
Uncovering the Laws of Global History

Graeme Donald Snooks

Australian National University

ABSTRACT

Global history is the outcome of a complex but knowable dynamic process that has been operating in the human sphere for the past two million years and that will continue to operate for as long as human society exists. Underpinning this dynamic process are the laws of history. This article argues that it is possible both to model the dynamics of human history and to identify the laws that govern it. Deriving the laws is the easiest part; it is modeling the dynamic process that is difficult. Without any real underlying laws there would be no global history and no human future. By employing the inductive method to identify the laws of history we could initiate a revolution in the social sciences to rival that in the natural sciences.

INTRODUCTION

The reality that we seek to reconstruct in global history is the outcome of a complex but knowable dynamic process that has been operating in the human sphere for the past two million years and that will continue to operate for as long as human society exists. Underpinning this dynamic process are the laws of history. As I show in my global-history trilogy – *The Dynamic Society* (1996),

The Ephemeral Civilization (1997), and *The Laws of History* (1998a) – it is possible both to model the dynamics of human history and to identify the laws that govern it. Deriving the laws is the easiest part; it is modeling the dynamic process that is difficult. An important point to realize is that without any real underlying laws there would be no global history and no human future. Hence, if history has laws, and we are unable to recognize them, then we need to redo our history until we can.

In this article I briefly examine the following questions. Why have the social sciences fallen behind the natural sciences? What are laws and how can we know them? If laws exist how can we recognize them? How is it possible to derive the laws of history? How can we test the validity of these laws? And, what is the role of the laws of history? As this article reviews a global-history trilogy that amounts to 1,400 published pages, the detail, mainly historical, has been cut to the bone. The reader, before assuming that an issue has not been adequately dealt with (and no doubt they exist), should consult the larger work.

WHAT ACCOUNTS FOR THE RELATIVE BACKWARDNESS OF THE SOCIAL SCIENCES?

Since the sixteenth century, Western scholars have accepted the existence of scientific laws of nature. Modern science over the past few centuries has been preoccupied with the discovery and practical application of these laws. This has revolutionized both the natural sciences and human civilization. While the human sciences have also progressed, their achievements have been less remarkable. They have been unable to account for the forces underlying the changing fortunes of human society despite the heroic attempts of some of our greatest intellects – such as Plato, Aristotle, Hegel, Marx, H.T. Buckle, and J.S. Mill, to name a few – over the past three millennia. The modern response is to accept this heroic failure as evidence that there are no laws governing human society. Postmodernists are even prepared to make the unimaginative and defeatist claim that there is no objective reality.

But, we need to ask, what is the reason for expecting the human sciences to differ from the natural sciences? If we are unable to envisage a physical world operating in the absence of the laws of nature, how is it possible to imagine social systems operating without the laws of history? The counterfactual world to the one in which

viable dynamic systems operate according to identifiable laws is one in which everything is the outcome of a great cosmic lottery. In such a world, complex social systems could not even get started, let alone reach high levels of sophistication. I argue that, just as there could be no universe without physical laws, so there could be no civilization without historical laws.

A number of natural scientists have come to the same conclusion. Ernest Nagel (1961: 575), for example, concludes a survey of the problems in the logic of historical enquiry as follows:

In short, there appears to be no foundation for the contention that historical enquiry into the human past differs radically from the generalising natural or social sciences, in respect to either the logical patterns of its explanations or the logical structures of its concepts.

Nagel is puzzled. If there are no radical methodological differences between history and the natural and social sciences, why are there no established laws of history? Although this philosopher of science does not say so explicitly, he appears to believe, like many other natural scientists, that historical studies attract scholars who are less able than those attracted by the 'hard' sciences. Nagel (*ibid.*: 606), who notes the failed attempts by law seekers in history, rejects the usual excuses from historians that laws of history necessarily involve inevitability and he concludes his book by conjecturing that:

However acute our awareness may be of the rich variety of human experience, and however great our concerns over the dangers of using the fruits of science to obstruct the development of human individuality, it is not likely that our best interests would be served by stopping objective inquiry into the various conditions determining the existence of human traits and actions, and thus shutting the door to the progressive liberation from illusion that comes from knowledge achieved by such inquiry.

Are the philosophers of science right in implying that historians are less able than natural scientists? If scientists could be persuaded to stoop to historical studies, would they be able to show us the laws of history? The answer to both questions is, of course, an emphatic: no! Yet the problem remains. If the laws of history do exist as these natural scientists claim, why haven't they been uncovered? My work in global history suggests that there are two main reasons for the failure to discover the laws of history. The first of these, discussed at length in my *The Laws of History* (1998a), is what I call 'existential schizophrenia'. By this I mean the great difficulty

we experience in openly facing our true natures. The second, which was not realized until I was writing *The Global Crisis Makers* (2000), is tied up with the material incentives for ideas in science and in history.

The actions we need to take in order to survive and prosper are often so repugnant to the intellectual image we have of ourselves that we are unable to face them openly, certainly not on a daily basis. The truth could, and sometimes does, lead to self-destruction, which frustrates the central human objective of survival and prosperity. Accordingly, over millions of years we have learnt to deceive ourselves with such facility that we are usually unaware that we are doing so. We compartmentalize our lives and build barriers between what we do and what we think we should do. Just compare man's inhumanity to man throughout the world today with our conviction that we are altruistic beings! Existential schizophrenia is a normal rather than a pathological condition, because it is required in the universal struggle by mankind to survive and prosper. Yet, while it is a psychological condition essential for the continued survival of our species, it prevents us from understanding the nature of ourselves and our societies. Human society is no more complex than the physical world around us. Only our reactions to it and to ourselves are complex. It is, therefore, easier to be objective about the natural world and its laws than about our human world and its laws.

The second reason for the relative backwardness of history is that, over the past 500 years, the material incentives for ideas in science and in history have been very different. In *The Laws of History* (1998a), I argue that the scientific revolution during the two centuries following 1500 was a response not to changing social attitudes and institutions as most historians argue, but to the 'strategic demand' of Western Europe for new ideas in shipping, land transport, communications, finance, distribution, and war. This was driven by the new dynamic strategy of commerce, which followed more than 150 years of economic difficulties owing to recurrent plague. This new learning was further enhanced when the dynamic strategy of technological change (ushered in by the Industrial Revolution) progressively replaced the exhausted commerce strategy from the late eighteenth century. The dynamic strategies of both commerce and technological change provided the material incentives for the scientific revolution.

Yet, at the same time, there was little strategic demand for the scientific development of the social sciences and, particularly, of history. History was valued, not for the insights it provided into the dynamics of human society, but for the entertaining stories it told. As I show in *The Global Crisis Makers* (2000), it was not until the second half of the twentieth century that governments began to make demands on the social sciences, particularly economics, and not until the past few decades that governments substituted neoliberal advice for strategic leadership as they lost sight of their real role. My point, expressed for the first time here, is that the recent loss of strategic vision by Western governments, which is itself an outcome of the unfolding technological paradigm, will require a better understanding of human society. In turn, this will require a revolution in the social sciences, including history, on the scale achieved in the natural sciences over the past five centuries. For the first time in human history, therefore, the social sciences will matter in the same way that the natural sciences have mattered since the sixteenth century. It is an intellectual revolution that will be based on induction – the ‘historical method’ advocated by Auguste Comte (1830–1842) and J. S. Mill (1843) in the early to mid-nineteenth century – rather than deduction that led in the twentieth century, particularly the second half, to the disaster called economic neoliberalism.

WHAT ARE LAWS AND HOW HAVE WE COME TO KNOW THEM?

We need to consider the nature of the laws that emerged from the scientific revolution and the methods employed to discover them. This has relevance to the role of history as a social science.

What are laws?

We can begin with a generally accepted definition of a law (Achinstein 1971: 85):

a law attempts to express a regularity underlying other regularities; it attempts to do so with a certain amount of completeness by isolating various factors that are involved and by indicating how they are related; and ... it attempts to formulate the regularity in a precise manner, often quantitatively.

Laws, according to this viewpoint, express regularities in behavior rather than individual occurrences. But what is meant by ‘regulari-

ties'? It is generally held that under certain conditions, certain behavior or properties always occur, or that these properties are exhibited by all objects of certain types. And, it is argued, these regularities are characterized by completeness, precision, and simplicity (Achinstein 1971: 13–14). These regularities underlying other regularities – that is, laws – which must be open to empirical refutation, should always be regarded as provisional.

Yet there must be more to laws than the expression of regularities occurring in the real world. What if the regularities expressed in a scientific statement are tied to a particular time and place, or if they are merely the result of accident? Can they still be regarded as laws? Clearly not. To resolve these problems, philosophers of science usually emphasize both the *generality* and the *necessity* of laws.

While it is widely accepted that *generality* is the essence of a law, philosophers disagree about how narrowly or broadly this 'essence' should be defined. As I am concerned that only the highest standards should be employed when framing the laws of history, I have adopted a stringent set of criteria about generality (Achinstein 1971: 25–35) as follows.

- Laws are syntactically general in that they either begin with a universal term such as 'All' or 'No' followed by a subject term, or could be expressed in this way.
- Laws also have general subjects – such as bodies, gases, or economic systems – rather than individual subjects – such as projectiles, hydrogen, or particular economic institutions. Hence, laws are capable of explaining more particular regularities.
- Laws are unrestricted universal statements in that they are not restricted to regularities occurring within a particular space or a particular time. Clearly, the scope of explanation and prediction is finite, but it should not be possible to infer this from a law, only from the empirical evidence.
- Laws are general in the sense that what they say about a subject should hold for every particular case.
- Laws, contrary to the claims of some, may mention specific objects – such as Kepler's law about the nine planets orbiting the sun – but only if the propositions are as general as they can be at the time of formulation.

We need also to consider the *necessity* of laws, by drawing the essential distinction between a law-like sequence in the natural world and a purely accidental sequence. Did a particular event, we

must ask, occur by accident, or was it the predictable outcome of a causal sequence? Yet we should not regard the attributions of necessity and accident as mutually exclusive, as an event may be neither accidental nor necessary. The necessity of laws can be outlined as follows (Achinstein 1971: 42–57):

- If a proposition offers a correct explanation, then it is non-accidental or non-coincidental. But there is a difference between a correct relationship and a necessary one. To be both non-accidental and necessary, a proposition must also satisfy the following criteria.

- It must be strongly and systematically supported both directly by empirical evidence and indirectly by other associated laws. Hence, even if there is some negative empirical evidence, the law can still be validly supported, at least for the time being.

- It should possess supporting counterfactual propositions. In other words, the relationship expressed by a law can be demonstrated by the probable outcome of assuming that one of its necessary conditions does not hold. For example, in the case of the laws of societal dynamics (Snooks 1998a: ch. 8), the supporting counterfactual for the ‘Law of Dynamic Regression’ (Appendix # 15) concerning the role of dynamic strategies in maintaining the viability of human society is the probable outcome in the late eighteenth century of suppressing the British Industrial Revolution.

- It must express ‘analytical truth’, in that it can be supported by reference to internal logic.

- It is capable of explanation. In other words, owing to empirical and analytical support, a given law can be said to be necessarily true, and owing to its ability to support certain types of counterfactuals it can be said to express a necessary relationship.

The philosophy of science, therefore, maintains that laws are concerned with regularities, in events, behavior, or processes in the natural and civilized world. And the laws concerning these regularities must be characterized by a generality that approaches the universal, a necessity that excludes the accidental, and a condition that can be supported both empirically and logically.

How are laws knowable?

In the philosophy of science, this is a contentious issue. But, to the practicing social scientist, much of the confused debate appears to arise from the remoteness of some professional philosophers

from the practice of scientific research. Three main views concerning the knowability of laws are surveyed briefly here: the inductivist, the deductivist, and the 'transfactual' realist.

The inductivist view, closely associated with empiricism, has the longest and most distinguished history. It is a method based on the assumption that experience rather than reason is the best, or even the only, source of knowledge about the external world. Our knowledge of the real world, in other words, ultimately depends on the use of the senses and what can be discovered through them. While empiricism can be traced directly back through the British empiricists – Bacon, Locke, Berkeley, and Hume – to Thomas Aquinas, and then to Epicurus, Aristotle, and Heraclites, there is good reason to believe that it stretches back to the beginning of human society (Snooks 1993: 95–106). There is, however, a sense of skepticism that pervades this tradition.

According to the deductivist view, a scientist attempts to resolve a problem by formulating – or, more often, by employing – a law. From this law, usually in conjunction with other assumptions, logical consequences are derived deductively. These consequences or proposition may then be tested empirically. The deductive stage will usually, but not always, involve mathematical methods, while the testing stage will often involve statistical techniques. Some deductivists in the tradition of Kant and Descartes – such as Karl Popper (1965), C.G. Hempel (1966), R. Feynman (1967), and their followers – deny that a law can be formulated by inferences from observations of the real world. Empirical evidence can only be employed, they assert, to test laws that are formulated from 'poetic intuition' or 'guesswork' rather than by systematic observation of reality. What they fail to understand is that the limited field of view that this approach affords – what I call 'the problem of deduction' – is more debilitating than the absence of mechanical rules of induction – what they call the problem of induction (Snooks 1998a: 21–24; 1998b: 68–70).

But there is a third, or realist view, of scientific method. Some philosophers of science, such as J.S. Mill (1843) and R. Bhaskar (1975), accept the possibility of non-deductive modes of reasoning. Essentially, they argue that there are two levels of reality: the patterns in everyday events, and the mechanisms that underlie these superficial patterns. The latter can be inferred from the former. This is very similar to the independent distinction I have drawn in my earlier empirical work (Snooks 1974, 1993, 1994, 1996, 1997,

1998a, 1998b, 1999) between ‘outcomes’ and ‘processes’ – a distinction arising from historical observation rather than philosophical speculation. In my global-history trilogy, for example, *The Dynamic Society* (1996) is concerned with eternal dynamic mechanisms that underlie the ephemeral events and institutions analyzed in *The Ephemeral Civilization* (1997).

A METHOD FOR DERIVING HISTORICAL LAWS

The old historicist fallacy

Thinkers in ancient Greece were probably the first to ponder the difficulties of studying a world in flux and of deriving the laws of history. It is far easier to examine a world in equilibrium, particularly in the social sciences. But, unfortunately, the type of issues that can be examined using equilibrium analysis is severely limited and certainly excludes the important issue of societal dynamics. As I show in *The Laws of History* (1998a), there has been a two-fold response to this major problem. The ‘metaphysical historicists’ – including Plato, Hegel, Marx, Spencer, Spengler, and A. J. Toynbee – focused on ideal sociopolitical forms that constituted in their minds (rather than in the real world) either the beginning or the end of history. Dynamics in this framework is the supposed movement towards or from those ideal states, which they regarded as progress and regress respectively. But, as I have argued (Snooks 1998a: ch. 3), the ‘laws’ of destiny that they believed were governing such movement have no empirical validity. It is a matter of metaphysics.

The ‘positive historicists’ – including A. Comte, J. S. Mill, H. T. Buckle, the historical economists, and W. W. Rostow – attempted to overcome the problem of examining a world in flux by focusing upon historical outcomes. These outcomes are either the trends in key variables that are apparent over time, or are the historical stages through which, it is claimed, all societies must pass. In both cases the general conditions of economic progress are associated with these outcomes. Either the actual patterns in variables, such as population or national wealth, are regarded as historical laws and naively extrapolated into the future, or the conditions required to achieve certain hypothesized stages of progress are given a law-like authority and are extrapolated onto other countries that have yet to achieve a certain stage in the supposed progression. In both cases, predictions about the future are based precariously on

superficial historical patterns that cannot be regarded as universally binding. They focus, therefore, on the ephemeral rather than the eternal aspects of social dynamics. This is the old historicist fallacy that has been rightly condemned.

The new ‘existential’ method

How then is it possible to derive the laws of societal dynamics? Certainly not by philosophizing about the essence of things as the metaphysical historicists have done, or by attempting to generalize the historical pattern of events or institutions as the positive historicists still do. We will only derive the laws of history by exploring the dynamic historical mechanisms in the real economy that are responsible for the apparent regularities in human existence. This is the essence of what I call the new ‘existential historicism’. As shown in *The Dynamic Society* (1996), there is a degree of constancy in the way human society changes, just as there is a degree of constancy in the way the physical world is transformed. Without this it would be impossible to plan for the future and, accordingly, human civilization would have failed to emerge.

What is the new existential method? Basically, it involves a four-fold system of analysis – the ‘existential quaternary method’ – which consists of the discovery of historical patterns (or ‘timescapes’), the construction of a general dynamic model, the derivation of specific historical mechanisms, and the construction of a model of institutional change. In effect, this quaternary system embodies a set of ‘inductive steps’ (if not ‘rules’) that goes a long way to resolving the famous ‘problem of induction’. These inductive steps emerged from work in a series of books I published between 1994 and 1998. We need to explore each of these four levels of analysis.

Timescapes provide ‘pictures’ of the dynamic outcomes of human society throughout time, both in quantitative and qualitative terms. The quantitative pictures show the numerical relationship between important economic variables such as real GDP, population, and prices. While these pictures are the beginning of understanding, they must not be used as the basis for prediction as naive historicists and econometricians have done. As demonstrated in *The Dynamic Society* (1996: ch. 12) these global-history timescapes reveal considerable regularity at the superficial level.

First, despite the impact of random exogenous forces, our statistical pictures show surprisingly regular wave-like fluctuations (rather than cycles) in the progress of all societies. These include the ‘great waves’ of *about* 300 years and ‘long waves’ of *about* 20 to 60 years that were experienced in the ancient, medieval, and modern eras alike. While these ‘great’ and ‘long’ waves appear to possess some regularity, it is of a superficial kind. We should not focus on the precision of either their duration or their recurrence (the old historicist fallacy), but on the underlying mechanisms that generate this wave-like growth. Second, these wave-like fluctuations were/are experienced in the New World as well as the Old World. Third, these society-specific wave-like fluctuations are an integral part of a global dynamic mechanism of ‘technological paradigm shifts’ (or economic revolutions), including the Paleolithic (hunting), the Neolithic (agriculture), and the Modern (industrial), that I have called the ‘great steps of human progress’. This is discussed more fully below.

The significance of these quantitative timescapes at both the societal and global levels is that they describe the ‘strategic pathways’ taken by human society, pathways that can be generalized inductively but cannot be deduced logically. In addition, the qualitative pictures reveal patterns of institutional and organizational change of an economic, political, and social kind. These qualitative pictures, developed in *The Ephemeral Civilization* (1997), quite clearly show that institutional change is not an evolutionary process, as it sometimes reverses on itself in response to the unfolding of the dominant dynamic strategies.

What is the significance of these global-history timescapes? The first and essential point is that they are not ends in themselves, as they are for the positive historicists and the institutionalists, but merely a beginning. Their patterns merely reflect the superficial regularities of human experience – the ephemeral regularities of *outcome*. Eternal regularities are to be found only in the dynamic processes that underlie these surface patterns. Hence, the laws of history can only be derived from these underlying dynamic *processes*. It is because these dynamic processes have not been previously identified that we are told that history has no laws – that history is just the outcome of a cosmic lottery. The second point is that the causal relationships suggested by the timescapes must be tested empirically before we can construct our general dynamic model.

The general dynamic model is the second stage in our analysis. This 'dynamic-strategy' model is constructed inductively by applying the 'historical method' to our timescapes and other historical data. This model is capable of explaining how and why a society emerges, grows, stagnates, declines and, sometimes, collapses. It is a model concerned with the way human agents attempt to achieve their objectives in a variety of economic environments, why and how these ways are eventually exhausted, and why a previously successful society falters and, even, fails. It is a universal model because it can be used to explain the dynamics of human society throughout space and time once the specific fundamental conditions are known. It is a model, as shown in *The Dynamic Society* (1996: ch. 4), that can even be used to explain the dynamics of life over the past 4 billion years.

Discovering the historical mechanisms operating during a specific time and place is the third inductive step. While the general dynamic model can explain global history in general terms, it needs to be informed by specific historical conditions in order to discover the specific mechanisms that can explain the dynamics of individual technological eras. There are three fundamental conditions that must be explored. We need to know whether we are dealing with an 'open' or 'closed' society: this is a question of the degree of external competition. We need to know the degree to which global resources are fully employed, given the prevailing technological paradigm. And we need to know the nature of that paradigm.

The application of our general model to the prevailing historical conditions generates three distinct, yet related, dynamic mechanisms that span the entire history of the human race. They are the 'great dispersion' of the Paleolithic era (1.6 million years – 11,000 years BC), the 'great wheel of civilization' of the Neolithic era (11,000 years BC – AD 1750), and the 'great linear waves' of the industrial era (since AD 1750). These historical mechanisms are related to each other through the wider global dynamic that I have called the 'great technological paradigm shifts'.

While each of the three dynamic mechanisms is specific to its own technological era, it is generally applicable in that era; and because the technological paradigm concept transcends historical eras, it is universally applicable. Also it would be possible for an earlier dynamic mechanism to reappear if we were able to change one of the prevailing fundamental historical conditions. If, for example, we were able to eliminate the condition of competition in

the modern era, the future would see the re-emergence of the great wheel of civilization – of the eternal recurrence of war and conquest. Prediction of the future, therefore, depends on the ability to correctly establish the changing fundamental conditions of human society as well as the correct dynamic model.

The fourth step in the quaternary inductive method involves employing the dynamic-strategy model to explain institutional change. As shown in *The Ephemeral Civilization* (1997), institutional change can be explained as a response to the unfolding and replacement of dominant dynamic strategies. An unfolding dynamic strategy, driven by materialist man who is in pursuit of survival and prosperity, generates dynamic demand (what I call ‘strategic demand’) for a range of inputs including institutions and organizations. The central mechanism by which strategic demand is converted into institutional change is the competitive struggle between various strategic groups in society for control of the dominant dynamic strategy. I have called this the ‘strategic struggle’. These struggling groups include the ‘strategists’ (profit-seekers), both old and new; the ‘antistrategists’ (rent-seekers), both conservative and radical; and the ‘nonstrategists’ (dependents). This model has nothing in common with Marx’s concept of class struggle (Snooks 1997: 10–11; 1998a: 218–219). To show how this system works, I will review its component parts in greater detail.

THE GENERAL DYNAMIC-STRATEGY MODEL

To fully understand global history and to make sensible predictions about the future it is essential that we isolate the laws of history. The primary laws of history – which are the fundamental laws of societal dynamics – can be derived from the general dynamic-strategy model developed in *The Dynamic Society* (1996) using the historical method. These primary laws are the building blocks for the derivation of the secondary (or historical) laws and of the tertiary (or institutional) laws.

The general model, derived from the study of global history, consists of four interrelated elements and one external and random force:

- 1) the competitive driving force of ‘materialist man’, which provides the model with its self-starting and self-maintaining nature;

2) the dynamic strategies – family multiplication, commerce, conquest, and technological change – which, in a competitive environment, are employed by the strategists (or entrepreneurs) to achieve their fundamental objective of survival and prosperity;

3) the competitive dynamic tactics of order and chaos, which are used by individuals and groups in the ‘strategic struggle’ to capture the gains made by the dynamic society;

4) the constraining effect provided by the eventual exhaustion of dynamic strategies, which for individual societies will lead to stagnation, downturn, crisis and, even, collapse; but which at the global level leads to technological paradigm shifts (the Paleolithic, Neolithic, and Industrial Revolutions);

5) a system subject to random shocks, both minor (droughts and floods) and major (wars and disease).

Hence, the longrun driving force emerges from the nature of mankind – indeed of life itself – in competitive circumstances, and the wave-like process by which the transformation of society is achieved is due to the creative use of various dynamic strategies and to the ultimate exhaustion of those strategies. The dynamic constraints, in other words, which arise from the very sources of expansion and growth are internal to the model and are relative rather than absolute. Further discussion should clarify this model.

The driving force

The driving force in human history, as in life itself, is the overwhelming desire to survive and prosper. This has been determined, in *The Dynamic Society* (1996), by a historical exploration of the nature of mankind, which I have called ‘materialist man’. To achieve his objective, materialist man adopts the most effective available dynamic strategy. The framework of implicit costs and benefits involved in adopting a dynamic strategy is determined by the degree of external competition.

Think of those societies existing in any period as being distributed along a ‘global scale of competitiveness’, with those societies experiencing a very high degree of competitiveness at one extreme, and those societies experiencing little or no external competition at the other extreme. Other societies will be located between these polar cases. We will need to divide the world into two parts – the Old World of Europe, Asia, Africa, and Australia on the one hand, and the New World of the Americas on the other – and to construct

a scale of competitiveness for each. After the initial migrations from Siberia to the Americas, which began more than 40,000 years ago, both parts of the globe were effectively isolated from each other by rising seas (about 15,000 years ago) and thereafter operated as separate worlds. Societies at the highly competitive end of the Old-World scale include the classic ancient civilizations and Western European countries, while the best example of a closed society is Aboriginal Australia. Other societies in Eastern Europe, India, Africa, and China range between these two extremes. On the New-World scale of competitiveness are the Mesoamerican civilizations at the highly competitive end, and the Inuit (Eskimos) and the Tierra del Fuegos at the isolated end. Various North and South American cultures can be distributed along the scale between these extremes.

If the society in which we are interested is at the highly competitive end of this global scale, it will employ the most effective of the four dynamic strategies, whereas if at the non-competitive end it will choose either the family-multiplication strategy if unused resources are abundant, or the family-planning strategy – a static rather than a dynamic strategy – if all natural resources are fully employed. Both choices are rational in that they are directed at maximizing survival and prosperity given the perceived costs and benefits of alternative strategies. The closed society will rate the costs of technological change, commerce, and conquest strategies relative to the expected benefits as too high to bother adopting them. In contrast, the open society has to fight against powerful external forces for its very survival and, therefore, is prepared to adopt a high-cost strategy if it provides a competitive edge in the struggle for life and prosperity.

The choice of dynamic strategy

Once an open society decides to opt for a dynamic strategy, there is a finite range from which to choose. This choice, which is influenced by the implicit benefits and costs of the alternatives, operates from the grassroots upwards. Individual investment projects are transformed into dynamic strategies for entire societies through the mechanisms of ‘strategic imitation’, by which less innovative economic agents imitate the investment activities of pioneering dynamic strategists in order to share in the supernormal profits.

Where natural resources are relatively abundant and, hence, relatively cheap, the family-multiplication strategy will be employed. This involves extending the family influence by reproduction and migration to adjoining areas. If, however, all natural resources are fully utilized at the prevailing level of technology and there is growing competition for these resources, a society has three dynamic options. It can pursue the dominant strategies of technological change, conquest, or commerce, often supported by one or more subsidiary strategies. The technological strategy involves increasing productivity by applying 'new' ideas to production and economic organization; the conquest strategy involves acquiring private and public income, land, and labor supplies (slaves) through systematic military activity; and the commerce strategy involves capturing a disproportionately large share of the gains from trade through monopoly pricing.

Each dominant dynamic strategy consists of a series of sub-strategies. These have been discussed in detail in *The Ephemeral Civilization* (1997). One example will illustrate the concept. In the modern technological strategy, which was introduced with the British Industrial Revolution, there have been five substrategies at the global level: the small-scale British production of textiles using new iron machinery and steam power (1780–1830); the larger scale, more capital-intensive production in Western Europe of engineering and chemical products (1830s–1870s); the mass production and mass distribution of consumer durables (particularly the car, radio, and television) by the United States to meet the demands of its own megamarket and later of the global market (1870s–1950s); the microelectronic technology pioneered by Japan and Germany in order to undercut US producers in the global market (1960s–1980s); and, finally, the technological competition between megastates, initially of the United States, USSR (until 1990), and the European Union, and in the future also of China and a rejuvenated Russia.

The strategic struggle

Within a particular society, individuals and groups of individuals will employ a range of tactics to capture as much as possible of the gains made by the dynamic society, from the pursuit of their dynamic strategies. Those in power will attempt to impose order on their economic rivals (both internal and external), whereas those ambitious individuals without economic and political power will

attempt to create chaos in order to topple the ruling elite. These are the ‘dynamic tactics of order and chaos’ that are employed in the strategic struggle for control of the sources of society’s wealth. The order category includes various tactics aimed at maintaining and exploiting the *status quo*, ranging from rent-seeking to the imposition of restrictive regulations and ideology; and the chaos category includes tactics aimed at disrupting the existing order, ranging from deregulation and reform to protest and rebellion (including radical ideology such as Marxism or fundamentalist religion such as Islam). Those who are best able to handle competitive conditions tend to opt for chaos, in which they have a comparative advantage, and those who are least able to handle competition opt for order. It will be clear that the forces of order and chaos are tactics employed by materialist man to influence the distributional outcomes of the dynamic strategies. A healthy society is able to achieve a balance between these forces.

The strategic exhaustion

The force constraining the expansion and growth of human society is not the supply of resources, natural or otherwise, but the exhaustion of its dynamic strategies and the inability to replace them with new strategies. This operates through the declining rate of return on investment of time and resources in the dominant dynamic strategy. Unless new strategies are adopted, or old strategies rejuvenated, a society will eventually grind to a halt – at least temporarily. This will occur when the marginal return to the dominant strategy is equal to its marginal cost. In other words, when an extra unit of investment in conquest, commerce, or technology only just pays for itself. At this stage in strategic development there is no incentive to undertake any further investment. This is what I have called a ‘strategic crisis’, which may lead to societal collapse if, as in all ancient societies, a nation develops to a size that greatly exceeds its technological base.

THE DYNAMIC MECHANISMS OF HUMAN HISTORY

By employing both the timescapes and the general dynamic-strategy model we can identify and explain the three great interlocking mechanisms of the Dynamic Society that have been operating over the past two million years. Our general model generates distinct but

related processes of economic change in different historical circumstances. But even these different circumstances are related to each other by an overarching global dynamic structure. This is the ‘great technological paradigm shifts’ (see Figure 1) that have been occurring at geometrically diminishing intervals since the emergence of mankind in the form of the Paleolithic (hunting), Neolithic (agricultural), and Industrial (modern) Revolutions. Within this global dynamic structure, the dominant mechanisms of change are, as stated earlier, the ‘great dispersion’ during the Paleolithic era, the ‘great wheel of civilization’ during the Neolithic era, and the ‘great linear waves of economic change’ during the modern era. Each of these mechanisms of transformation, driven by the materialist pursuit of dynamic strategies, has carried human society towards the upper limits of the prevailing technological paradigm and, hence, to a new technological paradigm shift.

A global dynamic structure

As shown in *The Dynamic Society* (1996: ch. 12), the process by which global technological paradigm shifts emerge is accelerating in a geometric fashion. The time taken for the technological shifts to occur involved hundreds of thousands of years for the Paleolithic, 4,000 years for the Neolithic, and 100 years for the Industrial Revolution. The time taken to transmit these new paradigms around the known world was about 1.2 million years for the Paleolithic, 3,000 plus years for the Old-World Neolithic, and 200 plus years for the Industrial Revolution. And the interval between the Paleolithic and Neolithic Revolutions was about 2 million years, whereas that between the Neolithic and Industrial Revolutions was about 10,000 years. The reason for this global acceleration is that the outputs of one round of technological change become the inputs of the next.

The global development path implied by the great technological paradigm shifts can be illustrated by reference to Figure 1, which encompasses all societies in the known world in the history of human society. It is designed to show two things: the stepped profile of *potential* real GDP per capita at the global level made possible by the three paradigm shifts (heavy line); and the more gradual increase in *actual* real GDP per capita (broken line). Potential GDP per capita increases relatively steeply – becoming more steep as we approach the present – but is then stationary for much longer peri-

ods that diminish geometrically over time. By contrast, actual GDP per capita increases only gradually to the potential ceiling and describes a more wave-like development path. This catching-up process by actual GDP per capita is driven by the three great mechanisms discussed more fully below. Once global resources have been fully employed in the current technological paradigm, actual income will press persistently against the potential ceiling. This is when the next technological revolution takes place, because the alternative is stagnation and collapse for the leading global societies.

The great dispersion

The first historical mechanism to drive a technological paradigm shift was the great dispersion of the Paleolithic era. This involved the adoption of the extremely slow but very effective dynamic strategy of family multiplication (of procreation and migration) to enable greater family control over unused natural resources, which were utilized through a hunter-gatherer technology. This great dispersion probably began in Africa about 100,000 years ago. By 40,000 years ago modern man had reached most parts of the globe, and by 11,000 years ago in the Old World and 7,000 years ago in the New World all resources had been fully utilized – the Paleolithic ceiling of potential GDP per capita had been reached. This pressure on resources was most intense in those narrow necks of land – which I call ‘funnels of transformation’ – through which relatively large numbers of people passed and where competition was relatively high. In the fertile crescent of the Old World and the Mesoamerican isthmus of the New World the incentives for adopting new ways of using scarce resources were greatest. These were the cradles of the Neolithic Revolution.

The great wheel of civilization

The mechanism driving the technological paradigm shift between the Neolithic and Modern eras was what I call the ‘great wheel of civilization’. Each rotation of the great wheel brought the Dynamic Society closer to the limit of the old Neolithic paradigm through population expansion and the transmission of ideas. This dynamic process, which underlies the rise and fall of ancient civilizations in both the Old and New Worlds, was in turn driven by the dynamic strategy of conquest. The reason for the eternal recurrence of the ancient world is that the conqueror must rebuild his empire

anew on each and every occasion. Only through the modern technological strategy can the great wheel be broken and civilization be set free to pursue a sustained linear development path. Yet even this escape will not be permanent if we forget how we broke away.

The great wheel of ancient civilization rotates slowly in historical space without gaining the technological traction required to drive global GDP per capita upwards over the longrun. In Figure 2, four great wheels of economic growth have been depicted, each of which represents a single ancient Western civilization in a series of successions – Sumer, Assyria, Greece, and Rome. While the diameters of the wheels are slightly different owing to a marginal improvement in living standards over time as military and organizational structures became more efficient, they have a common axis, which is fixed by a shared production technology. It is well known that, while military technology changed significantly over these three millennia, production technology changed only marginally.

How does the ‘great-wheel’ diagram work? It is important to realize that while the ‘great-steps’ diagram (Figure 1) operates at the global level, the ‘great-wheel’ diagram (Figure 2) operates at the level of the individual society; and that time on the horizontal axis is not continuous (that is, time cannot move back on itself). Each rotation of the great wheel for these societies took between one and two millennia. We start at the low point of the wheel. The origin, *a*, of each civilization is small and unimpressive and, with the exception of the pioneering society of Sumer, is overshadowed by its predecessor. As the internal energy of materialist man is translated into economic expansion through, initially, family multiplication, the incipient core of our new civilization borrows ideas and techniques from its predecessor and applies these to its expansion process. As real GDP per capita grows, the great wheel begins to turn slowly anew. Once our society has borrowed all it can from the past, the wheel has reached point *b*, the maximum level of real GDP per capita that can be generated from the neolithic economic system common to the ancient world.

This is a critical point at which the great wheel could stop, and even rotate backwards. The most cost-effective way of maintaining positive economic growth in ancient societies – of maintaining the upward swing of the great wheel – is through the adoption of the dynamic strategy of conquest. Only a fortunate few were able to achieve this through commerce (the Archaic Greeks and the Phoenicians) and even these were eventually overwhelmed by conquest

societies. For a successful conquest society, the great wheel continues to rotate upwards from *b* to *c* as the flow of plundered income and resources from outside increases. But, inevitably, the conquest (or commerce) strategy is exhausted, the inflow of external resources dries up, the former conquest society is thrown back on its own resources. Hence, the great wheel begins to rotate downwards to *d* and beyond. The stationary state is not possible in a highly competitive world. As the underlying neolithic production technology is not sufficient to support such high living standards and populations, the great wheel rotates from *d* to *e*, and eventually disintegrates (back to *a*) as Rome did between AD 200 and 476.

The great linear waves of economic change

The Industrial Revolution not only ushered in a new technological paradigm, it also began a new era in which linear, if fluctuating, economic growth was possible. This was unprecedented in human history. The great linear waves of economic change are generated by the modern technological strategy and its component substrategies.

It is important to realize that these wave-like surges of about 300 years are not systematically related in some sort of mechanical way as orthodox trade-cycle theory might, if it recognized them, claim. In reality there is no system of very long cycles. The intervals between these great *waves* are just that – intervals between the exhaustion of one dynamic strategy and the emergence and exploitation of another. During each of these intervals – a period of ‘hiatus’ – the strategic pioneers are involved in a desperate attempt to launch a new strategy owing to the adverse impact of external competition on real living standards. Each hiatus is a vulnerable time for any society, because strategic replacement is not inevitable. Failure to generate a new strategy will lead a society to stagnate and, possibly, collapse. It is for this reason I stress that modern linear development takes place through a succession of unsystematic ‘waves’ rather than through mechanical cycles in which downturn and contraction are followed necessarily by upturn and expansion.

The precise length of these waves, measured not from peak to peak as in trade cycles but from trough to peak as in wave-like fluctuations, should not concern us greatly. My research for *The Dynamic Society* (1996) and *The Ephemeral Civilization* (1997)

suggests that the upswing of the ‘great waves’ (reflecting the unfolding of full dynamic strategies) in both the ancient and modern worlds is *about* 300 years in duration, and of the ‘long waves’ (reflecting the unfolding of substrategies) is *about* 20 to 60 years. Random external shocks help to distort this pattern. Far more important is the dynamic mechanism that underlies these wave-like surges. Any predictions we are prepared to make about economic progress in the future must be based on the underlying dynamic model, and the laws that can be derived from it, rather than on fixed (and, hence, inevitably wrong) assertions about wave-length. Much of the recent (and distant) literature has focused, mistakenly, on the predictive value of cycle-length. As a result it has been largely discredited (Solomou 1987). This is the old historicists fallacy revisited.

THE STRATEGIC MODEL OF INSTITUTIONAL CHANGE

Societal rules (or ‘institutions’), both formal (laws) and informal (customs), are established and altered to facilitate the dynamic strategies by which decision makers attempt to maximize their chances of survival and prosperity, and to impose the dynamic tactics by which competing groups attempt to control the distribution of society’s wealth. These rules are required to economize not on cost–benefit information as Douglass North (1990) and the new institutionalists assert but on nature’s scarcest resource – the intellect. Similarly, societal ‘organizations’ of all types – economic, political, and social – also largely respond to these dynamic strategies and tactics, rather than to institutions as the new institutionalists suggest. Society’s institutions and organizations, therefore, are driven not by some sort of evolutionary process as commonly claimed but by strategic demand that arises from the unfolding of the dominant dynamic strategy. Social evolution is a myth.

Strategic demand provides the incentives, opportunities, and imperatives for the changing – the ephemeral – structure of civilization. As shown in *The Ephemeral Civilization* (1997), the strategic phases of adoption, expansion, decline, and exhaustion have a characteristic impact on observed changes in the institutional/organizational structure of society. Institutional change has no life of its own. It cannot evolve in isolation from what is happening in the real economy. It is reactive not proactive, facilitating not

initiating. It has no evolutionary logic and, therefore, no laws of its own.

If the longrun 'strategic sequence' were to reverse itself, the sociopolitical structure would also do so. The only reason that the last millennium in Britain gives the impression that democratic sociopolitical institutions and organizations have 'evolved' is that the strategic sequence has been conquest, commerce, technological change (the reason is discussed in *The Ephemeral Civilization*, 1997: 338–340). Had it been conquest, commerce, as it was throughout the premodern period (for example, ancient Greece and medieval Venice), then the growing democratization of the middle, commerce phase would have been turned back to autocracy once more. The same will happen in the future if our current technological strategy is replaced by a conquest strategy (as occurred in Germany and Japan in the mid twentieth century), by, for example, a fanatical ecological dictator. This, of course, is not possible in the evolutionary model, where non-marginal change is irreversible. In the end it must be recognized that human civilization is merely a vehicle for achieving the basic desires of mankind, and that, while the dynamic process is eternal, the rites of civilization are ephemeral.

The central mechanism of institutional change in the dynamic-strategy model is the competitive struggle between various groups in society for control of the dominant dynamic strategy. This is the struggle, referred to above, between strategists, nonstrategists, and antistrategists. The only reason modern societies possess democratic sociopolitical institutions is that their entire populations have been drawn into the ruling strategic group. This has not been a linear, but a circular, historical development. Whereas in hunter-gather societies most of their populations were strategists, in conquest societies the landowning warriors constituted a tiny ruling elite, in commerce societies their ruling class was extended to include the mercantile middle class, and in technological societies the ruling class embraced, once more, the bulk of the population who invested funds and/or skills in the modern dynamic strategy. The way this works is discussed in detail in *The Ephemeral Civilization* (1997).

The point I am trying to make is that, as there is no independent dynamic mechanism underlying institutional change, there can be no independent laws governing it. The great quest of the new institutionalists to discover a general model of societal rules, therefore, is futile. It is a quest for the Holy Grail. While there certainly are

regularities, or recurring patterns, in institutional formation throughout space and time, they are the outcome of the real economy's dynamic and not of any independent institutional mechanism. Hence, the laws of institutional change must be derived from the fundamental laws of social dynamics. The ephemeral nature of civilization can only be understood in terms of the eternal forces that drive the Dynamic Society.

DERIVING THE LAWS OF HISTORY

The laws of history can be derived from global history using the above quaternary system of analysis. But to do so we must focus not on the timescapes – this was the old historicist fallacy – but rather on the general dynamic-strategy model, the historical mechanisms, and the dynamic-strategy model of institutional change. Just as there are three sources for the laws of history operating at different levels of human experience, so there are three categories of laws (as shown in the Appendix). Those derived from the general model are the ‘primary laws of history’ (or the ‘laws of societal dynamics’), which govern both the behavior of individuals as they pursue their objectives of survival and prosperity through the most effective dynamic strategy, and the way societies respond to these strategies. These primary laws are relevant to all historical eras, and they do not imply inevitability as they only encompass those who freely choose to survive and prosper.

The ‘secondary laws of history’ (or the ‘laws of historical change’) are derived from the dynamic mechanisms underlying the historical development in each of the three great eras – the Paleolithic, the Neolithic, and the Modern – of human history. These laws underpin the technological paradigm shifts, the great dispersion, the great wheel of civilization, and the great linear waves of economic change. As these mechanisms were reconstructed in my global-history trilogy by applying the general dynamic-strategy model to the timescapes, the secondary laws can be thought of as being derived from the primary laws. They amplify and support those laws.

Finally, the ‘tertiary laws of history’ (or the ‘laws of institutional change’) are derived from the dynamic-strategy model employed in *The Ephemeral Civilization* (1997) to analyze institutional change. They explain the changing democratization of sociopolitical institutions, together with their changing complexity,

cohesion, and viability. These laws show why the idea of social evolution, as postulated by the institutionalists and sociobiologists, is a myth. As the dynamic-strategy model used here was constructed from both the general model and the historical dynamic mechanisms, the tertiary laws can be thought of as being derived jointly from the primary and secondary laws of history in a global-history context.

THE ROLE OF THE LAWS OF HISTORY

The laws of history not only enable us to further the work of global history but also provide us with the opportunity to construct a new generation of dynamic models and to predict the future of human society. In doing so they open up new intellectual and policy horizons. They allow us to see our own society in the more objective way that we have long been able to see the physical world.

The laws of history provide the building blocks for a new approach to social dynamics and, indeed, to the social sciences. The deductivist approach to the longrun has had its chance over the past 300 years and it has failed. Neoclassical growth models are unable to encompass the dynamics of the developed, let alone the underdeveloped, world. Hence, it is beyond reason that the new economic historians should adopt this failed approach in a futile attempt to examine historical dynamics. It is time for a more realistic inductive approach to these issues, as outlined here.

The ultimate test for any laws of history is that they not only throw light on the dynamic processes of global history but that they become the foundation for a new generation of dynamic theory relevant to all the social sciences. Any set of 'laws' that cannot pass this test must be relegated to the garbage bin of history. What is encouraging about the laws discussed here (presented for the first time in *The Laws of History*, 1998a), is that they have already been used to develop formal economic and political models of the dynamics of the rich (see my *Longrun Dynamics. A General Economic and Political Theory*, 1998b) and poor (*Global Transition. A General Theory of Economic Development*, 1999) countries. And this is only the beginning of a new approach to the social sciences that has its origins in global history.

The other important role for the laws of history is the prediction of the future of human society. This prediction concerns not the events of the future but the dynamic processes underlying these

events. Just as the laws of history have been derived from the dynamic processes underlying the surface of everyday events, so prediction must be confined to the future operation of those dynamic forces at both the fundamental and institutional levels. In this way we can provide answers to the big questions about the future of human society – big questions concerning the direction that economic growth, population increase, and natural resource depletion are taking us, and concerning the appropriate role of government policy. Some of these questions have been addressed in my global-history and social-dynamics trilogies. Much, however, remains to be done with this inductive approach to the social sciences. And if it were done, we could witness a revolution in the social sciences to rival that in the natural sciences.

APPENDIX: A CHECK-LIST OF THE LAWS OF HISTORY

Space prevents a full specification and discussion of the laws derived from global history. That discussion can be found in my *The Laws of History* (1998a), pp. 193–239. This is just a check-list to show the structure and coverage of these laws.

I. The primary laws

1. The law of human motivation
2. The law of competitive intensity
3. The law of strategic optimization
4. The law of strategic imitation
5. The law of strategic struggle
6. The law of diminishing strategic returns
7. The law of strategic crisis
8. The law of societal collapse

II. The secondary laws

9. The law of cumulative technological change
10. The law of technological revolution
11. The law regulating the optimal size of societies
12. The law of human dispersion
13. The law of eternal recurrence
14. The law of economic progress
15. The law of dynamic regression

III. The tertiary laws

16. The fundamental law of institutional change
17. The law of democratization
18. The law of social complexity
19. The law of social cohesion
20. The law of social unrest
21. The law of institutional economy
22. The law of antistrategic political collapse

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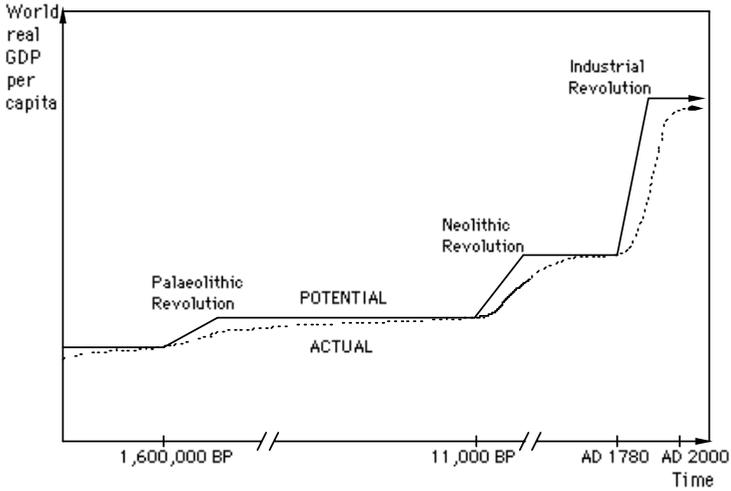
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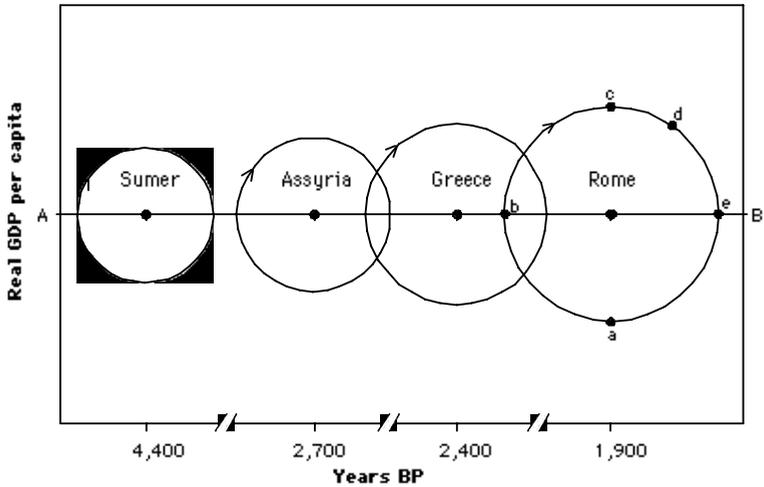
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Figure 1: The great steps of human progress



Source: Snooks 1996: 403.

Figure 2: The great wheel of civilization



Source: Snooks 1996: 407.