

The Evolution of Value Systems: A Review Essay on Ian Morris's *Foragers, Farmers, and Fossil Fuels*[†]

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Foragers, Farmers, and Fossil Fuels: How Human Values Evolve is a large-scale history of the world through the different modes of production humanity has adopted over time and their implications in terms of moral values. Morris argues that the predominant value systems of human societies are cultural adaptations to the organizational structures of the societies themselves, their institutions, and ultimately to their modes of production. In particular, the book contains a careful analysis of how the hunting–gathering mode of production induces egalitarian values and relatively favorable attitudes toward violent resolution of conflicts, while farming induces hierarchical values and less favorable attitudes toward violence, and in turn the fossil fuel (that is, industrial) mode of production induces egalitarian values and nonviolent attitudes. The narrative in the book is rich, diverse, and ultimately entertaining. Morris's analysis is very knowledgeable and informative: arguments and evidence are rooted in history, anthropology, archeology, and social sciences in general. Nonetheless, the analysis falls short of being convincing about the causal nature of the existing relationship between modes of production and moral value systems. (JEL A13, D02, N30, N60, Z13)

1. Overview

The book is a large-scale history of the world through the different modes of production humanity has adopted over time (the last twenty thousand years) and their implications in terms of moral values (with particular

focus on preferences for political and wealth inequality and attitudes toward violence). It is based on the author's 2012 Tanner Lectures in Human Values at Princeton University.

While Ian Morris displays an impressive breadth of knowledge across history, anthropology, archeology, and social sciences in general, he manages to maintain a light, entertaining, and provocative writing style. The style of the book is well-represented by its title, constructed as a juxtaposition of three catchy and partially unrelated

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[†] Go to <https://doi.org/10.1257/jel.20151352> to visit the article page and view author disclosure statement(s).

concepts: foragers, farmers, and fossil fuels—an effective way to draw attention, not unlike *Sex, Lies, and Videotapes*, or *Guns, Germs, and Steel*, to cite two famous examples.

The structure of the book adds to its entertainment value. Besides the text of the main lectures, it contains five extra chapters with comments by eminent scholars and intellectuals from diverse fields,¹ as well as an extremely witty and stimulating response by the author.

Even though the book reads mostly like a narrative on the evolution of humanity's organization of production, social relationships, and ethical values, it centers on a specific thesis:

The predominant value system of a human society is determined by the institutions which organize society itself, which in turn are determined by the mode of production the society is adopting.²

In particular, the author is quite explicit in claiming a causal relationship from modes of production to value systems.³

Morris is conscious, even somewhat pleased, I would say, that his main thesis is extremely provocative from the perspective of the humanities and several social sciences. While it is common for economists to consider cultural traits as determined by materialistic causes, economic or technological, for instance, Morris is right that the broad

intellectual discourse has generally moved afar from this kind of explanation.⁴ Perhaps even more provocative is his insistence that human values have evolved biologically.⁵ Several of the commentaries make this clear. Seaford, in particular, laments that an evolutionary theory of human values, by reducing them to adaptations to the institutions and modes of production of the particular historical phase in which they are prevalent, cannot capture their central critical role in overturning, e.g., established dominant relationships between classes and groups.⁶

The line of argument in the book is clear and direct: a conceptual model is developed and it is tested against reality. Interestingly, testing comes in different forms. The first chapter contains a simple statistical analysis across different present-time societies of the relationship between modes of production and value systems, proxied, respectively, by the percentage of gross domestic product (GDP) from nonagricultural sectors and by a measure (from the World Value Survey) of the relative predominance of traditional versus secular values. The three successive chapters have instead the structure of narrative essays. Each contains a detailed analysis of the relationship between modes of production and value systems in the context of one of the three main modes of production adopted by humanity in its evolution: hunting and gathering, farming, and industrial production. The narrative is rich and

¹Richard Seaford, Ancient Greek literature; Jonathan D. Spence, history; Christine M. Korsgaard, philosophy; Margaret Atwood, literature.

²The clarity of the main thesis in the book is clouded by its idiosyncratic terminology. Referring, as I do in this review, to *institutions* rather than *organizational structures* and especially to *modes of production* rather than *ways of capturing energy from the world around*, would have been more transparent. It would have also had the advantage of allowing more direct comparisons with the previous, in some instances even classic, large-scale narratives of the evolution of humanity.

³To this end, chapter 1 contains an interesting methodological review of the distinction between the concepts of explanation and understanding.

⁴As an interesting defensive strategy, in chapter 1, Morris proudly associates his thesis with several commonly disparaging labels: reductionist, materialist, universalist, functionalist, and so on.

⁵More precisely, in Morris's view, the role of moral values in the human experience is biologically determined, but the moral values that are predominant in a particular phase of human history are seen as cultural adaptations. Nonetheless, culture is seen as evolving by means of essentially the same process as biological evolution.

⁶Seaford even hints at the possibility that Morris's own view of the evolution of values represents an acritical support and justification of the present economic order.

diverse, interweaving historical and archaeological data as well as relevant evidence from anthropological studies.

My review will be structured as follows. In section 2, I discuss in detail the various components of the conceptual model constructed by the author. I also relate the model to some classic contributions on the evolution of modes of production and the modern literature in economics dealing with cultural and institutional evolution. Finally, I point to several weak links in the structure of the model and discuss to what extent they undermine the whole analysis. In section 3, I discuss what economists call the identification strategy of the empirical analysis. In particular, I discuss whether the causal claim put forth in the book is well established. In section 4, I comment on the last chapter of the book, which speculates about what the evolution of values might bring for the future. In section 5, I list several concluding observations about what economists could take from the book and what the book could have taken from economics.

2. *Conceptual Model*

The lectures, which compose the core of the book, may be placed in perspective by considering some previous large-scale conceptual models of the evolution of modes of production, institutions, and value systems.

2.1 *A Brief Perspective on Large-Scale Models*

A study of the evolution of modes of production and its implications naturally requires reference to Karl Marx (it is indeed odd that Morris omits doing it; it might be an effect of the idiosyncratic terminology adopted, which refers to “ways of capturing energy” in lieu of “modes of production”). The joint evolution of modes of production and institutions (and, a little less directly, of value systems)

is in fact fundamental in Marx’s analysis and interpretation of the historical phases prior to the capitalist mode of production.⁷ It is also central to the subsequent development of Marxian theory. Importantly, Marx considered modes of production as constituted essentially by social and technical relations of production (employer–employee work conditions, the technical division of labor, and property relations). He viewed modes of production as the “base,” determining society’s “superstructure,” in turn composed of culture, institutions, and civil and political power. Later Marxian thinkers, however, tend to view the relationship between “base” and “superstructure” not as strictly causal in nature. Morris’s causal view of the relationship between modes of production and values is therefore, in some sense, close to Marxian orthodoxy.

It should also be noted that links between modes of production and institutions spelled out in Marxian theory can be related back to Adam Smith’s theory of the *ages of mankind*, characterized by different *modes of subsistence*: from the age of hunter–gatherers to the age of shepherds, farming, and commerce; see Smith (2006). Interestingly, Smith seems to stress value systems more directly than Marx. In regards to hunting–gathering, for instance, he notes the lack of property and laws, and also, as Morris does, the egalitarian but violent social relations and values.

More recently, economic historians have taken the lead in the study of the role institutions in economic development. One important example is North (1990, 1991). North is concerned with the analysis of economic development in history. In his conceptual model, qualitative changes in modes of production are not central to the analysis

⁷See, e.g., Marx (1857–58 and 1859) and Foley and Dumenil (2008) for a concise summary of Marx’s theory on modes of production.

and economic development is rather represented as a smooth process, occurring in stages, from local exchanges within villages to markets across more and more vast interconnected regions (this is in part due to a shorter-term historical focus). On the other hand, economic development and evolution of institutions interact in important ways in North's analysis. As markets grow, transaction costs impose constraints, in terms of agency and enforcement of contracts, requiring institutions for the protection of property rights. Relatedly, Greif (2006) views institutions as the fundamental driver of economic history and contemporary cross-country differences in economic development. His historical analysis, however, is centered on detailed specific historical cases, such as the trade institutions adopted by Genoese and Maghrebi traders in European medieval history, rather than large-scale narratives.⁸

Diamond's (2005) famous work on the determinants of economic progress also speaks to the role of institutions. Diamond sees the ultimately dominant institutions of Eurasian societies as due to the advantageous effect of geography, which also has a role in developing resistance to endemic diseases. Building on this literature, economists have explored general models of institutions, producing formal theoretical and empirical analyses of the relationship between certain kinds of institutions and development and prosperity; see Acemoglu, Johnson, and Robinson (2006) for a survey of this literature.

Finally, large-scale analyses of the dynamics of culture include Cavalli-Sforza (1995, 2000) on language evolution and demotic movements. Cavalli-Sforza focuses his attention on cultural change along the Neolithic

transition from hunting–gathering to farming, two of the modes of production in Morris's study. He goes very much in detail on the transmission process of the farmers' specific set of cultural traits, including their value system. Following along his steps, Boyd and Richerson (1985) and Richerson and Boyd (2005) develop a study of human evolution as determined by a psychology uniquely adapted to create complex culture. They emphasize cultural diversity, as well as certain common typological characteristics of human cultural traits, like the ability to cooperate, which have been arguably instrumental in the development of institutions and ultimately economic progress.

Morris's lectures, in this perspective, constitute a very ambitious undertaking. While many of the references above deal with the interaction of modes of production, institutions, and value systems in one way or another, only Marx, and perhaps Smith, have a general conceptual model of the determination and the evolution of all three, as the one delineated in the lectures. On the other hand, most of the references above do not ascribe to Morris's causal view of the relationship between modes of production, institutions, and value systems. As a consequence, the models they develop are centered on (different forms of) the interaction among these three variables, resulting in interesting analyses with a richer array of empirical implications than in Morris's lectures.

2.2 *The Determination of Modes of Production, Institutions, and Value Systems*

While it does not contain a formal model of the evolution of modes of production, institutions, and values, the clarity of Morris's analysis and exposition is such that a conceptual model can be relatively easily identified. I structure this review around this model, with the caveat that by doing so, I might perhaps require some analytical components that a

⁸Another important contribution to the study of large-scale models of institutions is Landes (1998), which reduces the determinants of economic growth and progress to the complex interaction of culture, institutions, and historical accidents.

conceptual model cannot deliver, and at the same time inadvertently disregard some of its important distinctions, articulations, and subtleties. With this caveat, the core elements of Morris's model, as exposed in the lectures, are as follows.

1. The prevalent mode of production in a society is determined, for a given technological frontier, by the individual decisions of the agents in the society. The evolution of modes of production is the result of the changes in these decisions after an exogenous technological shock. For instance, a climatic change (the warming of the earth after the Younger Dryas, a period of cold climatic conditions and drought between 10,800 and 9,600 BCE) in the right ecological environment (e.g., the *Hilly Flanks* from the Jordan Valley to present-day Turkey's border and Iran–Iraq frontier, rich in potential domesticates) is seen as the direct cause of the advent of the farming mode of production.
2. Institutions are largely determined as the result of group selection, producing a well-functioning social system based on the specific prevalent mode of production. The relationship between modes of production and institutions is assumed causal in nature and hence their possible interactions are effectively disregarded; so much so that an essentially diachronic relationship appears to be postulated, in which adapted institutions arise *after* a change in the prevalent mode of production.
3. Value systems are the result of individual selection:⁹ “the race between values

and environments is played out in billions of little cultural competitions, as individuals decide what is the right thing to do” (p. 142). In fact, values are almost directly projected onto institutions: egalitarian/hierarchical institutions are supported by egalitarian/hierarchical values; violence/political compromise as a means to resolve conflicts is supported by values that are tolerant/intolerant of violence in the resolution of conflicts.

A concise representation of the structure of the model (where arrows represent causal relationships) is as follows:

Modes of production → Institutions → Value systems
 = Institutions

As such, the conceptual model has several implications and some limitations. I find it useful to collect them under headings that frequently appear in the characterization of the properties of formal economic models.

Welfare. While they are not explicitly and consistently derived in the lectures, Morris's conceptual model has implications in terms of welfare and efficiency. It is important to be precise about them as rational choice (as implicitly assumed in the determination of modes of production) and evolutionary selection (as assumed in the determination of institutions and value systems) are often erroneously interpreted as mechanisms leading to efficiency.

Indeed, the determination of modes of production postulated by Morris does not give rise necessarily nor generally to efficient equilibrium outcomes. Morris discusses this indirectly when facing Marshall Sahlins's (1968) fundamental question in his “Notes on the Original Affluent Society”: How is it possible that human societies moved in a widespread manner from hunting–gathering

⁹Lip service is offered also to the *Red Queen* effect, that is, the interaction between individual selection and institutions.

to farming, resulting in those societies being arguably worse-off?¹⁰ Morris identifies a crucial negative externality from farming to hunting–gathering, which could induce an inefficiency, and in turn, explain this outcome: intensive farming practices destroy the habitat for wild plants and animals. Another externality, with the same effect, has to do with endogenous fertility, lacking markets to internalize the effects of population growth on the productivity of land. This is, of course, the Malthusian effect, and is part of modern growth theory in economics; see Galor (2005).

Group and individual selection, which are postulated to determine institutions and values, in principle also fail to guarantee that societies reach a global maximum. In other words, given the mode of production, it is not guaranteed, from a theoretical point of view, that better institutions and values could not be found than the ones determined by the evolutionary selection process. To achieve efficiency, group selection requires that interactions between individuals in a group can overturn free-rider problems, unfortunately extremely common in most social and economic interactions. Free riding on agents behaving efficiently is often evolutionarily favorable; see Bergstrom (2003) for a review of these issues with group selection. Individual selection, in turn, also fails to guarantee efficient outcomes. The setup postulated by Morris, where individuals adopt values in “cultural competitions” given a system of institutions, coincides essentially with the model of social norms studied in evolutionary game theory. While this is not the appropriate place to review the results of this literature,¹¹ a social norm in this environment is one of many possible equilibria, not necessarily an efficient one: individuals

conform to a particular norm but different populations could converge to different norms. Furthermore, the same population might tend to generally switch across norms over time.

The possibility of inefficient institutions in equilibrium is not discussed in the lectures, though it is very relevant and raises many issues and questions. For instance, a great variety of institutional systems appears to have been produced in the context of the industrial mode of production (see the next section for further discussion of this). Are some of these dominated by others? Also, with respect to institutional rules and norms of behavior (attitudes) toward violence, is there a possible set of institutional rules and norms that could organize a hunter–gatherer society that does not involve a frequent use of violence to resolve conflicts? Is it possible that a system of values more intolerant toward violence could support such a set of institutional rules?

Determinacy. While individual selection is characterized by a single well-defined objective to which selected traits are adaptive (that is, fitness), this is not necessarily the case for group selection. The fitness of a group cannot generally be interpreted literally as population growth, since different complex mechanisms determine dominance factors at the level of the group. More specifically, the ability of a society to dominate might be due to its military power (which in turn might or might not be related to population growth), to its ability to produce resources (extract energy, Morris would say), or to the specific set of resources produced, and so on. Morris's model in this sense is not well-determined: different conclusions are, in principle, obtained with different assumptions regarding dominance mechanisms and interactions at the societal level; different societies might be interacting differently, due to, e.g., geographical or historical reasons, potentially giving rise to multiple institutional systems

¹⁰This same question is reformulated, with arguments, by Diamond (2005).

¹¹See, e.g., Young (2001).

given the same mode of production. The statement that the institutions selected are the ones that better support a society based on the specific mode of production under consideration is hence generally severely under-determined (what “better support” means depends on the mechanism governing selection). A recent example of the interesting theoretical implications that can be obtained once such a mechanism is clearly specified, is the recent work on the subject by Levine and Modica (2013), which develops a (group) evolutionary theory of institutions based on societal expansion through conflict. Conflictual success is determined by the ability of a society to produce free resources, that is, resources in excess of subsistence. In this context, interesting implications can be obtained regarding institutional characteristics and values systems of selected societies besides attitudes toward wealth distribution and violence. In particular, e.g., regarding their marriage norms and rules, property requirements for marriage and strong penalties for out-of-wedlock birth are predicted to be selected to limit population growth and produce resources in excess of subsistence.

Robustness. Morris’s model has values evolutionarily selected almost directly to functionally support institutions (see the arrow representation above). This is not an innocuous assumption: it is hardly supported once the evolutionary game-theory model is spelled out in detail, as we discussed above referring to models of social norms, and results are not robust to alternative modeling choices. Moving away from evolutionary models of cultural traits and moral values, e.g., adopting an intergenerational cultural transmission framework has, for instance, very different implications. Bisin and Verdier (2000, 2001), building on the work of Cavalli-Sforza,¹² develop an economic model of

transmission in which parents chose socialization rationally. These classes of models fare relatively well empirically, as they provide a natural explanation for the well-documented persistence over time, as well as fractionalization over space, of cultural traits, e.g., ethnic and religious traits; see Bisin and Verdier (2010) for a survey of models and empirical work. These models have the property that the population dynamics of cultural traits and values will generally be non-ergodic; that is, cultural evolution will depend crucially on initial conditions, e.g., on the initial distribution of the population by cultural trait.¹³ Non-ergodicity therefore implies, in Morris’s environment, that different value systems may be consistent with the same mode of production, a situation which is apparently borne out in the data, especially in the case of the industrial mode of production; see the next section. Furthermore, these models produce a wealth of empirical implications about the dynamics of cultural traits in the population, with regards to the characteristics of the traits that tend to survive in the long run, the speed at which the distribution of the population by cultural trait changes over time, and so on. Most importantly, these implications depend in a crucial manner on the socioeconomic environment, that is, the mode of production and the institutional system, underlying the cultural dynamics. All of this is lost in Morris’s model by postulating cultural traits (that is, values) directly functional to institutions.

Even without abandoning evolutionary models of culture and values, a more specific theory of the relationship between attitudes toward violence and institutions that delves deeper into this relationship than a simple evolutionary approach to institution formation could have different implications, e.g., in terms of efficiency. As an example,

¹²More specifically, on the modeling of cultural transmission processes in Cavalli-Sforza and Feldman (1981)

and Boyd and Richerson (1985).

¹³See also Bisin, Topa, and Verdier (2004).

consider the work of North, Wallis, and Weingast (2009). In their theoretical construct, limiting violence helps guarantee the well-functioning of institutions, but limiting violence by political manipulation of the economy is understood to create privileged interests and, in turn, constrain economic and political development. An important implication of this analysis is that the amount of violence in society is possibly only second-best efficient. This is true even if attitudes towards violence are selected to optimally support institutions as in Morris's view.

3. Causation and Identification

As argued in the overview, the main tenet of Morris's lectures is the causal relationship between modes of production and institutions, and from institutions to value systems (see the arrow representation on page 5).

3.1 *Modes of Production* → *Institutions*: *Statistical Analysis*

The causal relationship from modes of production to institutions is studied, briefly, by means of a simple statistical analysis based on World Value Survey (WVS) data. The statistical analysis consists essentially of a regression between national scores of WVS's traditional to secular-rational values scale against the fraction of GDP in nonagricultural sectors. The traditional to secular-rational values scale measures attitudes toward religion, family, and authority, and is intended as a proxy for the moral values associated with farming, as opposed to the ones associated with industrial production. In a sense then, this analysis centers on the second change in mode of production over human evolution, disregarding the first, from hunting-gathering to farming.¹⁴

¹⁴This is appropriate as very few hunting-gathering societies exist nowadays and in any case they are not sampled by the WVS, which is conducted at the national level.

Morris finds a positive correlation in the regression, though a small R^2 , 0.24.¹⁵

Various comments to Morris's statistical analysis are in order. His regression, in fact, falls squarely in a category of statistical analyses, like cross-country growth regressions in economics, which are plagued by econometric issues, requiring implausible assumptions about regressors, residuals, and parameters; see Durlauf (2000, 2001) and Brock and Durlauf (2001). First of all, obviously, the correlation documented in the data does not imply causation: reverse causation is consistent with the data. Second, no theory actually guides the decision about which variables to include in the regression. Even if the correlation documented by Morris were correctly interpreted as a causal relationship, nothing would preclude other causal determinants of WVS's traditional to secular-rational values scale. Third, no plausible reasons can be put forth to justify parameter homogeneity across countries: Why would the marginal effect of the fraction of GDP in nonagricultural sectors onto WVS's traditional to secular-rational values scale be the same in Africa and in Europe? Finally, linearity of the regression is always hard to justify.

In the following, I discuss more specifically in the context of Morris's statistical analysis two of the econometric issues we just raised: (1) how reverse causation could come into play to generate the positive correlation, however small, found in the data; (2) how the data might display a nonlinearity that suggests a possible different interpretation of the statistical result.

Reverse causation. The possibility of reverse causation, from value systems to modes of production, is obviously consistent with the statistical analysis reported in the lectures, as just noted. What is more

¹⁵The other regressions whose specifics are reported in the lectures deliver very similar results. I therefore limit myself to discussing this one.

important, however, is that such reverse causality is not just possible but even plausible and, in any case, at the center of the discussion of an important recent literature in economics that deals with the effects of institutions on economic progress and prosperity; see Acemoglu, Johnson, and Robinson (2006). The main tenet of this literature, as we have already discussed, is that certain kinds of institutions, that is, inclusive and non-extractive, are the fundamental causes of development and prosperity. While it is true that results in this literature are cast in terms of institutions and not in terms of value systems, it is the case, as we argued, that Morris identifies institutions with the value systems which support them.¹⁶ Further, development and economic progress are generally associated with a reduction in the share of agricultural sectors in GDP or, more precisely said, with the change from agriculture to the industrial mode of production. As a consequence, all the evidence collected in support of the central tenet of this literature, e.g., of the causal effect of extractive institutions imposed by colonial powers onto subsequent economic progress of the colonies, can be interpreted as evidence loosely against Morris's claim, in these lectures, that modes of production cause value systems (identified with the institutions they support) and not vice versa.

Nonlinearity. The plot of the data (reported in figure 1.3 in the book) shows that the documented positive correlation is hardly the result of a linear relationship between the variables. In fact, the positive correlation appears due to a few data points with a non-agricultural GDP fraction smaller than 0.8, which show low traditional to secular-rational

values scores but minimal or no correlation; and a large heterogeneity in the traditional to secular-rational values scale for data points at high nonagricultural GDP fraction. In other words, if it is true that the few relatively non-industrialized societies tend to be associated with traditional values, it is hardly possible to argue that values change “continuously” with development of the industrial mode of production. It is instead evidently the case that industrial societies are compatible with a whole large range of value systems along the traditional to secular-rational scale. One way to read this empirical regularity is that economic development might be important to elicit secular-rational value systems but far from sufficient and, especially, that variables other than the level of economic development or different initial conditions may determine which value system ends up being adopted. This is relevant, as it links back to the issue of the determination of value systems and the robustness of Morris's analysis discussed above. As already noted, models that imply different value systems in equilibrium given the same mode of production are easy to construct through different assumptions, either on group-selection environments, or on cultural-transmission mechanisms. Further, the many value systems that are compatible with economic development may be ranked in terms of efficiency, opening the door to an interesting analysis that is side-stepped in these lectures.

3.2 *Modes of Production* → *Institutions: Narrative Essays*

The narrative essays, one for each of the three modes of production, are the core of the lectures. Here is where the conceptual model is exposed and illustrated with great wealth of arguments and data. With regards to the causal structure of the explanation, however, the contribution of the essays consists in the identification of causal shocks. These induce changes in the modes of

¹⁶It could be argued, actually, that this literature falls into the same problem: inasmuch as it documents cultural traits affecting development and prosperity, it tends to categorize them as (identify them with) institutions; see Bisin and Verdier (2015).

production and various kinds of qualitative arguments in support of the exogeneity of the shocks, and, the lack of a direct effect of the shocks themselves onto institutions and value systems.

Morris identifies the climatic change after the Younger Dryas period in the Hilly Flanks as the shock responsible for the advent of farming, the agricultural revolution in the neolithic. I am not in the position to discuss whether this climatic change is enough to explain a large enough technological advantage of farming over hunting–gathering.¹⁷ If it is, then the requirements that it is exogenous and does not directly affect institutions and values would be convincingly satisfied. But even accepting that climatic change is the cause of the technological advantage of farming, it is hard to conceive the advent of farming as occurring diachronically with respect to the institutions supporting it, e.g., the formation of villages with a hierarchical structure of the population, religious beliefs, and so on, as Morris's model seems to require. The narrative essays in fact say nothing about this point. The evolutionary mechanism shaping institutions and value systems is postulated, but no evidence is brought to support it. Indeed the essay on farming is structured to argue solely that institutions and value systems prevalent in farming societies were/are functional to support the efficient operation of this mode of production. In this limited sense, they are convincing: there are few doubts for instance that villages with a hierarchical structure of the population and religious beliefs are well-designed to support a society based on farming. It is instead no surprise that historical accounts of the agricultural revolution

in the Neolithic era interpret the archeological data, e.g., regarding urbanization, as the result of the evolution of institutional systems (and, e.g., in Cavalli-Sforza 2000, of value systems) concurrently with the spread of farming as a mode of production; see, e.g., Barker (2009).

Finding a causal shock responsible for the advent of the industrial mode of production is obviously much harder than for farming. Any such attempt would clearly clash with some of the various multifaceted existing theories of the industrial revolution. Morris knows this very well, having discussed these issues in detail in his previous book, *Why the West Rules—For Now: The Patterns of History and What They Reveal About the Future*. He nonetheless attempts to find a causal shock in “geography” (p. 157). On a more detailed reading, however, the shock Morris identifies is an increase in long-run wages in Northwestern Europe, in turn due in part to the new and central role of the Atlantic Ocean in the age of large ships. This is not the place to discuss the long-run wages increase or the various other theories about the advent of the industrial revolution. I limit myself to observing that avoiding a complex and articulate account that relies crucially on the interaction and the joint evolution of technological and institutional elements, in the case of the industrial revolution, is even harder than in the case of the agricultural revolution in the Neolithic era. It suffices to refer again to the historical accounts centered on inclusive institutions in England from the Middle Ages onwards, e.g., in McCloskey (2006, 2010); see also Griffin (2010).

3.3 *Institutions* → *Value Systems* = *Institutions*

Even the second element of the fundamental causal relationship in Morris's book, that value systems are determined by institutions, is hardly tenable. Cultural traits (including value systems) and institutions typically

¹⁷A systematic examination of this hypothesis rests on its implication for population growth, a central aspect of the agricultural revolution; see e.g., Anderson et al. (2011) and, more generally, Richerson, Boyd, and Bettinger (2001), for favorable accounts.

evolve jointly, dynamically interacting. Bisin and Verdier (2015) contains several examples to this effect. Consider, for example, the evolution from farming to industrial production. Even without relying on Weber's specific *Protestant Ethic* argument, it is arguably the case that bourgeois culture, a set of cultural traits which includes a strong work-ethic, attitudes for innovation and entrepreneurship, the ability to accept deferred returns (that is, an attitude favorable to investment), have all been instrumental in the evolution of more inclusive institutions in England. At the same time, such institutions have, in turn, certainly favored the development and success of bourgeois values. Indeed, it is the complementarity of values and institutions that is often considered one of the reasons why the industrial revolution has occurred in England first and when it did; see, e.g., McCloskey (2006, 2010).¹⁸ Another important historical instance where institutions and cultural traits have manifestly jointly contributed to socioeconomic prosperity is the case of Italian independent city-states in the Renaissance: civic culture and social capital are more developed in Italy in regions that have experienced the creation of independent city-states (see Guiso, Sapienza, and Zingales 2008a, 2008b). In fact, the greater social capital in the north of Italy relative to the south, famously documented by Putnam (1992) via the differential effects of the political and institutional decentralization reforms across the country in the 60s and 70s, can be ascribed to the fact that city states were not prevalent in the south. In turn then, the interaction of culture and institutions brought about by the historical experience of city-states can explain, at least in part, the

economic success of the north relative to the south of Italy over the centuries.¹⁹

4. *Speculations*

The lectures on which the book is based end with a discussion about “Quo vadis”; that is, about where human history will direct its evolution in the future. This kind of discussion easily ends in wild and not very useful speculations. This is what happens here, but Morris is nonetheless interesting and entertaining. First, he addresses the issue of whether the predictable movement of the world economic barycenter (toward Asia) will bring about a fundamental change in the predominant value system. This is a question that his analysis is well suited to answer, at least in principle. Morris's conceptual model, in fact, implies that the predominant value system in human societies is essentially determined by the mode of production they employ. As a consequence, as long as the barycenter moves without changing the mode of production, value systems will stay relatively unchanged. In other words, Western values are not Western per se, but rather industrial, which are determined by the industrial mode of production. It will be the East then to adopt what we call Western values, e.g., “liberal, individualistic values,” to support its economic and political hegemony.

This argument is perfectly sensible and it is interesting that Morris's conceptual model be brought to bear on a prediction about the evolution of values. Nonetheless, it should be noted that the argument relies crucially

¹⁸See also Doepke and Zilibotti (2008), who discuss the role of patience as a selected trait favoring bourgeois values and fostering economic growth.

¹⁹Other interesting instances of the joint development of institutions and culture include industrialization and social capital in Indonesia (Miguel, Gertler, and Levine 2003), the technology of the plough, patriarchal institutions, gender attitudes (Alesina and Giuliano 2011), and the authoritarian culture of the sugar plantation regions of Cuba operated with slave labor as opposed to the liberal culture of the tobacco farms (Ortiz 1940).

on the model's postulation that modes of production are causally associated with a single unique set of value systems in equilibrium. I have argued in this review that this is not theoretically well-grounded nor empirically documented in the book.

Morris also considers the possibility that future changes in the world economic system be associated to a qualitative change of, a revolution in, the mode of production. In this case, of course, the value system would also change, possibly inducing a radically new socioeconomic order. Here is where the predictions turn into wild speculations about "an evolutionary leap on a par with the shift from a single- to multi-celled organisms 600 million years ago" (p. 166). Morris does well, however, in leaving predictions about the end of the industrial mode of production to the words of Ray Kurzweil, a visionary director of engineering at Google, rather than his own. In this way, he gets the entertainment value of discussing how "neuron-by-neuron maps of the individual brain" joined with "supercomputers so fast that bioengineers will be able to upload scans of every one of the eight or nine billion people on earth and run them in real time" will "effectively merge the whole of humanity in a single super organism" by 2045; and at the same time he gets to hedge by citing the "dismal record of crystal-ball gazers in the past" (p. 167).

5. *Conclusions*

The book is a fascinating exploration of human history, exposed in terms of the evolution of its modes of production, institutions, and value systems. The analysis is very knowledgeable and informatively rooted in history, anthropology, archeology, and social sciences in general. From the point of view of an economist, the book identifies a set of fundamental questions regarding the relationship between modes of production, institutions, and value systems. These

questions are relatively new, very interesting, and, as it turns out, quite amenable to the methods and tools of the discipline. The book, however, falls short in terms of the conceptual model it adopts to organize the data, which appears in way too reduced a form and especially simplistic in its postulation of causal relationships. An economist would recognize the endogeneity of modes of production, institutions, and value systems, and hence the usefulness of a more structural approach to identifying possibly exogenous variables determining the system. This would in turn offer a wealth of empirical implications that could be put to data. This structural approach does not have to include a formal model, of course, and many economists would approach Morris's questions by simply postulating deeper causal relationships in terms of a purely statistical model. On the other hand, a formal theoretical model would be of great use in Morris's context and would have helped him better understand the implications of his assumptions. As I noted, for instance, his adoption of an evolutionary theory of values excludes a rich class of models developed in economics, biology, and anthropology to understand the dynamics of cultural traits. These models introduce arguments, mechanisms, and considerations that are in principle of first order importance in this context and produce distinct results and implications. A formal theoretical analysis would have most probably led Morris to a more thorough examination of the available modeling choices, requiring at the minimum a more careful and much-needed justification for the ones adopted. But even restricting the analysis to an evolutionary theory of values, the lack of a formal model seems to have led Morris to draw implications from this theory that are much tighter than actually justified in the game theoretical formulations.

Finally, to an economist the book appears lacking in terms of its sophistication in

statistical analysis. This is not to say that the empirical analyses conducted by economists are not often plagued by serious econometric problems: cross-country growth regressions are a case in point, as already noted, and so is part of the recent empirical work on the questions raised in this book, e.g., the role of culture and institutions as origins of economic prosperity. But a more distinct awareness about these problems than is found in Morris's book is now commonplace in economics, especially with regards to what is required to claim a causal relationship. On the other hand, the book provides a great implicit argument in favor of the explanatory power of well-constructed narratives interweaving data from diverse sources. Economists tend not to value enough arguments and explanations based on qualitative data of the kind used in the book. This opens up, for instance, the issue of ethnographic data, which has proved very useful in social sciences but is almost completely disregarded in economics.

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