense the problems with strict Darwinism in his later work, *Evolution and Ethics*. He attempted to work through the seeming contradiction that while natural selection produces one style of behavior, history itself shows that man is forced to act against this principle in practice. His 'evolution' seems to be against natural selection. The question remains, whence this 'second' form of evolution? [22]

Darwin and his successors, making natural selection the fundamental axiom of explanation, have attempted considerable ad hoc extensions of great ingenuity to make selfishness the source of morality. This dramatic play of opposites has produced some exotic attempts to 'save the paradigm' in the theories of group and kin selection. These theories are essentially logical phantoms attempting to puzzle through the paradox of making selfishness the basis for its opposite.

But none of this answers to the real issue, which is to explicate, and show evidence for, the emergence of an 'ethical' agent. The issue of ethics is really one of the freedom or potential freedom to act according to an 'ought', and it is almost by definition not going to be explained by the mechanization of valuation via natural selection. This issue gives us a hint that Darwinian style explanation is wrong in principle and wildly off the mark in practice. We must see if we can find any actual data that will give us a hint as to what

21 Daniel Dennett, *Darwin's Dangerous Idea* (New York: Simon & Schuster, 1995), *Freedom Evolves* (New York: Viking, 2003).

22 T. H. Huxley, *Evolution and Ethics* (*The Romanes Lecture,* 1893).

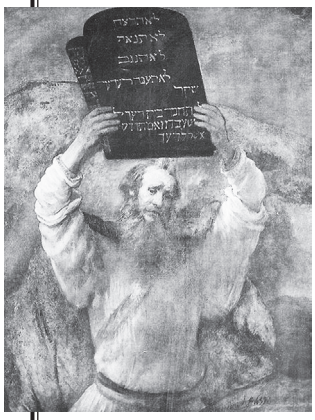

Fig. 4.11 Rembrandt's Moses

Evolution and Ethics?

The Axial Age shows us directly the way religions are induced from a higher level, and no doubt indirectly a hint as to the 'evolution of ethics', here in a very late recycling: we see the emergence of monotheism in the form of a religion with an ethical center of gravity. But note that the distinction we made between 'system action' and 'free action' is crucial: we see that the outcome is a human creation, but in the context of some larger factor, visible in the Axial period as a whole. The mythology of Mt. Sinai is a classic example of this process. The overlay of a macro factor and primitive religion formation is confusing, to say the least. But with perspective, the pieces of the puzzle fall in place. The reality is more spectacular than the primitive confusions we see created in the name of religion. Monotheists must complete their 'Reformation' and upgrade their understanding in the light of archaeological discoveries.

We can see by comparison with India that 'religion generation' operates at a deeper level than that of theism/atheism. The successor religions, e.g. Christianity and Islam, show the Axial Age signature very clearly. The idea of a 'god' gene (not to be rejected out of hand) proposed by evolutionary psychologists is misleading: we can see that the 'evolutionary mainline' recycles and recreates the foundations of 'religion creation' in its system action. Attempts to find a genetic factor are going to fail: we see the issue of 'values' injected into culture directly. We can get a hint of the original sense of 'god reference' and the reluctance to use theistic nouns in the now vestigial gesture of 'pointing to the sacred', IHVH. We cannot safely use design arguments or language here, even as we see that mechanical arguments fail. Thus our use of the term 'evolution' is by default, the 'brown paper bag' to hold a field of data: here the 'macroevolutionary induction' of religions. The evolution of ethics, like that of the capacity for language, is illuminated, but still not explained by the phenomenon of the Axial Age: but we must suspect that we have stumbled on the kind of process involved.

the evolution of ethics might be like. We don't have far to look.

In general, a theory of ethical behavior must explicate the consciousness of an ethical agent, and produce a model of choice-based behavior. But theories of evolution cannot yet account for consciousness. To make ethical consciousness an epiphenomenon of natural selection, and to propose that it arises as an adaptation in the game of survival beggars the nature of the phenomenon itself. What's more, this approach creates a de facto standard of ethics based on the evolutionary 'value' of pure selfishness.

One of the most notable challenges to Darwinists lies in the phenomenon of altruism. Why isolate this one character from the totality, unless some agenda is at work? Why is selfishness thought so compatible with physicalism, while generosity smacks of religious idealism, ethical and/or philosophical? The contradiction between the implicit selfishness of natural selection and the phenomenon of altruism has been the object of considerable theory in the realm of population genetics, i.e. theories of group selection and kin selection. This bag of tricks is a *tour de force*, no doubt, but fallacious at step one: to make altruism a secondary derivation from the tenets of selection is a set of abstractions unverified in practice, and we will soon see another approach to the question based on the evidence of history.

> **Darwinism, Altruism and Ideology** One of the obvious giveaways to ideology, in essence the economic brand, is the Darwinian obsession with altruism. Vindicating selfishness and denigrating ethical action via the debunking of altruism is well within the legacy of the Adam Smith canon of economic self-interest. But using natural selection to mechanize one virtue in a spectrum is a puzzling fallacy for science: the job is to explain the behavior of conscious ethical agents, and perhaps their evolution, the latter a difficult task with the evidence at hand.[23]

23 The attempt to resolve ethical issues via the restriction to altruism generated by natural selection spawns the twin theories of group and kin selection. Elliot Sober and David Sloan Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (Cambridge: Harvard University Press, 1998). Cf. also, the biography of the suicide George Price, the real genius behind figures such as Hamilton, Oren Harman, *The Price of Altruism: George Price and the Search for the Origins of Kindness* (New York: Norton, 2010). Gregory Clark, *A Farewell To Alms* (Princeton: Princeton University Press, 2007) gives the game away via the title. The issues of Adam Smith and morality have a large literature. Cf. R. F. Teichgraeber *Free Trade and Moral Philosophy* (Durham: Duke University, 1986), Athol Fitzgibbons, *Adam Smith's System of Liberty Wealth and Virtue* (New York: Oxford University Press, 1995), A. Arblaster, *The Rise and Decline of Western Liberalism* (New York: Basil Blackwell, 1984). The world of Adam Smith soon yields to neo-classical and marginalist economics. For a critique of the application of the physics metaphor to economics, cf. Philip Mirowski, *Against Mechanism* (Totowa: Rowman &

Debunking altruism borders on obsession with Darwinists. That this virtue is but one isolated aspect of ethics is forgotten. The attempts to derive altruism from selfishness via the various mathematical models of kin and group selection (to say nothing of the interior debate between the two) has to be the most direct evidence of ideology at work, and yet the mathematical sophistication (seeming!) of the technical arguments tends to stall critics. The issue is simple: ethical theories require conscious agents with a will to moral action, and scientism has by definition eliminated these. These theories are therefore not candidates at all for a real theory of evolution. Any real theory of human evolution, in this sense, is completely beyond current science. Not even the default chronicle of the sequences involved in deep time are unknown. The group/kin selection models are simply abstractions without real data.

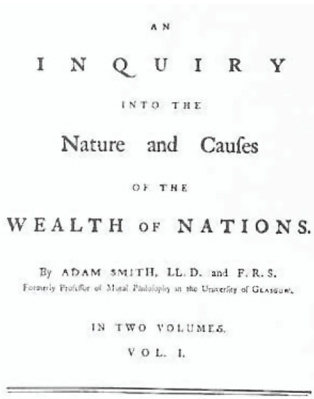
AN
INQUIRY
INTO THE
Nature and Causes
OF THE
WEALTH OF NATIONS.
By ADAM SMITH, LL.D. and F.R.S.
Formerly Professor of Moral Philosophy in the University of Glasgow.
IN TWO VOLUMES.
VOL. I.

Fig. 4.12 Adam Smith's classic

Adam Smith The influence of Adam Smith, and the ideas of self-interest as market 'virtues' is part of the milieu of Darwinian theory, and persists in the attempts to debunk altruism.

It is important to realize that Darwinian reductionism is wrong by definition here in trying to simply eliminate the problem. Further, a suspicious resemblance to economic ideology arises at this point. Even as you reduce ethics you produce one in disguise, and the implicit ethical character of 'survival of the fittest' and 'competitive struggles' instantly creates a substitute ethics of force and nihilistic indifference. This fails to account for the facts of the case, which shows that man, at least, is impelled to react against his own (supposed) evolution, in the Darwinian sense. Why is altruism such a problem for Darwinism? Is it any less metaphysical to posit the existence of a selfish beast than a generous one? In any case, altruism is but one of the issues of ethics.

Littlefield, 1988). Consider the classic from Karl Polanyi, *The Great Transformation* (New York: Farrar & Rinehart, 1944). The latter work starts with the classic attacks on welfare economics in the time of Malthus and enters the underground current of Darwinian classical liberalism via Herbert Spencer.

Theory and Ideology

Questions of ideology stalk Darwinian theory but are concealed by the relative sophistication of Darwinists in disguising the fallacies of Social Darwinism. Darwin's confusion in this area is often shunted off to Spencer. We should note that the confusion of biological and social evolution arises at the beginning of Darwinism, and the work of Spencer is a giveaway clue to the suspicious resemblance of classical liberal and biological theory. Most especially the influence of economics on Darwin's thinking is, or should be, transparent, along with the frequent metaphors of economic self-organization applied to evolutionary processes.

The issue won't go away for the simple reason that ideology is built into any causal claim about evolution that does not carefully distinguish historical action from evolutionary processes themselves. The subjective adoption of a theoretical construct such as natural selection as a stimulus to action creates a paradox of ideology and theory. And the collation of this, unconsciously, to the economic thinking of classical liberalism is endemic in Darwinian social thought.

We should consider that a theory, here natural selection, applied to passive organisms becomes paradoxical as a human agent adopts it as a tactic of action, especially to void moral objections to aggressive behavior in the name of 'evolution'. The fallacy is a dangerous one, and we see the confusion emerging in nineteenth century thought. The legacy of eugenics is not the least of the ideological distortions of theory.

Some references: for Social Darwinism, cf. Richard Hofstadter, *Social Darwinism in American Thought* (Philadelphia: University of Pennsylvania, 1945), Robert Bannister, *Social Darwinism: Science and Myth in Anglo-American Thought* (Philadelphia: Temple, 1979), Edward Caudill, *Darwinian Myths: The Legends and Misuses of a Theory* (Knoxville: University of Tennessee, 1997), John Greene, *Science, Ideology, and World View*, (Berkeley: University of California, 1981. Marx on Darwin is the source of a number of myths. Terence Ball in *Reappraising Political Theory*, Chapter 10, "Reappraising Marx and Darwin". Adrian Desmond & James Moore, *Darwin, Darwin, Life of a Tormented Evolutionist* (New York: Warner, 1991).

The mystery of consciousness and will enters here: the 'subject'(object) of evolution is complex, has a different character from that of a point mass in physics. We must reckon with the sense of meaning, consciousness, and deliberation that are, by definition, subject to contra-causal forms of explanation. The issue must be the 'evolution of the freedom' to choose between different courses of action. This would seem to apply to the case of man, or else the later stages of primate evolution, and there the point remains that mechanized explanations of ethics are not ethics. So, is ethical behavior an illusion, as strict positivism must claim? These are actually issues carefully addressed earlier in the Enlightenment, before Darwin, with such figures as Kant standing out by their careful consideration of the implications of the rise of Newtonian physics.

4.4 The Meaning of Punctuated Equilibrium

It is interesting that there is one spontaneous effort to extend the Darwinian framework, the thesis of punctuated equilibrium, which arises in relation to ideas of sudden speciation. And this invokes the controversial theme of evolutionary discontinuity. Ideas of discontinuous evolution tend to fall into confusion, and are often exploited by religious critics of naturalism seeking a 'miracle in the gaps'. These problems have solutions, and we should be on our way to creating what we will call an 'evolution formalism'. The nexus of concepts surrounding punctuated equilibrium came close to this, but has suffered its own confusions.[24]

The foundation for all claims about evolution lies in the fossil record. But the question of the fossil record is not so simple. One of the most persistent criticisms of Darwin has always been that of the so-called gaps in this record. There can be no doubt that the record is incomplete, and that something suspicious lurks in the data Darwinists give for the theory of natural selection. Over and over we see the phenomenon of rapid emergence

24 Eldredge, Niles and S. J. Gould (1972). "Punctuated equilibria: an alternative to phyletic gradualism" in T. Schopf, ed., *Models in Paleobiology* (San Francisco: Freeman Cooper), pp. 82-115. Reprinted in N. Eldredge *Time frames* (Princeton: Princeton Univ. Press, 985). Stephen J. Gould's massive *The Structure of Evolutionary Theory* (2002) is a classic text here. The issue of punctuated equilibrium has been caught up in the issues of revolutionary ideology and dynamics. This leftist slant requires a reformulation in terms of a better historical model than the Darwinian. Cf. David Prindle, *The Politics of Evolution* (Amherst, New York: Prometheus Book, 2009).

followed by relative stasis, and this was the original perspective leading to the idea of punctuated equilibrium. The record of human evolution itself is ambiguous here, and we see ambiguous evidence of some very sudden transformations in earliest man. The fossil record isn't really homogenous, in the sense that random evolution should not show sudden changes in direction. Nonetheless considerable progress has been made here by paleontologists. And many of these supposed gaps have been filled, or, if not filled, given some inkling of a transitional something (e.g. dinosaurs with feathers, or the basilosaurus), so at least to a some degree the record is filling out, although this does not add one jot to the claims for natural selection. Looking for gaps was the wrong idea.

Gap Argument In History As we move to study world history, we will discover how tricky the question of 'gaps' really is. It is also very simple: gaps don't exist, fullnesses do. The existence of intervals packed with transformational incidents shows us 'gaps in reverse'. Considering the sudden *compression* or close packing of innovations in the Axial Age, in a finite interval, we have something that shows, not a gap, but historical continuity at all points, yet also shows a sudden speed up of development, and on a level that has no connection that we know of to genetics. This could be defined as 'discontinuity' but hardly a gap. That should leave us wary of pronouncements about deep time. Only close observation at the level of centuries suffices to discover what is going on. It is better to bypass the confused language of discontinuity and gaps, and think in terms of transitions.

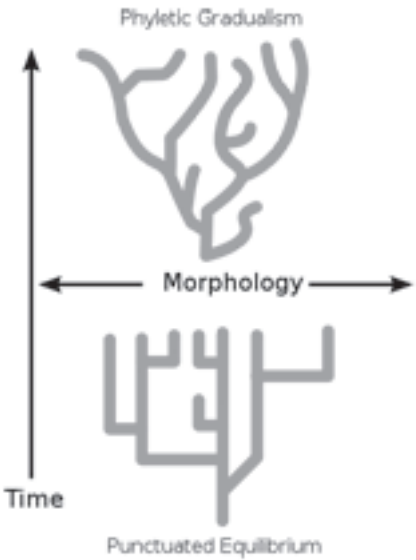

Fig. 4.13 Punctuated Equilibrium

Here critics of Darwin have too often fallen into confusion themselves, because the whole idea of a 'gap' in the record suffers from misdefinition, if not incoherence. Although it is certainly true that the fossil record is very sparse, too sparse to maintain Darwinian certainties, it is not likely that one will find 'gaps' in the record. What is a gap? It is highly likely that there is a continuous sequence of organisms showing an unbroken lineage

of bodily forms. That is not the same as saying that natural selection alone is at work. However, we have no conclusive grounds, for example, to extend this claim to the factor of consciousness, especially in the human case. But these critics have a point, and a refinement of the 'gaps' argument is easy to provide, hence the challenge to Darwin's theory remains in some form. Taken over all, without claiming gaps in the record, we should suspect that something is speeding up the process of evolution beyond the rate entailed by natural selection.

> **Theories of Evidence** The Darwin debate constantly scrambles the issues of the 'fact' of evolution and the 'theory'. There is a complication here, which is that we can distinguish a 'theory of the evidence' from a 'theory to explain that evidence', should that theory of the evidence graduate to stable data. Darwinism has yet to produce a proper theory of the evidence. This subtle difference constantly confuses all discussion. In economics, for example, a theory of evidence would be, as a theory, that economies show cyclical behavior. A second theory to explain the first, i.e. explaining cyclical behavior, is quite another task. Note that without a detailed record we would be likely to think in the abstract about economic systems. This example shows the dilemma of Darwinian theory. We have no detailed record of the way evolution actually happened, and tend to deal only in abstractions based on Malthusian or other misleading examples. This is clearly the trap into which Darwin and Wallace fell, because they were struck by the teeming behavior of jungle populations with its clear profusion of speciation processes. They thought the full evolution of forms was explained by its surface aspect, the competitive struggle in biogeographical regions.

Indeed, conventional Darwinians such as S. J. Gould upgraded this argument with the various claims for so-called 'punctuated equilibrium', which amounts to seeing that emergence is often very sudden, followed by a period of stasis where the rate of change is small, or nonexistent. Granting that such data is hard to interpret, the basic issue simply won't go away. These theories suffered from the inability to disassociate themselves from the fallacies of natural selection, as they attempted to have their cake and eat it too, by proposing various 'levels of selection'. But real evolution is altogether likely to be something different. And it might well 'punctuate', this being followed by some sort of 'equilibrium'. The issue is bound up in distinctions of microevolution and so-called macroevolution, or speciation. The existence of microevolutionary processes is not in doubt, but the elusive factor of macroevolution remains unclear.

Those who propose this issue of 'gaps' in the record, then, are onto

Rediscovering Macroevolution

The ideas of punctuated equilibrium are really something that was implicit in the thinking of Lamarck, and represent a form of the distinction of macroevolution and microevolution That macroevolution should be an intermittent series of 'active evolutionary episodes' is the most obvious form a 'macro' process could take, as, indeed, our outline shows.

An Evolution Formalism It is in the failure of the selectionist pseudo-force that we see the significance of the idea of punctuated equilibrium, which spontaneously invokes what we will call a basic 'evolution formalism'. This formalism distinguishes two levels to evolution, micro and macro, and is best seen in the case where the 'macro' is visible as a series of discrete intervals. Our historical outline is already hinting at this.

Micro/macro: Two-level Evolution One of the key suggestions attempting to resolve Darwinian confusions is to distinguish microevolution from something more general, the real evolution, or 'macroevolution'. This posits the existence of a large-scale 'force' of evolution, and leaves the action of natural selection to produce adaptational refinements. This distinction of levels first emerges in Lamarck, and represents the original version of a theory of evolution, the first, before Darwin's (and Wallace's) reduction to one level. As we proceed we will construct an evolution formalism based on this distinction.

We will complete our very simple and elegant evolution formalism as we go along. Later we will look again at our outline of world history, there to discover to our surprise a perfect exemplar of punctuated equilibrium, describable in our evolution formalism.

something, but need to consider that the fossil record is always going to be continuous in some sense. This does not preempt the possibility, not of 'gaps', but of some other evolutionary process that creates a real discontinuity in some definable sense *on top* of that continuity. Think in terms of acceleration, as artificial as physics logic might be applied to evolution. Acceleration is not a 'gaps' argument, and its discontinuous action is not in contradiction with continuous motion. To propose discontinuity as antithetical to continuity is logical in the abstract, but in this case leads to the hopeless quagmire of miraculous interventions of one kind of another in the creationist vein. We cannot say in advance what that kind of process it would be that generates this sense of discontinuity, but its existence is something that we must suspect based on the evidence that we have.

4.5 In Search of History

We are ready to return to our examination of world history, and should summarize our thinking with a simple deduction:

> If evolution and history are distinct, then they must flow the one into the other. But this could hardly happen instantaneously, so we should see a transition between the two. But this transition could not, again, be instantaneous, but with a beginning and end. Therefore, we might see a series of transitions, partly evolutionary, increasingly historical, until man himself exits from evolution into history.

Fig. 4.14 History Personified

Amazingly, we see that we have derived (after the fact, no doubt) the pattern we have discovered in our outline. And, more, we have solved the problems listed in our Preface! We need to expand our outline as it turns into a window. The question of evolution and history, and the way they must overlap, contains the key to our subject. The match of our deductive logic to the data in uncanny.

The evolution of man is one of the notable failures of Darwinism, and yet this fact is simply ignored in public proclamations of Darwinists, who have denied almost all the key aspects of human nature in the name scientific reductionism. Man's emergence is an obstinate riddle in part because we simply don't have the evidence of how it happened,

and also because of our inability to understand our own minds. Such evidence as we have is mostly that of skeletal remains, highly incomplete, of a series of hominids. In the midst of this void of hard information we are to believe that all the complex functions of the human advance are to be ascribed to processes of adaptation. And yet such claims are as extraordinary in their implications as they are weak in their evidentiary basis.

We are close to the reason theories of evolution have constantly gone in circles in endless debate: evolutionary data shows, must show, the non-dual resolution of the freedom/causality paradox. Historians in practice always assume the existence of free will in history: it is the study or chronicle of 'free agents' and their deeds, not the study of a system of mechanics applied to robots. Our treatment affiirms this, and yet can also hedge, as 'will', free or not, rides the vehicle of 'self-consciousness' in complex hybrids of freedom and causality. Our notes will focus closely on German Classical philosophers, as an exercise to make a point.

4.15 G.W.F. Hegel

Philosophy of history's non-random appearance: The phase of German Classical Philosophy is itself a non-random correlate of our finite transition model, the modern 'axis' effect. The phase from Kant, to Hegel and Schopenhauer is almost an apparition in the macro-effect. Kant's Challenge is first answered by Hegel, with a counterpoint in Schopenhauer's unwitting historical model. Our frequency analysis is quite different from Hegel's 'design' argument. But Hegel's sense that the emergence of freedom was directional (taken up and distorted by Fukuyama) is spectacularly confirmed in another way by our systems analysis.

Historical research has greatly expanded our understanding of the data of world history, and in the process transformed our knowledge of the emergence of civilization. As we proceed we will need to avail ourselves of immense ranges of this enlarged chronicle, which creates a considerable logistics of study. World history is a highly coherent unity, and yet we never see its hidden logic. Part of the problem lies in the influence of Darwinism itself, which enforces a tacit set of assumptions about random evolution. The result is almost deliberate incoherence, and willful blindness toward the giveaway clues to what is going on.

This is often matched with a prejudice set by postmodernists against any

consideration of Grand Narratives, and any attempt using the philosophy of history to generalize about history in the large. The 'grand narrative', with a kind of teleological propaganda lurking in the background, is certainly open to criticism, but so is its opposite: the 'reverse grand narrative' of Darwinized history makes it look like competition, conflict, and 'social natural selection' are driving history, but an organized study of world history shows how untrue that is. Any chronicle of human events will have a default narrative plot, if only a 'waiting for Godot', where nothing happens. In fact, world history has an infinite set of narratives, the most basic for us being, developmental globalization in the drama of civilizations, among others. The point is that 'grand narratives' need to be critiqued for ideological bias, but their basic existence is rather hard to gainsay.

Notes

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From *Information and the Naure of Reality*, Paul Davies (New York: Cambridge University Press, 2010):

> Does information matter? It is no longer a secret that inherited notions of matter and the material world have not been able to sustain the revolutionary developments of twentieth-century physics and biology...

The attempt to find 'free will' in the context of neuroscience continues despite the prejudice of 'scientism': Micheal Gassaniga, *Who's In Charge: Free Will and the Science of the Brain* (New York: HarperCollins, 2011). Reductionist theories of ethics are problematical from the start, cf. Frans de Waal (et al.), *Primates and Philosophers: How Morality Evolved* (Princeton: Princeton University Press, 2006).

An older classic is Michael Polanyi's *Personal Knowledge* (Routledge and Kegan Paul, 1958), on the limits of science. Also, Michael Aeschliman, *The Restitution of Man: C. S. Lewis and the Case Against Scientism* (Grand Rapids, MI: Eerdmans, 1983). The chimp connection is fundamental, but ofen misjudged, Jonathan Marks, *What It Means to Be 98% Chimpanzee: Apes, People, and Their Genes* (Berkeley: University of California Press, 2002). Evolutionary psychologists offer invasive theorizing: even Cinderella comes within their ken, apparently: a charmingly ridiculous treatment: Maring Daly (et al.), *The Truth About Cinderella: A Darwinian View of Parental Love* (New Haven: Yale University Press, 1998). Philip Kitcher, *Vaulting Ambition:*

Sociobiology and the Quest For Human Nature (Cambridge: The MIT Press, 1985). Nietzsche's eugenics is out in the open, save for post-Kauffman scholars, Dan Stone, *Breeding Supermen: Nietzsche, Race and Eugenics in Edwardian and Interwar Britain* (Liverpool: Liverpool University Press, 2002), Martin Bull, *Anti-Nietzsche* (New York: Verso, 2011). We discuss 'naturalism' below: in Owen Flanagan's *The Bodhisatttwas's Brain: Buddhism Naturalized* (Cambridge: The MIT Press, 2011), an egregious reductionism is at work: the issue of 'naturalizing Buddhism' by eliminating its beliefs about 'nirvana' shows the confusion over what nature is. Thousands of yogis over many millennia have made this 'meta-state' of consciousness an empirical finding. It has been described many times over. Darwinists on average cannot assess their own field of population genetics, whose brilliant achievements are masked by a dangerous hype as to anything like a real science like mechanics. The usages here to derive ethical evolution are mostly sophistical, and beyond the grasp of believers and critics alike, William Provine, *The Origins of Theoretical Population Genetics* (Chicago: University of Chicago Press, 2001), Brian Chalsworth (et al.), *Elements of Evolutionary Genetics* (Greenwood, Co: Roberts, 2010), George Williams, *Adaptationism and Natural Selection: A Critique of Some Current Evolutionary Thought* (Princeton: Princeton University Press, 1992). The 'Paradigm' should have halted in the 1980's with Gould's declaration the synthesis was effectively dead, but Darwinists seem to have balked. Kim Sterelny, *Dawkins vs. Gould: Survival of the Fittest* (Cambridge: Icon, 2007). The miracle of sophistry has graced the darwinization of the falsification, evo-devo, viz. Sean Carroll, *Endless Forms Most Beautiful: The New Science of Evo-Devo* (New York: Norton, 2005). JohnJoe MacFadden, *Quantum Evolution: How Physics' Weirdest Theory Explains Life's Biggest Mystery* (New York: Norton, 2001).

The Darwin debate revolves around the claims and definitions of naturalism. We can certainly embrace naturalism, but its definition cannot prejudge the issue of what nature itself shows to be the case. We are stuck with the obstinate Cartesian legacy of dualism, leaving our naturalistic assumptions schizophrenic. Religious critics then proceed to the opposite confusion of spiritualizing the leftovers at the limits of reductionism. The glaring lack of any account of the evolution of consciousness ought to have made Darwinian certainties close to preposterous, but it is assumed in

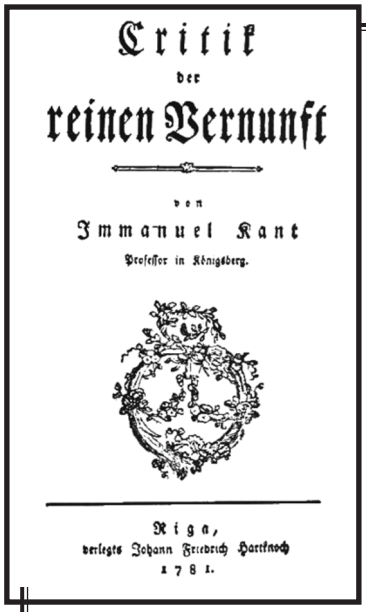
Critik
der
reinen Vernunft
von
Immanuel Kant
Professor in Königsberg.
Riga,
verlegts Johann Friedrich Hartknoch
1781.

Fig. 4.16 *The Critique of Pure Reeason,* 1781

The Metaphysics of Evolution

In essence the question is simple. The need for a 'science of metaphysics' is the first step to a 'science of history and/or evolution'. But it is just this requirement that proves the stumbling block. In the preface to his famous first critique Kant isolated the three great issues of the metaphysical tradition destined to get into trouble on the way to a 'science of metaphysics': that of divinity, followed by those of soul and free will. To these we should add the question of teleology, and note the way Kant considered teleology within the bounds of methodological naturalism, albeit ambiguously. The questions of divinity, soul, and free will demand proofs of existence, and Kant exposed the way that the road to these three proofs is beset with contradictions.

We notice immediately that the conflict of science and religion, notably Darwinians and fundamentalists, impinges on the first, soon followed by the second, the third creating a dilemma even in the context of secular culture. The monotheistic religions have shown an obsessive reluctance to yield ground on the issue of divinity in history, hence evolution. The Eastern religions have not yielded an inch on the question of 'soul' (although Buddhism gives the misleading appearance of rejecting the idea of 'soul'), would grant the problematic shown by Kant, yet demonstrate methods of enquiry into issues of self. And the core concepts of modernity, its definitional liberalisms, are equally problematical in relation to the causal monism of the defining scientism of the modern era.

Kant's *Critique of Pure Reason* correctly predicted the 'big three' problems that would bedevil Darwinism (or evolutionism): questions of god (or even 'nature' as totality), self (or soul), and free will. Scientism must produce fake solutions to the second two problems to claim a theory. And endless cultural warfare accompanies the first. The basic entities of biology have a 'noumenal' aspect.

advance that some scenario of adaptation can account for this.

Even as Darwinism challenges the legacy of metaphysics, its claims for evolution are forced to impinge on this realm with tacit assumptions

> It should have been possible, even before Darwin come around to it, to criticize the whole imagery of natural selection and the survival of the fittest. But if we except Samuel Butler and one or two other unheeded critics, everybody preferred "Nature red in tooth and claw", and either regretted or rejoiced that it was the only means of making improvements in species. Some obviously feared that if natural selection were discarded evolution would be endangered. They thought the two theories inseparable and foresaw a rebirth of superstition. But dropping natural selection leaves the evidence for evolution untouched. It was not even a question of dropping natural selection, for natural selection is an observed fact. It was a question of seeing—as Darwin came to see—that selection occurs *after* the useful change has come into being: therefore natural selection can cause nothing but the elimination of the unfit, not the production of the fit...
>
> Jacques Barzun (1941), *Darwin, Marx, Wagner: Critique of a Heritage* (Doubleday Anchor, 1958), p. 62

that belong to the same genre. The problem is, first, the complexity of the organism, and its intangible mysteries such as the nature of the 'will', if such exist, in the human evolutionary development of ethical behavior.

And it is significant that Kant stands at the dawn of the rise of evolutionary biology, with a set of critiques that can mediate the contradictions of causality, freedom, and teleology, especially in the analytical study of organisms. The onset of the positivistic period completely bypasses this important stage in the development of the modern social and biological sciences.

It is not surprising, and yet remarkable, therefore, that the work of the philosopher Kant is too little considered in the dialectical collisions of science and religion, since his system of philosophy addressed wholesale the problematic that pervades not only the philosophies of rationalist theology, but of the empiricist tradition as well. In fact, positivism is a form of collapsed Kantianism and it is a pity that scientific methodology, mostly through reductionist downshifting, has lost his analysis of the boundaries of science.

The metaphysical deadlock now revolves around the design argument. The most recent initiative in the debate is thus the intelligent design movement, which has injected the long controversial question of design into the forum, obscuring the basic question once again, the need, within the context of methodological naturalism, of finding evolutionary processes

Fig. 4.17 Immanuel Kant

beyond natural selection. The question of design is the other hardy perennial in the debate and provokes all the metaphysical ambiguities of natural selection, itself ironically a 'design' term. Both natural selection, a term referring to a 'selector', and classic design arguments are, most ironically, kin, and thoroughly vacuous propositions, bordering on metaphysical presumptions. The intelligent design gambit in the culture wars seems to be a strategic finesse to avalanche the dialectic into a false antithesis, 'materialistic' natural selection or 'spiritual' design.

The Design Argument The reductionism of Darwinian natural selection has given the fundamentalists an opening for a renewed consideration of design arguments. But the question of design is really the question of teleology and of a science that can extend its methodology beyond the categories of physics. It is not true that Darwinists have refuted the design argument. The problem is that we cannot win a single inch of ground in the attempt validate the existence of a designer. It is a metaphysical quest. We should assume that the design factor is embedded in nature, and consider that incomplete nature of standard methodologies of science.[25]

The design argument, recast as the 'Intelligent Design' argument, has become almost as ideological as the selectionist fundamentalism of Darwinism, but is based on an ancient and honorable intuition, one that graced even the early stages of science, but one that has proven forever elusive. It was Socrates, we should recall, who first challenged the presumptions of naturalism with a design dialectic. The claim that Darwinism has refuted the design argument has simply confused the discussion, and driven design theists to stand their ground confronted with the Darwinian illusion. The design argument has also been the object of some devastating, if not decisive, refutations by such figures as Kant and Hume. The design argument is not so much false as unknowable. We cannot specify a designer, and the Biblical

25 Philip Johnson, *Darwin on Trial* (Downers Grove, Ill.: InterVarsity, 1993), *Reason in the Balance* (Downers Grove, Ill.: InterVarsity, 1995), Norman Macbeth, *Darwin Retried* (Boston: Gambit, 1971). Larry Witham, *Where Darwin Meets the Bible* (Oxford: Oxford University Press, 2002). William Dembski, *Intelligent Design* (Downers Grove, Ill.: InterVarsity Press, 1999). Robert Pennock, *Intelligent Design Creationism and Its Critics* (Cambridge, Mass.: MIT Press, 2001), William Dembski (ed.), *Uncommon Dissent* (Wilmington: ISI, 2004), Mark Perakh, *Unintelligent Design* (Amherst, New York: Prometheus, 2004), Thomas Woodward, *Doubts About Darwin* (Grand Rapids, MI: Baker, 2003).

substitutes immediately trivialize the question. The great irony is that the atheist Schopenhauer in his classic theme of the 'world as will' unwittingly pointed to an insight that can clarify design mystifications.[26]

The design argument is often a confused version of the issue of teleology. But when all is said and done, the obsessive claims for natural selection, taken as a refutation of design arguments, have served only to embolden their adherents. The issue of teleology was soon banished from physics, but with the rise of modern biology a new perspective on teleology emerged at once. With the coming of Darwinism, this phase has been forgotten.

Fig. 4.18 David Hume

The question of design is really one of teleology and an inevitable ambiguity arises as biologists confront systems that simply won't fit into the rubric of physics.

Fine-tuning arguments Paul Davies in *The Goldilocks Enigma* asks, Why does the universe seem so well-suited to life? Physics itself, although physicists are reluctant to admit it, gives us a hint of the mechanism beyond natural selection. This insight has been confused by metaphysical design arguments. But the empirical basis for a consideration of evolutionary directionality, beyond random evolution, is there.[27]

Kant provided a complete methodology for the study of teleological questions in biology, and this produced a whole generation of teleomechanists far more careful metaphysically than Darwinists, so prone to their concealed metaphysical extravagance. To be sure, the issue of teleology can cause immense confusion and it is not productive to indulge in speculative ventures in this direction, as indeed the Kantian perspective makes clear. This promising advance at the dawn of modern biology was swept away by the Darwinian paradigm. The result is the intractable character of the Darwin debate in the midst of almost total historical amnesia on the part of tightly conditioned scientific cadres condemned to propagandizing against

26 Dale Jacquette, *The Philosophy of Schopenhauer* (Ithaca, NY: McGill-Queen's University Press, 2005).

27 Paul Davies, *The Goldilocks Enigma: Why Is the Universe Just Right for Life?* (New York: Houghton Mifflin, 2006).

> The World is my representation...it then becomes clear to him that he does not know a sun and an earth, but only an eye that sees a sun, a hand that feels an earth...
>
> Schopenhauer,
> *The World*
> *As Will and Representation*

Fig. 4.19 Arthur Schopenhauer

Schopenhauer and the 'Will' in Nature The design argument is highly ambiguous, and often ill-served by the religious interpretations used to exploit it. Ironically, the 'design' factor in the atheist transcendental idealism of Schopenhauer offers an entirely different perspective on design in nature, and shows how design factors and laws of nature are closely related. This philosopher makes clear that the evolutionary might be related to the noumenal, and beyond observation, its phenomenal aspect apart. We will encounter this idea again as we go along.

> Idealism and materialism, the physics and the math, are distinct, and in permanent false conflict, leaving both science and religion in metaphysical limbo, but the legacy of Kant's and then Schopenhauer's transendental idealism (neither transcendental nor an idealism, the terms are specially defined) allows the two into a workable tandem.

religion in their iron cage.[28]

The question lingers, can current science explicate evolution? The first emergence of man produced a being at odds with the thinking of scientism, with his beliefs in 'soul', and a sense of the 'spirit world', and the complexities of a consciousness impinging on a larger dimension. And this creature had a complex potential for self-consciousness, which is more than simple consciousness, as the invariable mythologies of the magical and mysterious testify. It would seem that these superstitions should yield to science. But then why did they accompany the advance to first humanity? Are we to say that the first men were regressive in this? To be sure, the later forms of these are often degenerations of the originals. Indeed, we don't easily understand our own evolutionary software enough to even use it, let alone explain its evolution.

The primordial nature of human nature in earliest man with his complex spectrum of consciousness, soul beliefs, however decayed, and sense of a spirit world token a larger dimension in man that the purely reductionist account allows, issues the philosopher Kant explored long before Darwin.

> **The Spectrum of Consciousness** The questions of theology can be a distraction from the deeper core of religion involving the exercise of human potential. The devolution of man's realizable 'self-consciousness' to the mechanized passive consciousness induced by social ideology is a challenge to decayed religion and ideological scientism both. The classic evolutionary spectrum of human mental states, sleep, consciousness, self-consciousness, and meta-consciousness (or simply the mostly unknown 'fourth state') finds no reckoning whatever in monotheistic religions or scientific psychologies, a warning they are social conditioning instruments designed for domination. Darwinism is completely oblivious to the complexities of consciousness, despite Wallace's belated warning that something was amiss.

The Darwinists, in the *idée fixe* of their selectionist world-view, are hard pressed to handle even elementary issues of altruism and have produced a sort of Ptolemaic adjunct in the concoctions of kin selection and group selection to save the appearances in their theory. This bag-of-tricks tactic of making selfishness, the prime suspect of an age of economic liberalism, the key to the altruistic enigma, is clever but beside the point. This form of explanation is by definition wrong, because it denies the existence of the

28 Timothy Lenoir, *The Strategy of Life* (Chicago: University of Chicago Press, 1989). Cf. Peter McLaughlin, *Kant's Critique of Teleology in Biological Explanation* (Lewisten, New York: Edwin Mellen, 1990). For another view, cf. Frederick Beiser, Chapter 9, "Kant and the Naturphilosophen", *The Romantic Imperative* (Cambridge: Harvard University Press, 2003).

Notes Toward an Evolutionary Psychology beyond Scientism

Schopenhauer spontaneously rediscoverd the essence of the ancient Upanishadic/Samkhya spectrum of thought in the Kantian context, and he is the more convincing for having independently come on the core ideas, which degrade under repetition, and which began streaming into modernity in the Enlightenment. The philosopher J. G. Bennett recounts a variant of what Schopenhauer rediscovered, the ancient yogic-Buddhist distinction of 'being, function, will', in his language, of the causal order, its envelope of greater 'being', and the independent reality of 'will'. Despite its own problems (the 'will' is problematical as egoic or noumenal), this can help as an exercise, and to break the habit of the misleading 'material/spiritual' duality, which causes endless confusion. He cites the analogy of man compared to a room with various obects, each with a function, a typewriter, a bed, a sewing-machine, a musical instrument, a telescope. In darkness the bed can be used, but not the machines. With a candle, the machinery can function better, while if window is opened, the telescope can be used. The machines correspond to functionality, the light to being, and the 'user' to the factor of will. Cf. J. G. Bennett, *The Dramatic Universe*, Vol I, (London: Hodder & Stoughton, 1953), p. 55. This analogy, where the light corresponds to 'being', and the will answers the question, who uses the machines? can help to sort out the confusion of brain, neuroscience and self, which has elements of being and will in a still unknown relationship to the functionality of 'brain'. Consider the distinction of physics and the equations of physics, to see that the discourse must embrace the larger framework of 'being' where the (Platonic) ideas of mathematics have we suppose a reality ('being') beyond physical existence. But Kant and Schopenhauer suggest the deeper insight into noumenal and phenomenal aspects and to the fact that self is larger than its categories of 'space and time'. Part of the problem of understanding thus arises from the way the 'mind' is embedded in a larger framework, which it can't see or visualize.

problem to be solved, the evolution of agency and consciousness.

> **Social Darwinism:** The confusions of Darwinian evolutionism resulted very quickly in the blight of Social Darwinist ideology used to apply evolutionism to the propagandas of class and conflict. Eugenic and other fallacies appear to distort the idea of applied evolution. The confusion of theory and ideology results in the application of natural selection theories to racist ethnocentrism and eugenic utopianism based on the wrong method.[29]

Close study of the emergence of modernity climaxing in the Enlightenment can help us to correct the imbalance created by the ideology of positivism. Scientism and Darwinian evolutionism have distorted the legacy of the Enlightenment. The dangers of Darwinism are more clearly reflected in the Nietzschean diatribes against the 'last man' of modern history. The nihilist secularism of Social Darwinist eugenics lurks in the unstated implicate ons of sanitized Darwinism. The legacy of this fascist project lies in part in the uncritical acceptance of Darwinian fundamentalism. The attempt to produce a new man via applied natural selection is a total misunderstanding of evolution and the road to calamity: a degenerate human.

> **Nietzsche and Darwin** Nietzsche's denunciation of modernity as the refuge of the 'last man' was indirectly influenced by the thinking of Darwinism and reductionist scientism, despite that philosopher's critique of Darwin. But this perspective, with a concealed project of eugenic exterminations, is based on a complete misunderstanding of evolution, and the relationship of history and evolution. The ironic connection of modernity to evolution remains ours to discover. The latent dangers of selectionist theories are implicit in their basic emphasis.[30]

Nietzsche raises the issue of the future evolution of man, but surely Nietzsche had this backwards. The 'last man' of the Darwinian theory would be a regressive manifestation of human degeneration. It is civilization itself since the Neolithic that shows the resumed species evolution of man, but

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29 Richard Hofstadter, *Social Darwinism in American Thought* (Philadelphia: University of Pennsylvania, 1945), Robert Bannister, *Social Darwinism: Science and Myth in Anglo-American Thought* (Philadelphia: Temple, 1979).

30 Keith Ansell-Pearson, *Nietzsche and Modern German Thought* (New York: Routledge: 1991), (ed.), George Stack, "Kant, Lange, and Nietzsche: critique of knowledge", Steven E. Aschheim, *The Nietzsche Legacy in Germany 1890-1990* (Berkeley: University of California Press, 1994), Gregory Moore, *Nietzsche, Biology and Metaphor* (New York: Cambridge University Press, 2002), Abir Taha, *Nietzsche, The Prophet of Nazism: The Cult Of The Superman* (Bloomington, Indiana: Authorhouse, 2005).

Kant and Natural Teleology

Fig. 4.20 Ernst Von Baer 1792-1876

As biological science in the Newtonian legacy emerges in the era of positivism the denaturing of teleological components leaves Darwinists stranded with no definition of an 'organism'. This situation was virtually prophesied by Kant whose work suggests issues of natural teleology. The data of our macro effect, proceeding empirically, gives us an actual example: a intermittent oscillator that expresses directionality, i.e. a hybrid of mechanical and teleological components, both and neither. But this phenomenon has a 'noumenal'/'phenomenal' Janus-face.

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."

this time with a new element of the 'self-evolutionary' in the emergence of a freedom factor beyond the organismic. The evolution of man is unaccountably complex, and can't be resolved through gimmicks.

But Nietzsche's ironic confusions ask us to formulate the idea of evolution in a way that can expose the Social Darwinist confusions of the Darwinists, in the process recasting evolutionism in a way that can do justice to the complexity of man. The last chimpanzee should be the first true man, a species not yet in existence. To think that such a being could be created by a nihilist perspective plying Darwinian eugenics is the sure road to calamity, as the outcome of twentieth century fascistic eugenics makes brutally evident. Here the delusions of Social Darwinist eugenics are a miasma of misinterpretation liable to destroy the future of evolution altogether. These issues are a reminder of the dangers of bad theories of evolution: the dynamic of natural selection pressed into service for eugenic futurism are more likely to induce regression than evolution, whose mystery remains stubbornly elusive.

5. HISTORY AND EVOLUTION

> The most popular catchwords of Darwinism, "struggle for existence", and "survival of the fittest", when applied to the life of man in society, suggested that nature would provide that the best competitors in a competitive situation would win… Secondly, the idea of development over aeons brought new force to another familiar idea in conservative theory, the conception that all sound development must be slow and unhurried.
> Richard Hoftstadter
> *Social Darwinism in American Thought,* p. 6

5.1 Enigma of the Axial Age

Our historical outline has uncovered the unexpected evidence of the non-random in world history. We have set this as a minimal claim, about randomness, but our pattern is a clue to something deeper. We could stop there, our job done, and leave the example of the non-random as a challenge to Darwinism, and erect a counter to any attempt to darwinize world history. But our discovery is really a gateway to a deeper set of insights. As we zoom in it shows us far more, beginning with a clear sequential logic in a series of intermittent intervals, at the middle of which we find the so-called Axial Age. It is hard at first to grasp the full sequential logic, and we can focus on the data of the Axial Age in isolation. And anyone who thought 'slow

development' was a law of nature is in for a shock. High-speed changes over discontinuous intervals make selectionist 'slow evolution' look mythological.

It is useful to look at the Axial Age in isolation, and yet, as discussed in the box on the facing page, its probable resolution as a step in a sequence needs to be kept in mind. We need to review some of the classic questions of historical dynamics and human freedom as these interact. For example, we see the non-random appearance of art, and yet these are the work of artists. This hybrid character demands care: standard science will not work. The outcome of our 'macro-effect' is partly 'free creative action'. This situation is completely different from standard theories. Our data will solve this problem for us, and we can develop a hybrid perspective of 'evolution' and the philosophy of history, traditionally named, that is, the 'chronicle of human freedom'. This Janus-faced account, based on causality and freedom, resolves a classic conundrum in the pursuit for a 'science of history'.

> **The Axial Age in Isolation** Until the sequential logic we have discovered is clear it is useful to restrict study to the phenomenon of the Axial Age, and its enigmatic dynamics. It is the one incontestable case of a non-random pattern operating discontinuously. Its multiple parallel synchronous zones of action are an additional indication of a kind of 'macro' effect, something operating outside of the normal stream of history.

One of the most important discoveries of modern historiography has been that of this enigmatic synchronous emergence of multiple Eurasian transitions in the period of the birth of classical antiquity. In Greece, Rome, the Middle East, India, and China, with question marks about Africa and the New World, a sudden burst of cultural innovations generates a new era in world history.

The term 'Axial Age' was invented by the philosopher Karl Jaspers who collated a whole series of observations of this phenomenon, as it came to be discovered in the nineteenth century.

> **Confusion Over Axial Age** The discovery of the Axial phenomenon has led to great confusion, and many muddled accounts. We need to repair the misperception by putting the period into the context of a larger history. Then its discontinuity will stand out. The Axial Age is not a religous age, but a phase in a dynamical system, whose action is neutral in a series of *relative transformations*. Once grasped, the effect is spectacular.

Once seen in this light the multiple harebrained accounts will fall away and we can see the phenomenon as it is. And then we can begin to study the individual areas, a second and crucial task, in part beyond the scope of

The Enigma of the Axial Age Against the Backdrop of World History

We saw our pattern as a short series of epochs in succession each associated with a kind of punctuated transition at its onset. Since the data becomes clear only with the invention of writing, which occurs in the first of these transitions, the data for the first phase is just on the threshold. The resulting fragment is nonetheless unmistakable in its structured coherence. We can see this pattern from several perspectives:

1. The first, visible from our outline of world history, is of the mysterious drumbeat pattern of epochs in world history, proceeding down a mainline of the diversity of civilizations. Note that these turning points are equally spaced, with an interval of about 2400 years, clear evidence of a cyclical phenomenon.

2. The second, which is really an aspect of the first, is of the so-called Axial Age, the enigmatic synchronous emergence of cultural innovations and advances across Eurasia in the period of the Classical Greeks and early Romans, the Prophets of Israel, the era of the Upanishads and Buddhism in India, and Confucius in China. We could have discovered our pattern from analyzing this period in isolation. Looking at this Axial phenomenon we are forced to consider that it is really a step in a sequence, and moving backwards and forwards we suddenly discover the full pattern.

3. The decline and fall of ancient civilizations followed by the sudden rise of the modern world after 1500 is a puzzle that has long confounded world historians. But the puzzle is easily solved if we extend the domain of analysis to include the whole of world history. The puzzle of modernity falls into place in the larger puzzle.

4. The sudden take-off of Sumer and dynastic Egypt in the centuries just before -3000 again suddenly falls into place with a simple explanation, not as the 'beginning' of civilization, but as another kind of 'axial' turning point, such as we see in the subsequent 'Axial Age'. This kind of 'relative beginning' phenomenon, like tree rings in an annual pattern, makes complete sense, but requires getting used to when applied to world history.

5. We are left to wonder if this series has a starting point, perhaps in the Neolithic. It is clear evidence of the existence of a 'driver', thus of directionality, the great taboo. But now the evidence is clear.

The clear traces of a non-random pattern taking the form of a sequential logic is a giveaway to some kind of evolutionary process. Note that this kind of intemittent process answers to the paradoxes listed in the Preface.

this book: let us concentrate on the overall pattern. The Axial Age needs to be understood first using periodization. Then its content areas can be examined, a very difficult task. The clearest case is Archaic Greece.

Fig. 5.1 Noah's World, 1854

The discovery of the Axial Age is one of the great episodes in the more general drama of the archaeological revolution, whose most notable early incident is perhaps the discovery of the Rosetta Stone by the army of Napoleon in its invasion of Egypt. In fact, the onset of classical antiquity as the source of our traditions began to be seen more as a rebirth or relative transformation of a more ancient world, as the boundaries of civilization stretched backward, first to the rise of higher civilization in Egypt and Sumer, and then into the Neolithic. This aspect of relative transformation, or sudden discontinuity is the clue to whole question, and prima facie evidence of what standard evolutionism refuses to see, or consider.

As the data of world history began to become global in scope, transcending its narrow focus on the 'West', a strange realization of a coordinated process across Eurasia in the first millennium BCE began to crystallize in the fixer, so to speak. In the West we see the birth of the Roman Republic, next to the brilliant, and brief, flowering of Greek culture in its Archaic period, as this becomes the incandescent moment of the Classical era. In the Middle East we see the dramas of Israel and Judah against the backdrop of the play of empires in the core area of Mesopotamian civilization. A similar gestation seems to be occurring in Persia, and suddenly near the end of the Axial transformation the two interact and blend to produce a revolutionary brand of monotheism. Restarting as it were at a frontier, the remarkable 'Israel', as an emerging abstraction of the chronicle of two

kingdoms confronting Assyria, becomes the source of a crystallization of monotheism that will become the basis for a tide of world religion. What is remarkable is the parallel birth of two (or more) world religions, as we observe the synchronous emergence of Buddhism (and Jainism) in the Axial Indian period. Finally in China we see the analogous birth of a new era in the appearance of figures such as Confucius and Lao Tse. What is remarkable here is the synchrony of independently appearing periods of innovation, a phenomenon that confounds our usual views of historical cause and effect. This completely unexpected pattern of data has still not been properly assessed by conventional historiography.

This revolution in our perceptions of antiquity is relatively recent, still unacknowledged by mainstream historiography, and is best coordinated with the work of Biblical Criticism, and the new biblical archaeology. The meaning of the history of the Old Testament begins to dawn on us, as the dynamics of the Axial Age shines through the semi-historical chronicle of the Biblical history. The effect, also, of pushing our knowledge of history backwards before this period, has been to emphasize by contrast the sudden discontinuity of the Axial Age. The sudden opening to the mystery of ancient Egypt in the decipherment of its ancient hieroglyphics heralded the massive new findings of the nineteenth century. The at first less visible but in many ways more spectacular discovery of the Axial Age synchronies did not impinge on public consciousness until a bit later, and in fact has still not done so in full measure, in part because of the dominance of the view that there can be no such thing as an historical non-random pattern. Part of the difficulty is the way that our traditional perceptions had to reflect the Axial Age, yet without seeing the general picture. Thus the Old Testament is really about this phenomenon, but is cast in the form of an Age of Revelation. This dissonance of similar perspectives has tended to confuse the issue of a great discovery, and to cast its significance in religious terms.

This difficulty pervades the treatment of the subject by Jaspers whose views are nonetheless sufficiently broad to grasp the essence of what is occurring. 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.[1]

This period shows an effect spanning the whole of Eurasia in rough synchrony in the period, as Jaspers depicts it, from -800 to -200. In fact the core period is from about -900 to about -400, after which the phenomenon starts to show a kind of fall-off effect. This insight begins with a list of innovators, as philosophers, sages, or religious figures. As we shall the phenomenon is actually much broader. Even a cursory glance at the history of Greece in this period shows the suddenness of the Greek transformation, and the parallel emergence of the prophetic age of the Israelites will seek its explanation here also.

It is not clear at first what we are seeing. This discovery has been almost orphaned by an inability to properly grasp what the evidence shows. Part of the problem is that we assume we already know how history works. But we don't. The archaeological revolution has given us for the first time the gift of a continuous historical record of about five thousand years, and this is not something we can assume we understand, as the clear evidence of the unexpected Axial Age makes clear.

Jaspers is not alone in his observations, which collate a whole series of such. Joseph Needham, in *Science and Civilization in China*, notes:

> The close coincidence in date between the appearance of many of the great ethical and religious leaders has often been remarked upon: Confucius, c. -550; Gautama (Buddhism), c. -560; Zoroaster (if a historical personage), c. -600; Mahavira (Jainism), c. -560, and so on. But the Chhun Chhiu period was also contemporary with many important political events, such as the taking of Nineveh by the Medes in -612, the fall of Babylon to Cyrus in -538, and the invasion of the Punjab by Darius in -512, all examples of Iranian expansion. At the beginning of the Warring States period, the Greeks checked Iranian expansion westwards (-480), and the middle of the -5th century saw the erection of the Athenian Parthenon. The concluding stages of the Warring States time are contemporary with many outstanding events, such as the conquest of Alexander the Great (c. -327), the foundation of the Maurya

1 From Karl Jaspers, *The Origin and Goal of History* (New Haven: Yale University Press, 1953), Part I, Ch. 1.

> dynasty in India and the beginning of the reign of Asoka (-300 and -274 respectively), and the Punic Wars in the Mediterranean (-250 to -150) which overlap with the first unification China under Chhin Shih Huang Ti. But the beginning of the Roman Empire (-31) does not take place until well into the Han dynasty.[2]

Again we have the evidence of prophets, sages, and philosophers. But there is a problem here: this period is flush with such figures, but it cannot hold a monopoly on them. And, for example, the figure of Zoroaster is not always thought to lie in this period. The same could be said for Moses, or Abraham. This, actually, is not a problem. This point needs to be understood, and only a frequency hypothesis will work. Great men appear throughout history, but for some reason they are especially clustered here in the Axial period, and the other transitions. The solution to this is simple: our 'Axial' period often innovates, but it also often repackages the innovations of other periods. Usually something must already exist before the 'axis' interval will work on it. Monotheism was an inchoate idea of great antiquity, emergent in figures, however mythical, such as Abraham, and Zoroaster. But in the Axial period the idea is transformed into an entire religion. This phenomenon is visible in many of our synchronous zones. In India, the birth of Buddhism is directly correlated with the Axial period, but its sources are very ancient.

Fig. 5.2 Athena with owl, early fifth century

All these initial observations of the Axial Age began earlier in the nineteenth century as global historiography began to force the issue of a multicultural perspective, and this entailing the need for synchronous study. The first philosopher of history to mention the Axial phenomenon would appear to be the little known Lasaulx (1856), who observes,

> It cannot possibly be an accident that, six hundred years before Christ, Zarathustra in Persia, Gautama Buddha in India, Confucius in China, the prophets in Israel, King Numa in Rome and the first philosophers—Ionians, Dorians, Eleatics—in Hellas, all made their appearance pretty

2 Joseph Needham, *Science and Civilization in China* (Cambridge: Cambridge University Press, 1965), p. 99.

well simultaneously as reformers of the national religion.

A sense of something defying probability arises spontaneously as we notice this phenomenon. Victor Von Strauss (1870) notes,

> During the centuries when Lao-tse and Confucius were living in China, a strange movement of the spirit passed through all civilized peoples. In Israel Jeremaiah, Habakkuk, Daniel and Ezekiel were prophesying and in a renewed generation (521-516) the second temple was erected in Jerusalem. Among the Greeks Thales was still living, Anaximander, Pythagoras, Heraclitus and Xenophanes appeared and Parmenides was born. In Persia an important reformation of Zarathustra's ancient teaching seems to have been carried through, and India produced Sakyamuni, the founder of Buddhism.[3]

A great deal of this material is focused on religious figures. But we should consider the Greeks, and note that many observations of the type collected by Jaspers exist for isolated instances of what we can see is connected to this 'Axial Age' phenomenon. Thus the philosopher Bertrand Russell opens his *A History of Western Philosophy* with an exclamation of wonder at this generative era:

> In all history, nothing is so surprising or difficult to account for as the sudden rise of civilization in Greece. Much of what makes civilization had already existed in Egypt and Mesopotamia, and spread thence to neighboring countries. But certain elements had been lacking until the Greeks supplied them…What occurred was so astonishing that, until very recent times, men were content to gape and talk mystically about the Greek genius. It is possible, however, to understand the development of Greece in scientific terms, and it is well worthwhile doing so.[4]

We suddenly see the question of Greece in the larger context of the Axial Age, and to understand the question in scientific terms requires an objective look at a phenomenon that we had not suspected, where the occurrence of so many novelties in parallel seems at first inexplicable. In any case we are left with a question, is there a science of history?

The implications of the Axial Age have thus left its study stranded in a kind of limbo, as the phenomenon has tended to drift into misinterpretation. Karl Jaspers, in a curious blend of the religious and the secular, brought a carefully balanced sense of the philosophy of history to his depiction of the

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3 From Karl Jaspers, *The Origin and Goal of History* (New Haven: Yale University Press, 1953), Part I, Chapter I, "The Axial Age".

4 Bertrand Russell, *A History of Western Philosophy* (New York: Simon & Schuster, 1945), p. 3.

question, but many in his wake have tended to see a kind of generalized 'age of revelation' in which the issue of religion is given center stage. And this has tended to scare away serious students of the subject.

Fig. 5.3 Sphinx, Archaic Greece

Archaic Greece: The Birth of the Secular? We can become distracted by an emphasis on a series of creative individuals and sages. But these are merely shining lights in a far broader phenomenon at the level of whole cultures. The Axial phenomenon is the result of the actions of individuals, but these individuals generate a coherent outcome that surpasses their isolated contributions. This point, and the Axial phenomenon generally, can be seen at its clearest by studying the period of the Greek Archaic flowing into its Classical flowering: the period from the Greek Dark Ages to its period, from ca. -900 to -600, followed by two centuries of stunningly multifaceted innovation across an entire spectrum of culture. Because they are innocent of metaphysical historicism histories of the Greek Axial give unwitting testimony to the extraordinary character of this period. Armed with the periodization pattern of the Greek instance we can rapidly uncover the similar and isomorphic 'core Axial' significance of the other cultures in the spectrum: Israelite, Indic, Chinese, Roman. The Greek Axial shows how the phenomenon undergoes rapid fall-off after around -400, the onset of the Age of Alexander and the subsequent periods of empire being clear cases of decline from the peak period.

But if we examine the data of the Axial Age more closely we discover to our surprise that it is more than just an historical garlanding of sages and prophets. If we zoom in more closely we discover to our astonishment that these sages and prophets are merely the tip of an iceberg, that the Axial phenomenon encompasses an entire social transformation in place of an entire stream of culture. And we soon see that the question of religion is only one aspect of the mystery. For as the remark of Bertrand Russell suggests the case of Greece comes to the fore in the synchronous emergence in parallel of multiple Axial exemplars, and leaves as its clearest case the spectacle of secularism at the point of its birth in world history.

We are confronted with a synchrony of effects. We have at least five seminal areas suddenly showing characteristic 'pivotal' intervals in concert:

Archaic to Classical Greece The period from the Greek Dark Age to Alexander contains the great clue to world history. The period of

Archaic Greece overflowing into the Classical period lays the foundation for a whole new order of civilization, and produces the beginnings of philosophy, science, and democracy.

Histories of Israel The phenomenon of 'Israel', that is, Israel/Judah, in the Old Testament is a considerable enigma but its significance falls into place once we see that it simply reflects its place in the Axial phenomenon. This involves the period from about -900 to the Exile, and does not include the (mostly mythical) accounts of Abraham to Moses. No historical myth, theory of evolution, or universal history has ever produced a coherent account of this history. But the macro effect will clarify its status at once, and in a very simple and elegant way, if we see that the key issue is the core period of the Prophets around which additional history is adjoined as epic prelude.

Persia As we study our data we begin to that the innovative areas are almost always at the fringe or frontier of the main centers. Thus Israel/Judah is a remarkable upsurge in the what were then the frontier areas of Egypt and the Mesopotamian mainline. Even so, we can see that the parallel development of monotheism in the legacy of Zoroastrianism suddenly blends with the Israelite during the Exile, producing a monotheistic corpus on the threshold of its global religious formation.

China: The period of Confucius One of the strangest cases of the 'axis' effect is the sudden transformation *in medias res* of the Axial period in China. This comes right on schedule in the midst of an otherwise continuous history! The rise to organized states in Chinese civilization begins very early, and yet we see the synchronous effect right in the correct time frame, as an overlay on the prior development. China and Europe are both at the fringes of the 'macrosequence', at this point (we notice nothing in Europe). The Chinese case is inexplicable in isolation. This shows that the Axial/macro effect occurs on schedule independently of the local dynamics of civilization.

India: Upanishads to Buddhism The case of India resembles that of our 'Israel' in producing a world religion from the temporal sequence, as if sifting from a tradition that is already clearly formulated (relative transform) and existing prior to the transition. We see that some dynamic is operating independently of the politics of cultures and empires in the reactions of religion to state integration. With the forest philosophers who renounce history, India creates a protected zone, a parallel world in the Axial spectrum.

Early Rome We should include the case of Rome either by itself or as a cousin of the Greek case. Note that when we speak of the Greek period we are referring to a network of city-states stretching all the way to southern

Italy. The appearance of Republican Rome in the wake of the Axial Age is prime data for the 'axis' effect. Note that the Roman Empire is a much later phenomenon, and in fact dramatizes its own deviation and decline from the sturdy Republican beginnings appearing in the Axial interval.

The New World and Africa Since this phenomenon is global we should wonder about areas where the evidence is absent of an Axial effect. But if we examine the onset of the Maya we see a structural synchrony as a relative transformation in sync with the rest. We can draw no hard conclusions here, save only to note that nothing in the South American data contradicts our portrait, and the few elements we have fall into place. In the case of Africa, we should realize that the continent was until very late in the stage of the San hunter gatherers, and that the expansion of the Neolithic and the Bantu migrations were barely underway, so we should not expect sub-Saharan regions to correlate necessarily. Egypt, of course, is one the great sources of higher civilization to come. It is important to grasp the difficulties of survival in Africa, until the coming of modern medicine, and we should for these reasons see that, while Africa and Eurasia are a continuum for our analysis, the case of the African interior is problematical at the earliest phases of our data. But the case of Africa will make sense once we expand our data to a sequential pattern: then it becomes obvious that the Neolithic phase is the beginning of civilization in Africa, notably with the migrations of the Bantu peoples, who are the first wave of higher civilization to the sub-Sahara. In the case of the New World this issue cannot easily be resolved since we don't really know to what extent diffusion from the Old World has taken place.

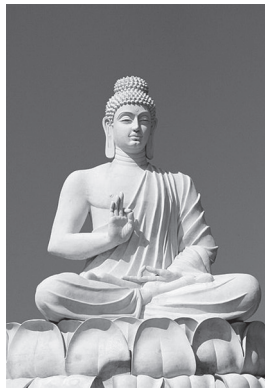

Fig. 5.4 Gautama

The Axial Age shows double discontinuity: the sudden onset, and the synchronous action in geographically independent regions, in a way that can't be explained by diffusion. As we examine the Axial Age in its breadth we are confronted with the difficult question of arriving at the history behind each of its exemplars. Thus the history of India behind and leading up to the remarkable era from the appearance of the Upanishads to the birth of Buddhism is difficult to reconstruct. And yet the basic outline of the Axial phenomenon is clear, and we can almost fill in the blanks with the data we have. And the question of what is historical in the Old Testament at first bedevils any simple account of the birth of that remarkable document. We are talking only about the period from ca. -900 to the Exile, the parallel interval in the Axial constellation. To our stunned amazement, something

familiar, but confused by mythology suddenly makes sense in a different way. China, in turn, while it clearly echoes its parallel cousins, confronts us again with a confusing picture of the period in question, until, once again, we follow the basic logic and its timing. The confusion arises because we see Chinese history from two perspectives: a continuous civilization sourcing in the Shang period, or before, and the discontinuous echo of the Axial Age, in perfect timing, in the Confucian period, another clear case of the 'relative beginning' effect. Ironically, then, despite the hopes of religionists for some secular version of the idea of an 'age of revelation', the clearest example given to us, the period of the Greek Archaic onward, shows us in detail something quite different, and in many ways far more remarkable: a kind of evolutionary leap or jump to a higher level of civilization, one very well balanced between all the categories of culture. But certainly this is, in a broader sense, an age of revelation! We tend to over-distinguish religion and general culture, and this blinds us to the spectrum of effects. But we must grant that this 'evolutionary leap' is so subtle and sophisticated that it could be confused with a 'design' process.

Fig. 5.5 Confucius

The notion of the era of Classical Greece as the birth of the secular would at first seem paradoxical. We need not press the point save to note that the birth of philosophy as a critical consciousness sows the seeds of rationalism for the first time, but it is also directly related to both the issues of religion and those of consciousness, as we see them in Indian history. A hybrid figure such as Heraclitus, sage, philosopher, rationalist and mystic, makes us see the continuous spectrum across the board. In fact, a balanced view is essential, for the essence of the Greek phenomenon could as well be seen as the last flowering of a strange form of political polytheism, and we should be wary of assigning a modernist label to what we see. But the gestation of philosophical tradition in Greece shows us the first birth of the Enlightenment, as it were, along with the first birth of science, the first Scientific Revolution, and the first democracy millennia before the one that centers on the transformation to the modern world in the sixteenth and seventeenth centuries. The point here is that the Axial phenomenon is clearly connected to a larger set of categories than the merely religious, a point that is clearly indicated in Jaspers' original description, although he is struggling in the text of his work on the subject to remain within his

Fig. 5.6 Archaic Greece, 740-490 BC

theological boundaries, and yet to see that something larger is at work than the legacy of Christian historicism. Axial Age Greece was a multidimensional masterpiece whose legacy has ultimately transformed world civilization. It is hard to understand now, but the birth of monotheism was a rationalist reform, in its almost primitive way, of still more primitive polytheism in decay. This case can assist in understanding the stunning enigma, now hidden in its own myths, of the 'Israelite' (Israel/Judah) Axial interval. Archaeology is coming to the rescue here, and a clearer picture is emerging.

5.2 Archaic Greece: A Snapshot of Axial Dynamics

The discovery of the Axial Age by Karl Jaspers and others was one of the most important achievements of modern historiography, but the result has often been a series of misinterpretations of this phenomenon, and an inability to escape the framework of Old Testament history. The focus is on religion, but we can see from the example of Greece that this is misleading. The case of Greece shows us the opposite is correlated with the Axial

Archaic Greece as the template for the Axial Age

The Axial Age is confusing because of the lack of data, but the Greek Axial Age, the only properly documented exemplar, shows us clearly what is going on. We can see what roughly is the case in China, India, and Israel. It is our first candidate for a 'finite transition model'. Jaspers' periodization should be revised to -900 to -400 for the Axial interval. The real action is from -900 to -600, in the sense of 'seeding' action, followed by the spectacular Classical era.

We should stand back and simply look at the periodization here:

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 the 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', the republican polis, 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

phenomenon, and we see the essential core of modern secularism coming into being. It must be that 'secularism' and 'religion' are not opposites! A close look shows that Archaic Greece is also a 'religious' phenomenon, the case of Confuciansim the perfect hybrid. Beyond that, we have lost sight of what the 'great religions' came into being to do: the Christian, followed by the Moslem, create a post-tribal cultural framework with the glue of a universal religion. At the same time, a close look shows a complex hybrid of culture, politics and religion in a magnificent and brief flowering of art, philosophy, and democracy in a fireworks display that is quite as much an 'age of revelation' at the dawn of secularism.

> **Israel and Archaic Greece** As we study the Axial Age we realize that the clue to the history of the core Old Testament is to be found in the parallel and synchronous case of the Greeks. Despite the difference in details, and the explicit creation of a new religion in the case of Israel, the rhythm and stages are the same, and in both cases we see the creation of a new literature and culture that will become instruments of globalizing diffusion. Note that this does not include the earlier, clearly mythologized history before ca. -900 in the case of Israel: it is the Axial interval in both cases that is key.

In the whole of world history the sudden takeoff of Greece after -900 is one of the most stupefying accelerations known. In a space of less than three centuries almost everything we now consider the essentials of culture came into existence or was transformed from primordial elements. It is also the best documented of our transitions, and gives us frequent hints about what is going on in the others. Our only source of old Testament history is the Old Testament! In the case of Greece we have multiple accounts. In the space of a few centuries, an immensity of profound innovations produces a legacy that still echoes in the modern age in philosophy, science, mathematics, politics, and the arts. In literature we have the almost continuous stream from the Homeric corpus to the phase of Greek Tragedy, we see the birth of philosophy, a scientific revolution, and the birth of democracy in the spectacular flowering of the Athenian city-state. The discontinuous arising of all this is as strange as its sudden passing. By the fourth century the phase is clearly over. Even as it impinges on the secular, in some sense, Archaic Greece was a riddle unto itself in the complexity of its decaying polytheism, the 'high barbarism' of its ethical archaisms, noted by Nietzsche, and the elusive deep consciousness in its evocation of a tragic view of life. It is a last brief flowering of a polytheistic religion of art. Nietzsche's nostalgic paean to high barbarism (and high intelligence) missed the point: we see the equalizing

balancing effect of Aryan and Semitic cultures remorphing in tandem, with Israelite/Persian hybrid gestating a universal culture via religion.

We can adopt a metaphor, 'stream and sequence', to describe this kind of sudden interval of rapid change inside the stream of a larger history. The sudden, in the sense of centuries, acceleration of Greece in this period can't be the result of antecedent causes since it is mirrored by synchronous parallels. The effective causality transcends the stream of Greek history and is in fact an aspect of our sequential logic, an almost global phenomenon.

Fig. 5.7 Temple of Juno, Agrigento

The case of Greece is crucial because it helps us to put the issues in right perspective. The terminology of the Axial Age has devolved into a confused perception of some kind of religious age, a sort of generalized age of revelation. Indeed! The whole period is quite a revelation, but in many categories from science, and philosophy, to politics, and, yes, religion. This Old Testament fixation has resulted in the inability to see the phenomenon for what it is. The phenomenon of Axial Age Greece is then seen as in some fashion not conforming to the archetype of an age of revelation, and ends up the black sheep of the Axial Age.

The reality is that the study of the Greek Archaic is the key to seeing the real Axial effect, undistracted by questions of the emergence of religion. A close look at the case of 'Israel' shows a remarkable parallelism to the Greek case, with the issue of a world religion of monotheism only arising much later. The great achievement is the collation of an 'epic' literature, much like the Greek, both occurring in almost exactly the same time frame. The interval of Axial Greece is one of the most enigmatic of historical periods in the way it suddenly spawns a fast run of creative innovation, and this, as we zoom out to see the context, almost like clockwork. Science, philosophy, religion, politics, and literature flower with incandescent brevity, leaving an evolutionary beacon in its wake.

The Biblical history has been so overdramatized by epic supernaturalism

that we can no longer see what the history was, or its significance. If we turn to Greece it is like catching something unexpected in the act, and in the end far more remarkable than the embroided sagas of the Bible, now seen in many cases to lack an historical basis. Simple periodization and a bird's eye view of world history as a whole gives us the indication of something very strange: if we track changes in centuries relative to millennia, the whole history of the Greek phenomenon looks almost miraculous, as we note the overall pattern. Something doesn't add up in the usual analysis. We have the canonical instance of an 'axial transition'. And in this case we the phenomenon in its full detail. However the 'Israelites' differed from the Greeks in being the first discoverers of the Axial Age, in which they were immersed, seeing it in terms of the logic of 'divinity' and the action of a mysterious higher power on history. The Greeks by comparison never put together all the pieces of their equally remarkable history, whose constellation of advances was only clear much later.

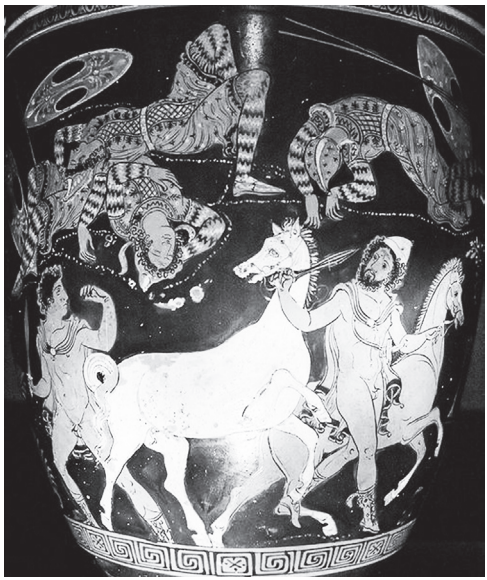

Fig. 5.8 Greek Pottery: Odysseus and Diomedes stealing horses

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.[5]

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",

5 C. G. Starr, *The Origins of Greek Civilization* (New York: Norton, 1981), p. viii.

creating the foundation of the great classical period.[6]

There is no simple answer to the complexities of what we are seeing until we start to consider what the broad sequence of our turning points suggests, relative beginnings, and a reworking of the incoming stream. This means that, while many genuine novelties are appearing, by and large, we see a transformation of what is entering a period and what is emerging. The dynamic seems independent of the content. Things appear in a total cultural spectrum, with Greek philosophy and early science, dramatic tragedy, or pottery, showing the passage from one end of the spiritual to the other of art, politics, and economy. The key is that the interrupt is coming on cue, and simply creates a kind of intensity or amplitude of generative change.

We are forced at once to distinguish two different things:

> the temporal ongoingness of cultural evolution, a 'this leads to that' aspect,
>
> an interrupt phase: fast action, accelerating from earlier periods.

Consider Greek history in this light. We have a people, its temporal sequence, a series of stages, nomads arriving from Asia, early Neolithic farmers, Bronze Age Mycenaeans, then suddenly the period of Archaic Greece, and its Classical outcome as a foundational period that templates a whole new age. We see this five times, at all once, to the century, in some cases to the decade. The sudden advance of the Greeks does not spring, then, from long antecedent influences, although the raw material of diffusion is there. This means that it happens suddenly without slow buildup, relative to the scale of intermediate mideonic stages, even as it must accept the antecedent influences of a long runway, whose only effect can be timbre but not the note.

The Greek example, especially, shows the spectacular surge, then its first flowering, roughly, after -600, as science, drama, architecture and sculpture, political thought, and a Mediterranean presence, and much else, emerge, develop, and create whole new categories of thought, social existence, and art. We can break the problem down into clear stages, relative to world history, stripped to a minimum of actual data.

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6 C. G. Starr, *The Economic and Social Growth of Early Greece: 800-500 B.C.* (New York: Oxford, 1977), p. 3. Starr also notes the same effect in the first phase of our sequence: in *A History of the Ancient World*, he traces the steady development from the Ubaid and Uruk and describes the sudden change in the period just before -3000 by noting that in history there are "revolutions as well as slow eons of evolution; one of the greatest explosions now took place and affected virtually all phases of life in an amazing, interconnected forward surge."

From -900 onward, there are barely visible signs of Greek renewal as it appears from its Dark Age. There is a pronounced appearance of a new pottery style, the Geometric. By the turn of the eighth century, the onset of the earliest period of what is called Archaic Greece. The record of the Olympic Games begins in -776. By the end of the century, the take-off is gathering momentum. Out of nowhere we find the *Iliad* fully accomplished (from oral sources) as a written epic, Hesiod following in its wake, then a great flowering of poetic forms. The Greek city-states are crystallizing in an era of colonization, social revolution, and economic advance. By the middle of the seventh century, a new form of culture has arisen, one in which the early Sparta, and Athens, are still cut from the same cloth, a generalized field of city-state constitutionalism, with a trend toward republicanism. At the rough era of the Exile, we find, in the generation of Solon, ca. -600, the Archaic Age graduating, the labels are relatively arbitrary, to what we call the Classical Period, the age of Marathon, Herodotus, the birth of Greek Democracy, Pericles, and the Parthenon, and the Peloponesian War. Soon, by the fourth century, we are in the age of Plato, Aristotle, then Alexander, and the rushing advance wanes.

We see this basic structure repeated in each case, China, India, the core Old Testament period, and Greece. Persia, indeed Assyria, Rome, and other areas such as Carthage, perhaps, are slightly different, but clearly related, variants. The cultures in the original core area, like Assyria, tend to fail because they are too large, retrograde or caught up in the past. It is the nimbler Israel and Greece that take off. Analysis requires great caution: the overall perception of a *mechanical* event is rendered over to correlation by a seemingly random pattern of *creative* events. It seems like a 'spiritual' phenomenon. Confucius, Laotse, Buddha, Mahavir, Deutero-Isaiah.

The Hellenic example is of especial interest because its stream shows so clearly the four or more separate conditions of culture possible to the nomadic tribalisms entering the field of successive phases, in the relations of multiple encounters with the eonic sequence1.

1. its earliest stage as a nomadic tribalism arriving from Asia and Hyperborean minus infinity. By what process of cultural evolution the early Indo-Europeans achieve their characteristic culture remains unknown. The same stands true for all of the primordial cultures of the Paleolithic.

2. Then, a sequential or mideonic stage in the first phase of civilization after Sumer, as the Mycenaean relative and apprentice of the Minoans. The difference between a *phasing transition* and the *sequential dependency*

induced it its wake is clear from looking at the Mycenaean world, very much in the mold of the Middle East, and the Minoans, themselves in a complex blend of this same, and earlier diffusion. This era makes what comes later the more remarkable. For it shows that pure diffusion is a different effect.

3. a phase of transition: after an artificially created or contingent 'Dark Ages', we see the rapid appearance of the transitional period leading to its great classical contribution, followed by

4. a post-transitional passage into its Hellenistic period as a generator of a new oikoumene.

This is not the evolution of a 'Greek' culture, but evolution in the greater macro sequence, in a cross-section or cycle sampling, during a period of phasing transformation. It is hard to avoid the conclusion that a *local* acceleration finds its meaning in a *global* context. The case of Greece is especially interesting because of the artificial discontinuity created by its post-Mycenaean collapse.

With this simpler Greek example, we can see the logic of the Chinese and Indian transitions, and decipher the Old Testament data, without being distracted by religious trappings. It is remarkable how the Old Testament, with an additional account given by later history to the period just after the Exile, gives direct clocking testimony of one time-zone slice, the Canaanite pocket world, to the whole phenomenon of the great synchrony, irregardless of its content. The runway, acceleration, crossing, and realization-emergence are told in the thoughts and words of a crystallizing first-emergent group, the Israelites becoming the Jews in the later Hellenistic world of the Second Temple. In India, the chronological record is not so detailed but is clear, the appearance of early Buddhism in the period after -600, within the memory of the earlier Upanishadic era just before it, is almost directly parallel, bulls-eye fashion, within the limits of a generation. Just as the Old Testament literatures begin to crystallize by -400, so the 'Buddhism' we see has crystallized from the fertile era of gestation, in the period before roughly -600. The 'peculiar' appearance of the Upanishadic phenomenon as a buffer between the runway and emergence periods is a giveaway, as incomprehensible as the rest, but the bearer of a clue in the form of its preoccupation with self-consciousness.

5.3 A Mysterious Synchrony

The data for the Archaic Greece has given us a kind of template for the other transitions of the Axial interval, notwithstanding the important differences.

And we should grant fully the different character behind this template in the way that Israel produces the framework for a new phase of world religion, while the Greek case is differently focused. But as we examine Archaic Greece we get a sense of what is really going on in the 'Israel' sector. From there we suddenly get a sense of what is going on in India, and China. This tale could take up several volumes, but let us take snapshots of the strange set of effects:

Axial China is an almost baffling case, but if we stick to our Axial logic, the mystery dissipates: we see a continuity in Chinese civilization beginning with the Shang, and before, but, presto! right on schedule in perfect synchrony with the Axial Age effects elsewhere, we see the cultural flowering of a new cultural jump to a higher octave in the period of Confucius. The continuity, and discontinuity are so perfectly blended we could easily miss the way a new and higher stage of culture appears, in concert with its parallels.

Axial India, in the period from the Upanishads to Buddha, once again shows the pattern of transitional action. We see two zones, Israel and India, as the source of world religions. In each case a gestating or primordial source is remorphed and amplified into the organized form we call a religion. Our perceptions here are distorted by the confusing term 'Hinduism' which is actually a spin-off of the earliest sources, visible in Buddhism and Jainism. The greater tradition flows into the 'misnamed' Hinduism, as Buddhism, as with Israelite monotheism, gyrates toward diffusionary status as a 'world religion'.

Persia and Israel The focus on Israel can fail to appreciate the obvious way in which, and this is truly a translocational 'miracle' of the Axial Age brand, the net result we call 'monotheism' is a hybrid of Persian Zoroastrian and Canaanite (Egyptian) sources. The earlier, almost mythical, traditions of Zarathustra and Abraham/Moses show the 'seed' elements transformed in the Axial Age transition. That Israel should conveniently 'disappear from the map' for a century and find its exiles in Persia blending their corpus of Biblical scripts with Zoroastrian vitamins is an effect spectacular in its timing.

The Bible and the *Iliad* One of the clues to the synchrony of Israel and Greece lies in the emergence in both cases of an epic literature, the Old Testament, and the Iliadic corpus in Greece. A similar concordance can be found in India. Seeing the Old Testament as an epic is both insightful, and misleading. We should see in any case the 'Axial Age' effects at work in this crystallization of a written record. Written literatures start coming into their own.

The New World That the Mayan 'relative transform' is exactly analogous

to the Old world cases (given the various gestating prior elements, e.g. the Olmec) is hard to understand at first, without a clear sense of the way the 'finite transition' works. We can leave this open, but note the difficulty of isolated civilizations have in keeping up with Eurasian advances.

Africa We fail to note that the Egyptian Axial phase suddenly shows a Nubian influence: our macro effect is aiming at a global effect, and has to straddle Afro-Eurasia. The Sahara, and the difficult biomedical milieu of the sub-Sahara, make advance sluggish. The diffusion of the Neolithic shows the direct entry of first civilization, and the Bantus are de facto missionaries of civilization to the sub-continent, and may show complexities of adaptation to a nearly impossible environment. The question of the relation of African peoples to the pre-globalized *homo sapiens* in the Out-of-Africa phase is unknown, but may complicate the picture.

The Old Testament is a fascinating puzzle, the key to which we have thus found. In fact the whole document falls into our lap as a play of 'macro data' built around a transition, albeit in disguise. Let us look again at our stream analysis of the Greeks:

An independent stream, e.g. Indo-European Greeks

A transitional time-slice, e.g. the Archaic Greek period

A post-transitional oikoumene

Let us note in passing that the transitional period produces a great literature in the gesture of putting the *Iliad* into writing, sometime in the eighth century or early seventh. This literature is about the second Mycenaean period, which is not a part of the Axial period. So it is the transitional rendition of 'stream entry myths' that is significant.

Now substitute the relevant data from the Canaanite area of the emergent 'Israel'. Our Axial period clearly seems to straddle a broad band all the way across Eurasia, one transition in a suitable roughly spaced spot from Rome to China. We get the following:

An independent stream, e.g. Semitic Canaanites

A mideonic entry into a diffusion field, e.g. tales of Egypt, a kingdom in the field of late Mesopotamian mideonic empires

A transitional time-slice, e.g. 'Israel' and Judah up to the Exile

A post-transitional oikoumene or generator, here several religions

The two structures are isomorphic, if we can sort out the actual data that we are dealing with. The Old Testament clearly records a transition, but throws us off the scent because of its instant mythological wrapper. But given this resemblance of our two lists we can safely predict the key period will correspond to the Archaic period. And that there might be a clustering near the divide, if we can find one to correspond to the modern. Tracking backward 2400 years gives us about -600, the period of or just before the Exile. The clue might lie there and our butterfly net coordinates suggests something interesting between about -900 and -600, especially the last half: about the time of the major Prophets! We check the divide period. Let's look at 'state of the art' Biblical Criticism, attempting to uncover the archaeology of Israel. As the authors of *The Bible Unearthed* note,

> During a few extraordinary decades of spiritual ferment and political agitation toward the end of the seventh century BCE, an unlikely coalition of Judahite court officials, scribes, priests, peasants, and prophets came together to create a new movement. At its core was a sacred scripture of unparalleled literary and spiritual genius. It was an epic saga woven together from an astonishingly rich collection of historical writings, memories, legends, folk tales, anecdotes, royal propaganda prophecy, and ancient poetry.[7]

So the Old Testament is really a creation of the divide period (with many ancient sagas entering, exactly as with the Homeric corpus!) This is a climax of strains emerging in the period of Axial phasing. We see the phenomenon as in Greece, the compression near the seventh century, splendidly confirmed by the emerging picture of the rapid crystallization of a viable but still contradictory monotheism in the 'YHWH alone' movement and the testimony of the Prophets, in a rapid phase visible in the period of Josiah. It is here that many of the outstanding Judaic myths suddenly crystallize via the formation of an ideology of what is still a 'state religion' in the kingdom of Judah. And it is this corpus, complete with its contradictions and the strategies of its lost moment, that will be injected into the world stream, among other characteristics its unwitting record of the macro effect. We tend to get into a snafu over the clear nationalistic origin of the Bible, its Prophetic anticipations (with retroactive fudging), and the final result, which is several religions in tandem. But in fact the whole structural dynamic is 'macroevolution' from beginning to end. It is hard to think of anything more remarkable than the appearance of the

7 Israel Finkelstein and Neil Silberman, *The Bible Unearthed*, (New York: The Free Press, 2001).

Prophets, but it is not more remarkable than the appearance of the Greek Pre-Socratics, Buddha, Confucius, and Lao Tse.

We see the pieces falling into place once we realize that the patriarchal myths of Abraham, the tale of the Exodus, the saga of Joshua and the invasion of Canaan, and the Davidic/Solomonic Kingdom are later nationalistic myths emerging over the transition and starting to crystallize just before the Exile. Who were the Israelites then? In fact we see that current archaeology shows us the highland peoples drifting in and out of Bedouin stages in the millennium before the pastoralist David, around whom a considerable myth is to be created. The account that we have is backdated with the later codifications we now see in the Bible. Monotheism appears relatively late, in organized form, although there is no objection to evidence that it existed in some primordial version much earlier. But there are still clear elements of polytheistic religion until near the end. And in fact, the whole point was that there was a process of consolidation based on the Jerusalem temple, appearing near the end of the eighth century in our 'acorn field', the remarkable Judah.

Now compare this to the Greek case. We can almost map isomorphic elements one to one between the two, completely different despite the isomorphism. Both produce a nationalistic literature during a transition, using elements outstanding from a later legacy of the culture stream. This history of the Israelites turning into Jews shows a remarkable culture-form, something like networking ironically enforced by the repeated loss of the 'geographical base'. The spread of this network into the coming worlds of recurrent empire will prove a source of general innovations throughout that greater area yielding finally to the Roman world, and this feature goes a long way toward accounting for the emergent Christianity to come. A related instance in Islam will carry a larger balance of the Persian legacy.

5.4 The Riddle Resolved: A Sequential Logic

We have seen the two independent ways to understand out data. First, we had a sudden gestalt of the sequential regularity in world history. But others have discovered the Axial Age, and then asked its meaning. We see this attempt to zoom out in Jaspers, and he is just on the threshold of seeing the full pattern, but he is unable to distinguish 'civilizations' from 'transitions'. The Axial Age gives dramatic evidence of this puzzle: we see

a discontinuous interval in 'mid stream', so to speak. And this suggests something operating at a higher level than civilizations. We suspect a phenomenon returning on itself, and this drives us to search for an earlier or successor transition. Like a miracle we find it in the sudden onset, mid-stream, of the Sumerian and Egyptian high civilizations. That this period is not the 'birth' of civilization, or of these particular civilizations, has always made the sudden take-off at this point mysterious. But now we see the reason for a peak in the middle, followed by a relatively less creative 'middle period', which sounds suspiciously like the term 'medieval' which also accompanies the post-Axial period. Thus, moving the other way, we see the fall-off from a peak, and even decline into a medieval period, so-called, including a Dark Age, as if the whole advance had been lost. Then with a spooky timing we suspect is no coincidence there is another sudden take-off in the sixteenth century, and a new era begins, in Western Eurasia. The puzzle is solved if we think in terms of frequency phenomenon. The key to the phenomenon is a set of 2400 hundred year intervals, more or less. With that key, we can rapidly figure out the earlier stages, in the Neolithic, but since we don't have clear data for those, we will see what we can make of an incomplete set of pieces to a puzzle.

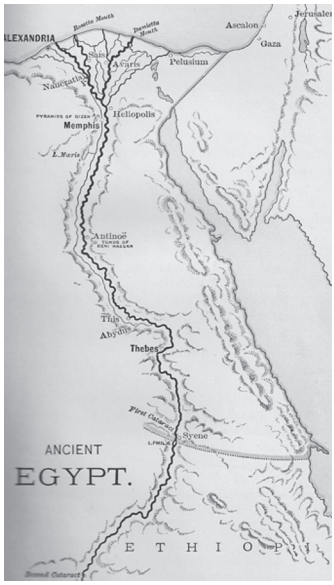


Fig. 5.9 Ancient Egypt

Thus, given the Axial Age, we ask, are there any other periods like this? The great clue is the remarkable resemblance of the Greek Axial interval and the sudden rise of modernity from 1500 to 1800. Moving in the opposite direction, can we find a similar period of rapid innovation and sudden advance? We don't have far to look. We suddenly see that the rise of Dynastic Sumer and Egypt, and the rise of modernity are different phases of a larger pattern, with the Axial Age in the middle. Seeing the rise of the modern as a kind of second Axial Age suddenly makes complete sense of the data. In fact it is a third, at least, the extraordinary rise of Dynastic Egypt and early Sumer being a giveaway. We are forced to consider that the Axial Age is really a step in a sequence, and moving backwards and forwards we suddenly discover the full pattern. We can see three turning points equally spaced, with an interval of about 2400 years, clear evidence of a cyclical

The Macro Effect

Our snapshot of world history has uncovered almost without trying the presence of a non-random pattern by simple inspection. This pattern of self-organization can give us an empirical basis for considering the questions of human evolution. We connected the two ideas of evolution and history, exposed the paradoxes of laws of history, and proceeded to substitute simple periodization, of a special kind, which is easily adapted to a timeline history. Our outline shows three epochs with transitions and turns them into discrete steps in a sequence:

Transition 1: Egypt/Sumer, an early 'axis' point

Transition 2: Axial interval

Transition 3: *rise* of the modern

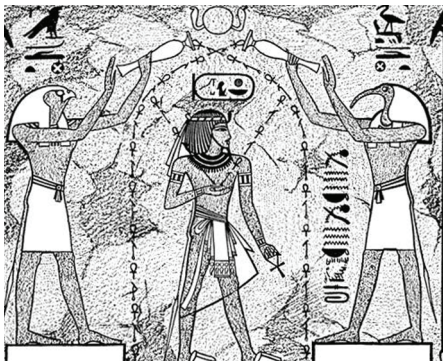
That's it. The resemblance of this to punctuated equilibrium is remarkable. This dynamic is too obvious a solution to the 'evolution' mystery to be chance.

An Intermittent Sequence 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.

A Systems Dynamic: Macroevolution We have stumbled on a new model of historical evolution, based on the idea of a macrosequence. This will form the foundation for our idea of an 'evolution formalism', and we will connect this to the idea of history emerging from evolution, in a further distinction of micro and macro processes. But for a start we see an 'evolutionary driver' in our macrosequence.

This sequence of three transitions and the epochs in between them is an extraordinary demonstration of self-organization, and suggests 'evolution' at work, 'evolution of some kind'.

phenomenon. This can be confusing because the 'birth of civilization' really occurs earlier. The sudden jump in Egypt and Sumer is another case of our 'relative starts', like the discontinuities of the Axial Age which shows us we are dealing not in the 'evolution' of civilizations, but a macro effect that operates at a higher level.



5.10 Anointing of a Pharaoh

A Frequency Hypothesis We see a set of transitional periods in a series, always starting over in a new civilization. As the data continues to crystallize we can close the case by seeing the Axial period as one of a set of 'axial ages'. But we must move past the idea of 'civilizations' to see the action of a kind of sequence, of transitions. Thus, looking at this Axial phenomenon we are confronted with an inexplicable mystery. But the clue to the riddle lies in seeing that this period is not unique, but one in a series. The resolution of the mystery comes to us quickly, as long as we are not distracted by the interpretations of the Axial period solely as a spiritual age of religions. Our system is using a series of transitions in different civilizations to advance a larger framework, like a process of globalization. To be sure, we have only three beats in this sequence. So we can't quite be sure of the total effect of this phenomenon. Probably it starts in the Neolithic. But even with only a part of the puzzle we can what is going on. We must be wary of generalizations, but we can use the data we have empirically to see the 'evolution' of civilization, and, we suspect, human evolution in general.

Let us expand on this insight by tracing the fragments of the puzzle to see their connection. Almost as remarkable as the sudden onset of the Axial Age is its sudden waning and the return of what we should almost call 'history as usual'. There is something odd about it. We are left to wonder what the significance of the Axial Age might be. And most of all we are confronted with a question of dynamics. And we are confronted with something unlikely: the uniqueness of this period. Jaspers' use of the term 'axial' is ambiguous in that respect. It seems to point to a unique period in history, a pivot point. But a larger look at world history suggests something quite different, a succession of 'axial' periods.

A frontier effect Our sequential logic uncovers a telling riddle in the emergence of Axial Age Greece and Israel: a 'frontier effect', two new

starts outside of the original set of civilizations, Egypt and Mesopotamia. Our 'system' moves away from its first phase to zones near to, but outside of the previous place of action. The entire mystery of why a new beginning should occur in backward Canaan is thus made clear!

Fig. 5.11 Hieroplyph: Menes, primordial first pharaoh

Our outline has alerted us to the solution to the riddle and we have but to zoom out to see that a very simple pattern is at work in the progression of civilizations since the Neolithic. But the progression transcends those civilizations, and advances through a series of transitions in different civilizations, in each adjacent to its predecessor. Jaspers himself attempts to generalize his finding, but is obstructed by this issue of 'civilizations'. We are instead in search of short intervals inside of civilizations. Once we adopt this different search, the solution is immediate. And Jaspers' examination of modernity is on the threshold of discovering a 'second axial age', but is thrown off the scent by the confusions of secularism. He wants to find a new age of revelation, but the data of Archaic Greece remind us that our phenomenon is much larger than the issue of religion.

Fig. 5.12 Sumer/Akkad

It is odd at first to consider the solution to be a frequency hypothesis, but, whatever the case, the basic facts speak for themselves: the Axial Age is part of a larger sequential structure. We need to indulge in no theories here: we have a solution to a great riddle in empirical form. The result is still a riddle, and the solution incomplete, but used with care our finding will unlock the mysteries of historical dynamics. We should continue moving in two directions, backward toward the Neolithic and forward toward—well, we run out of time! Toward the future! That future will be our own creation. We are thus probably exiting this phenomenon. The 'axial' character of modernity is often noticed. Thus Bruce Mazlish observes, "The German philosopher Karl Jaspers has spoken of the periods when the great religions arose as 'axial periods'. At such times, there is a 'revolution' in the conditions of human existence and society turns on its axis." A close look shows that modernity

is a strange hybrid of the 'secular' and the 'religious'.[8]

Fig. 5.13 Isis and Osiris, *Book of the Dead*

And Joseph Campbell finds an axial period at the dawn of Sumer. The Sumerian source is easy to underestimate. It looks primitive to us now, but its immediacy of creative surging gives birth to 'real civilization' in the odd 'early hybrid modern' where the village passes to the large city-complex. Its effect must have been as seminal as the later Greek transitional era to those who received its influences. It is as if everything was invented all at once, in embryo, to constitute the root-ideas of coming civilization. Thus,

> In the epoch of the hieratic city-state (3500-2500 B.C.), the basic cultural traits of all the high civilizations that have flourished since (writing, the wheel, the calendar, mathematics, royalty, priest craft, a system of taxation, bookkeeping, etc.) suddenly appear, prehistory ends, and the literate era dawns. The whole city now, and not simply the temple compound, is conceived of as an imitation on earth of the cosmic order, while a highly differentiated, complexly organized society of specialist, comprising priestly, warrior, merchant, and peasant classes, is found governing all its secular as well as specifically religious affairs according to an astronomically inspired mathematical conception of a sort of magical consonance uniting in perfect harmony the universe.[9]

We note the obvious similarity of this statement to Jaspers' observation of the later 'Axial' Age. Describing the swift transition from the era of earliest Egypt, Michael Hoffman, in *Predynastic Egypt*, is driven in some puzzlement to adopt the economic take-off idea as a metaphor to account for the sudden change that produces the unification of Upper and Lower Egypt under the Pharaoh Menes:

> The immediate archaeological problem in explaining the cultural identity of Menes and his state is to account for the sudden embarrassment of riches that characterizes the material culture of Egypt between the Late Gerzean (ca. 3300 BC) and Archaic period (ca. 3100-2700 BC) in

8 Bruce Mazlish, *The Meaning of Karl Marx* (Oxford: Oxford University Press, 1984), p. 8.

9 Joseph Campbell, *Primitive Mythology, Masks of God*, (New York: Penguin, 1959), p. 404.

Neolithic Sources

Fig. 5.14 Hassuna/Halaf

As we examine the Axial Age, we suspect it is a step in a sequence, and if we apply our frequency hypothesis in intervals of 2400 years a revealing pattern stands out. The result would be:

Transition 1 ?-10400, as an arbitrary start
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

All at once we see what's going on. The rise of Sumer and Egypt, like the cases in the Axial Age, is not the absolute start. There is a long prelude, with a series of stages along the Fertile Crescent, now being discovered. The fit is too good to be chance, but the picture is still incomplete.

> terms of a sophisticated, multifaceted explanation. Professor Renfrew borrows the term 'take-off point' from the economist Walter Rostow to characterize the rise of civilization and the proliferation of certain types of artifacts. Over the years a number of propensities develop within a social system, which predisposes it to a really major transformation. When that transformation does occur, it is so thorough as to convey the impression of crossing a critical threshold.[10]

Remarkable, to say the least. What about Mesopotamia? In *Prehistoric Europe*, Philip Van Doren Stern wrestles explicitly with the evolution/revolution paradox and observes the sudden jump to the first level of civilization in the first hydraulic world of Mesopotamia as it emerged from its mysterious roots of it in the era of the so-called Ubaid and before:

> Something happened in Sumer during the fifth millennium B.C., when all the rest of the world was still so primitive that the Sumerians had to make their own way. The initial stages proceeded slowly for a thousand years or more, and then, during the five centuries between 3300 and 2800 B.C., culture accelerated so rapidly that in this brief time villages became cities and cities grew into city-states...Roux[Georges Roux, *Ancient Iraq,* London. 1964,] merely says of this extraordinarily rapid cultural development in Sumer that 'a close examination reveals no drastic changes in social organization, no real break in architectural or in religious traditions. We are confronted here, not with sudden revolution, but with the final term of an evolution which had started in Mesopotamia itself several centuries before.' Perhaps. But perhaps he is applying our modern time scale to an age when centuries were equivalent to our decades. For a village to become a city in a few hundred years when there had never been a city anywhere before, is, to put it mildly, something more than ordinary evolution.[11]

Again, remarkable. And this statement suggests we can keep on going backward to find a still earlier case, but for the moment we have discovered something very simple, and a resolution, to some extent, of the riddle of the Axial Age, it is but one in a series. There is one last piece to our puzzle, the rise of the modern. Having moved backwards toward the beginning of civilization, we can move forward from the Axial period.

The sudden waning of the Axial effect, as we have noted, is dramatic. By -200 the Axial phenomenon is clearly over, and the onset of empire seems like a rush into a vacuum, to replace a brief period of republican experiments. The onset of the Hellenistic world of empire is almost a return to the world

10 Michael Hoffman, *Predynastic Egypt*, "In Search of Menes".

11 Philip Van Doren Stern, *Prehistoric Europe* (New York: Norton, 1969).

whence the Greek experiment hopes to escape. In the case of Greece the period of spectacular achievements is over as the Hellenistic, soon yielding to the Roman world ushers in the age of great empires. It is interesting to consider the cognate relation of the Greeks and the Romans, and to consider that the early appearance of Rome and its republic is really a part of the Greek phenomenon. As we study the Greeks we note the way in which their common culture was a function of language and custom, and that this was in turn a medium binding a set of city states and their colonies across the Mediterranean, including the southern part of Italy. Was not Rome, in a sense, a child of that nexus of all things Greek, as the diffusion of ideas and the vague sense of a new age animated those in the immediate field of Hellenic influence?

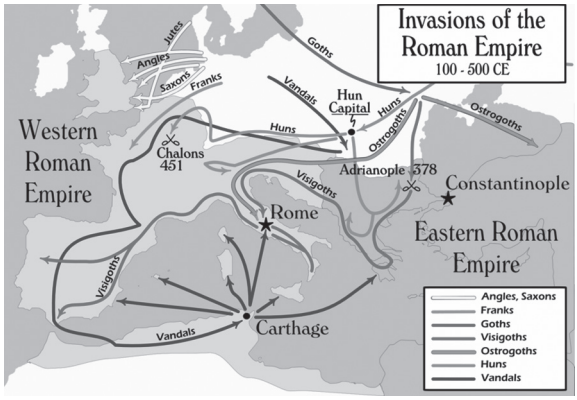


Fig. 5.15 Invasions of Roman Empire

Thus, the emergence of Republican Rome is really still another branch of our far-flung Axial Age, and the appearance of the Roman Republic is the cousin to the surge of republican experiments in the age of Greek political innovations, and the uniquely prophetic creation of the world's first democracy in Greece. There is something significant in the brevity of the Athenian experiment, and the endurance of the Roman. The Athenians will leave a hope for the future, not to be realized until millennia later, in the rise of the modern world. The Romans will carry the issue in its sturdy republican form until the onset of its imperial phases precipitates finally the breakdown of its phase in Axial swaddling clothes and the age of the Caesars begins, enduring all the way into the medieval period.

There is something odd about our use of the term 'middle ages'. We spontaneously consider that the era after the fall of Rome is the middle of something. In fact, it is in the middle between the Axial Age, as a boundary point, with its associated Roman continuation, and the rise of the modern world millennia later. This 'medieval period' suffers a charge against its reputation in our minds, then, one frequently protested by various parties to its defense, in the way we see it as in some fashion not up to the standard of either its Axial beginning point or its modern recurrence. Whether this

downplaying of the medieval interval is fair or not, the fact remains that our very terminology reflects a larger pattern of history, and on a scale that goes far toward explaining why a pattern of overall coherence is hard for us to detect. For until the rise of modern archaeology the beginnings of our traditions seemed to be those visible in the Axial period. The intimations of unknown earlier acts of the play are seen in the unexplained appearance in Biblical history of the Egyptians, or Assyrians, lurking in the background as remnants of some unknown world thought to be passing away.

Fig. 5.16 Barbarians invade Empire

This effect of relative beginning in what we have dubbed the 'Axial Age' seems then to suggest a complete unit, of 'punctuation' and the 'equilibrium' that follows in its middle period, until what is apparently another punctuation occurs, and this we call the rise of the modern world. We are getting suspicious. If the Axial Age is a kind of new beginning inside a larger history, its uniqueness would seem to have been the result of our lack of knowledge of earlier civilizations. But this lack of knowledge about the earlier stages of civilization is no longer the case: the rise of archaeology has shown us the antecedents for the mysterious Assyrians and Egyptians who appear in the Biblical text. And as we proceed backwards we are left to wonder if some antecedent 'Axial' period is not visible in the historical image crystallizing in archaeological fixer. We already know the answer, if indeed we are aware of any of the findings of modern archaeology, which show us the so-called rise of civilization at the end of the fourth millennium in strangely synchronous emergence of Egyptian and Sumerian civilizations. Strange to say, we can even produce a rough interval between these moments, of just over two millennia.

The dynamism of the Axial period, its seminal creativity, seems to fret an entire an entire cycle of civilizations, and is unmatched by anything until the rise of the modern world. What is remarkable is the loss of so many of the innovations of the Axial period, a notable example being the birth of science, and its slow passing away with time, such that by time of

the medieval period, in the Christian West, its birth among the Greeks is almost a forgotten memory. Its partial survival in the world of Islam is like an ember fire carried across time.

And then suddenly in the sixteenth century we see once again, almost like a timed renewal, what is in many ways a recursion of many of the innovations of the Axial period, with some important differences. The parallel transformations of the Protestant Reformation and the Scientific Revolution, Copernicus and Luther, stand at the threshold of the modern transformation leading to the rough point, around 1800, when a transition to a new era seems complete, and a new age begins, at the threshold of globalization. The phenomenon of the rise of modernity is the object of many theories and controversies, but the basic observations of the phenomenon resemble the exclamations we find with the Axial Age.

Fig. 5.17 English Civil War

There is a mysterious seminal generation springing from the period ca. 1500, indicated by the onset of the Reformation. Over and over our sense of historical modernism draws us to this point of the so-called 'early modern', and into a controversy or equivocation over its significance as one of the great turning points of history. Relative to world history, progress explodes in the sixteenth century, despite the puzzle over the Renaissance. The abrupt start after 1500 is constantly suggested and then challenged or retracted because its proponents cannot account for it, or sort out the fact that a discontinuity might interrupt prior continuity.

> The modern transition, as an 'Axial Age', shows, not a syncrhonous effect, but a single focus: the reason is obvious: the frontier zone of the Eruozone will trigger a global oikoumene, a process now visible.

This sudden change in direction is reflected in the puzzled observations of a host of historians. J. M. Roberts in his *History of the World* opens by noting, "After 1500 or so, there are many signs that a new age of world history is beginning…". William MacNeill, in his *The Rise of the West*, calls the career of Western civilization since 1500 a vast explosion. Geoffrey Barraclough, in

Turning Points in World History, notes the remark of Paul Valery that Europe is a 'peninsula of Asia', a western appendix of the Eurasian land mass, and asks, "How was it that this western appendix came to be in a position to exercise this power, this domination over the greater part of the world?" He cites the factors of technological and scientific proficiency, the revolution in transport and communications, that 'caused' this brief hegemony, but in a manner typical of historians stumbling over the macro effect is driven to note, "So much, I think, is obvious; but it tells us very little".[12]

Marshall Hodgson, in *The Venture of Islam*, speaks of the Western Transmutation, 1600 to 1800, and sees the connection with the earlier period, generated from Sumer, but his analysis focuses on the history of technology, and fast-forwards to exclude the Reformation.

> What happened can be compared with the first advent several thousand years BC of that combination, among the dominant elements of certain societies, of urban living, literacy, and generally complex social and cultural organization, which we call civilization.[13]

Jacques Barzun in *From Dawn to Decadence* asks, "Granted for the sake of argument that 'our culture' may be ending, why the slice of 500 years [from 1500 to the present]? What makes it a unity? The starting date 1500 follows usage: textbooks from time immemorial have called it the beginning of the Modern Era." There is no implication of decline or decadence after the interval of transition, since a new era has come into being. The conclusion of the eonic sequence should be great new beginning. [14]

This sudden take-off (relative to world history) has always been intractable for students of the question, and driven historical sociology into a frenzy of Renaissance resurrections, dialectical Big Bumps, Marxist social stages,

12 J. M. Roberts, *The Penguin History of the World* (New York: Penguin, 1990), p. 526. Cf. also, p. 529, for a discussion of the relativity of the term 'modern', which was once inclusive of the medieval, then distinguished from it, and now might be distinguished from the contemporary by a new term, the 'early modern'. L. S. Stavrianos, in *The World Since 1500* (Englewood Cliffs, New Jersey: Prentice-Hall, 1975), "Why should world history begin with the year 1500?" William MacNeill, *The Rise of the West* (Chicago: University of Chicago Press, 1963), p. 567. William A. Green, *History, Historians, and the Dynamics of Change* (Westport: Praeger, 1993. Jacques Barzun, *From Dawn to Decadence*, New York: HarperCollins, 2000, p. xvii. Geoffrey Barraclough, *Turning points in World History* (Great Britain: Thames and Hudson, 1979), p. 3.

13 Marshall Hodgson, *The Venture of Islam*, Chicago: Chicago University Press, 1974, 179. See also, *Rethinking World History* (Cambridge: Cambridge University Press, 1993), Marshall Hodgson, Edmund Burke III (ed.) (1993), Ch. 4, "The Great Western Transmutation".

14 Jacques Barzun, *From Dawn To Decadence* (New York: HarperCollins, 2000), p. xvii.

Dangers of Wrong Thinking: Invisible Transitions

We tried to consider a retrodiction of our pattern, with a result that actually makes sense. Thus, there is a trap: invisible transitions of several centuries. What if they are there and we can't see them!! Here's our extended sequence again:

Transition 1 ?-10400, as an arbitrary start
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

Our resolving power is not sufficient to determine what's going on.

The Significance of Israel Now consider the history of Israel. This was a novel breakthrough area armed for the first time with the new technology of writing, and they actually recorded a phase period, and the onset of a new religion. This earlier era didn't have writing, so we don't know. And without that closely tracked data we default back to the 'slow evolution' mode of explanation, something the Judaic data would not let us do. Now proceed backwards still further into the Paleolithic. We are in the midst of full-blown 'slow evolution' theories, assuming that fast transitions do not occur. Yet by incremental steps backward we could suspect that religious and cultural transitions might be occurring in more primitive fashion at these earlier times.

Apply this reasoning to the earlier speculations on the Great Explosion, and we see at once the dangers of assuming anything.

Without written records, the history of Christianity would be visible at a macro level, but we might never realize its sources in a short Axial interval. The danger of jumping to conclusions is severe. We are thus barred from talking about sociological evolution without sufficient data.

Weberian econo-religious explanations, or the 'European Miracle of the historian E. L. Jones.[15]

As noted, the periodization question of the 'rise of modern' has many casualties in the realm of theories. Three sets of failed theories deal with these eras in isolation, those of the rise of the modern, the birth of civilization, and, to the extent they exist at all, efforts to explain the Axial period, along with the whole spectrum of interpretations of the classical civilizations, to say nothing of explaining the history indicated in the Old Testament. Without exception these theories have all failed. Suddenly we realize they are really all asking a similar set of questions about an invariant puzzle. The question of the 'modern' remains baffling until we see it in its greater context. Then the remarkable resemblance of the rise of the modern to the Axial interval, and especially Greek Archaic appears.

Fig. 5.18 Frontispiece: Voltaire on Newton

We are closing in on a pattern of universal history, at once simple, and mysterious, and clearly showing us the principle of coherence we were seeking in our perception of world history. And we are close to the resolution of the riddle of modernity, and to a perspective on the way it might suddenly show chaotification. We seem to be, not in the stages of the postmodern, but in the early stages of a great new era of world history, after passing through the transitional period of its onset. And as we explore this larger framework we can attempt to redefine the modern in a fashion more conducive to the needs of our future, beyond the domination of economic fundamentalism, or the imposition of false views of evolution on the outcome of something larger than Social Darwinist paranoia and environmental degradation. We begin to see the clue to better resolution than the return to traditionalism.

As we examine this 'ratchet effect', the pattern confuses us because it does not follow the course of a single civilization, but jumps between civilizations as it proceeds. The question of the rise of the modern world also shows the displacement of change beyond the frontiers of the old Roman Empire into those parts of Europe that were only marginally a part of the ancient Roman system. We observe the Reformation, and see a religious

15 E. L. Jones, *The European Miracle* (New York: Cambridge University Press, 1961).

phenomenon, but we might look beyond religion to see the opening of a new field of culture free from and at the exterior to the system of antiquity. In fact, we begin to sense another instance of the frontier phenomenon that we noted in the Greek Axial Age. This is in many ways the signature of this age of renewal, as it expands beyond the framework of antiquity, first to Northern Europe, thence to the Americas, and beyond. We must begin to wonder if the phenomenon we are trying to understand is not a globalization process more than a phenomenon of civilizations.

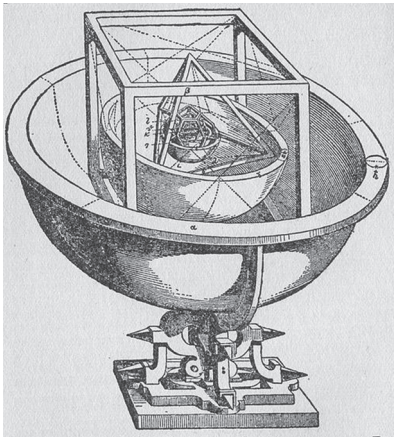


Fig. 5.19 Kepler's analogy of five worlds and five solids

Our sense of modernity has been confounded by a false Eurocentrism, but we can begin to see beyond that. The constant references to 'Western Civilization', or the 'West', or the Judaeo-Christian heritage, in a series of Eurocentric terms, blinds us to the reality, which is that the rise of the modern is not a European phenomenon, as such, and finds its field of realization almost sooner in its exterior than in its homeland. The obvious picture left by history here is the temporal correlation of the spread of European, we should rather say, Eurasian, civilization to the Americas. It is hardly accidental that the North American colonies beginning in the seventeenth century already show the seeds sown by the English Civil War that will grow later in the classic harbinger of a new era dawning, the American Revolution.

There is obviously something larger than Europe in the modern transformation and the result is the birth as much of a new global civilization as the passage of a cultural particularity called the European. The same interval of sudden change, followed by the creation of an oikoumene in the diffusion from a source, is visible in the modern world as it was in the Axial Age of Greeks. And a comparison of the two leaves us with a set of unanswered questions about the nature of historical change, and the more general issue of slow or fast evolution. We seem to see, or think we see, the slow evolution of modernity from a medieval world. But it resembles very closely the Greek Axial interval, and there we were left hanging with such explanations. There wasn't anything at all slow about the Greek Miracle. In a few centuries it emerged from nothing, flowered in spectacular fashion,

A minimal conclusion: a non-random pattern

The analysis using a frequency hypothesis is a powerful one, but may overstep the bounds into what seems speculative. We can remain with an absolute minimum conclusion, which is also very practical. Thus before proceeding we should come to a first basic conclusion about our data:

1. World history shows a non-random pattern, something that wasn't supposed to exist. This cautions us against ideas of random evolution. We may have missed the full pattern, but it is enough to show that some 'macro' effect is at work. There must be a hidden teleology.

2. The phenomenon of the Axial Age shows us that development can occur on a global scale in a matter of centuries. That makes assumptions about what happened in earlier eras dangerous. We may have missed the key data.

3. The right name for this is '(macro) evolution', as 'history' emerges from it, to become autonomous. But if the term seems wrong, the reader can use 'developmental process'.

4. History shows the emergence of values at the core of its dynamics. Therefore a reductionist science can never explain evolution. We must take into account the issue of freedom.

The appearance of the non-random in history makes it highly unlikely random evolution was at work at earlier periods. We see that there is a guiding factor behind development, probably reflecting a higher level template, which we don't see. For example, 'drama' as a template, and its exemplars, dramas, are free human creations. Archaic Greece, and Greek Tragedy, are of course exact examples of this. The deeper template process is unknown. The extraordinay deeper logic of thie pattern will emerge with study. But it tends to provoke cognitive dissonance, because we invoke a 'systems model', which then seems like a design argument. It is spooky, we see something that can't be mechanical and looks like a conscious agent. Our treatment, at least, must remain neutral. The reader must carefully judge for himself.

and was done. The sense of a resemblance with the modern transformation begins to suggest a new and different kind of explanation for the rise of the world we have inherited from the early moderns. We should look at the data in terms of a 'finite transition model'.

5.5 History Macro/Micro

The discovery of a sequential logic behind the stream of world history has forced us to reexamine the meaning of evolution itself, for we suspect that its current purely genetic interpretation is misleading, and fails to account for a broader component that we can only call 'macroevolution'. We have clearly stumbled on the key to the driving force of civilization: a clear mainline, and one that, most remarkably, can jump from one civilization to another. The term 'macroevolution' tends to refer to the process of speciation. But it should clearly apply to any situation where 'macro' or 'large-scale' evolution occurs.

> **Toward the 'last and first man'...** In fact, we suspect that the 'speciation' of man is incomplete, and renews with the rise of civilization! But man is emerging from his own evolution to a new phase of 'self-evolution'.

We are highly suspicious that in fact what our discovery represents is a renewed phase of human evolution, but this time with a twist: it is evolution becoming history, that is, the emerging self-evolution of man as a free organism. In the case of man we confront the ambiguity of that definition of man as man, the species Man. Perhaps that speciation is still incomplete, and history itself is an exhibit, evidence, in this process! It will turn on a question of 'evolution' becoming 'self-evolution', the passage from passive to active, as if it were an 'evolution of freedom'.

It is peculiar to bring the term 'evolution' so close to home in our own history. We tend to have romantic image of wild and primordial evolution, and like to think that we evolved into free men in a jungle somewhere, tearing raw flesh off of wild beasts, the fourth chimpanzee cooking steaks on a fire, and then after some lucky mutation we just walked away with full-blown Kantian morality to greater things from then on. But our new perspective is a cautionary tale. In reality our usage probably rescues the term from its misleading reductionist mindset.

Our exploration of historical 'macroevolution' seems audacious, and yet there is a rightness to this approach, and furthermore it is non-dogmatically

Macro/Micro: An Evolution Formalism

We can see that we have stumbled onto an 'evolution formalism'. Evolution on two levels, macro and macro, becomes the 'macro' sequence on the macro side, and 'history' as creative free agency on the other. This is really a way of applying our ideas of 'system action' and 'free action' to history. The result is a simple and elegant solution to the problem of historical theory.

The answer to the paradox of history and evolution is given to us empirically. We see a series of intermittent transitions. Clearly that's the form taken by our evolution-history. We can simply define the terms 'evolution' and 'history' to conform to that definition. We can speak of the Great Transition, broken into a series of smaller transitions, from evolution to history.

This means that there is an overlap of the two. It is like a cornucopia. The advantage of this approach is the relativity of the definition. We can say that early man in the Paleolithic was evolving, but that his history is beginning, and that the two are braided together. Furthermore, we have a natural interpretation of the distinction of macro and microevolution. We can formalize this as follows:

From evolution to history We can make the evidence of the macrosequence explicit grounds for defining the overlap between evolution and history. We could call history the record of free activity rising in the wake of the passive evolution of volition.

The '(macro) evolution' of civilization We can call the evidence of our three transitions the 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 this macro effect. This will create an interplay of two distinct forms of action, one inside the macro pattern, one outside.

Descent of Man Revisited: 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*.

useful. This new approach immediately creates two levels, hence two 'evolutions' really. A large-scale process, and the reaction to that in between, the 'self-evolution' in the middle, or medieval periods.

We can see the one thing theories of natural selection are designed to rule out, discontinuous episodes of rapid 'evolution' that operate over the long range, and that can do a kind of 'end run' around the sluggish competition of winners and losers. We will see that, on the average, the winners, by winning out, tend to create rigid structures that are incapable of innovation. Something new and different appears from a different source, often in the frontier areas of previous histories. We have definite counterevidence here, complete with a substitute evolutionary driver, albeit in such a fragmentary glimpse that we are left to wonder about the earlier manifestations of such a prodigious force.

5.6 Modernity Decoded: A Finite Transition Model

Our sequential logic suddenly resolves the enigma of the rise of modernity, if we clock the onset of a 'transition' in the sixteenth century. Many have suggested this, but without quite knowing why it works. Now we see why. Here is another point, again often missed: there is a change after around 1800. Why? We now understand that too. The transition concludes around 1800, and we are now in a post-transitional period. Taken that way all the pieces fall into place with stunning force. But we must realize we are already entering a 'middle' era beyond the transition. The breakup of modernity is a dangerous possibility. The sense of the 'postmodern', in the confusing fad, seems to sense this. We come to the end of our macrosequence, but not of history, obviously, with the rise of modernity, and that ending is a new beginning, the dawn of a new era in world history. But do we understand our own modernity? The system in which we are embedded is a challenge and a warning: the continuation of the Axial Age was a prolonged decline. But there was nothing inevitable in that. We can learn from the past and create a new epoch of human free development. With the onset of a final phase of globalization, the creation of a new global oikoumene is imminent and requires that we come to a better understanding of evolution. And the confusion of evolutionary and economic categories has contributed to much misplaced emphasis. We need to examine the place of economic history inside our larger history.

Our Frequency Hypothesis To ascribe the rise of the modern to the sequential logic we have uncovered will strike many as speculative.

The Finite Transition Model

The idea of a finite transition is strange, but can help to understand what is going on, and the conclusion of that transition at what we call a 'divide' point is equally helpful to see our position in the wake of this period. Remarkably the data fits perfectly, so this is more than mere modeling. We see the take-off begin in the sixteenth century, but modernity itself emerges in the seventeenth with the birth of the Enlightenment, and the Scientific Revolution. The climax comes in the eighteenth century, which concludes in a crescendo of change and innovation. A three-century transition is followed by a take-off in a 'new age', our own. Consider the analog of 'countdown' and 'lift-off' to see the two aspects, before and after the divide. This phenomenon is strong evidence of an 'intermittent' sequence effect.

Sixteenth century: Reformation (and German Revolution), Copernican Revolution, beginnings of modern science.

Seventeenth century: Scientific Revolution, birth of Enlightenment, English Civil War, birth of liberalism, secular politics, and philosophy.

Eighteenth Century: Flowering of multiple Enlightenments, English, German, French, American. Industrial Revolution, French and American Revolutions, the rebirth of democracy, the onset of capitalism culture, a massive set of innovations in all fields.

The Divide (end of transition): the climactic conclusion of the modern transition, in the nineteenth century. The rapid emergence of a new global civilization, despite Eurocentric obstructions.

A New Age Begins The onset of a new era of world history rapidly shifting from its frontier jumpstart zone toward globalization

> Then take it as an hypothesis, and as a project of study to explore its implications as an hypothesis. It can be a trial 'theory' of modernity, and in fact the sudden perception of the details will soon show the strength of the extraordinary claim, which can simply be left as an hypothesis. But the structure of empirical non-random data is not speculative at all, and stands out as the enigma it is.

The question of the rise of modernity, the explosive take-off from the sixteenth century onward, has long been the object of speculative theories. Endless efforts to trace the phenomenon to medieval influences have always failed (although they have also shown continuities of interest). The long-sought solution to this riddle of the rise of the modern world is provided by our analysis, and falls in our lap unexpectedly, at least in the sense of putting the issue in perspective, a real perspective of the whole of world history.

The rise of modernity is one of the most contentious of theoretical subjects, theory after theory, with attempts to explain its sudden rise invariably getting into a snafu over discontinuity, the Renaissance, and secularist ideology. But the high-level perception of its placement in the direct mainline of the macrosequence solves most, if not all, of all of the problems, at the price of clipping the data at both ends with discontinuities. One reason for confusion is the tendency toward an economic interpretation. The problem is that while capitalism seems to emerge in this period it doesn't characterize modernity in and of itself.

The sudden partition created by the Protestant Reformation is the key discontinuity. Note that it is *not* the cultural evolution of 'Europe' that produces modernity. No, it is the divisive *partition* of Europe, at a frontier, that produces the modern phase transition, Europe cut in two in an unmistakable case of the frontier effect, and the defensive barrier for innovation.

> **The Modern Divide** We have a way to put our idea to a simple test: if the phenomenon is not a continuous history (it is that too) but a transition, then its endpoint will show its hand. With that idea we discover the modern 'divide'. We can see it clearly just at the time of the French and Industrial Revolutions. Our transition climaxes and comes to an end, a new (middle or 'medieval') period underway. Many systems have such a property. A slingshot just at release point, a rocket at liftoff at the end of countdown, and so on.

We see that our 'modernity', the rise of the modern, is really two things, the transition and the period that starts after that transition. We are ready to dig deeper, in the next chapter. But, if we recall our 'frequency deduction', we note that our model faithfully reflects the paradox of 'freedom evolving'

in producing a 'something causes freedom contradiction', and our data directly mirrors this unexpectedly significant piece of jargon. Finally, we should note the spectacular appearance of democracy, as a recurrence of the great Greek experiment.

5.7 Voices of Silence

Thus, we have found, given closely-tracked evidence, a dramatic pattern of derandomizing self-organization in the directed emergence of world civilization. In fact, we have something more than thermodynamic 'self-organization', we have stumbled on a progressive unfolding process, whose visible directionality portends a deeper teleological process behind it.

Evolution and Self-organization World history shows us a spectacular display of self-organization in the emergence of civilization, the problem here being that issues of teleology arise to demand an extension of the concept. We can easily detect this by systematically clocking this history against a frequency hypothesis. The result is, however, far more complex that the usual thermodynamic increase in order associated with self-organization. The result shows that natural selection reasoning is inappropriate to discussions of the dynamics of historical evolution.

Design Arguments and Natural Teleology The data of the macro effect clearly falls into the category of self-organization, yet seems to outstrip this depiction in the complex details of the emergence of the highest forms of culture, as we have seen, for example, in the realm of art. It almost seems to demand an argument by design. But if we examine the data closely we can see that no designer would quite do things the way we see them in history. There is a clear indication of a teleological component to the directionality of the macrosequence, and this is a part of what generates a sense of design.

God or Evolution? We must suspect that the crude duality of design and mechanism is transcended in our elusive 'evolution'. We seem to have stumbled on a higher octave, as it were, of the 'naturalistic'. But the distinction of 'spirit' and 'nature' is too muddled to serve us. A better approach is the Kantian framework of transcendental idealism, and the insights of Schopenhauer into the 'will' in nature, ideas that we can't endorse as such, show on line of enquiry into what is really the hidden face of evolution a the noumenal.

Self-consciousness The ambiguity of our data arises from the way our 'system' promotes and fuels the self-consciousness of man in history,

and it is this ambiguous relationship of 'system action and free action' that generates a sense of design.

We can see 'evolution' acting directly on human consciousness in the transformation of self-consciousness. The complex mystery of human evolution has too long been confused with the emergence of physiological or anatomical features, leaving out the evolutionary stages of his consciousness and culture, indeed the emergence of civilization itself. We are fixated by the contrast of the primitive, so-called, and the technological sophisticated aggregates we call 'civilization'. But perhaps to a larger cosmic perspective the difference is more relative than we think, the stage of civilization being of piece with the onset of the Neolithic, thence the onset of behaviorally modern man. Nothing truly fundamental has changed in man throughout, as he remains in essence that creature that embarked on the journey of behaviorally modern man.

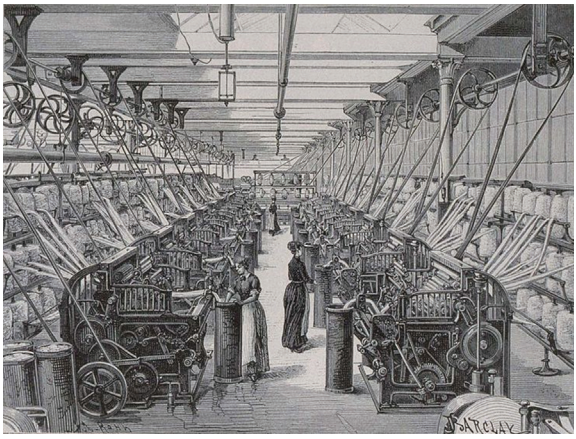


Fig. 5.20 Factory scene

We have discovered something extraordinary, and very useful for the understanding of the question of religion. We have all the tools and concepts needed to construct a new perspective on the evolution of religion. Just as with civilizations, we see an 'evolution' on two levels. This distinction is essential for grasping the confusion of the Old Testament.

Evolution of Religion This Axial interval gives birth to two world religions, in Indian Buddhism, and the Israelite 'monotheism', and these become the source for a whole epoch of religious development and history. It is important to see, however, that the Axial Age is not the source of either Christianity or Islam, as such, which arise centuries later from the seeds planted in the Axial phase, the second step in our sequence. This snapshot of religion formation is an eye-opener, and gives us for the first time a picture of how religion evolves in the context of civilization. We must suspect similar intervals of transformation in that most seminal of periods, the Neolithic.

The Axial period by itself is such a remarkable phenomenon that we

might be tempted to take it in isolation. But taken in that way the period doesn't quite make sense, and we suddenly realize that the solution to the riddle is to see it as a step in a sequence with the dawn of civilization and the rise of modernity completing the (visible) pattern. Although this might at first seem speculative, a careful look at this expanded pattern shows the rightness of this conclusion. However, it is completely okay to simply revert to our perception of a non-random pattern, and simply note the empirical sequence of great turning points in world history, at the dawn of higher civilization in Egypt and Sumer, the mysterious concert of synchronous social transformations at the dawn of classical antiquity, and the rise of modernity. If anything it is the characteristic appearance of 'medieval' periods in between that shows the pattern clearly.

> **Religion and Evolution: Macro/micro** Our idea of 'stream and sequence' is a useful metaphor here: we see the historical streams in India, Israel, and Greece, and clearly also in China, and then we see their intersection with the 'Axial interval', itself a part of a larger sequence. The streams then contribute to the larger sequence by being participants in a brief interval of the macro process. An extraordinary process! No wonder the Old Testament is so confusing. And we have a clear picture, then, of the evolution of religion: it proceeds as a continuous stream of human culture, but then also at certain times reflects the larger pattern of human evolutionary emergence, as with the evidence of the Axial period.

But the prime instance, the Old Testament, can confuse us. In the Axial Age, we are confronted with something very deep, something that lies beyond the emergence of two religions, one theistic, the other atheistic. That seeming paradox should in fact tell us something. Our macro process isn't really involved in religion at all, but rather in the larger patterns and potentials of civilization. And it faithfully reflects and recycles what is already that, in the process driving it across a threshold to a new form. We can see that the idea of monotheism is very ancient, but marginal. Then, suddenly, during the Axial period, in Israel, and in Persia, the sources crystallize into a world religion. In parallel, we see the primordial Indian tradition, visible in archaic Jainism, also remorph into the seeds of a world religion, Buddhism, so-called. In Archaic Greece we see one and the same process transform an ancient polytheism, almost as an afterthought and in the context of its massive spectrum of effects visible in the Greek Miracle.

The rise of the modern, despite its curious disguises, is very similar to an 'axial' interval such as we see in antiquity. And our ability to see it at close range is especially instructive. The rise of the modern is chronically

confused by debates over continuity and discontinuity, the contributions of the Middle Ages (often by religious proponents) and the nature of the so-called Renaissance. In the final analysis such debates are beside the point, and we are unable and not required to answer them. Many things can be the case at the same time in the complexity of world history, and we don't have to answer all questions to see the dramatic reality of the macro effect.

Fig. 5.21 Babylonian Siege of Jerusalem

And these other debates distract us from seeing the simplicity of our non-random pattern which shows the sudden beginnings of a transition in the sixteenth century, in the context of certain areas of Europe, and this rapidly produces the modern world by the period of the Enlightenment at the end of the eighteenth century. Whatever else may be the case with the medieval period or the Renaissance, the modern transitions stands out very clearly. The question of continuous or discontinuous evolution thus has no simple answer, save that both are the case. The macro effect, however, shows us what we could not suspect, the real existence of rapid transitional or punctuational periods of fast evolution. And they are a remarkable complement to the companion, 'slow evolution'.

The rise of the modern world, and our interpretation of modernity, is beset with the confusions of Eurocentrism. In fact, we have developed a clear explanation for the appearance of our transitions with our discussion of the frontier effect, and we can see that the modern transition occurs with precise timing in the greater context of Eurasia, and is not a form of European ideology at all. It might help to consider that with time and some distancing from the rise of the modern age the pattern of the macro effect beyond the locale of Europe will begin to stand out, especially as the transitional area begins to yield to the greater globalization to which it contributes. We have thus produced the solution to the Eurocentrism problem.

Religion: Macro/Micro

The Axial Age Riddle solved We suddenly have the solution to our puzzle over the history/evolution of religion. And the hopeless confuson over the Axial Age suddenly clarifies: we are seeing the same aspects of macro and micro that we saw with civilizations. All at once the Old Testament is clear: it records the macro interval of the Axial Age and this shows the sudden emergence of monotheism, followed by the micro phase in which actual religions arise, e.g. Christianity and Islam, in the Occident.

Finite transition models The previous remarks need the reminder that the Axial Age is not as such about religion: the case of the Greek Archaic is basically a hybrid of the sacred and secular, as it China. The use of a 'finite transition model' shows at once what is happening. And we can proceed to resolve the problems of the modern 'transition' using this thinking: the logic works if we consider the period from ca. 1600 to 1900 to be a transitional interval, a 'next Axial Age', as it were, with a divide point at the end. This form of periodization clarifies what is happening. Note that the 'secular' modern is also a hybrid of the 'sacred/secular' and the parallel emergence of the Protestant Reformation, the Scientific Revolution, and the rise of liberalism and moderrn democracies show the 'dialectical' complexity of the explosive transition, something not seen since the original Axial period.

A Higher Power Acting Through History It is almost egregious to throw our data into the grabbag of 'self-organization'. The macro effect fills us with a sense of an almost ominous presence, of a mysterious process or action operating throughout history as a higher power. We see fine-tuning down to the level of poetic meters and even the whole genre Greek tragedy that might leave us floundering in design arguments. We need to realize that divinity would not act in this way. Conventional theism/atheism will not help us understand this situation.

In fact we have rediscovered, perhaps, the elemental sense of universal history first intuited by the Israelites, pointing beyond god idols to IHVH, before that degenerated into monotheism. We have lost that tradition, and need to steer well clear of it. We cannot under any circumstance bring simplistic 'god ideas' to our depiction, at the risk of corrupting our clarity with the confusions of false design arguments. That would truly wreck our 'design' account. The same can be said of the sterile atheism based on the metaphysics of Darwinian natural selection. The depiction of 'evolution' using systems analysis keeps our account honest. This should warn us against applying theistic designer logic to our data, a tactic that can only produce total confusion.

One of the most intriguing aspects of what we have called the 'macro effect' is that we only become aware of it as we begin to exit from its action. As we pull away from the modern transition, and as the results of archaeology begin to enlarge our perceptions of human origins, the pattern of macrohistorical dynamics becomes visible like a photograph in fixer, and we are filled with the sense of something like a higher power operating in history.

As we recede from the action of the macro sequence, whose last visible interval of dynamism was the rise of the modern, we are left with a sense of the stupendous drama of the emergence of civilization, before the uncertainty, almost the suspense, of entering a future of our own creation, beside the mystery of evolutionary becoming that animates the ruins of past, and passing, civilizations.

End of Macrosequence? One of the strange mysteries of the macro effect is the fact that we are outside of its action as we come to observe it. Our best estimate is that the modern transition is the last in the macro sequence, for as we become aware of its action it could no longer act in the same way. The tremendous transformation since the Neolithic contains a still unrealized potential of tremendous scope. At the same time it is important to consider the dangers of decline and medievalization that can beset historical sequences outside of the macro sequence.

The existential sense of our self-consciousness in freedom must leave us to wonder at both the opportunities and the dangers of the completed passage that has brought us from the Neolithic to the stage of civilization, thence to a more sophisticated combination, wherein the secular sphere as civil society matches the false sanctity of the State with a field open to the potential of human individuality. The most difficult challenge lies in the relationships of these entities, whose transformations over the course of history have resulted finally in the ambiguous legacies of revolution. Our distinction of System Action and Free Action warns us of the perilous passage through mideonic worlds where the mechanization of consciousness becomes fixated in socially constructed identities.

5.8 A New Age Begins: Last and First Men

The strangest, and yet most satisfying aspect of our perspective has been the solution to the 'modernity' puzzle. As we have seen our data has uncovered a very remarkable result, and we have a very useful way of looking at the early modern, as a transition to a new era. And the modern world is, in many ways, the key to antiquity. The detail of the modern transition shows us what is going on at the dawn of higher civilization and then in the Axial period.

Thus the rise of modernity falls into place as an evolutionary transition in our framework of world history with its succession of epochs, and the 'axial' periods that precede them. The rise of the modern world is in many ways the dawn of a new age, and its so-called 'secular' character has devolved into a debate over world views in the conflicts of science and religion. But that conflict is misleading.

Reactionary efforts to negate modernity by postulating some phantom of a postmodern 'new age' are a misunderstanding of what is going on. Part of the confusion arises from the sense that the Axial Age was about religion and that modern secularism doesn't foot the bill for a new Axial Age. That is a failure, as we have seen, to really observe the original Axial Age, where the case of Greece shows the birth of the secular next to the sacred. The distinction is therefore less than useful. The sacred is clearly massively embedded in modernity by reason of its key note of the idea of freedom.

We should note the spectacular second coming, on schedule, of democracy, as a recurrence of the great Greek experiment.

The great master chord of modernity is the emergence of the idea of freedom and the nexus of ideas surrounding this. In this sense the emergence of liberalism has to considered for what it is, an independent synchronous emergentism in parallel with the rise of science. It is important to consider this point since the sudden downshifting into positivism shows the attempts to construct a universal canon based on the successes of causal reasoning in physics. This will derail the whole system if allowed to proceed without challenge, and that challenge appeared almost immediately at the Great Divide, please note. Positivism is one of the first regressions in our system. It is important to consider this point since we tend, in an age of later scientism, to define modernity in narrow terms of a type of rationality based on scientific universalism. But the birth of the modern was more complex than this, and it more accurate to say that 'causality and freedom' together form the 'dialectic' of modernity.

It is ironic therefore that the idea of freedom contains all the elements of the mystique of the sacred and yet expresses this in secular form. The modern transition wants nothing from a 'sacred age', and in any case creates a pluralistic stage of religious freedom in which the heritage of antiquity can find its place. And our transition spawns a virtual novelty, the revolution, whose effect is clear almost from the German Social Revolution in the early sixteenth century in concert with the Reformation, itself certainly another revolution. The cascade of revolutions, to the English Civil War thence to the French Revolution, is characteristically symptomatic of modernity, but an endless controversy arises over their significance. It is too little noted that most of these revolutions fail, and that that modernity appears from a broader spectrum of causes than simple revolutions against traditional political forms.

A New Birth of Freedom Inside our sequential pattern we discover another counterpoint pattern: the timed birth of democracy in sync with our transitions. This can hardly be chance. Our periodization uncovers one of the most remarkable mysteries of human history, and its evolution, a windfall that leads us also to the core of the Kantian philosophy of history, and the solution to 'Kant's Challenge'. It is the only clue we have to the otherwise invisible action of our sequence. On the surface it is a transparent phenomenon, almost widget-like in its system action. But the basic dynamic never shows its hand. However, like a dropped handkerchief it does leave behind the traces of a bare something, reminiscent of the Kantian intimations of the noumenal. We see the exact resemblance to the Kantian considerations of freedom, save that here we see this applied to history!

Thus, to define terms, one of the most interesting things we can observe about this pattern is the *double appearance of democracy* in two successive turning points, in both cases near a divide. In fact, this is probably a triple sequence, beginning in Sumer, with an 'almost'. If only we had a longer sequence, more data, but this is unnerving. It looks like democracy has been induced by macroevolution! This is the *piece de resistance* of our data.

One of the most significant, and confusing, aspects of the modern transition is the appearance of the phenomenon of (political) revolution. The phenomenon of revolution is rare beyond the modern age, and we can see in the democratic revolutions of this transitional era a genuine advance on the static authoritarian governments that have dominated world history. The spectacular rebirth of democracy after its long hiatus since the classic Athenian experiment is an almost uncanny phenomenon, seen in the context of its timing. The multiple revolutionary episodes, beginning in the sixteenth century, and climaxing with the French Revolution are notable for their failures, followed as surely by the basic success of their aims in the larger sphere of modernity. And it is important to see that the first modern revolution was the Protestant Reformation whose rebellion against theocracy set the stage for religious freedom.

As we have seen we are left with a mysterious question, which we can restate: have we reached the end of the phase of renewed evolution that resumed the great explosion and that began with the rise of civilization in the Neolithic? Note that our analysis has demonstrated that we have exited the modern transition after its divide, thence to enter a sort of New Age of modernity as a new stage of history given by the sequence.

But was this the last transition? We have no means to finally say. We could examine the outcome of the Axial Age to see that our future could fail

to realize the modern potential. The character of the system has changed as the system action shuts down leaving 'free action to realize freedom' in its wake. Although it is appropriate to leave the issue open, the tentative answer to our question should be in the affirmative, that the spectacular driving motion of the macro sequence has completed its action in what is probably a driving motion initiating in the Neolithic period. Now it is sink or swim.

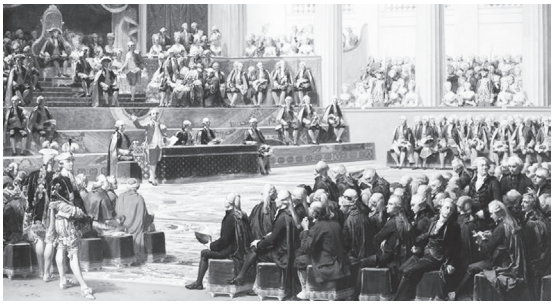


Fig. 5.22 Estates General 1789

And the issue of Nietzsche's last man should be recast in a new logic: the last man should be the man at the 'end of the evolutionary phase' finding freedom at the 'beginning of the historical phase'. This is useful jargon, whose meaning is simply that nature 'evolves' us only up to a point. The rest requires our self-evolution as free men.

We see that the end of our macrosequence is really the beginning of a new phase of human self-evolution, with a reminder that there is nothing simple or well-understood here. Man's exercise of his natural powers has proceeded for more than fifty thousand years, and we cannot say with any certainty how the new phase of standing beyond the macrosequence will play out, whether in a swift decline of culture followed by a resumed 'rescue' operation by a new stage of the macro effect, or by the appearance of a new man altogether, from the bootstrapping stages of human experiment and learning, as with Darwinism, learning the hard way. The result requires a match of science and religion, in a step beyond both, but the issues of religion remain too primitive and of science too crude to allow us a complacent vision, now but science fiction, of the expected future, the grand appearance once and for all of the species man. But the explosion of advance since the Neolithic should give us some confidence that a realizable transition from the 'last' (chimpanzee) to the first man is within human capacity, mindful, as we examine history, of how much is a gift to man from nature, and how much is man's achievement. We cannot predict the future behind this catch-22, since the crucial stage of autonomy has been reached, requiring man to proceed without nature's aid. The next millennia will tell the tale, and we might start by dispensing with Social Darwinist conspiracies to examine the full range of the human instrument to bring to bear on human

evolution the full music of potential self-consciousness, in the birth of the human will.

Notes

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History and Evolution: A Paradox Resolved

We have pursued the suspected link of evolution and history, in the process making some surprising discoveries: the non-random in a remarkable instance. The result is to stumble on the secret to evolution, we suspect, and certainly to human evolution, with something that would be too unbelievable without evidence, but once seen, is a completely obvious solution to the evolution mystery: an intermittent evolutionary driver able to operate in directional fashion across time and space on differential regions. Remarkable, right under our noses.

This surprising result is especially convincing due to its robust empirical basis: it is an argument stopper, nothing like Darwinian theory is the case in world history. It is also true that in solving the evolution paradox it leaves a mystery in its wake, like the noumenal aura of the unknown to perception beyond the phenomenal, a Kantian outcome indeed. We cannot necessarily generalize this to a universal statement of process, and we have discovered that at each step in our sequential logic 'evolution' reinvents itself to do different things. We are confronted with concealed laws of nature, but ones with all the variety and creative potential of designed entities. The idea of a law of nature breaks down confronted with the near aesthetic character of much evolutionary process. And world history shows dramatic evidence of this 'evolution' visible as artistic creativity. We must retreat beyond the search for 'laws' to the plain chronicling of evolutionary sequences.

The result, however, is not a new 'theory of evolution', since our finding is really an empirical chronicle over a limited range, and, at most, a 'theory of the evidence'. This result is especially convincing since it shows a realistic solution to the insoluble paradoxes of random evolution. But there is a catch: as with the Kantian distinction of phenomenon and noumenon we see only the outer phenomenology of evolutionary sequences.

> **The Meaning of Evolution** Our data gives a new insight into 'what evolution is': it is an abstract dynamics operating on a global scale in a directional sequence of intermittent action visible in a series of

macro-transitions, a process that resembles the canonical definition of punctuated equilibrium.

Evolution and Reductionism Our discovery shows that evolution is the result of still unknown forces beyond those given to us by physics and cosmology. The whole confusion arose because of the demand to reduce evolution to basic physics. But we see that 'evolution' operates at a far higher level, global in its action, and involved in the details of culture, mind and consciousness.

There is a deeper dimension, and it is this that leaves an aura of mystery, the sense of the 'voices of silence'. This is really evidence of a teleological system in the deeper layer, and the result is the standard confusion of mechanical and design arguments. That the outer phenomenon suggests a cyclical manifestation as a stand-in for a teleological process is a decisive hint as to the mystery of directionality in evolution.

Fig. 5.23 Declaration Of Independence

But it is important to consider the Kantian warnings about teleology: it is not a simple question amenable to observation, the reason for our emphasis on empirical detection of a macro logic. The evidence is indirect: cyclical directionality, in a spectacular display of effects across space and time. In the final analysis the mechanics of evolution is, we suspect, so complex as to mimic design action. We must be very careful of theistic hallucination here, with no stance taken on theistic versus atheistic questions.

We can see the problem with theories of evolution, and the way in which the study of an 'evolutionary sequence' empirically can unlock the real meaning of emergence. We can resolve two issues: we see the interplay of facts and values in the emergence of an evolutionary sequence. More than that, we stumbled on the completely unexpected: the existence of macrohistorical dynamics, one beyond what we know in the way it mixes values and the mechanical. The existence of an evolutionary 'uphill driver' in world history itself is entirely surprising, but once seen make sense of the data in a way that suddenly seems like common sense. It is the dogma

of randomness that is incoherent.

We began by seeking to fulfill our prime objective by noting the way world history demonstrated a non-random pattern. That neutral minimum was set to provide a purely empirical data set that speaks for itself, and is free of theoretical add-ons. But even that is enough to sound an alarm against claims of random evolution, thence the application of Darwinism to history. The non-random is simple the evidence of some causal or determinate factor (a principle of sufficient reason) creating a patterned effect against a random background.

> **A Non-random Pattern** We have achieved our prime objective: the demonstration of a non-random pattern in world history. This is a remarkable example of something that is not supposed to exist, but does, right in our own backyard, historically speaking. Even one example of such a thing can tell us in essence what nature can do, and the emphasis on random evolution by Darwinists ceases to be so convincing.
>
> We saw this pattern either as the dramatic phenomenon of the Axial Age, or as a larger pattern with a sequential logic. The enigma of the Axial period forces us to look for this larger context, and with the right question the answer is immediately.

This non-random pattern is clear. But there is more. Where there is smoke there is fire. Zooming in on this revealed a kind of hidden archaeological site, a detailed structure of emergent self-organization. This evidence shows a process acting directly on cultures via human consciousness.

Our non-random pattern is highly provocative and we see at once, at the risk of renewed speculation, and incipient theory, a complex system at work. Our claims for a non-random pattern can be a fall-back position, as our deeper analysis can be taken simply as advisory. We have achieved our purpose: neutralizing the Darwin fantasy. But we can proceed to interpret our pattern as 'evolution'.

> **Non-random evolution?!** This pattern consists of the division of world history into intervals or epochs, with transitions at their onset. Such a pattern fully qualifies as evidence of some dynamic at work. Indeed, the data passes a frequency test with a wavelength at around ca. 2400, a devastatingly non-Darwinian type of systematics. From one perspective it is a process of self-organization, from another it outstrips mechanical explanation and shows a process acting directly on human consciousness. The clear pattern of developmental sequencing demands the term 'evolution'.

We constructed an evolution formalism to deal with this pattern, as

a simple model, not as a new theory of evolution, but as way to help us understand what we are seeing in world history. We also see directly that natural selection, while always present, has very little to do with the master chord of the developmental emergence of civilization.

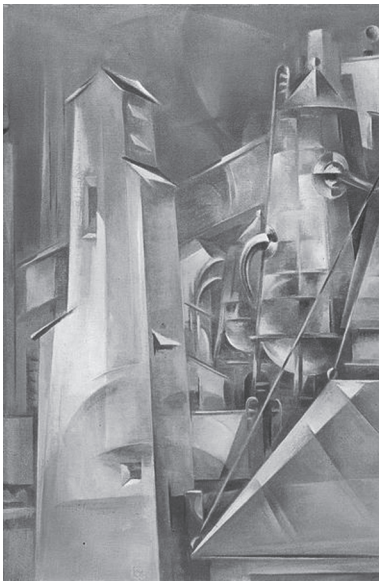

Fig. 5.24 'Marx lite': The fate of the industrial outcome to modernity remains open Dickinson's The Factory, 1920

The Macro Effect Our perception of the non-random was really the discovery of a macroevolution, in a systematics of 'evolution' operating on two levels, echoing the original insight of Lamarck. Further, this dynamic operates with an intermittent sequential logic, which gives expression to a directionality that is the outward aspect of a hidden teleological process.

An Evolution Formalism Our macro effect is a perfect candidate for our 'evolution formalism', which shows two levels, macro and micro, the macro visible in the division into epochs and transitions, the micro the action of human individuals inside history. The two intersect via the transitions. The result is the perfect exemplar of the term 'punctuated equilibrium' (in our non-Darwinian usage). This formalism also expresses the transition from passive evolution to active human history, suggesting an endstate to the action of evolution, leaving only history in its wake.

But is this really evolution? We are so used to Darwinian usage for the term 'evolution' that its usage for the emergence of civilization seems wrong. The term is simply a 'brown paper bag' in which to place a data set. But our data, as we begin to realize, shows an almost perfect example of 'evolution' in what should be its real form. The real question is, what is its relationship the earlier emergence of man? We suspect the connection is direct, and that this high-level cultural evolution precedes the genetics it invokes. That Darwinian selectionism is an incomplete or false theory becomes clear.

Out stance was to stop short of theories: the system we see is far too complex for any theory we could muster. Our exploration of an 'evolution formalism' fell short of deriving a totalizing theory, which is really a kind of metaphysics. Instead we attempted to follow evolution as an empirical sequence in history. We see the reason that debates over evolution end in a chronic metaphysical dilemma. We can, however, with our simple method,

Can human technology achieve re-speciation?

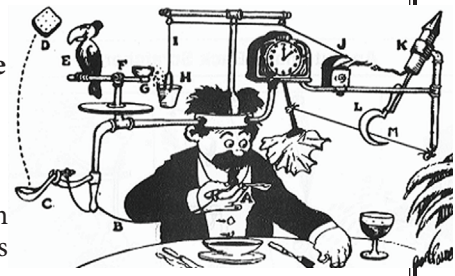

Fig. 5.6 Machines to evolve future man?

Fig. 5.25 Sci-fi: Apes of the future (Intelligent monkey to do a person's work, 1911)

Our interpretation of evolution ends with an open-ended outcome, as 'evolution' turns into history in the relationship of system action to free action. This leaves the field to self-evolution, which is a dangerous suggestion in the context of Darwinism, because it allows eugenic modification of man, which won't work. So we should be clear that self-evolution is

1. the self-realization of the individual of human potential, present since early man. This would require full use of the instrument of self-consciousness, into the 'turiya' end-state.

2. and possible re-speciation of man under his own aegis. But this requires mastery of human history in phases stretching over tens of thousands of years, across an entire planer. This would require sci-fi levels of superadvanced civilization able to construct technological sequences over a minimum of ten thousand years, from a perspective that is–timeless?!!

Fig. 5.27 Paris, the future

The conclusion must be a warning that a civilization fixated on Darwinism is too primitive to re-speciate without doing great damage. The result could not be achieved by eugenic natural selection. Only a very advanced civilization could produce a phenomenon on the scale of the Axial Age!

track an evolutionary fragment and visualize its action over time, with a surprising result. Just as biologists distinguish the fact and the theory of evolution we can use the 'fact' of historical 'evolution' to understand world history in a new way. Everything we need is available with our basic model of the evolution formalism. And now we can see the status of 'history' emerging form the chrysalis of evolution.

> **History and Evolution: a paradox resolved** We have found the resolution of the paradox of history and evolution in seeing them as overlapping, with history as the chronicle of 'freedom' emerging from evolutionary passivity. The transition between history and evolution occurs in a series of transitions, in a braided unity of the two opposites. We need not speculate about such a system, instead replacing it with careful periodization to help us follow the 'track of evolution in history' along a time-line: the deeper dynamic is hidden from us, as with the Kantian noumenal behind the phenomenal.
>
> **The Great Transition** Our transitions are direct evidence of the 'descent of man resumed', as the 'great transition' to the completed speciation of man. The historical aspect seems to show the way man must take over his own evolution, a task still from his understanding in light of the wrong views of social Darwinist eugenics, dangerous fallacies liable to induce regressive cultures.

The strong suspicion that our discovery of the historical macro effect contains the clue to the dynamics of the earliest evolution/speciation of homo sapiens gives us a new perspective on the whole question of human origins, and certainly shows us the limits and liabilities of Darwinism whose oversimplifications simply ignore the complexities of man and his emergence. The 'Great Transition' visible in history as a series of transitions shows us a transparent image of the outer phenomenon of evolution without showing us necessarily the deeper mechanism behind that. In fact, the resemblance to the Kantian phenomenon/noumenon distinction is striking, and the questions of human will, ethics, and self-consciousness suggest to us that the resumed evolutionary march of human civilization is both the continuation of the first stage of man's evolution, but also a nearly prophetic sign of the future of that evolution in the completion of the human question mark.

Analyzing Civilizations: Toynbee and Spengler

To understand our data, we can introduce a few ideas that might help to see it in a clearer light. In the process we can consider the views of

Toynbee and Spengler on civilizations. We can see that our data points to a teleological process, or rather a solution seen in nature to the mystery of teleology. These are the ideas of

Fig. 5.28 Punch 1861

Stream and sequence

Transition and oikoumene

The Frontier Effect

Civilizations and the 'Unit of Analysis'

As we examine our data we spontaneously discover a new way of looking at history, one provided to us by the action of nature itself, and along with this comes a useful metaphor, that of stream and sequence. This perspective is forced on us by the data of the Axial Age where there is an obvious distinction between the 'stream of history' leading up to and away from a short interval inside that stream. As strange as that seems, that is what the data shows. This is not in principle any different from the way we already take our divisions of history into periods. The interval of the Axial Age is a finite interval inside the more general stream of history. What is remarkable is the way that, taken together, a series of such intervals, what we have called our 'transitions', create a kind of 'macrosequence' out of the pieces inside the streams. Remarkable indeed, and a solution to the riddle of how something can evolve in a series of steps inside an otherwise continuous flow of events.

Our system generates two kinds of histories, the stream history, and the isolated 'sequence' intervals in those streams. Consider the idea of 'Greek history', a stream of historical culture. This proceeds throughout the course of world history, from the era of Indo-European differentiation to modern times. It is in some fashion 'Greek'. But, for some reason, this stream shows a remarkable flowering in the period from -900 to -400. There is no 'causal antecedent' or general explanation possible from simple examination of 'Greek culture'. We are left baffled, until we see that this stream suddenly becomes a part of a larger sequence. As the stream and sequence intersect we see the 'Greek Axial interval', one of our transitions.

Another perspective is to see the data of world history in terms of our transitions and the diffusion they create. Related to the idea of a 'transition', is the mirror image, an oikoumene. The macrosequence is not about civilizations, but the way they are generated, or regenerated. As we studied our sequence we found a definite series of properties that unlock its riddle.

Transition and oikoumene We can begin to see what our system is up to. Instead of evolving civilizations, we see a series of transitions like time-slices of particular civilizations generating new oikoumenes in their wake.

Fields of diffusion Each stage of our sequence creates a plateau from which diffusion occurs. The cultures in these fields show a kind of sequential dependency. In many ways the breakthrough to higher civilization at our first transition is unique, to the best of our knowledge, and all subsequent civilizations show a 'sequential dependency' due to diffusion from these sources. This does not preempt other independent cultural evolution, but which is likely to be sluggish. This pertains to large-scale civilizational constructs, viz. the onset of State formations. It does not follow that smaller scale anticipations of the future as high culture did not exist very early in other places. But we never hear of them! Our sequence is really about global integration, and pumped diffusion. Our system garlands many long lost cultural innovations. A good example is Buddhism. The 'Hindu stream' was an unknown until it regenerates as Buddhism in the Axial interval and then starts its course of globalization.

Another property is the acorn, or frontier, effect: our sequence never steps twice in the same place, but always in an adjacent area just at the fringes of its previous expansion. Notice the way that Egypt and the Mesopotamian field don't enter the Axial Age list of areas of transition. A tiny corner of Canaan in between the two takes off and produces a new tradition of religious culture. The Greeks are just at the fringes of the core area of higher civilization. Another spectacular case of the frontier effect is the rise of modernity at the boundary of the Roman Empire. In each case the transitional eras generate oikoumenes, and at the next stage, just at the fringes, the sequence resumes its action. We think this a 'European' phenomenon, but that is misleading. We can see already that it is misleading to speak of 'Western Civilization'.

The frontier effect A key property of our pattern is the 'acorn or frontier effect'. Note that something global is occurring starting in a series of local areas. But the sequence restarts in a new place each time, like an acorn, just at the frontier of its predecessor. The world of Canaan, spawning 'Israel', does not look like a frontier now, but in

the era of the mythical Abraham it certainly was, and we even have a 'pioneer' story about his leaving the city of Ur in a prime diffusion source, the world of prior Sumer. Greece and Rome in the Axial period were definitely still frontier areas, relative to the by then ancient world of Egypt and Mesopotamia. Each of our transitions creates a hotspot, then expands to create a new civilization, better, oikoumene. Cultural acorns sprout in this field, and then at the next cycle one of them becomes a new transition. Note how our sequence is generating 'evolution in the large' via local hotspots, 'short term evolution in the small'. We must study the diffusion fields of our turning points.

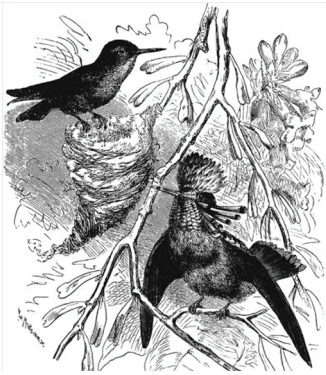

Fig. 5.29 From *Descent of Man*

This property makes complete sense. If we restart over too far away, the sequence can't continue. But if we are too close, the momentum of the earlier stage will overwhelm advance or make novelty abortive.

In this discussion we see that we are talking about something different than the 'civilization' (or the stream). As we pursue our riddle we see that its effects transcend the particulars of individual civilizations. We need to consider a new fundamental unit of analysis, beyond the idea of civilization, in a challenge to Toynbee and Spengler. We see that the key to the whole pattern is the way that our transitions create a series of oikoumenes, perhaps overlapping. Basically the perception of transitions is paired with the formations they generate: a series of cultural diffusion zones that spread out from the source. This reflects the reality better because it reflects what we always actually see, a series of cultural layers superimposed, overlapping, or mixing elements from different sources. And a civilization is a territorial entity, perhaps well-defined thus, but the development overall of the whole system proceeds by the flow of information which is not so geographically bound. This point is essential, since the Axial Age, as with the case of the account of Israel, produces its effect with a series of geographical displacements, the result being a literary document, well able to travel beyond cultural boundaries. The same is true of Buddhism, which almost seems to extract the essence of Hinduism, and create a universal transcultural vehicle.

The unit of analysis We notice something strange. Development is occurring over a long interval, longer than the individual civilization. Thus, we have a problem with the use of the term 'civilization' in the first case, the 'birth of civilization'. The effect is transparent, and

follows the contours of mainline of development in the emergence of civilization, and at the same time demonstrates the relationships of all civilizations to each other. It is therefore at a higher level than the 'evolution of civilization' (whatever that is). Note the singular and plural usage of the term 'civilization'. We might be better to speak of one World Civilization. World historians, such as Toynbee, tend to think in terms of civilizations as self-contained dynamic units, while anthropologists in terms of cultures evolving in linear fashion. Toynbee posits some very dubious structure for these civilizations. The cultures of the anthropologists are temporal streams proceeding more or less as static kaleidoscopes from the Paleolithic. We are not really looking at the evolution of civilizations, but of the stepping stone intervals when the macro sequence finds a civilization in its mainline.

Booknotes

We need to connect our outline with a bibliographical database for world history: this can also be a tool to read world histories by multiple authors. Our analysis has stumbled on a remarkable solution to the riddle of historical evolution:

> **The evidence of evolution overlaid on history**: looking back on the ever-expanding outline of history that archaeology and the human record present to our vision, we can isolate to observation an emerging pattern of what we can call macroevolution, visible in two historical intervals or epochs, and the three transitions between them, visible as cycles of cultural and social innovation on a scale of millennia, roughly 2400 hundred years—emerging as a pattern in and of itself, and as the last visible aspect of an earlier structure originating in the Neolithic. This tantalizing fragment allows us to decipher the riddle of evolution, albeit here something embedded in the historical.
>
> **Finite Transition Model** World history makes sense as a centripetal master sequence of transition overlaid on a centrifugal diversity of cultural streams.

The pattern shows a striking resemblance to the dynamic of punctuated equilibrium, in the dictionary sense of those terms. We have applied the finite transition model throughout. But keep in mind this is not a 'theory', but a descriptive framework.

This non-random pattern is a challenge to more simplistic views of historical evolution. Any law of history, theory of cultural evolution, religious teleology, transcendental explanation, or political action script, or theory of economic determination ought to explain this pattern if it claims

superstitious or pseudo-scientific authority.

Our short history of the world is simple, because it shows a sequential logic. The sequential pattern reduces to a Table of Contents and the whole tale to three chapters, with three transitions connecting them. We suspect the real beginning is in the Neolithic. Our approach is designed to start anywhere, no absolute beginnings are required.

We see three massive periods of advance, what's more, with obvious echoes and interconnections, clear evidence of three successive waves of fundamental advance, at equal intervals, and with significant mutual correlations:

Chapter 1: The rise of civilization ca. -3000

Chapter 2: The Axial Age, ca. -600

Chapter 3: The rise of the modern, ca. 1800

That's it. Our world history, we're done. A non-random pattern. The term 'rise of civilization' is misleading. The real 'rise' was probably in the Neolithic. The first 'chapter' is in reality like the Axial Age that follows, a sudden discontinuous burst driving an already moving history. These dates are really divide points for a set of intervals we call 'transitions' in a macrosequence. We called this the *macrosequence*, and set a frequency hypothesis to fix this obviously incomplete series in the domain of non-speculative empirical verifications. That hypothesis is more a way to preempt speculation than a practical part of our chronicle. It can also serve to silence at once the long history of speculative histories based on cyclical ideas. The pattern is the only one that will work, whatever it means. But the history of cyclical viewpoints is a significant history in itself.

We have seen that the 'Axial Age' is really an interval, not an age, and that these demarcation labels cannot be instant turning points but must be transitions of some kind, *phases in a macrosequence.* And these transitions show a characteristic divide as they conclude. We will see, looking at the modern period, that the transitions are about three centuries long. We aren't sure, but three centuries is sure to enclose the phenomenon seen three times in a row, and five times in parallel in the Axial Age. Or, more accurately, a statistical region three centuries long appears to enclose the phenomenon. The term 'Axial Age' is really two things taken together, a transition, a rough divide point, and then a period just after that starting a new era.

The Old Testament embeds a confused account of such a transition, and comes into existence, in final form, just after the divide, around -600. In Greece, the great era occurs after the divide, in its perilous moment of

freedom. But the gestation period comes before. So it seems that even the exceptions fulfill this dynamic of mysterious transitions. But it is all a bit fuzzy, as it should be, and our model is a guide, but not a dogma. On the basis of this we will see that three centuries again, as with the modern transition, looks to be the rough interval. We should reserve the term 'age' for the periods or intervals between our transitions. It is not the Axial Age but the 'axial' interval in our sequence.

1. Neolithic Beginnings

Just as we pass the world of the ziggurats and pyramids, at the 'start' of our pattern, we can flashback to the greater dawn of cultural history after the Ice Ages to consider the elements brought to the beginnings of civilization.

After The Ice: A Global Human History, 20,000 to 5000 (Cambridge: Harvard University Press, 2004), by Steven Mithen, *Ascent of Civilization: The Archaeology of Early Humans* (London: Collins, 1984), by John Gowlett. *Patterns in Prehistory: Humankinds First Three Million Years* (New York: Oxford University Press, 1984), by R.J. Wenke, *Farming in Prehistory* (New York: St. Martin's, 1975), by Barbara Bender, *From Foraging to Agriculture* (Philadelphia: University of Pennsylvannia, 1989), by Donald Henry, James Mellaart, *Earliest Civilizations of the Near East, and Catal Huyuk* (New York: Mcgraw-Hill, 1965), James Mellaart, David Harris, *The Origins and Spread of Agriculture and Pastoralism in Eurasia* (1996), *The Early History of the Ancient Near East 9000-2000 B.C.*(Chicago: University of Chicago, 1988), Hans Nissen, *The Old World: Early Man to the Development of Agriculture*, ed. Robert Stigler, The Emergence of Civilization (New York: Routledge, 1990), by Charles Maisels, *The Ancient Near East* (New York: Harcourt Brace, 1971), by W. Hallo and W. Simpson, *Prehistory and the Beginnings of Civilization*, by J. Hawkes and L. Woolley, Charles Redman, *The Rise of Civilization* (San Francisco: W.H. Freeman,1978).

2. Egypt, Sumer, And The Rise Of Civilization

We begin *in medias res* with the Sumerian city-states and the founding of the great dynasties of the Pharaohs, the millennia since the Ice Ages behind us, and no detailed evidence for what we must at once suspect is only the midpoint of this history, starting at the point where we see the first transition majestically evident in Egypt and Sumer, after ca. -3300, with probably the same false equivocation as elsewhere over -3600 to -3300

H. J. Nissen, *The Early History of the Ancient Near East* (Chicago: University of Chicago, 1988) , Chapter 4, "The Period of Early High Civilization (ca. 3200-2800 B.C.), Harriet Crawford, *Sumer and*

Sumerians (New York: Cambridge University Press, 1991), Chapter 2, " History Chronology , and Social Organization", J.N. Postgate, *Early Mesopotamia* (New York: Routledge, 1992), Chapter 2-3, "Cities and Dynasties", "The Written Record", George Roux, *Ancient Iraq* (New York: penguin, 1992), Chapter 4, "From Village to City"; for Egypt, see especially Michael Hoffman, *Egypt Before the Pharaohs* (New York: Knopf, 1979), Chapters 19-20, "In Search of Menes", "The Emergence of Egypt", Michael Rice, *Egypt's Making* (New York: Routledge, 1990), *Egypt's Legacy* (New York; Routledge, 1997), Chapter 3, "The Lords of the Two Lands", Walter Emery, *Archaic Egypt* (New York: Penguin, 1961), Chapter 1, "The Unification", Nicolas Grimal, *A History of Ancient Egypt* (Cambridge: Blackwell, 1988), Chapter 3, "The Thinite Period", Karl Butzer, *Early Hydraulic Civilization in Egypt* (Chicago: University of Chicago, 1976), Ronald Cohen & Elman Service, *The Origins of the State* (New York: Norton, 1978), "The Ancient Near East", H. Frankfort, in *Orientalism and History* (1954), Sir Leonard Woolley *History of Mankind* (1965), Vol I, Part 2, "The Beginnings of Civilization", Wilbur Jones, *Venus and Sothis* (1982), Stephen Sanderson, *Civilizations and World Systems* (Walnut Creek: Ca: Altamira Press, 1995). William Hallo, *Origins* (New York; Brill, 1996). *The Uruk World System: The Dynamics of Expansion of Early Mesopotamian Civilization* (Chicago: University of Chicago, 1993), Charles Freeman, *Egypt, Greece and Rome* (New York: Oxford, 1991), Donald Redford, *Egypt, Canaan, and Israel in Ancient Times* (Princeton: Princeton University Press, 1992.

3. The Axial Interval

We arrive at the onset of the 'classical' period, with a better perspective on the overall context of this parallel surge of advance, whose eonic structure is now seen to be almost identical with what has occurred in the case of Egypt and Sumer, in the sense of parallel interactive emergence. Suddenly five dispersed sources move against the trend of the long-term, and in the process regenerate a new constellation of civilizations. We see a complex cultural 'economy': it is one field of diffusion, and yet this field is moving as one into separate realizations, in a pattern independent parallel emergence.

Israel:

N. P. Lemche, *Ancient Israel, A New History of Israelite Society* (Sheffield, England: JSOT Press, 1988), John Hayes et al. (ed.), *Israelite and Judaean History* (Philadelphia: Westminster, 1977), J. Alberto Soggin's *A History of Ancient Israel* (Philadelphia: Westminster, 1985), M. S. Smith, *The Early History of God, Yahweh and other Deities in Ancient Israel* (New York: Harper & Row, 1987), Morton Smith, *Palestinian Parties and Politics that Shaped the Old Testament* (New York: Columbia, 1971),

Bertil Albrektson, *History and the Gods* (1967), Giovanni Garbini, *History and Ideology in Ancient Israel* (London: SCM, 1988), Marc Brettler, *The Creation of History in Ancient Israel* (1995), H. Saggs, *The Encounter with the Divine in Mesopotamia and Israel* (London: Athlone, 1978), Robert Coote, *Early Israel, A New Horizon* (Minneapolis: Fortress Press, 1990), John Van Seters, *In Search of History* (New Haven: Yale University Press, 1983), Aberbach David, *Imperialism and Biblical Prophecy 750-500* (New York: Routledge, 1993), Bernhard Lang, *Monotheism and the Prophetic Minority* (Sheffield, UK: Almond, 1983), Ahlstrom, Gosta, *The History of Ancient Palestine* (Sheffield: Sheffield Academic Press, 1993), Albright, William, *The Archeology of Palestine*, New York: Penguin, 1960, James Pritchard, *The Ancient Near East* (Princeton: Princeton University Press, 1958).

Greece:

Chester G. Starr, *The Origins of Greek Civilization*, 1100-650 B.C. (New York: Norton, 1991), *The Awakening of the Greek Historical Spirit* (New York: Knopf, 1968), *The Economic and Social Growth of Early Greece* (Oxford: Oxford, 1977), Anthony Snodgrass, *Archaic Greece, The Age of Experiment* (Berkeley: University Of California, 1980), *The Dark Age of Greece* (1971), R.J. Hooper, *The Early Greeks* (1976), Oswyn Murray, *Early Greece* (Cambridge: Harvard, 1993), M.I. Finley, *Early Greece: The Bronze and Archaic Age* (New York: Norton, 1981), *The World of Odysseus* (1962), W.G. Forrest, *The Emergence of Greek Democracy* (New York: McGraw-Hill, 1966), Pavel Oliva, *The Birth of Greek Civilization* (London: Orbis, 1981), A.R. Burns, *The Lyric Age of Greece* (New York: St. Martin's, 1960), William Biers, *The Archeology of Greece* (Ithaca: Cornell, 1980). Donald Kagan, in *Pericles of Athens and the Birth of Democracy* (New York: The Free Press, 1991), Herman Frankel, *Early Greek Poetry and Philosophy* (New York: Harcourt-Brace, 1962), Christian Meier, *The Greek Discovery of Politics* (Cambridge: Harvard, 1990), Jennifer Roberts, *Athens on Trial* (Princeton: Princeton University Press, 1994), Walter Burckert, *The Orientalizing Revolution* (Cambridge: Harvard, 1992).

India:

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Heroic Age of India (New York: Oriental Books Reprint, 1975), contains an interesting cross history of the Indian and Greek epic traditions. Joseph Elder, *Lectures on Indian Civilization* (Madison: University of Wisconsin, 1970), Phulgenda Sinha, *The Gita As it Was, Rediscovering the Original Bhagavadgita* (Lasalle: Open Court, 1987), and Prem Nath Bazaz, *The Role of the Bhagavad Gita in Indian History* (New Delhi: Sterling, 1975).

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4. The Modern Transition

We are back at our starting point in the frontier zone of the Eurasian system. We see the clear 'jump-start' effect in the generation of Machiavelli and the explosion of the Reformation. From this point onwards, the acceleration is pronounced and unflagging until the beginning of the nineteenth century, and generates a revolutionary turbulence, from which emerges the new industrial society we call 'modern'.

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in the Sixteenth Century (London: Macmillan, 1973) J. Polisensky, *The Thirty Years War* (Berkeley: University of California, 1971), Wallace Ferguson, *The Renaissance in Historical Thought* (Boston: Houghton-Mifflin, 1948), Warren Treadgold, *Renaissances Before the Renaissance* (Standford: Standford, 1984), Charles Tilly, *European Revolutions: 1492-1992* (Oxford: Blackwell, 1993),Walter Webb, *The Great Frontier* (Boston: houghton-Mifflin, 1951), Sidney Painter, *Feudalism & Liberty* (Baltimore: John's Hopkins, 1961), Marshall Hodgson, Edmund Burke III (ed.), *Rethinking World History* (New York: Cambridge University Press, 1993), Ch. 4, "The Great Western Trasmutation", Herbert Butterfield, *The Origins of Science* (New York: Allen & Unwin, 1962), H. G. Reventlow, *The Authority of the Bible and the Rise of the Modern World* (London: SCM, 1984), *The Reformation* (Lexingon, Mass: Heath, 1972), Lewis Spitz (ed.), *The Renaissance* (1974), Johan Huizinga, *The Waning of the Middle Ages* (London: E. Arnold, 1924), Herbert Butterfield, *Man on His Past* (New York: Cambridge University Press, 1955) , Michael Adas (ed.), *Islamic and European Expansion* (Philadelphia: Temple, 1993), Jack Goldstone, *Revolution and Rebellion in Early Modern Europe* (Berkeley: University of California, 1991), Lawrence Stone, *The Causes of the English Revolution* (New York: Harper & Row, 1972), Christopher Hill, *God's Englishmen* (New York: Dial Press, 1970), Karl Polanyi, *The Great Transformation* (New York: Frrar & Rinehart, 1944), C.E. Black, in *The Dynamics of Modernization* (New York; Harper & Row, 1966), S.N. Eisentstadt, The *Protestant Ethic and Modernization* (New York: Basic Books, 1968), W W Rostow, *How it all Began* (New York: McGraw-Hill, 1975), Immanuel Wallerstein's *The Modern World System* (New York: Academic Press, 1974), Sanderson (1995), op. cit., Part II, "World System Approaches to World-Historical Change", T. Aston (ed.), *Crisis in Europe, 1560-1660* ((London: 1965), Richard Dunn, *The Age of Religious Wars* ((New York: 1979), T. K. Rabb, *The Struggle for Stability in Early Modern Europe* (New York: 1975), F. Braudel, *Capitalism and the Material Life, 1400-1800*, (London: 1973), David B. Davis, *The Problem of Slavery in Western Culture* (Ithaca, New York: 1966), E. Kedourie, *Nationalism* (New York: Praeger, 1961), David Landes, *The Unbound Prometheus* (New York: Cambridge University Press, 1969), Tom Bethel, *That Noble Dream* (New York: St. Martin's, 1998), G. Ruggiero, *The History of European Liberalism* (trans. R. Collingwood, Gloucester, Mass:Peter Smith, 1981*),* Paul Hazard, *The European Mind* (New Haven: Yale University Press, 1953), Norman Hampson, *The Enlightenment* (Baltimore, 1968), R.R. Palmer, *The Age of Democratic Revolution* (Princeton University Press: 1964), Norman Hampson, *A Social History of the French Revolution* (London: 1963), Georges Lefebvre, *The Coming of the French Revolution* (Princeton University Press: 1947), T. S. Ashton, *The Industrial Revolution* (London: 1948), Eric Hobsbawm, *The Age of Revolution* (New York: 1962), Peter Stearns, *1848: The Revolutionary Tide In Europe* (New York: 1974).

6. CONCLUSION: ENDS AND BEGINNINGS

> Natural selection is credited with seemingly miraculous feats because we want an answer and have no other. There probably cannot be another general answer—certainly no equally broad and basically simple answer. Biologists must do without a comprehensive theory of evolution, just as social scientists must make do without a comprehensive theory of society.
> Robert Wesson, *Beyond Natural Selection*, p. xii

Our expedition through world history is complete, and our discovery of a resolution to the riddle of evolution springs from a giveaway pattern of non-random dynamism in plain sight, one whose sequential logic shows a meta-historical directionality that in turn demands reopening the question of teleology. The macro effect shows dramatic evidence of 'self-organization', minimally, and more cogently the action of mysterious 'global bio-fields' operating over time and space, and almost biospheric in their range. These

bio-fields must act globally, over tens of millennia, scan their action areas, and seed ultra-complex elements of culture, i.e. art, religion, literature... That provokes a crisis with our 'brown paper bag' usage of evolution, but the term remains the basic descriptive category of choice.

> **A Failsafe** We should move at once to replace natural selection with an empirical chronicle based on our frequency hypothesis, which is very strange, but very efffective, and is actually far less speculative. This in turn leaves us highly suspicious of accounts of earlier evolution, as our framework could be easily adapted to those earlier cases, given evidence. We should cease and desist from Darwinian assumptions until we can explain this non-randomizer. The Social Darwinist impulse is blocked from the start. This stand-in frequency interpretation is a useful, and accurate empirical substitute and approximation for a 'theory': theories, we suspect, will always be wrong for a long time to come. This approach creates a failsafe, and a useful insight into the overall form of evolution. Challenge this all you want, but you can never recover selectionist explanation for world history.
>
> We must face the reality that evolution is highly elusive, super-smart, hypercomplex and defies reductionist scientism in the action of mysterious global bio-fields that mimic design action. Our frequency hypothesis catches the tail of the tiger, just barely, and lets us follow dynamics without 'still another theory', doomed to be wrong. The first requirement, a mathematical science of teleology doesn't exist yet. We must therefore consider if our thinking isn't upside down, and aggravated by Social Darwinist illusions.

All this provokes a question about a Gaian interpretation of evolution. The data of the Axial Age makes this global aspect clear. Within the short span of data at the centuries level a definite process of developmental evolution is overlaid on the historical chronicle. This discovery is a reminder that we cannot arrive at an understanding using the canons of science in the abstract to foreclose on what we should find. For what we find is an unexpected complexity that is, however, the process required to do 'evolution'. If the result seems strange, it is nonetheless based on simple empiricism using simple outlines of world history, and we can drive the gross oversimplifications of Darwinian myth into the skeptic's folder. And it makes sense because it 'solves' the problem of how something could evolve, without the mystifications of speculative Darwinism. Our 'brown paper bag' usage of the term 'evolution' is correct because we defined it that way, because it fits developmental data, but we can see that that data is bursting at the seams, asking for a deeper understanding, one that we can't easily provide.

Emergency Theoretical Failsafe

As we can see, we are in a critical muddle of theories. We cannot do with theories of evolution, and we cannot do without. Armed with Darwinian assumptions, men will start killing each other in the name of evolution. There is no simple eugenic program possible, however, for man as he is.

Thus our theoretical failsafe provides a theory substitute on the spot and effectively blocks natural selection ideology. It is important to see that selectionism simply misses the real source of evolution. Our substitue isincomplete, but that doesn't matter. We can see that it represents evolution, even if we don't understand it. A non-random pattern in the middle the mix throws Darwinian logic into confusion.

In fact we can see that natural selection, if anything, if retarding evolutionary progress.

We need a clear awareness of our ignorance, but with a sudden new understanding, still partial, based on our study of history. The solution is to consider the historical template we have found as a middle ground of rough approximation to the spectacle of the fossil record, aware that it can be misleading. But that evolution occurs in rapid macro template-realizing phases followed by micro phases of working out details makes sense in the most obvious way of the mysteries created by Darwinian distortions of thought. Our analysis enables us to make this rough approximation to the evolution question by looking at history. We have suffered enough confusion via the reductionist genetics fallacy. Evolution is a noumenal unknown whose outward phenomenon is nonetheless visible as a macro driver operating in an oscillation that carries a teleological factor. And this process seems to be the realization in real time of a hidden template against which the micro aspect of evolution tends to approximate. This double action is very similar to the original intuition of Lamarck. The stunning beauty and complexity of this process is still mysterious to us, and we can see the way it could be confused with theistic action.

Design 'hallucination' We must proceed with caution, since the data induces an overwhelming sense of 'design' in its fine detail. The effect of action *over time and large geographical regions* was the Israelite definition of divinity, so we must be careful to distance ourselves from theistic speculations. Our system analysis enforces our neutrality. Let us note that a divinity would use an 'engine', to evolve a cultural frame. So our systems analysis is actually the right approach. The point is that theistic speculations were never our purpose, and will completely distort our findings. And this statement is not an atheist assertion. What we have often looks like something out of science fiction, the reason for our strict use of simple outlines, and periodization. We can only help the reader to 'see' the macro effect, and invite him to apply the term 'evolution' as a first step. Replacing that usage with some new concept is possible, but requires care. In fact, the evolutionary usage makes the most sense. But it is a very subtle and advanced kind of 'evolution'!

Fig. 6.1 Superman, the parodies

Our findings are of fact, while those of natural selection are misleading on all counts. Some will protest that this is 'historical evolution' at best, and tells us nothing about evolution in deep time. We must refrain from the speculative extensions of our findings, but at least we can raise the suspicion that human emergence is the result of some analogous macroevolution of the type we see in world history, making Darwinism a dead letter. Science must begin with at least one clear example of a phenomenon! And the data of world history at close range and at the centuries level appears to be the only such data set we have. What are we to say, then, if this data shows us the non-random next to the Darwinian obsession with the random?

Fig. 6.2 King Kong poster

Last and First Men The title of the sci-fi classic evokes also the notion of Nietzsche's 'last man', and also of the 'overman'. But our analysis shows that this 'creature' is as yet unknown to us, and cannot be found by projects of applied Darwinism! Man's future evolution is not yet

Our systems model succeeds, but turns spooky!

We began by listing a set of things any type of 'evolution' must do:

> From the Introduction: we said that, random evolution
>
> 1. must skirt severe improbability, as the scientist Fred Hoyle warned,
>
> 2. overcome without a template, system memory, or feedback control the inherent tendency to peter out, deviate, or retrogress,
>
> 3. operate in partial steps to construct complex objects at random,
>
> 4. effect infinitesimal, geographically isolated innovations into species level change over large regions or whole species.
>
> There are very few solutions to this set of contradictions: one is that of an explicit evolutionary driver, a sort of macro process that operates *intermittently* over the long range, and acts on wholes via transitional areas of reasonable size.

Remarkably, our data conforms to this solution very closely, and a finite transition model of three-century transitions in a frequency sequence about 2400 years in wavelength is highly correlated with world history:

3300 to 3000...first transition
900 to 2400...second transition (Axial Age)
1500 to 1800...third transition

This approximation works very well. However, beyond the obvious action of a 'feedback' system, this is supersmart 'evolution' that must scan its space of action, act globally, remember its previous steps, and jump to a new starting area! The systems model will strike many as requiring a design argument. We have a problem: the Israelites saw that such a system was IHVH (not god). That was ethnocentric. Our finding is global, and includes the secular. Your move! Proceed with caution!

under his own control, in part because man is not fully in control of himself. The reality of the 'last chimpanzee' becoming the first man is via the potential of self-consciousness, present from the beginning! The superman comics version seems a bit primitive![1]

6.3 H.G.Wells' War of the Worlds, 1906

Again, one might persist in feeling that this is not 'evolution'. Indeed, such a fantastic spectacle of macro action over tens of millennia in a fully global field with fine-grained effects down to the details of culture would strike many as bursting from the seams of definitional 'evolution'. But as we noted at the start, the term is simply 'a brown paper bag' to contain a data set, here the clear evidence of a developmental sequence. From there, the suspicion is strong that this 'evolution of the some kind' is the 'real McCoy'. By all means question this usage, but note that the Darwinian usage has gone bankrupt.

We might elect to replace that with a better term, but, upon reflection, that would be 'evolution' all over again.

> **DMS?** Try as an exercise the term 'developmental macro sequence' for the term 'evolution'. Then consider if a similar DMS accompanied the Great Explosion. We may as well use the term 'evolution', qualified perhaps...DMS-evolution. What we call it is secondary to a clear picture of what we are referring to. We cannot simply throw the term 'evolution' at many millions of years, call it evolution, and declare natural selection the mechanism. As our data warns us we can miss what is happening altogether.

We aren't out of the woods yet, however, since the confusion of 'evolution' with theistic affirmations, a gesture fully Biblical in the intuitions of the Israelites as to the 'Axial Age', will confound those who see the way the

1 *Last and First Men* by Olaf Stapledon (Kindle Edition - Nov 16, 2011). Keith Ansell-Pearson, *Viroid Life: Perspectives On Nietzsche and the Transhuman Condition* (New York: Routledge, 1997).

What is evolution?

Our findings strongly suggest that 'evolution' is a combined 'macro/micro' set of processes, that the macro process is directional, intermittent, and a guiding factor in 'meta-evolution'. Its teleological action reflects an unknown template or 'attractor' in a non-standard dynamical system operating in relation to a planetary body. Such a system must be able to clock itself over huge intervals of time, and to act on globally distributed fields in units of whole species. A distinction of a noumenal and phenomenal aspect is indicated (despite problematical issues with Kantian frameworks). The suspicion is strong this situation is the result of the 'fine-tuning' of life discovered by physicists. The sense of 'design' is often strong, but the 'double take' between design and a dynamical system is constant. A theistic design argument seems to fail, however, since such a designer would not operate via a transitional intermittency, but would show constant interaction. The best approach to evolution is to sideline theories and construct evolutionary chronicles, the actual behavior of most biologists in practice. Real evolution may be so fast acting that we would not observe its effects in deep time. And its effects, like those of art, may be unique.

The question of human evolution, however, remains unsolved by this or any other theory. As life evolution yields to mind evolution, the nature of the 'evolutionary' changes. Our historical analysis probably gives us a hint at the way in which human speciation first occurred, in fast sequences of transitional action in localized core areas, probably in Africa, followed by the micro action in the expansion of man globablly in the 'Out of Africa' scenario. The questions of human self-consciousness, ethical action, and mind cannot be declared solved by Darwinian theories. No direct observation of the evolution of this entities exists. A look at the Axial Age shows that without data at the centuries level we could miss high-speed transformations entirely.

'macro effect' operates with almost miraculous force across history. A closer look shows, beyond the clear evidence of 'design', that the naive theistic hypothesis fails, because an omnipotent divinity would not operate after the fashion shown, which shows, we suspect, a dimension to greater nature that is rich in a new and different mustic than that to which we are accustomed, or to which the archaic theist laid claim. That such a data set should respond in first halting steps to our humble systems analysis shows the rightness of our approach, even as it points to something far beyond our current level of understanding. That said, we have found the original indication for the sense of the sacred in history. We need to bypass theistic/atheistic debates, however, because they are a distraction from all sensible thinking.

Fig. 6.4 Last and first men: over the top, Somme, 1916

We should recall with grim finality that the evidence suggests that naive theism is a degeneration of that higher 'pointing' to the unsayable, IHVH, which expresses the reality of a higher

Fig. 6.5 Last and First Women

The finite transition model highlights the retreat of the Axial period patriarchal age, and the advance of women, as with the appearance of Wollenstonecraft at the Geat Divide, a spectacular timing we are now familiar with...

power beyond the primitive beliefs of polytheism and, it must be said, monotheism. We have also indicated the issue of natural demiurgic systems that act via space-time. Religionists have forgotten their own theology, with its Biblical reference to 'elohim'.

Fig. 6.6 Paleolithic Venus

The reality, known in silence, beyond the cults of god reference, warns us that man is still too primitive to express 'god' beliefs! We can see that our 'brown paper bag' references to 'evolution' really hit the spot. A further suggestion is that a neutral 'systems analysis' can allow us to refer to what

Our data generates an overwhelming sense of design. We found this by using systems analysis, not by theistic speculation. Compare the account of the Old Testament with the plain macro analysis of Archaic Greece: the latter is far superior, but now looks 'designed'! And our sense of design is global, and transcends of the myths of revelation of the monotheisitc Axial Age religions. That said, the Israelites detected the macro effect.

Note that this design sense applies with especial force to the modern transition, its ideologies, and revolutionary politics. The traditonalist anti-modernism of much religious design mythology is seen to be archaic confusion. We must reinvent design interpretation via a neutral systems analysis. The philosopher Hegel was the first to sense this, but produced a systematics that is arguably metaphysical. Our better approach carries his insight to a deeper level, and shows how modernity is really another 'Axial Age'.

Our model resolves the beautiful way in which the religions of the Axial Age spring as from seed to blossom in the middle period, Christianity and Islam, and in Buddhism in the Orient. The close connection can be seen in the way the phase of Mahayana and the rise of redemptive Christianity are synchronous in phase and connected in content. The enigma of the 'god/man' in Christianity has been the source of endless confusions, but is a simple and elegant symbolism of the action of the macro and micro in a meeting in time.

These religions are Axial Age productions, prodigious in scope, and are perhaps destined for recasting in the wake of the modern transition. The attempt to replace them with modern scientism is not likely to succeed.

We should also consider the existence of demiurgic powers in the realm of nature, as a side hypothesis. A strong suspicion arises of the existence of life-forms beyond the framework of body-mind climaxed in man. This remains a mystery for future understanding, and this thinking can, in any case, be a lightening rod against false speculative theism which as we can see has distorted the Old Testament's account with primitive design logic. The reality is almost more spectacular.

seem like 'design' issues without the superstitious muddle of supernatural agents. The argument by design can wreak havoc with the detailed complexity of what our developmental sequence shows. With no bias toward atheism, we must insist that arguments by design result in fallacy. Systems analysis, however ludicrous at first, does better. This is not an effort to make the case for atheism. The theism/atheism debate has failed on both sides.

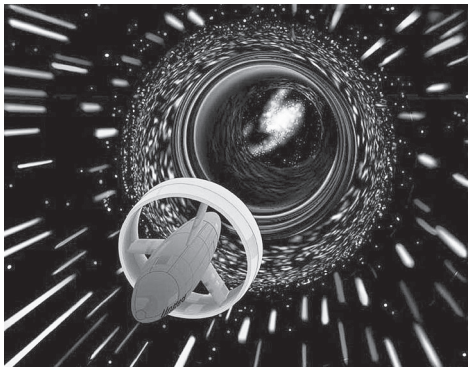

Fig. 6.7 Entering a wormhole, NASA

There is another complication here, one that distinguishes what we have found from the greater universe of discourse on 'evolution'. We have focused on human evolution. And this is a highly differentiated form of the 'evolutionary', and speaks to our notion of the 'evolution of freedom'.

> **Another objection to 'evolution'** It is possible to dissent once again from the use of the term 'evolution' as we consider the way in which human speciation enters the domain of 'mind' and higher consciousness, the ground of the potential for 'free will'. This seems to be a path leading beyond nature. But the better suggestion is that greater nature encounters simply another discontinuity on a par with the discontinuity of life, and that man is on the threshold of a deeper dimension of nature. Once again our 'brown paper bag' usage seems right!

This perspective required that we distinguish a system and the agents inside it. Historical evolution shows creative realization by man, but in the context of a larger pattern of evolutionary unfolding. The question of free agency complicates the analysis, and must collide with the factor of teleology as human self-awareness of man's evolution rises to the fore beside the higher determination of evolution. But this is, perhaps, as it should be, as man steps out of evolutionary passivity into creative free history. Nature leads man to a threshold, and stops. The rest must be up to man. And that is a dangerous passage. The distraction of Darwinian nonsense is throwing cultural thinking off track with a confusing red herring: the Social Darwinist gambit of 'selfish genes' and the science mythology of evolutionary psychology. At the same time the age of the gene was perhaps a rite of passage, one that has enriched our understanding, without, however, disclosing the full secret of evolution. We increasingly suspect, and here the study of history is most useful because

it simply ignores genetics, that evolution operates at a higher level than the biochemical, which follows its own 'microevolutionary' circuit, in response to a larger framework of directional, indeed, progressive evolution. *Homo sapiens* touches on a factor of 'will', but cannot separate that from his 'common ego'. The issue was touched on by Schopenhauer.

Alife, Seti, An eerie silence The questions of evolution await some resolution of the search for alien life. The relationship of theistic, alife, and design arguments is confusingly close. The (no doubt misleading) impression of superadvanced technology in the macro effect is startling. We cannot easily solve the human evolution question without understanding the riddle of consciousness, and its cessation as depicted in Buddhism. Nirvanoid states are intractably obscure and may be beyond human obervation.[2]

Fig. 6.8 Jain Teertanker, another take on last and first men

The question of what evolution is has thus remained the great unknown for science. Here the study of history offers a hint, and a glimpse. But we suspect the 'secret is out', in broad strokes, once we read the historical clues. Once we finally decipher the evolutionary enigma in one instance, its real meaning and action in general become more understandable. There can be no final certainty in this, and we cannot rotely apply our findings to 'general evolution'. But we do expand our sense of reality, for we see that non-random evolution is real. The Darwinian fixation has always been a concealed confession of ignorance.

No simple 'law of evolution' The fixation on natural selection was indulgence in gimmickry. The real 'force' of evolution is a complex that can shift its action according to circusmstance in a creative action that often mimics art, with unique non-repeating effects.

A further realization is that the surface phenomenon is the outer aspect of a deeper process beyond observation, whose outer manifestation of directionality points to a hidden teleological mechanism. It is not surprising evolutionary questions should have proven so confusing. The attempt to 'do science' tends to move in the wrong direction.

A Noumenal Mystery One problem with evolutionary theories is the straining after explanation, with primitive bits of theory. In fact,

2 Paul Davies, *The Eerie Silence: Renewing Our Search for Alien Intelligence* (New York: Houghton-Miffllin-Harcourt, 2010).

it is impossible to get the matter straight, and the dangers of lunatic theories as applied evolutionism is severe. Our discovery shows something so stupendously subtle and complex that we are forced to abandon universal theories. It is beyond science fiction. Our task is so hard it becomes easy: the mechanism is veiled from us, and we remain with the easier task of simply observing evolutionary sequences with simple models showing 'how' evolution happens. The resemblance to a Kantian analysis is strong: we detect the phenomenon as a dynamic system in frequency, but we never we the deeper source as 'teleology', just as Kant predicted. His premonitions were remarkable.

Self and noumenon A similar consideration involves the question of human nature: man's greater 'being' involving factors of the 'will' have a noumenal aspect, and man's own interiority is not freely observable. This factor makes any consideration of purely temporal evolution problematical.

We should acknowledge that invoking the 'noumenon' provokes a crisis in our use of science because it suggests that the space-time matrix is in part a construct of mind, thus leading us beyond standard paradigms into the unknown realm pointed to by Kant. This may be itself problematical, and the Kantian formulation must be considered a set of hypotheses attempting to resolve metaphysics with metaphysics, on the way to a new science beyond neuroscience. But this perspective solves at once many of the paradoxes created by reductionist dogmatism, and shows why 'soul' beliefs are intrinsic, yet blocked from direct verification–so far.

Despite, or because of this elusive aspect of theories, we determined to remain empirical, and explored a rich structure of dynamic cyclity, unfortunately over too short a range to close on a full theory. We began by looking at the evidence of the Axial Age by itself. This massive discontinuity in plain sight in our historical backyard gives testimony to the global signature of evolutionary action, and its high-level character, beyond the purely genetic. The entire phenomenon of the Axial period gives us the entire set of clues to 'what evolution is', or so we must suspect. Quite apart from anything else it induces a reality check, with a challenge to the physicalist assumptions of standard science.

What we suspect... Our study leads us to suspect that 'macroevolution', seen in an intermittent sequence, is itself intermittent, and that it 'switches on' according to an unknown timing mechanism of greater teleological nature. That it must have switched on to at the dawn of *homo sapiens*, then leaving man to globalization, then switching on again in

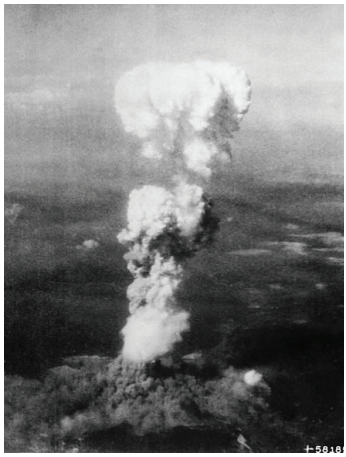

Fig. 6.9 Hiroshima

the Neolithic. As man becomes aware of its action, it switches off once again, leaving man to complete the 'evolution into freedom' of his final, and real, speciation as man, the fourth and last chimpanzee, the last, and first man.

One problem is the persistent confusion over the religious interpretations of the Axial period, a trend perhaps set by Karl Jaspers whose religious philosophy of history tended to put too much focus on the theme of an Age of Revelation. But we have found that this 'age of revelation' was far more stupendous than he realized, far more than the tale of the Israelites. We see a cornucopia of seemingly revelatory effects. And there, as we found, the instance of the Greek Axial period is clearer, more documented, and, in the end, a better guide to the Israelite phenomenon than the Old Testament which as become a case of epic literature.

Fig. 6.10 Warriors of the *Iliad*

This said, the case of the history of Israel, next to the comparable analog in the case of India, is a challenge to conventional secular thought, and the timed episode of religion formation in a dynamic interval, leading to the seeds from which several world religions is more than remarkable, it is evidence of a higher power operating over time. But we must be wary of theistic language in depicting this. It will produce confusion and misinterpretation. The humbler idea of a dynamic model can be a neutral way to carry the data prior to interpretation, as an injunction to look at, and 'see' history in action, this being given a carrier metaphor of 'evolution'.

The data of the Axial Age is sufficient as a challenge to Darwinian confusions on its own terms, and can be left as the magnificent mystery that it is. But the data clearly shows a larger context, and makes no sense in isolation. Its place in a series of 'axis points' is suddenly obvious frrom high-level observation of world history as a whole. We stumble on a system operating in long-range steps, and we can see this evidence of sequential directionality in purely empirical terms. We don't have to connect the dots with any kind of theory. But we can 'see' a system in action, however we

understand it. That pattern is empirically overwhelming and can give us a rough sense of the way an evolutionary process really works. The result, however, will generate design thinking in many. Indeed, confusing 'god' and 'evolution' is possibly inevitable. We must discipline ourselves to some systems thinking (a generalization of causal thinking, which breaks down).

> **Some systems analysis** If we came across a 'machine' left by some advanced species we might be unable to say 'how it worked', but we could apply simple systems analysis to first see what it does. This resembles our situation with the 'macro effect'. The data of world history responds to a trial by systems analysis, and passes a simple frequency test. We can see what the 'macro effect' is doing, but we cannot easily say how.

Systems analysis is neutral: dynamics or a design argument can enter, although 'design' arguments must fulfill a high standard of proof, and there is none, except the feeling of 'spooky design hallucinations'. To be sure, we cannot resolve the question of evolution in all cases,from the origin of life onwards. But our data provokes a reality question. We see how a teleological system works in one instance, with clear evidence such things exist in nature, and a direct indication of the reasons why it is so hard to detect and understand. There are two levels, and we tend to see only the randomized substrate. From this situation a tentative theoretical interpretation, complete with model, can be constructed, and this macroevolutionary formalism, strongly echoing an idea of 'punctuated equilibrium'.

And that remains controversial, but the suspicion is that we have stumbled on the template for earlier human emergence: a fast series of directed transitions. And a hint is given for all the cases where standard Darwinism confounds itself with one-level analysis. Let us venture one use of our hint for the Cambrian mystery. It is obvious from the way our model pokes our reality sense what the solution to the Cambrian muddle must be:

> **The Cambrian, again** Our model cannot be used out of context, but it suggests at once the reason the Cambrian confuses us. The existence of two levels, an unknown potential or template, and a randomized pool of realizations. We don't even need to know the details to see how our model suggests a way to sort out the confusion. The play of teleology and randomized 'experiments' with animal forms finally stabilizes as the chronicle of the animal kingdom familiar to us.
>
> **What is Life?** The title of a classic by Schrödinger is a question still unanswered. And we must suspect that a related unknown, What is mind? correlates with the first question.[3]

3 Ed Regis, *What is Life: Investigating the Nature of Life in the Age of Synthetic Biology*

The Axial Age: Religion, macro and micro

The phenomenon of the Axial Age shows us the solution to the riddle of evolution, but instead has produced a whole series of false interpretations. The only way out of the morass is to consider our frequency hypothesis taking the data as a set of discontinuities in a timed sequence. Then we must carefully study the differentiation of effects in different cultures. It is not a 'common philosophy' applied in different ways, but parallel transforms of source areas. To try and find a common denominator as an 'Axial Age' philosophy won't work. We see contrasting opposites and a balance of diversities, increasing the future potential of the system. The 'evolution' of religion is powerfully illustrated in the way a 'macro' effect takes up the streams of religious culture and amplifies them, in two cases, India and Israel/Persia, into what will become materials for world religions. The Indian case is especially significant because a tradition of great antiquity, the so-called Jain, remorphs on schedule into Buddhism, in the wake of the terminating sequence of teertankers, concluding with Mahavir! The sudden coalescence of Persian and Israelite monotheisms at the conclusion of the Axial interval (by our measure) is a spectacular effect, leaving sociological casusation theory far behind. As the Isreaelites well knew there was a higher dimension to what befell them.

It nonetheless remains the case that Archaic Greece, our putative source of modern secularism (but in a flowering of polytheism as 'art religion'), is the clearest exemplar of the Axial effect. Its massive cluster of innovations coming in and going out with a spookily exact schedule is far more 'miraculous' that anything portrayed in the primitive Old Testment. The riddle of Christianity and Islam show a beautiful resolution as Axial Age seeds come to full bloom in the 'middle period' of our sequential series.

We will say no more here, beyond the assertion that something is missing in the usual accounts. There is no going back from what we have discovered. Our basic interpretation is that world history, using a little systems analysis, passes a frequency test, and that the only interpretation of this is the revised terminology of evolution, macro and micro. A closer look at our pattern shows this is more than an arbitrary use of the term 'evolution': our data is so coherently structured as to be more probably the real usage, one that we should consider relevant to earlier stages of human emergence. Our case, however, is slightly unique because we have adapted our terminology to describe the 'evolution of freedom'.

One of the problems with our result is the way it begins with the obvious, but then provokes what seems like an implausible solution. Let it remain so. But it is the standard view that is unbelievable. The one unlikely solution to the standard turned out to be right in front of our noses, once we know where to look. We can linger near the completion of our prime objective: demonstrating a non-random pattern. The full understanding of that result requires deeper study. But we have considered a series of demands for an evolutionary model or theory, in advance. Then our data fulfilled those requirements exactly.

Random evolution is a 'crank theory'. But if that it is the case, then the solution to the paradoxes is going to be something unexpected. In the Preface we considered a series of problems with random evolution. We can see that our result answers to all of these difficulties, but in the process suggests something almost spectacular. Let us consider the problems in our list:

1. Random evolution invokes the improbable. But we see that our 'derandominizer' contains a hidden source of action that increases the probabilities of various outcomes. There is a hidden driver at work.

2. Our sequential logic constitutes de facto 'feedback' in which a system returns on itself to reset direction, with 'system memory' of its previous action.

3. As an 'intermittent' macro effect our 'evolution machine' obviously operates in partial steps, to create, not biological, but cultural entities.

4. the final, almost spectacular aspect of our macro sequence machine is the way it answers to the most difficult problem: geographical action. Our transitions are short intervals or 'axial ages' acting on restricted gerographical and cultural regions, which then expand into their environment by diffusion.

Every single one of our problems is answered by the non-random

(New York: Oxford, 2009).

The data we have found should give religionists pause, and also a robust context for a major upgrade. The Axial Age suggests that religions remorph themselves at each stage of the general sequence effect. And the Reformation shows just that. The completion of that transformation was suggested by the avatars of that transitional 'axis' point, the phase of German classical philosophy, with its intuitions of the final phase of the Reformation.

Armed with our portrait of evolution in history, Christians can surely find a way to recast their legacy for a secular age, taking a hint from Kant, that issues of metaphysics haunt their theologies, and that the dialectic of theism and theism is the road to their reconciliation in 'spirit', the 'void' or, best, the IHVH pointer so brilliantly intuited by the great sages of Axial Israel, and lost in the tide of vulgar theism that ended up muddling the critique of polytheism with a Pantheon of the one god, Zeus in fresh disguises. We can offer no safe guide to 'theistic' distortions of our data, but the design sense is so strong many will demur at systems analysis. Restrain idle speculations, and recall the warning of those who merely pointed to a mystery, IHVH.

Christian theology is a creation, not of an Axial Age of Revelation, but of the politicians of the later Roman Empire, and this result has no ultimate canonical status. The symbolism of the 'man/god' was correctly reduced to sense by Hegel. The mystery of the prophet 'Jesus' can find a sufistic essence and history. Religion in Reformation is eminently secular, and the attempts by scientism to banish all religion from cultural life have missed the point that if the concept of religion is itself recast it can be as modern as anything in science. The legacy of political liberalism (and cousin socialism), free will and the idea of freedom, and the questions of ethical action, demand a social religion that is faithful to the demands of the sacred without the preposterous anti-modernism of traditionist phantoms. The legacy, beside Isrealite cultism, of Indic buddhism, Chinese social philsophy, Persian zoroasrianism, Indian Buddhism, and Greek art/religion, stand as 'last and first' signs of the past rediscovered in the future of a religion that can survive the grim recycling of antiquities in the progression of Axial Ages.

pattern we have discovered. This answer is very satisfying but it requires getting used to.

> **Better than science fiction** We have tried to clarify the status of our discovery by suggesting that only a very exotic process could actually constitute real 'evolution'. Once we suspected this, we went in search of it, finding, to our stunned surprise, just this kind of dynamic. The result tends to seem like the advanced technology of a super-advanced species of aliens, at first. But this sense of 'design' tends to wane with the increasing sense of the 'mechanics', albeit super-complex, of the evolutionary chronicle we have found embedded in world history.

Our result cannot be a standard theory of evolution, because it shows directly the action of values at the core of the evolutionary or developmental process. And this answers to all of the intractable confusions of Social Darwinism generated from theories of natural selection. The debate over evolution has suffered from the agendas of those attempting to control the social ideologies of secular culture. The meaning of secularism has itself fallen victim to a false dichotomy of science and religion. Further, the attempt to constrict science itself to the narrowest brand of scientism has driven many into a kind of postmodern revolt against modernity itself. A broader view of the rise of the modern suggests that neither reductionist science, nor Darwinian fundamentalism, nor, for that matter, the economic ideology of capitalism can be taken as defining secularism. Ironically, the rise of the modern world has shown itself to be an evolutionary incident in the macroevolution of world civilization.

Another dramatic aspect of our discovery lies in the global character of the action, and the direct action at the species level.

> **Speciation as macroevolution** The confusion of Social Darwinism arises from the obsessive focus on natural selection, taken as the sole driver of evolution. But we can see that speciation is most probably a macroevolutionary process operating like our sequential system over time and place. We can see that localized eugenic action could never produce a new species of man.

The issues of Social Darwinism haunt sociological theory because Darwinian theory sends a suggestion that social subsets in competition will become, via conflict, the vanguard of a future species. This toxic delusion is gainsaid by what we see: the direct action on a totality, a whole species.

Fig. 6.11 The Divided Kingdom

Axial Age Israel is the most striking case of 'spooky design' hallucinations. It offers a pattern of 'coincidence' that bursts beyond the framework of sociological mechanics. The 'disapearing kingdoms' drama of Judah and Israel and the last minute braiding with Persian Zoroastrianism is a feat no standard theory of any kind could explain. But the 'theistic' mythology that emerges is itself output of the 'system in action'! A new 'secular' interpretation of the data would actually be more remarkable than the Biblical version. We must proceed with caution, since the whole field is an invitation to error.

Transformation at the species level exposes the ideology of competition for what it is, the ideology of economics applied to evolution. Conflict and competition are real, but they are not the driving forces of evolutionary advance.

> **Ends and Beginnings...**We see that the end of our sequential effect in world history is really a new beginning, and this obvious 'paradox' is a fitting conclusion to our quest for historical evolution: System action is replaced by free action. This perhaps is the reason for much New Age thinking about 'conscious evolution'. But we must remember that the macroevolutionary process we have detected remains far beyond the capacity of man as yet, requiring a technology that can operate over a minimum of ten thousand years, with global scanning, and memory: a task for a super-advanced culture. Human self-evolution into history must be a humbler discipline of self-awareness in action. At least the way beyond Social Darwinist eugenics is clear.

In the confusion over theories of evolution, the public has been subjected to poorly conceived theories, as a set of unobserved abstractions that correspond to a definition of 'science'. These are, ironically, far too primitive to deal with the ultra-complex system that we uncover behind world history. We have found the way out of this dilemma of theories by looking at world history itself. We consider in some fashion that 'evolution' lies in the past, and that history somehow begins in its wake. But we have seen that evolution and history are more closely related. Guessing that they must be two aspects of the same thing braided together, we deduced the need for an overlapping of two levels, and to our surprise found precisely this phenomenon. Many of the paradoxes of evolution find a resolution, and we find the secret to the real dynamics of human evolution in the way a set of transitions express the hybrid: evolution/history.

This very simple, and elegant, framework, based on real evidence, gives us as if for the first time, a kind of 'glimpse' of evolution, and a set of possible hints as to the emergence of man. It also suggests the reason the fossil record in deep time confuses us: it is an overlay of two levels, and the confusion of the two has befuddled understanding. But we are in the presence of a new mystery: the unseen source of the evolutionary template acting in what appears to be a teleological manner. We suspect the fine-tuning issues now known to physics to be telling a more advanced story of physics.

Our broader view of the meaning of evolution can serve as a warning, and a defense against these lunacies of the Social Darwinists. Our historical

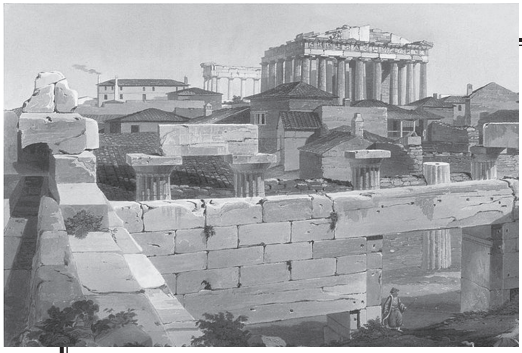

Fig. 6.12 Acropolis

One of the most significant patterns of 'coincidence' in our sequential pattern is the double appearance of democracy at the division point of two successive transitions. Is this really coincidence?

Everything about our display of the non-random suggests that the appearance of 'freedom' in history is non-random. Which leads to a riddle of causation. Freedom cannot be caused, but clearly it is. The solution, which history shows, is that a 'freedom generation' process is followed by a 'freedom realized' phase. This means that we must summon up our resources of consciousness to perserve in the gifts of time! The brevity of Greek democracy is suddenly clear, next to the long decline of the Roman Republic.

Note that our distinction of 'system action' and 'free action' works perfectly here, and the macro and micro aspects of freedom emergence are clearly indicated by the facts.

Our search for evidence for the 'evolution of freedom' has produced one dramatic example indeed.

Fig. 6.13 *Liberty Leading the People*, Delacroix

The modern democratic revolutions are seen to be strongly correlated with the modern transition, and it 'sgreat divide', another of the 'spooky coincidences' in our overall pattern.

We thus find that the 'secular' is as 'miraculous' as the case of Axial Israel! In fact, the category of 'evolution' is the best!

framework can serve as a way to ground evolutionary thinking about human culture in a realistic empiricism. Explanations, thence theories, tend to be metaphysical, but chronicles of history simply show what is the case in a direct manner. Thus, we cannot easily explain the Axial Age, but we can see the massive discontinuity and associated innovations, and we can further conclude this to be 'evolutionary', by definition of terms. We can thus proceed without a 'theory of evolution' to make use of an evolutionary model of world history. Everything we have said is thus directly demonstrable as a set of facts, whatever the interpretations we bring to them.

> **Spooky 'design' coincidence** Our perception of macroevolution in world history is almost 'spooky' in its fine-tuned detail and direct action on the highest forms of culture. The correlated action of things 'falling together' (coincidence) is unnerving. Some will find that it defies understanding how a mechanical set of forces could produce such sophisticated effects. They are probably right: 'evolution' is not a branch of physics. The sense of design is strong, but perhaps hallucinatory. The opposite is also true, the effect shows effects uncharacteristic of divinity. We have been here before: the perception of the primordial Israelites, or their hidden prophets behind those prophets known to us, was that a mysterious, perhaps 'divine' but nameless action was at work in history. This vision soon decayed into theistic mythology at its worst. We have confirmed the original insight! And we can see that the later style of theistic interpretation would undo our hard work of reconstructing the original vision. We must in haste move beyond that legacy to our different perspective, and look beyond the duality of mechanism and design to something that defies our still primitive understanding.

A powerful sense of the 'voices of silence' lurks behind our historical discovery, but, ironically, an open but atheist or agnostic perspective, taken loosely without dogma, would almost be a better stance toward seeing the data with a clear vision beyond the instant destruction of understanding that comes from theistic mythologization of divine omnipotence voiding (and falsifying) the work of explanation. Enough said: we have an insight into a reality beyond the dead matter of physics.

> Neither the Old Testament nor the Biblical criticism of atheist humanism can properly account for the phenomenon of Axial Israel (ca. -900 to -600). But the Bible correctly intuits a mysterious action over a geographical region, our sense of a 'transition'. Our result outstrips the myth and is almost more remarkable. It can help to ground study first in the parallel study of Archaic Greece to get a sense of how this works, and then only return to the often misleading accounts in the

Theory and Ideology Redux

We began with a critique of ideology, and a consideration of the fact/value dichotomy and the role it must play in evolution. And now, with our discovery of evolution in history, we suffer an embarrassment of riches as we see the profusion of religious, philosophical, artistic, and political forms processed by our macro generator. This creates the problem that our 'science' is no longer value-free and our data shows us the clear emphasis on ideological transformation in the transitional phases of our sequential system. This is why we have left theory: our strategy is 'evolutionary razzledazzle' in real time, using approximate versions of 'system action' as our 'free action'. As the Old Testament shows, that 'free action' can create at best a distant echo of the deeper reality. A good example is the explosion of liberalism in the modern transition, and its rapid advance against political tradition. This leaves us with an ideological thesis mixed with dynamics. We can no longer avoid this, and must simply try to find the true source of the 'dialectical' spectrum of thought under transformation. There is an unknown higher ground that transcends the realizations of particular ideologies, and this demands a new form of philosophy, one perhaps sensed by Kant, and Hegel, who tried to understand, for example, the 'historical trend/bias' toward freedom, as with our take on democracy. And Kant's Challenge, as we have noted, attempts to reach this higher ground. As Hegel makes clear, without understanding our more complete model beside his mystical 'Geist', there is a trend toward 'freedom in history', and we have dramatic evidence of this, in its spooky timing. The so-called 'great divide" at the end of the modern transition is thus packed with ideological transformations, and the very nature of 'revolution' becomes 'evolutionary' in our sense.

This will not square well with traditionalist reactionaries, appalled at the thought that modernity is else than a degeneration, what to say of 'value-free science'. We should embrace and respect the clear ideological trends of meta-history, even as we attempt (and here Kant begins the search) to find a higher ground to this historical dynamics of ideology itself. Kant's 'challenge' was a first step here.

biblical chronicles. The findings of archaeology can of great help here as they allow the separation of myth from fact. The result shows how 'macro' processes create religions in the mainline sequence of its action.

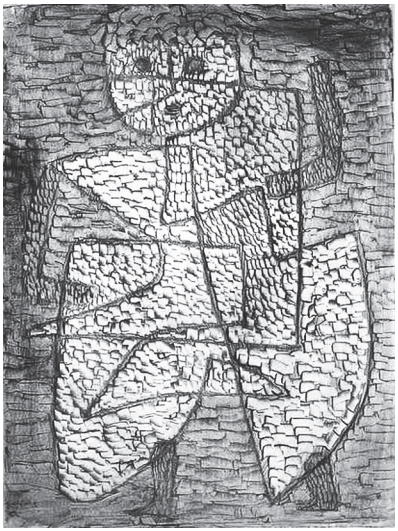

Fig. 6.14 Klee: The Future (Wo)Man

Human evolution is braided with history, as the completion of that evolution. And the completion is the realization of freedom in history, in the flowering of the vehicle of that freedom, human self-consciousness. We should thus close without a fixed conclusion, on a note of suspense. Our conclusion points to an ending that is a beginning, and to the onset of a renewed search for 'evolution' after we have already found it! The realization of the potential created by the visible macrosequence in world history requires the self-creation of a new level of man and civilization far surpassing the barbarism of the Darwinian framework. The exercise of human self-consciousness, and the powers of the latent human will, leaves the hope that man can achieve the self-transcendence required to both fulfill and surpass the historical. We should note the symmetric path beyond the will indicated by the legacy of Indic religion. The ambiguity of evolutionary emergentism and transevolutionary transcendence remains and will continue to fuel the ambiguity of human culture. The secular and the religious will become one in the self-creation of the man of real consciousness. But this requires real maturity beyond the adolescent perusal of the superman comic, what to say of the Nietzschean nihilist as mad scientist intent on the great Eugenics project of the Darwinian super-fit. This untermensch we have already declared extinct, or close to such. The first man remains to evolve from this dead end branch of the hominids, also known as the third, or fourth, chimpanzee.

The Old Testament is one of the great 'firsts' of human historical evolution: a direct record in writing of a transitional phase in the punctuated 'forced march' of macroevolution. It is a reminder that just such records are absent for earlier stages of evolution, leading to misleading conclusions about how things happened. The Israelites are remarkable for detecting the action of the Axial Age 'macro' effect. But then their account rapidly succumbed to a constellation of epic myths

based on a primitive theism. Religionists need to both revere and declare obsolete this classic 'witness' to evolutionary transformation (with its double entendres on design entities).

Greek Tragedy, and Christianity We have seen the remarkable aspect of Axial Israel, but it also prompts us to see the almost more remarkable case of Archaic and Classical Greece. The spectacular innovations of this period are the basis of modernity and secularism. One of the most mysterious appariations is that of Greek Tragedy as a new genre of literature. Further the clear echoes of this genre in the 'redemptive drama' of Christology to come is a clue to the misunderstood symbolisms of that religion, a tour de force spoiled by its theological crudescences.

A Last Testament The Christian drama and symbology is a remarkable Axial Age downfield production and ersatz religous 'tinkertoy' that has fallen into metaphysical confusion. Its meanings should have been far clearer. A new epoch in world history triggered by the Reformation should warn Christians that time will not rest and drive them to a new and 'last testament' as a new continuation of the classic legacy.

Fig. 6.15 Capriccio of ruins...

The evolution controversy has persisted for so long because of the failure to create a real science of evolutionary facts. Unlike the case of physics, biologists have no means to settle the disputes that must arise from a subject still bordering on the metaphysical. The attempt to bypass this situation and create a science from the abstraction of natural selection theory was doomed to fail, despite its superficial resemblance to something like a physical law. In fact, we suspect a rising scale of complexity in nature seen first in the step toward life, and this cannot be resolved by the facile hopes of scientism in the framework generated from Newtonian physics. A powerful warning along these lines emerged in the work of the philosopher Kant at the dawn of modern biology, and his legacy seen in the teleomechanists suggests a deeper foundation for the subject of the life science than that of Darwin.

We have deduced from the start the limits of current evolutionary theories in the failure to embrace the twin domains of facts and values. The dynamical braiding of the two visible in world history is so obvious once seen that the whole question of evolution seems up in the air as we consider the need for an entirely new conception of science. In fact, we may have stumbled on nature's solution to this duality in the way that we have tracked the emergence of freedom in the context of evolution. From another angle we have claimed a solution to the long-sought riddle of historical dynamics, that phantom of the science of history. *Mirabile dictu*, both questions turned out to be the same, seen from opposite angles. This resolution was intuited in confused terms in the works of Kant and his successors, where the paradox called the 'science of freedom' popped into the heads of the philosophers of history, the legacy of Kant himself. The antinomial character of causality and freedom disguises what is in reality their mysterious symmetry, and dynamic action of these opposites hints at just the kind of future framework for a real science of natural life.

Human evolution is so routinely placed in the category of Darwinian evolution that we have forgotten how questionable this annexation really is. In fact, the emergence of man remains almost insoluble given the data that we have. The checkmate of explanation confronted by the phenomena of language, ethical will, and the spectrum of consciousness, is passed over by Darwinian fundamentalists who seem content with the mechanical emergence of a humanoid automaton. The reality is that we hardly understand our own nature, let alone how it might have evolved. Here as in all cases the limits of observation stand in the way of easy resolution of the mystery. The obstinate complexity of human speech, for example, defies the hopes of purely random genetical processes.

The evidence of man's first emergence that we have suggests a remarkable instance of punctuated equilibrium, taking those words as if freshly coined. The relatively sudden appearance of modern man, if this is what the facts show, is highly suggestive of the kind of top-down cultural-genetic transformation we saw in history. This conclusion is by no means final, and we must leave the question open, but the rote assumptions of Darwinian random evolution here, never with any good evidence, suddenly border on the ridiculous once we have seen at least one process of non-random evolution at work. The isolated and rapid emergence in African 'edens' of new hominid strains followed by the rapid globalization of the result is the evidence staring us in the face.

We have withdrawn from theories given the complexity of what we

The Rustling in the bushes...

We began with a challenge to find, at a minimum, the 'rustling in the bushes' that would constitute evidence of the non-random, thence of some 'systems action', dynamic or design, visible as a surface effect (phenomenon) before a suspected 'deep action' (noumenon).

The Evidence of World History The existence of a clear derandomized pattern in world history puts an immdediate block against attempted Darwinization of world history via reductionist theories. Such a thing is not supposed to exist, but it pervades our visible history, as the stock of Darwinian speculation plummets for the history/evolution that is not visible.

Falsifying Darwinism Karl Popper claimed that Darwinism was not falsifiable. But our demonstration has clearly come close to falsifying Darwinian theories of human evolution: they cannot be claimed as science.

Evolution: the bottom line The public is under tremendous pressure to accept the Darwinian framework on the grounds that it is science, in a struggle with religion. But Darwinism is clearly a pseudo-science, and has lost the real meaning of evolution.

Facts and Values The question of science is sidelined step one in the way our evolutionary matrix is based on the value domain in relation to facts. This tells us immediately that standard reductionism fails, and that evolutionary 'science' is beyond the purely physical. We must resist the propaganda of religionists attempting to claim this as their monopoly. There is no science (yet) of evolution in the standard sense.

Dangers of Social Darwinism Darwinian theory is an accident waiting to happen, and the false hope that human self-evolution via eugenics can create evolution via Social Darwinist scenarios is an ongoing fallacy of reductionist literalists. There is a real danger of doing damage to human potential with these delusive ideologies, which are also the mainstays of economic exploitation. Darwin lunatics should be considered 'armed and dangerous' theoretically.

see in our historical context. We elected to retreat to simple chronicles, and discovered that simple periodization could take the place of theory by showing an evolutionary dynamics in action as an entity to be visualized in stages, and then as a whole. The complexity of this task, and the need for prolonged study makes a mockery of the Darwinian pretense of universal explanation, sight unseen. Just as Lamarck suspected we see twin levels of evolution, a kind of drive toward complexity, and a reactive response process, on of adaptation and environmental adjustment. We should be wary of the idea of a 'drive toward complexity', but the basic issue is clear. We have discovered the way to proceed here, by simply demonstrating the braiding of double evolutions in the 'evolution to history' nexus, in the elegant tandem of a system in motion, yet one passing over into the action of individuals who are in part creating their own history out of their own evolution.

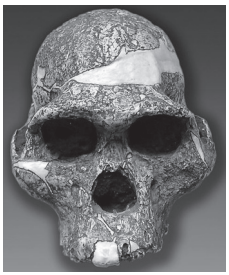

Fig. 6.17
Australopithecus

This larger framework of the evolutionary question ends with a powerful warning of the dangers of reductionist thinking: there is no basis for such a thing given the overwhelming evidence of a larger symphony of evolving culture, and yet the meager Social Darwinist bastard offspring of Darwinism threaten to overtake the whole of culture in a strange turn toward the embrace of barbarism. We can subject man to such limited theories, whose fate is to become ideologies. We must look backward on the reality of evolution as we see it, as in world history, there to find all the guiding standards and protocols of action. The notion that since natural selection produced evolution therefore we must adopt in practice as a tactic of social advance is dangerous nonsense bordering on lunacy. We must be on guard against another repetition of hidden esoteric cabals with an agenda of genocidal eugenics applied with Nietzschean savagery. This scenario has already occurred once, and we must be warned that Darwinian obsessions in both

Fig. 6.18 Hamlet,
The graveyard scene, Delacroix

culture and economics have coopted the real potential for evolutionary advance.

Our discovery of a sequential logic in world history has shown us a better way to take the idea of evolution, and in the process setting up a powerful obstacle to the misapplication of false evolutionary logic to culture. The scenarios of evolutionary psychology on religion and ethics look almost ridiculous next to the evidence of the Axial Age. The irony is that the intimations of an Age of Revelation by the Isrealites and their successor creators of monotheistic religions hit on the real dynamics long before the rise of evolutionary science. The mystery of the period, however, is lost to us in the case of the Old Testament history of the Axial period, and we must attempt to infer in general outlines the sequence of events that was at work in both India and the Middle East. We found that the real answer lay in the more secular Axial Age history of Greece, whose 'age of revelation' is documented in a way that leads to an understanding of the other cases.

We can see that our sequential logic, or macrosequence, is about 'evolution', but also about globalization (which is more than the globalization of capitalism or markets in the current usage), and that the current phase of Eurocentric culture is a transient phase of the pinpoint logic we see from the start in the innovating transitions at the beginning of successive epochs. We are now entering the middle phase of one such era, and the question remains whether developing awareness of our own historical evolution will phase out this macro process to leave humanity to its own evolution. We can see the powerful challenge presented to us, and must move to prevent the descent into barbarism in the name of science created by the muddle of Darwinism. We should recall that it was Wallace who created the theory adopted by Darwin and his successors, and that he soon saw the limits of his thinking, moving on to a critique of natural selection in the evolution of man.

Man has a complicated potential, and a larger dimension of self that is so far undetected by neuroscience. The man who came into existence in the Paleolithic with his sense of soul and a spirit world is in danger of being forgotten in the name of scientific progress. But the real man, *homo sapiens*, is emerging from a kind of chrysalis phase to come know his inherent powers and nature and the ability to control of his own future. The delusions of Social Darwinist eugenics mixed with economic ideology are surely transient confusions on the way to a higher conception of man and his evolution, visible clearly in the fulsome evidence of the macrosequence embedded in world history.

We began with the issue of natural selection, its statistical implausibility, and the misuse of the idea as a metaphysical stand-in. The basic problem lies in the limits to observation, and the difficulty of actually observing an evolutionary dynamic in action. Suspicion arises that real 'evolution' occurs in short-acting bursts, in intervals too short to observe in deep time.

We suddenly realize that world history since the invention of writing is the one dataset we have that records data at this fine grain. Sure enough, this chronicle of the emergence of civilization flunks a randomness test: we see clear evidence of a non-random process visible in a sequential logic of epochs and initializing transitions at their onset. The data of the Axial Age, on the one hand, and the clear division into stages

This evidence satisfies a frequency test, and we are confronted with the hidden action of a complex system driving the self-organization of historical civilization.

This complex system is, however, far more subtle in its action than a thermodynamic process creating a higher degree of order. Its action shows direct metaprogramming of cultural entities, from culture, art, religion, politics, including even the onset of science itself. This metaprogramming shows the relationship of a system and the individuals inside it, and this sets up the rubric of the 'evolution of freedom'. Man makes himself, to use a famous phrase, yet he does so in the context of a subtle teleological potential.

What we are seeing demands the term 'evolution' as the 'rolling out' of a complex set of cultural wholes in a developmental logic that shows directional momentum.

This set of phenomena asks for an 'evolution formalism': we can simply adopt the generalized schematic of punctuated equilibrium to represent periods of transition between relatively stable epochs in between. This allows us to call the driver macroevolution and the response intervals microevolution: this expresses the transition from passive evolution to active history. We suspect this type of 'evolution' is what drove earlier human emergence...We see, at least, the silliness of Darwinian oversimplification.

A closer look, evading theistic and atheistic confusions, shows a richness of deeper nature confronted with an unknown dimension beyond that about which we have no knowledge. We see that man is entering a new dimension, both as mind, and a being beyond mind, in a discontinuity like that of the origin of life. But we can use the discoveries we have made to counsel our ignorance, and to keep us safe from wrong theories. Our data is the failsafe we need to operate with an evolutionary understanding that is still incomplete. If we feel bereft by our deep ignorance we should consider how far we have come in ten thousand years, and consider the future of our understanding in the minimal achievement of a glimpse of evolution as it is. The deeper aspects of that process remain as undiscovered country in a

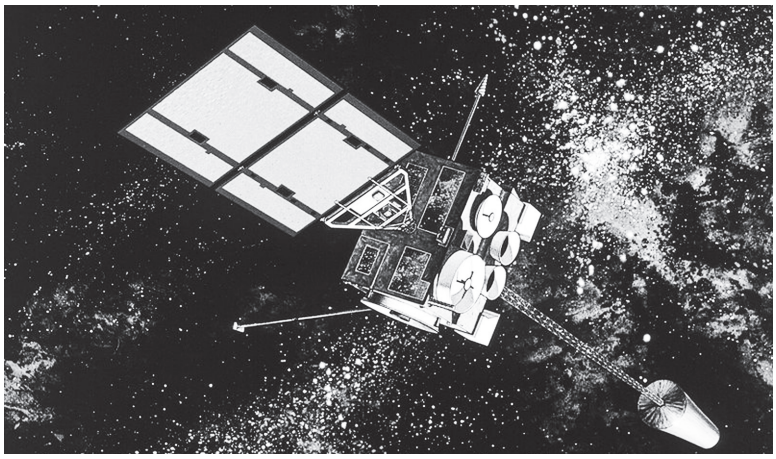

Fig. 6.16 Leaving the Solar System, NASA

journey into the future.

The way forward remains to be discovered, but is present already we must suspect in a latency of potential that will emerge in the next, presumably the last, epoch of what we called the Great Transition, on the way to the final real speciation of Man. The ambiguous stall in the limbo between passive evolution and active history or self-evolution is perhaps in reality a creative gestation, as the outcomes of modernity yield to the post-evolutionary birth of history, long since underway, and thence to the posthistorical self-transcendence given in the spectrum of consciousness.

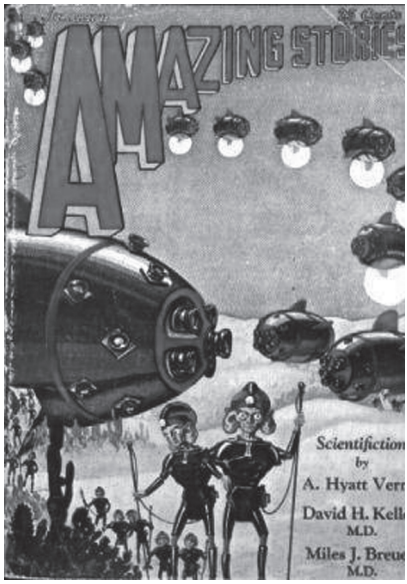

Fig. 6.19 Amazing Stories sci-fi mag cover 1930

Notes

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Last and First Men: A Story of the Near and Far Future is a futuristic history in the science fiction novel format written in 1930 by the British author Olaf Stapledon. It describes the progression of humanity from the present across two billion years and eighteen distinct human species, of which our own is the first and most primitive. Stapleton's conception depicts a repetitive cycle with many varied civilizations rising from and descending back into savagery over millions of years, but it is also one of progress, as the later civilizations rise to far greater heights than the first. We may consider this 'pulp fiction', yet acknowledge the implicit questions such works leave us with. It seems that historical evolution will converge much more quickly, and the potential is already there to bypass endless re-speciations. Cf. en.wikipedia.org/wiki/Last_and_First_Men. The attempts to transcend the duality of mechanism and design are inevitable, and appear powerfully in Schopenhauer's views on the 'Will' in nature. Amit Goswami, in *Creative Evolution: A Physicist's Resolution Between Darwinism and Intelligent Design* (Wheaton, IL: Quest, 2009), plies one track in this alternate universe of discourse.

The pursuit of Darwinian economics as 'naive ideology' is obsessively persistent, cf. Robert Frank's *The Darwin Economy: Liberty, Competition and the Human Good* (Princeton: Princeton University Press, 2011), with its question, giving the game away, who was the greater economist, Adam Smith or Charles Darwin?' "Marx's attitude to Darwin was ambivalent (as Richard Weikart has documented). In particular, Marx viewed with suspicion the 'struggle for existence', a notion that Darwin derived in part from his reading of the political economist Malthus whom Marx regarded as a blatant apologist for the existing order". From Allan Megill's *Karl Marx: The Burden of Reason* (New York: Rowman & Littlefield, 2002). Megill's Darwinism makes him miss the point that pre-Darwinians like Marx were not so confused

Teleology: noumenon/phenomenon

The reader might consider a study of Kantian discourses on teleology, to be wary of the issues of teleological metaphysics. Our data makes no sense short of teleological explanation, but that is not fully observable. A good short text is the already cited book by Körner, *Kant*, with its explanation of Kant's position on teleological questions. But, we should emphasize, our data tends to outstrip Kantian caution, and actually demonstrates teleology in nature. Nonetheless, Kant's thinking is very deep, and his intuitions about teleology and biology are confirmed by our analysis.

Our neutral systems analysis, which provokes such a stunning phenomenon would seem, as noted, to demand a design interpretation, and evokes a sense of 'presence' in world history, the 'voices of silence'. Consider that IHVH doesn't mean 'god', but just the situation we are in! And consider the related sense of 'design', Schopenhauer's Will in Nature. This is dangerous ground, and what we have really found is teleological mechanics.

The point is that method is not an explanation, but a way to flush the non-random out into the open, so to speak. We sense we are 'seeing' the phenomenon, before the noumenal. The phenomenal is a cyclical driver, the representation of the unobserved teleological. Elegant, but mysterious, and confusing. A Darwinist ought to fold at this point, and cease the dreary litany of natural selection and the ceaseless propaganda of a science of evolution achieved. We don't need an alternate theory: it is the chronicles of evolution that are key. In fact our findings are robust, but point to a deeper mystery, not unlike the Kantian partition of phenomenon and noumenon. We can at least free our thinking from Social Darwinist illusions, and the reductionist value-free mechanization of evolution that is proposed in the name of 'science'. Eugenic scenarios are wrong, and dangerous, and our result shows that a real 'eugenics' operates with mechanisms able to act on whole species, globally, and over tens of theousands of years. Current theory is completely primitive by comparision.

The Kantian discourses on teleology are a good discipline to prevent confusion, but our data is more than 'regulative', it seems constitutive of nature, to use the classic distinction. The book's website will have some material from this source.

as those who came later, despite the frequent muddle of Hegelianism. This passage also documents Marx's clear realization of the problems with natural selection as he was intrigued by the (very poor) theories of Trémaux. Marx spotted the problem with Darwin's theory at once. The failure of the later left to pick up on Marx's intuitions are tragic. Cf. Richard Weikart, *Social Darwinism: Evolution in German Socialist Thought from Marx to Bernstein* (San Francisco: International Scholars Publications, 1999). In *Darwinian Fairytales: Selfish Genes, Errors of Heredity, and Other Fables of Evolution* (New York: Encounter, 2006), p. 3, David Stove notes, "If Darwin's theory of evolution were true, there would be in every species a constant and ruthless competition to survive: a competition in which only a few in any generation can be winners. But it is perfectly obvious that human life is not like that, however it may be with other species. This inconsistency, between Darwin's theory and the facts of life is what I mean by 'Darwin's Dilemma'". Concealed ideology in Darwinism threatens to undo the reputation of science.We can see that 'speciation' operates on whole species globally, over millennial intervals. Thus competition with population subsets is not going to produce real evolutionary change, or advance. The myth of the 'selfish gene' from Dawkins fails at once, is one of the most insidious of the clever demonic twists to Darwinian/economic ideology, allowing disavowal of its clear inuendo, and begins with the altruism question: "Altruism had always seemed to be a problem for the super-competitive survival image of natural selection evolution. When a bird cries out to

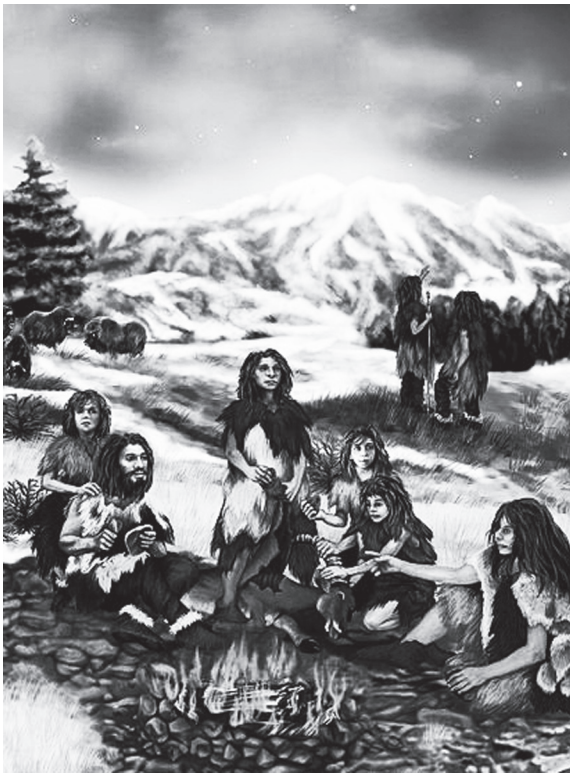

Fig. 6.20 Descent of Man Revisited

warn its fellows of danger, for instance, it exposes itself to extra risk. How could such behavior, which actually reduces the individual bird's survival chances–ever have evolved by natural selection...?' Group' selectionists had long assumed that it was all about what was good for the 'good of the species'–i.e. these were the traits which helped the group or the species to survive, if not the individual. Then in the mid-`960's, George Williams brutally exposed what some saw as huge flaws in this logic. The floodgates opened, and very quickly evolutionary biologists such as Bill Hamilton were saying that it is neither species nor organisms that are selectedd, but individual genes. They talked, for instance, about altruism being about 'kin selection'--which ishow geses that programmed an organism to act for the good of its relatives evolve. This is where Dawkins came in...Interestingly, the book's (*The Selfish Gene*) timing was apposite, coming at a time when the feelgood 1960's were giving way to the rampant individualism of Ms. Thatcher's 1980's, exemplified by her infamous comment, ''There is no such thing as society'...Fern Elsdon-Baker, *The Selfish Genius: How Dawkins Rewrote Darwin's Legacy* (London: Icon Books, 2009). The philosopher Mary Midgley was one of the first to expose this veiled ideolgy, but was informed that this wasn't what Dawkins meant. But her challenge stands: Dawkins and Hobbes, http://www.guardian.co.uk/commentisfree/belief/2009/apr/20/religion-philosophy-hobbes-dawkins-selfishness. Deepak Chopra and Leonard Mlodinow debate the science/spirituality divide in *War of the Worldviews: Science vs Spirituality* (Newe York: Harmony Books, 2011) in the stalemate of a possibly misleading duality. Bridging the divide with the idea of a 'conscious' universe is suggestive but probably anohter confusion beside the reductionist. We have already cited J. G. Bennett's attempt to revive the ancient 'triad' of 'being, function, and will', in a formulation rediscovered by Shopenhauer. The latter's metaphysics of the will can lead to its own confusions. The relation of will in this sense to the concept of 'laws' of nature, at the low end, can assist in seeing why the human mind is always confounded by theological interpretations of natural laws, laws quite unknown to science. If we think the universe is alive, or conscious it is because of this factor of the 'Will' in nature, which is, however, neither alive, nor conscious, but in a category by itself, one that apes the laws of physics as it were in a 'lower octave'. In *Biocentrism: How Life and Consciousness are the Keys to Understanding the True Nature of the Universe* (Dallas: Benbella, 2008), R. Lanza & R. Berman move in this direcction and point to a dead end in quantum mechanics, or its understanding, and suggest the

need to include life and consciousness in a new formulation. From Stuart Kauffman, *At Home in the Universe: The Search For the Laws of Self-organization, and Complexity* (New York: Oxford, 1995), p. 92:

> But if selection, working on random variations, is the sole source of order, then we stand two-fold stunned: stunned because the order is so very magnificent; stunned because the order must be so very unexpected, ophaned in the spellbinding vastness of space. But has selection truly acted alone as the sole source of order in the emergence of life, and its subsequent evolution? I do not think so,. From my gut, from my dreams, from my work of three decades, from the work of a growing number of scientists, I do not think so.

Our sequential logic is such an obvious case of 'self-organization' that we might seem to have found the solution to our riddle. But a closer look shows something operating at a still higher level: consider the factor of art. And the issues of consciousness are *sui generis*, and belong in a different domain.

In *Nature's Destiny: How the Laws of Biology Reveal Purpose in the Universe* (New York: The Free Press, 1998) Michael Denton pursues the fine-tuning details that suggest the universe is 'fit for life'. Many new theories of the Multiverse are arriving attempting to explain this data, as if the physicists were spooked by them.

If we examine the Greek Archaic in its stupendous details we see 'fine-tuning' down to the 'lyres of the Homer's, in the non-random explosion of literary production from the eighth to the fourth century, followed by a rapid fall-off. The design question is much worse than reductionist scientists imagine. Dynamical theory of the aesthetic is far beyond us, as yet! But the problem is that divinity would not act in the way we see in our sequential logic. With this example we can see that the Israelite case is a ditinct but parallel analog, a people with a new book, an ersatz literature that springs out of nowhere in the period of the drama of disappearing kingdoms. Nothing is more mysterious than this disappearing kingdoms effect, leaving a world religion in its wake.

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8. ILLUSTRATIONS

WC= Wikimedia Commons, PD= public domain CA = Common Attribution Creative Commons Attribution-Share Alike: http://creativecommons.org/licenses/by-sa/3.0/deed.en: Fig. 1.4
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