Explaining the Economic Trajectories of Civilizations: Musings on the Systemic Approach

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1. Civilizations and Their Economic Trajectories

In Ottoman studies a fashionable view is that culture, or specifically religion, played no central role in either the Ottoman Empire's long ascent or the subsequent descent that turned it into the "sick man of Europe." Distinguished scholars observe that Ottoman laws governing economic life in the empire fell into three categories: Islamic law, customary law, and sultanic law.[1] In realms critical to economic performance, they claim, sultanic law is all that mattered, and it responded well to the Sultan's evolving needs. Neither in taxation nor in economic regulation were Ottoman rulers hampered by religious considerations; interpretations of Islam proved flexible enough to accommodate desired changes in state policy. The balance of power between the Sultan and local elites was maintained through institutions essentially divorced from religion.[2] Although laws were critical to economic performance, they say, religion hardly made a difference.

The argument that religion was essentially irrelevant to economic development is not limited to Ottoman studies. It is claimed that South and East Asia fell behind mainly because European states used silver extracted from the Americas to subordinate once flourishing economies.[3] China became underdeveloped, others propose, because of factors rooted in geography and natural resources. Europe could extract coal relatively cheaply, and the primary products of the Americas were relatively less useful to China.[4] Such "materialist" accounts, developed within various disciplines, put little weight, if any, on what are commonly characterized as cultural factors. Just as many Ottomanists dismiss the possibility of retarding influences of Islam, many Indologists disregard

[1] Ş*eriat*, *örf*, and *kanun*, respectively.

[2] Variants of such arguments are put forth, always implicitly, by Issawi (1980), Genç (2000), and Pamuk (2004). Neither Islam nor religion appears in the index of Issawi's otherwise erudite tome on Turkey's economic history in the nineteenth century.

[3] Frank (1998) and Bose (1991) develop variants of this thesis.

[4] Pomeranz (2000).

the lasting influences of the caste system, and many Sinologists the impact of cultural isolationism.[5]

Only a shrinking minority of the materialist scholars who eschew cultural factors consider themselves Marxists, or use Marxian terminology. Yet most accept, at some level, Karl Marx's distinction between the "base" and "superstructure" of a social system. Marxian historical materialism treats "relations of production" as the engine of history. Societies advance, it holds, through the adoption of more powerful means to control and transform nature. Communal bonds, cultural identities, ideologies, religions, and, for some scholars, even laws are epiphenomena that accompany or reflect relations of production. If productive forces change, all these other factors may get transformed; yet they themselves may exhibit colorful variations without reciprocal effects on relations of production. Causal effects go from the base to the superstructure, never the other way around.[6]

Even strictly materialist accounts of history are compatible with the view that cultural traits are among the defining characteristics of civilizations. They assert not that culture is irrelevant to social life in general, only that it has a negligible impact on basic economic indicators, such as per capita income and average life span. Ottomanists who subscribe to materialist accounts of history readily place religious life among the factors that differentiate the early modern Ottoman Empire from, say, coeval India or France. They agree, too, that religion figures prominently among the factors that have served as overarching sources of identity and objects of loyalty. Few of them object to treating Islam as a key element of Ottoman civilization, provided the economic system is relegated to a compartment of its own—effectively a "material" compartment isolated from "culture."

Materialist interpretations of economic history may be contrasted with interpretations that treat cultural traits as key determinants of civilizational economic fortunes. There are works that focus on how religions differ in the extent to which they promote a work ethic conducive to economic development. Other works draw links between religion and labor mobility. Max Weber's seminal writings accord religious beliefs—the Calvinist belief in predestination, Islamic fatalism,

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[5] Goldstone (2002) synthesizes this class of arguments. For a critique of currently fashionable materialist approaches to global history, see Bryant (2006).

[6] For an extensive interpretation of the primacy that Marx gives to relations of production, see Elster (1985), pp. 267-72.

Buddhist escapism, the Hindu belief in the transmigration of souls—key roles in the economic divergence of the second millennium.[7] In the same vein, modernization theorists of the mid-twentieth century took it for granted that religions other than Christianity were essentially incompatible with modern capitalism. They wrote about the religious reinterpretations and transformations ostensibly necessary for underdeveloped societies to catch up with the West.[8] Recent years have brought numerous "culturalist" treatises that identify cognitive and attitudinal factors as critical to economic development.[9]

Culturalist accounts of social evolution share with materialist accounts the view that certain components of social systems develop autonomously. They differ in what they consider autonomous and, hence, immune to changes elsewhere in the social system. This paper's first goal is to critique these polar approaches with an emphasis on their neglect of crucial feedback effects and unintended consequences, including ones that cross the presumed material-cultural divide. The central message is by no means novel, but I will structure the argument in a way that lays the groundwork for tackling a second task, which is to sketch certain basic characteristics of a systemic approach to the study of civilizational trajectories. As we shall see, in a systemic approach, bidirectional relationships are commonplace, and complementarities of importance to economic development may involve traits ordinarily considered cultural. Over the long run, every important variable influences every other. The analytical challenge is not to pinpoint unidirectional causal relationships but, rather, to identify social mechanisms that account for clusters of variables and their dynamics. Although effects in one direction may be work faster or carry greater force than the counter-effects, the base-superstructure distinction plays no role.

Does a systemic approach to studying civilizations negate the usefulness of investigations limited to studying unidirectional relationships? Especially over short periods, much can be learned from focusing on relationships in one particular direction, provided the exercise is viewed as part

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[7] Weber (1958a, 1958b, 1978).

[8] See Lerner (1958).

[9] Landes (1998), who sometimes ascribes some weight also to geography and natural resources, offers an example. Jones (2006) critiques culturalist interpretations of global history.

of a broader inquiry. The longer the time period, the more problematic it becomes to limit analysis to unidirectional relationships that suppress feedback loops.

The systemic approach treats civilizations as living organisms. What defines civilizations, it holds, is not immutable characteristics, as epitomized by Rudyard Kipling's famous 1895 couplet: "Oh, East is East, and West is West, and never the two shall meet, Till Earth and Sky stand presently at God's great Judgment Seat." Civilizations stand apart because they form systems of complementary variables that make it very difficult to manage change. Individual traits are difficult to alter by fiat because they depend on many others. It is precisely because they form complexes of mutually supporting traits that they serve as overarching sources of identity and objects of loyalty that transcend political and geographic boundaries.

As we shall see, reforming a civilization involves targeting a cluster of variables all at once, and the order matters. The enormity of the task compounds the chances of running into unanticipated obstacles, producing perverse consequences, or even failing to make a dent.[10] In the past quarter-millennium reforms designed to overcome economic underdevelopment have involved a vast array of factors—organizational forms, court procedures, schools, governance, accounting, mentalities, attitudes toward foreigners, interpersonal relations, and much more. One of our challenges is to offer methodological guidance for exploring why reforms in some contexts, countries, and periods have been more successful than others.

2. Uses and Abuses of Partial Analysis

Imagine two societies, with identically low crime rates. In the first, crime is rare because nearly everyone respects private property. In the second, the reason is that everyone invests greatly in security; it is common knowledge that people steal when they can, so people take precautions that limit the theft opportunities. From the fact that both countries are nearly crime-free, one may infer that attitudes toward property rights are economically inconsequential. In fact, only the primary

[10] Hirschman (1991) shows that conservatives of various stripes invoke the specter of such possibilities to block social transformations. That a mechanism serves rhetorical functions is consistent, of course, with its existence.

effects are negligible. There can be side effects of great economic significance. For one thing, resources devoted in the first society to locks and guards can be spent in the first on consumption and investment.[11] For another, the members of the first society, precisely because they have less to fear, will trade more readily with strangers, and they will carry specialization farther. Hence, the first society will develop faster economically. By themselves, crime statistics cannot explain why one society advanced while the other stagnated.

Against this background, and as a prelude to considering the elements of systemic analysis, let us consider Maxime Rodinson's *Islam and Capitalism*. In this heralded treatise, Rodinson holds that the economic fortunes of the world's Muslims have had nothing to do with Islam per se. It purports to show not only that Islam was compatible from the start with free exchange but also that its teachings have had little influence on economic life. Like all major religions, Rodinson observes, Islam provides a vast reservoir of principles, commandments, and precedents from which anyone with imagination can pick and choose to support practically any economic agenda or justify any economic behavior. If the Middle East failed to develop the institutions of modern capitalism from within, he infers from the richness and heterogeneity of Islamic traditions, the reason must lie in factors divorced from religion.[12] One must look to factors controlling the distribution of economic resources and political power, and to incentives to undertake collective action. Islam, says Rodinson, served only as a veil for political and economic interests. It helped to legitimate privileges and inequalities without contributing to their emergence or preservation. This is, of course, an unmistakably materialist interpretation. Indeed, Rodinson adheres consciously to the Marxian base-superstructure distinction.

To support his case, Rodinson considers several economic patterns, among them financial practices. In its strict interpretation, he observes, classical Islamic law requires every loan to be free of interest. The ban is justified mainly on the basis of the Qur'an. Actually, what the Qur'an explicitly prohibits is an ancient Arabian practice whereby the debt of a defaulter was doubled, and redoubled if he defaulted again. Commonly resulting in the borrower's enslavement, it was a potent

[11] Hirshleifer (1991), Skaperdas (1992).

[12] Rodinson (1972).

source of discord.[13] Nevertheless, the view that the Qur'an prohibits all interest gained currency. It remains the conventional wisdom even today, among Muslims and non-Muslims alike.

Yet, the belief that Islam bans all forms of interest has never kept Muslims, even the very pious, from borrowing and lending at interest. In the early Islamic centuries, Rodinson documents, interest-based loans were commonly made through casuistical methods akin to those used in medieval Europe to evade Christian usury laws. For example, the recipient of the loan would simultaneously purchase from the lender a good, such as a sweater, at a price inflated by a "service charge"; payment for the good was deferred by mutual agreement. Empirical studies of more recent periods show, in the same vein, that financial contracts involving thinly veiled interest payments were routinely registered in Islamic courts and enforced by state-appointed judicial functionaries.[14] In every period there existed religious interpreters who characterized interest as sinful. However, partly because Islam prescribes no temporal punishment for dealing in interest, their anti-interest campaigns never managed to cleanse financial markets of interest. From such findings Rodinson and his followers infer that Islam was at worst a nuisance in regard to financial development. Although it complicated financial practices by requiring the use of legal stratagems, it did not block financiers from earning returns on their capital or cash-strapped individuals from borrowing.

Rodinson's work thoroughly discredits culturalist accounts that equate Islamic financial teachings with Muslim financial practices.[15] It makes a valuable contribution to economic history by documenting that even widely accepted religious rules may be circumvented where they are considered inimical to economic goals. But does it really show that the Islamic ban on interest was

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[13] Rahman (1964), Kuran (2005), pp. 595-96.

[14] For example, Istanbul court records, vol. 9, case 197b/3 (1662) and vol. 22, cases 94b/1, 109b/2 (1695), and Galata court records, vol. 145, case 116b/1 (1690). See also Khan (1929) and Kuran (2005).

[15] Since the publication of *Islam and Capitalism* this conflation has been most conspicuous in Islamist discourses. Siddiqi (1973), who presumes that at least in the early Islamic centuries Muslims by and large avoided interest, offers an example. Few non-Islamist scholars, Muslim or non-Muslim, fail to distinguish between doctrine and practice. But the belief that Rodinson sought to discredit lives on in popular discourses. Reputable journalists without much knowledge about Islam or the Middle East are shocked to find out that throughout Islamic history most Muslims have dealt in interest as a matter of course.

inconsequential for the evolution of the Middle Eastern economy? Does evidence that the ban was rarely obeyed amount to proof that its historical role was merely symbolic? In principle, it might have had side effects of far greater importance than its immediate and direct effects.

The available data do not indicate whether the interest ban reduced the volume of credit transactions by raising interest rates. But we can identify how financial development in regions under Islamic law, and thus subject to a formal ban on interest, differed from that in places with liberalized attitudes toward interest. By the middle of the second millennium western Europe was well on its way to a consensus on a narrow interpretation of the Biblical prohibition of usury. By contrast, the dominant view in Islam remained that all forms of interest are sinful. If the direct effects of this divergence were negligible, the indirect effects had cascading implications for relative economic performance.

Consider accounting practices. In the mercantile states of Italy, and then elsewhere in Europe, the transparency of financial transactions achieved through the freedom to deal in interest made it useful to develop increasingly sophisticated accounting methods. Not surprisingly, it is the West that invented double-entry bookkeeping, which facilitated communication and coordination among investors, firm managers, and financiers. This advance eventually permitted the organizational forms of modern business. In the Middle East, the deliberate opaqueness of financial transactions discouraged written contracts, thus removing the need for developing advanced accounting conventions. The persistence of a largely oral contracting culture and the concomitant lack of standardization in accounting contributed to keeping economic enterprises small and ephemeral. By no means were restrictive attitudes toward interest the sole cause of the lag in the region's organizational modernization.[16] Yet the Middle East's failure to narrow the scope of the Islamic "interest ban" had organizational consequences that became critical to relative economic performance when technological advances made it advantageous to pool large amounts of capital within huge organizations. If the Middle East's first banks were founded by westerners under foreign laws, a basic reason lies in the region's failure to make financial transactions transparent within Islamic law, its indigenous legal system. Hence, religion was a factor in the region's economic

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[16] See Kuran (2001, 2003) for complementary mechanisms.

development; although economic incentives led generations of Muslims to circumvent Islamic financial restrictions, those very acts of circumvention distorted financial development.

Like any account that splits social variables into two categories, an autonomous base and a subservient superstructure, this work displays what has been dubbed the "fallacy of absolute priority"—the misperception that every causal series must have a first term.[17] In focusing on how economic incentives trump religion and mold the practice of religious law, it disregards effects in the opposite direction, from religion and religious law to economic incentives.

Had Middle Eastern societies actually enforced Islam's presumed ban on interest, their financial markets would have remained primitive even by medieval standards. Hence, the ban would have ranked among the direct causes of economic retardation. The lasting contribution of *Islam and Capitalism* is twofold. First, in demonstrating the ban's ineffectiveness, it rules out one possible mechanism by which Islam might have caused economic backwardness. Such a negative result should spur researchers to look elsewhere for causes the Middle East's economic retardation. The book's second lasting contribution lies in the information it provides on the manner in which Muslims engaged in interest-based transactions. Whatever Rodinson's own interpretations, it mattered that they resorted to legal stratagems rather than reinterpreting the pertinent Qur'anic verses. These stratagems provide clues as to the social mechanisms primarily responsible for the Middle East's observed economic trajectory. They thus constitute a building block of an inquiry into the mechanisms that caused the Middle East to fall behind economically.

The limitations of *Islam and Capitalism* stem partly from its focus on primary and intended consequences. On the question of interest, he goes no further than whether the Islamic ban achieved its intended purpose of eradicating interest. Finding that the ban was commonly circumvented, Rodinson concludes that it did not affect economic development. As such, he neglects to inquire into the dynamic paths blocked through the use of legal stratagems. This common tendency to focus on immediate, direct, and easily identified consequences for particular groups has been dubbed the

[17] Fischer (1971), p. 178.

"fallacy of overlooking secondary consequences."[18] In a vast array of contexts, it leads to the neglect of processes that carried greater significance over time.

3. Hints of Trouble in Records of Success

The stated purpose of *Islam and Capitalism* is to demonstrate that Islam did not hinder economic progress or, for that matter, stimulate it. But the fallacies that limit this work's usefulness also afflict works whose aim is simply to explore workings of the Middle Eastern economy, without placing religion at the center of the inquiry. In focusing on documented successes, a wide variety of studies disregard the evolutionary paths precluded by those very successes. Inadvertently, therefore, their interpretations obfuscate critical patterns in subsequent periods. They confuse broader historical matters by making it seem that before the nineteenth century nothing at all was troubling, even with the benefit of hindsight.

These points may be illustrated through the well-researched, and in many ways admirably instructive, biography of Ismail Abu Taqiyya, a leading Egyptian merchant who was active between 1580 and 1625. This was a time when the use of coffee as a beverage was spreading in the region and demand for refined sugar was growing rapidly. Displaying remarkable entrepreneurial skills, Abu Taqiyya became a major supplier of coffee to Egypt and sugar to much of the eastern Mediterranean. His biographer Nelly Hanna writes about how the Islamic legal system allowed Abu Taqiyya to exploit commercial opportunities. Describing his shining career, she claims that "the legal system was not a barrier to carrying out business."[19] What she actually documents is that over his career Abu Taqiyya formed thousands of partnerships, all under Islamic law. She thus establishes that a Middle Eastern producer and merchant of the pre-industrial era could reach the pinnacle of his profession without relying on foreign institutions.

It is the inferences drawn in passing that are open to question. In inferring from Abu

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[18] Hazlitt (1946), pp. 3-4. Hayek (1973-79) expounds on this tendency in his *Law, Legislation, and Liberty,* especially chaps. 3, 9, 11, 18. Lal (1998) focuses on secondary consequences that have shaped key patterns of global history.

[19] Hanna (1998), p. 59.

Taqiyya's successes that Islamic institutions adequately supported economic activity, she also gives the impression that they could not have contributed to the Middle East's subsequent loss of economic stature. In fact, signs of Egypt's looming retardation had already emerged as Abu Taqiyya was making a name for himself. The organizational possibilities open to Egyptian merchants of the seventeenth century encompassed nothing more complex than temporary partnerships. Abu Taqiyya and his many partners could not pool resources within joint-stock companies resembling the Levant Company of the English traders active in the eastern Mediterranean. Unlike their western contemporaries, they could not form partnerships whose members designated heirs who stood ready to take over. At the time, the prevailing differences in organizational scale and longevity did not amount to a major handicap for the Egyptian economy, or that of the broader region. However, eventually they enabled the West to dominate the global economy. The West developed organizational means to exploit emerging technologies of mass production. Other civilizations became organizational laggards and eventually also organizational imitators to improve their economic performance.

Just as Rodinson disproved that Islam has blocked the use of interest, so Hanna successfully discredits the claims, common in culturalist writings, that Islam is hostile to commerce, discourages risk taking, and promotes fatalistic attitudes inimical to business. Abu Taqiyya was indeed a tireless entrepreneur who expanded diverse markets by taking calculated risks. But his exploits excluded the development of new organizational forms. The contractual forms that Abu Taqiyya used and the types of organizations he founded, all within the rubric of Islamic law, limited the opportunities of his descendants. Hence, certain obstacles to development are evident in Hanna's own research. Another clue as to what was going wrong lies in the range of her primary sources. Unable to find a private archive of documents related to her subject's professional life, she had to rely exclusively on transcripts of court cases in which Abu Taqiyya was a litigant or witness. Evidently he operated within a largely oral commercial culture and did not enter into complex or long-term contracts that would have necessitated an archiving system. This biography illustrates, then, that the region was failing to develop a business culture conducive to the development or adoption of the organizational forms that would prove vital to industrialization.

In contrast to Rodinson, Hanna does not seek to advance the methodology of investigating the effects of cultural traits. Her stated purpose is neither to debate whether Islam has mattered to economic performance nor to test competing culturalist and materialist hypotheses with regard to the Middle East's economic development. Nevertheless, she takes Abu Taqiyya's recorded career to imply that Islamic law could not have hindered business in the Middle East. In reaching this conclusion, she abstracts, of course, from the secondary consequences of the institutions under which Abu Taqiyya operated.

It bears re-emphasis that, like Rodinson's empirical findings, those of Hanna contribute admirably to the study of links between Islam and economic performance. On the one hand, they establish that Islamic institutions could support production and commerce at a respectable scale by pre-industrial standards. On the other, they offer valuable clues to anyone who tries in earnest to make sense of why the Islamic world became underdeveloped, and even of what went wrong elsewhere. It is only her broader interpretations, in particular her claims regarding the commercial advantages of Islamic law, that appear simplistic and misleading.

4. Measuring Success and Failure

People standing atop Mount Catherine, Egypt's highest point, feel that they are at the peak of the world. In fact, Mount Everest stands three times taller. The illusion stems, of course, from the shape of the earth, and the consequent limitation of individual horizons. Illusions of the sort identified above—the alleged irrelevance of Islamic doctrine to financial development, the presumed optimality of Islamic contract law—stem from methodological constraints. Each of the claims is too general in relation to the temporal and contextual foci of the analysis offered in support. The neglect of secondary consequences causes local optima to be treated as global optima, and static efficiency to be equated with dynamic efficiency.

This neglect, evident even in high-caliber scholarly works such as those just critiqued, tends to be shared by subjects of historical inquiries. The historical societies that scholars analyze consisted of individuals who were themselves cognitively limited—bounded, that is, in their capacity to acquire, store, retrieve, and process information.[20] Inevitably, therefore, their choices had consequences that they themselves did not intend and could not possibly have anticipated. Basing their decisions on necessarily partial models of their environment, they achieved outcomes that would have been perceived as global optima, when in fact they were merely local optima—hilltops surrounded, distances away, by tall mountain ranges. For centuries on end, Middle Easterners lacked awareness of the unfolding global process of economic divergence. Neither the borrowers and lenders whose transactions Rodinson observes nor the merchants who populate Hanna's archival records could have known that the laws governing their economic choices were sowing the seeds of organizational retardation. As such, they would not have offered their analysts living centuries later clues about unfolding difficulties.

However, the illusions of historical subjects need not pose an insurmountable obstacle to identifying emerging opportunities and troubles. If only because they know where the world was headed, interpreters of historical data can spot dynamic failures linked to static successes, and recognize future dangers inherent in immediate solutions. Misinterpretations can be avoided through an awareness of the fundamental transformations that cumulatively brought about the modern economy. Knowing these transformations and their logic can help one identify whether outcomes that appear impressive by the standards of a particular region or period carried implications for economic modernization. There is a growing literature on the fundamentals of the economic modernization process.[21] It will suffice here to outline one set of findings as a means illustrating the advantages of taking a long view of economic development.

In the course of economic development, Robert Cooter and Hans-Bernd Schaefer (2006) observe, economic cooperation undergoes several stages. The most primitive involves "relational cooperation"—the pooling of resources among family and friends. Provided basic property rights exist, relational cooperation is easily sustained through the bonds of trust that develop within tightly

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[20] The concept of "bounded rationality" goes back to Simon (1957). On the concept's methodological implications, see Gigerenzer and Selten, eds. (1999). Hayek (1973-79) addresses its implications for social evolution.

[21] For a few of the prominent contributions, see Lamoreaux (2004), North (2005), Greif (2006), and Hansmann, Kraakman, and Squire (2006).

knit communities. Its limitation is that business stays small and local. A more advanced form of cooperation is "private cooperation," which involves business relationships within larger networks. It requires, in addition to property rights enforced by a third-party, contract law to support financial markets. Islamic contract law and the courts that enforced its provisions formed institutions established to support private cooperation. The mercantile courts of the Champagne Fairs, the Hanseatic League, and the inter-caste councils of premodern India provide additional examples. Every major pre-industrial civilization had found ways to promote private finance.

The main limitation of private finance is that investors retain substantial control over how borrowers use their capital. It does not leave the management of capital to specialists.[22] Under "public cooperation," a third form of cooperation which emerged in countries at the forefront of economic modernization, investors who buy stocks and bonds generally leave the use of their capital to professional managers. Protecting the investments of such investors against managerial fraud requires more than property and contract law. It requires laws of corporations and securities. The mix of relational, private, and public cooperation varies across today's economically most advanced countries. But each one boasts institutions that enable the mobilization of capital in amounts inconceivable under private finance, to say nothing of relational finance.

A plethora of observed institutions constitute solutions to some problem of cooperation. If any given problem is defined narrowly enough, its chosen solution will even appear as optimal. The legal system that sustained Abu Taqiyya's exploits were optimal by definition if there was no use for commercial organizations more complex or more durable that Islamic partnerships. If organizational longevity is added to the criteria by which optimality is defined, the same legal system will seem suboptimal, for Abu Taqiyya operated through myriads of short-term contracts, and after he died his business empire dissipated within a decade, largely because of inheritance rules designed to spread wealth. Viewed, then, from the standpoint of organizational evolution or the direction of the global economy, the legal system under which Abu Taqiyya operated was anything but optimal.

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[22] Various forms of medieval partnerships, including the Islamic *mudāraba* and the Latin *commenda*, gave active partners some discretion over the capital invested by passive partners. But ordinarily it was decided jointly where the active partners would go and what exchanges they would pursue. In relation to modern investors, the passive members of medieval partnerships knew more about the utilization of their capital.

It was setting the stage for the region's slip into a state of economic underdevelopment and for institutional transplants aimed at making up for lost time. Though statically efficient in relation to Abu Taqiyya's known objectives, the Islamic legal system was dynamically inefficient.

A statically efficient economic choice could never cause dynamic inefficiency if switching institutions was always costless. In fact, institutional change is never free; it imposes costs that depend on past trajectories. Confronted with the same set of circumstances, two societies may respond differently, because historic contingencies make particular options less costly in one than the other. It was in the late sixteenth century, as Abu Taqiyya was building his reputation, that durable companies with dozens, if not hundreds, of shareholders started to spearhead the expansion of global trade. The early overseas companies originated in the West, where merchants had a long history of forming effectively permanent organizations to pursue their common interests.[23] Egyptian long-distance traders of the period had no formal organizations, not even guilds. Hence, they were ill-prepared for forming large and durable global trading companies. There is no indication that Abu Taqiyya sensed that permanent companies—what we now call firms—would play a growing role in cross-Mediterranean trade. If he did, and wanted to form one himself, his task would have been harder than that of the English merchants who formed the Levant company. He would have to make bigger institutional leaps.

Viewed from a perspective that accounts for path dependence, Abu Taqiyya's exploits still look impressive by local standards of the day. But they do not appear as steps that expanded the frontiers of the Egyptian economy. On the contrary, they testify to the problems that were turning the Middle East into a persistent economic laggard. By and large, regions of the world that fell behind in organizational modernization have remained economic laggards. Without experience at solving the organizational challenges of the transition from personal to impersonal exchange, and private to public finance, they have had to modernize through imitation and defensively. With the notable exception of certain East Asian countries, they have stayed a few steps behind the regions that initiated the modern economy.

[23] Rulers supported these organization in the hope of appropriating some of their rents through taxation. Wood (1935), Gelderblom and Jonker (2004), and Harris (2005).

5. The Systemic Approach to Civilizational Analysis

The gist of the argument thus far is that historical works replete with new facts and clever insights frequently promote interpretations that neglect to account for social processes of great significance. Feedback effects and secondary consequences are overlooked, or brushed aside as trivial on the basis of an ideological or methodological commitment; and grand lessons are then drawn from an analysis limited in scope to a short period, or one sector, or one particular transformation. Moreover, distinctions among local and global optimality, and between static and dynamic efficiency are blurred, leading to exaggerated evaluations. Such errors are not harmless to the study of civilizational trajectories, because discourses on broad economic trends are heavily reliant on focused empirical studies. Unjustified inferences can confuse their participants and lead them down unpromising research paths.

In an ideal world, no one would make causal claims about historical trends without considering all possible interactions among every single factor that may have affected the societies under investigation. In practice, even a very broad social study—one that incorporates multitudes of causal effects—necessarily involves simplifications. For the very reason why the subjects of historians had to be oblivious to many side effects of their actions, the feasible breadth of any given study is limited. One cannot bring everything that might have mattered, say, to China's economic trajectory in the second millennium even into a series of wide-ranging books completed over a lifetime. Whatever webs of relationships a research project covers, it will necessarily exclude ones involving factors central to the analysis. However many feedback effects it recognizes, it will have to treat as exogenous trends that co-evolved with variables treated as endogenous.

Legitimate concerns about omitted variables and effects can be raised, then, about any investigation that attributes economic trends to social factors. For a causal explanation with a genuinely autonomous independent variable one would have to fall back on geography or climate. Yet the fixity of these factors rules them out as determinants of civilizational transformations, or changing economic rankings. A stable climate cannot explain why China was an economic leader in one period and a laggard in another. Geography cannot explain why the Islamic world conducted commerce under Islamic law for more than a millennium, and then undertook massive legal reforms involving the transplant of foreign commercial codes.

If an analysis aimed at making sense of a civilization's trajectory must include social variables, and these variables must be restricted, its conclusions will inevitably leave room for doubt. This is not a counsel for despair, because imperfection is a matter of degree. A person who cannot climb Mount Everest may manage to scale lesser mountains. If we define intellectual progress as gaining greater understanding, rather than solving every imaginable puzzle, there is no need to refrain from seeking answers to the big questions of history. Of course, to get as far as possible, we need to think about the right methodology. In other words, we need to think about about the most effective way to explore the determinants of broad trends.

I will propose five steps to guide researchers. None will come as a surprise to the many competent scholars—historians, economists, sociologists, political scientists, and others—who follow these guidelines anyway, often instinctively. They are meant to enlarge the community of scholars producing new insights, and to reduce the "noise" generated by claims that go beyond what is being supported empirically or theoretically.

There is a body of research concerned explicitly with the methodology of interpreting civilizational trajectories. Works by Avner Greif (2006), Douglass North (2005), Masahiko Aoki (2001), and Jean-Philippe Platteau (2001) are among the recent contributions that offer pertinent and highly valuable methodological lessons through both mixes of abstraction and application. Students of civilizations have much to learn also from methodological works on social mechanisms, including those of Jon Elster (1989) and Peter Hedström and Richard Swedberg (1998). A social mechanism is usually more than a causal relationship between a set of variables. It may incorporate feedback effects. But it is less general than a "social law," in that it may represent a constellation of forces unique to a place and time. Although the concerns of the social mechanism literature go beyond the illumination of major historical trends, it explains more fully than is possible here why a systemic approach is appropriate to the study of civilizations. Exposés of common fallacies encountered in historical publications, such as those of David Hackett Fischer (1971), complement these other literatures through abundant examples of logical errors committed in influential works. There are other valuable methodological contributions. But the sources just cited offer a solid springboard to anyone wishing to conduct civilizational research that will stand scrutiny.

The second step is to recognize that in every domain of history exemplary scholars have already laid some of the groundwork. Young researchers aiming to explore why India became one of the laggards, or why in the second half of the twentieth century Africa performed worse than any other continent, need not start from scratch. Identifying, classifying, contrasting, and dissecting the existing explanations will alert them to possibly critical variables, trends, relationships, and puzzles. This may sound like an obvious point, for in every field new researchers are instructed to survey what is already known. But I would stress here that the surveying be done with an awareness of the steps to follow.

The next step launches the process of analysis. Its goal is to eliminate from consideration factors known to have varied greatly without any visible effect on outcomes to be explained. For a demonstration, suppose we want to explain the trajectory of a particular society's commercial organization. The list of potentially relevant variables is immense. It includes property rights, family structure, military organization, architectural fashions, longevity, weight distribution, inheritance regime, and communication technology, to name just a few possibilities. Some of these can be excluded with little trouble using the principle just given. Architectural styles have varied greatly among regions with essentially identical contracting forms. Comparing medieval Venice and Genoa, or Tunis and Aleppo, establishes the point. By the same token, certain variables can quickly be identified as closely relevant on the basis of patterns reported in existing works. In Europe the average size of partnerships declined during the Black Death, recovering after the plague subsided.[24] Apparently the expected life spans of potential commercial partners mattered to organizational size. The pre-modern commercial treaties that regulated trade between Europeans and Middle Easterners contained clauses on inheritance rights. Evidently a link between commercial profitability and inheritance practices was thought to exist. The perception suggests that traders might have made organizational adaptations to prevailing inheritance practices.

So imagine that we have isolated several factors that appear relevant to organizational choices. The fourth step of the process is to identify the key social mechanisms that link the chosen factors. The task cannot be fulfilled inductively, merely by examining historical records. Data do not

[24] Hunt and Murray (1999), pp. 154-55.

speak for themselves. Everyone uses models to classify information, rank factors in importance, connect variables, define success and failure, in short, to make sense of historical data. Some scholars do so self-consciously, and they make a point of reporting their assumptions, inferences, and analytical principles. Most use models implicitly, without pausing to outline their methodology. Explicitness offers several advantages. It facilitates comprehension, provides a check on inconsistencies, and makes it easier for researchers studying other places, contexts, or time periods to test the generality of causal claims.

At one level or another, generality is an objective of all social research. If we are trying to understand why the population of a given town is shrinking, a parsimonious account ("rising crime induces flight") is more instructive than a long set of explanations, one for each departure ("Jim escaped after his home was burglarized," "Leila left because the homeless people camped by her store frightened customers," and so on). The larger the unit, of course, the broader will be the generalizations. In civilizational research one looks for social mechanisms common to huge populations and in play for long periods. The objective is to identify mechanisms that illuminate multitudes of case studies involving numerous places. If an identified connection between Islamic inheritance practices and organizational evolution is observed holds across the Middle East, and for centuries on end, it may qualify as a core attribute of Middle Eastern or Islamic civilization.

Once a mechanism is identified as a civilizational attribute, one wants to know whether it sheds light on relative economic performance. Could it be that the same mechanism was at work in another civilization that performed measurably better or worse? Multiple outcomes can flow from the same mechanism. The demand-supply relationship that governs price may bring about different outcomes if initial conditions differ. Likewise a given mechanism that connects inheritance practices with organizational development can elucidate why one inheritance regime facilitated organizational innovation while another hindered it. Discovering that the mechanism in question was operative in multiple civilizations, with a variety of results, will suggest that it may be among the fundamental factors that explains observed patterns of divergence. By contrast, discovering that it was not operative in certain parts of the world will call for fresh thinking about what was critical. The best the available data permit could be that different mechanisms were at work in different civilizations. Further research might show several distinct mechanisms to be special cases, or sub-mechanisms, of a shared, deeper mechanism. For reasons already given, it will never be possible to find a single set of mechanisms to explain all historical patterns. But broadening the generality of the mechanisms used to explain historical patterns would amount to progress.

Once again, distinguished researchers proceed through these steps routinely in diverse contexts, sometimes without articulating their methods of analysis. These steps accord with the philosophy of scientific progress identified with Imre Lakatos (1977). Our understandings deepen, said Lakatos, as theories that explain *n* observations are replaced by ones that explain all *n*, plus more. The goal of scholarship is to integrate as many facts as possible. If mechanism M_2 explains everything M_1 does, and also some patterns that M_1 leaves unexplained, it is preferable.[25] This principle of elimination is served, of course, by comparative research.

The process of elimination is an iterative process. Just as identified mechanisms stimulate and guide empirical investigations, so new empirical findings support the discovery of new mechanisms at play, and the modification, even the discarding, or mechanisms believed to have been operative.[26] Historical information that leads to theoretical advances may come from anywhere. The fact that Abu Taqiyya's biographer found no privately held documents associated with him yields clues about the the mechanisms responsible for the Middle East's retardation. Apparently, in the early seventeenth century the region was at best at the start of the transition from personal to impersonal exchange—from trade among people able to unleash communal sanctions on cheaters to trade among strangers able to enforce contracts through specialized institutions of third-party enforcement. An alternative starting point for this observation could be that in Europe major merchants did leave elaborate archives. With that information, historians of the Middle East could ask why their own sources include far less documentation preserved by entities other than the state.[27]

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[25] The sets of phenomena that two mechanisms explain may overlap incompletely. In other words, each may explain phenomena that the other does not. In that case, there are no grounds to reject one decisively. This is a common situation in the social sciences, which is why we observe so many fruitless debates that go on ad nauseum.

[26] Greif (2006), especially chap. 11, develops this point.

[27] The famous Geniza documents of mainly the eleventh-thirteenth centuries, so named because they were found in the "geniza" of a Cairo synagogue, constitute a major exception that proves the point. The geniza of a synagogue served as a repository of discarded writings. The

In turn, the Middle Eastern and European experiences may provide new clues to historians of, say, Japan, China, and India.

Ordinarily one can identify multiple mechanisms likely to have contributed to a given outcome. Looking at the Middle East in the nineteenth century, one notices that it was underdeveloped not just organizationally but also technologically, militarily, politically, and more. Just as it lacked a law of corporations, its engineering schools were teaching globally outmoded technologies. Middle Eastern entrepreneurs acquired, then, multiple handicaps. Is there any way to rank these dimensions in terms of their contribution to underdevelopment or its persistence? What would be the basis of such a ranking?

Technological and organizational handicaps did not pose equally intractable problems. Physical production methods were transferred across continents more easily than commercial institutions. Steam engines could be shipped to distant lands, along with the technicians and raw materials needed to make them productive. Transplanting the organizational means to exploit mechanization took much more time. An efficient stock market requires an intricate legal system, various specialized occupations, and schools to train and certify appropriate professionals. Only some of the required specialists can be hired from abroad. To be effective, the rest will need familiarity with local cultures and vernaculars. It also requires the existence of norms that facilitate anonymous exchange by promoting generalized trust—trust that transcends ties based on kinship, ethnicity, religion, or region.[28] By this logic, the absence of organized equity markets posed a greater obstacle to economic advancement than delays in mechanization.

There is a reason, then, to give analytic priority to institutional transformation. Analytic

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court depositions, wills, partnership contracts, and business correspondence found in the Cairo geniza were not meant to form a private archive. They ended up together to accommodate the Jewish belief that unneeded writings bearing the name of God should be left in a special location (Goitein, 1999, pp. 9-13). Since these documents had lost their usefulness, they were not expected to be consulted again. Accordingly, no one bothered to classify them until their discovery by modern scholars. The Jewish merchants who appear in the Geniza documents did business under Islamic or Jewish contract law. Neither was conducive to the formation of lasting business enterprises.

[28] See Platteau (2000), chap. 7, Fukuyama (1995), and Greif (2006), chap. 9.

priority is not to be confused with the fallacy of absolute priority, which undergirds the strict forms of materialism and culturalism. To give analytic priority to one source of retardation over another is to recognize that it posed a relatively vexing social problem, not that the causal relationship between them was unidirectional. The Middle East's organizational and technological capacities co-evolved, with each influencing the other. On the one hand, the failure to develop technologies of mass production diminished incentives to develop permanent organizations commanding huge amounts of capital. On the other, organizational retardation distorted incentives for technological innovation, because many advanced technologies can be exploited only through complex organizations. For reasons given, the vicious circle was easier to break through technological borrowing than through organizational transplants.

The foregoing logic does not rest on an a priori distinction between base and superstructure. A systemic framework of analysis recognizes that one can disturb an established equilibrium through any number of interventions. If some interventions are less effective or work more slowly than others, it is because they require the modification of a broader range of behaviors.

6. Civilizations as Units of Analysis

The last observation may be rephrased in terms of complementarity: the more significant the complementarities, the harder the intervention. Two institutions complement one another insofar as each enhances the usefulness of the other. Double-entry bookkeeping and a law of corporations are complements in this sense. Standardized accounting is vital to the daily operations of a corporation; by the same token, the availability of a law of corporations enhances the value of accounting standards.

In the presence of complementarities, successful reforms will involve clusters of changes. Consider two civilizations: 1 and 2. In the first, institutions A_1, B_1, ..., F_1 all complement one another. A_1 is a set of organizational forms, B_1 a form of accounting, C_1 a court system, D_1 a system for training judges, E_1 a banking system, and F_1 generalized trust, as opposed to trust limited to family and acquaintances. All of these institutions have distinct counterparts in the second: A_2, B_2, ..., F_2. The menu of organizations (A_2) is more limited, and individuals lack trust in strangers, which induces them to exchange primarily with people known to them or their friends (F_2). Over time, let us say, the second civilization falls behind the first, and it becomes the conventional wisdom that substituting A_1 and C_1 for A_2 and C_2 would jump-start a convergence process. The two reforms are carried out, so that the second civilization now has institutions A_1, B_2, C_1, D_2, E_2, and F_2. The transplanted institutions will not equalize the economic performance of the two civilizations instantly, because their complements, which play a vital role in its home civilization, are absent here.

Ever since states started to add economic modernization to their objectives, this scenario has been played out repeatedly, all across the globe. An example from the nineteenth century must suffice. In the 1850s Turkey and Egypt launched reforms to increase the global competitiveness of their merchants and financiers. Each adopted the French commercial code and established new secular commercial courts to adjudicate cases that Islamic courts were poorly equipped to handle. It took many decades for the new organizational forms introduced through these reforms to gain popularity. One reason lies in the teething problems of schools to train judges, another in the inexperience of appointees to the new tribunals. Yet another reason is that investors accustomed to personal exchange did not immediately warm up to organizational forms involving separation of ownership and control; the necessary generalized trust was lacking.[29]

In the preceding stylized illustration, the entities were defined as "civilizations." Why not regions or states? What is gained by using a concept lacking a geographic or political referent? Britain and New Zealand share many basic institutions, and the commonalities facilitate institutional transplants. For instance, traffic regulations developed in one are easily adopted by the other. In general, it is relatively easier to transplant institutions entrenched in Britain into New Zealand than into Egypt, which lies much closer. When traffic lights were introduced to Cairo, initially they were mostly ignored. For another example, British managers of multinational companies find that in New Zealand relationships with employees, customers, and the government resemble those at home. By

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[29] On the adjustment problems experienced in these contexts, see Toprak (1995) and Black and Brown, eds. (1992), chaps. 5, 12. By the standards of the most advanced countries, generalized trust remains low in the Middle East. The only predominantly Muslim country included in the World Values Survey of 1990-93 was Turkey, and it registered a level of trust lower than all other countries in the sample of 43 countries, save Brazil [Inglehart, Basañez, and Moreno (1998), table V94].

contrast, their counterparts in Cairo consider local commercial norms to differ significantly from those to which they are accustomed. Those differences would not disappear—at least not quickly—if Britain were to start ruling Egypt again, as it effectively did between 1882 and 1922. The concept of a civilization is useful, then, precisely because it accommodates institutional commonalities that transcend political boundaries and geographic distance. Two regions, countries, or communities can be said to belong to separate civilizations if their basic institutions differ sufficiently to make institutional transplants across their boundaries substantially more problematic than internal transplants.

The boundaries among civilizations are by nature fuzzy. Assigning social entities to civilizations is subject to greater imprecision than identifying which state controls Buenos Aires, or where Argentina ends and Brazil begins. Nor does the concept imply a permanence of institutional differences. Although thinkers who share the conviction inherent in Kipling's above-quoted couplet use the concept to capture ostensibly indelible cultural characteristics, the difficulties posed by complementarities are not insurmountable. Although Cairo's traffic still leaves much to be desired, its drivers now obey traffic signals more readily than they did two decades ago. The institutional mismatches generated by the mid-nineteenth century commercial reforms in Egypt and Turkey spurred further reforms that eventually overcame the obstacles to forming large and organizationally complex enterprises. Modern law schools started producing new judicial cadres, and accounting schools clerks familiar with modern bookkeeping. Meanwhile, the emergence of local banking sectors spurred the formation of large commercial enterprises through various channels, including greater capital accumulation and lower borrowing costs. Today, each country boasts private firms with tens of thousands of employees and assets measured in billions of dollars—magnitudes inconceivable under a traditional Islamic legal system.

Earlier I proposed that physical technologies are easier to alter than institutions. I can now add that differences in complementarities make some institutions easier to alter than others. The track record of the Middle East suggests that it takes less time to put in place new accounting standards than to institute generalized trust. Whom we trust depends on family norms, education practices, and patterns of upbringing—traits that reach deep into daily life. For that reason, we cannot even identify all the complementarities involved, let alone know how to go about modifying the relevant set of traits. It is the slowest moving institutions—those most resistant to change, least understood, and hardest to distinguish or quantify—that the concept of civilization generally conjures up. Not all slow-moving institutions affect economic performance directly or significantly. Core civilizational traits include religious rituals and beliefs of little economic relevance, and some of these are highly resistant to change. What matters here is that institutions of great relevance to economic performance vary in the degree to which they are amenable to alteration.[30]

Therein lies, perhaps, a clue to the underpinnings of the second great divergence in economic performance that the world has witnessed over the past quarter-millennium: the leap in living standards that propelled first Japan, and then several East Asian countries, from the ranks of the economic laggards into those of the advanced countries. All of these countries fell way behind in living standards, partly because they were slow to develop, or adopt, modern market institutions. Like the countries of South Asia, Africa, the Middle East, Eastern Europe, and Latin America, they were subjected to top-down institutional reforms, and their entrepreneurs adopted foreign business tools and methods also on their own. If the transplants produced much higher yields as measured by living standards, the reason may be that its slow-moving economic institutions were already better suited to the modern global economy. In the World Values Survey of 1990-93, the percentage of people saying "most people can be trusted" was substantially higher in East Asia than in all other groupings of late developing or underdeveloped countries.[31] For two of the three East Asian countries included—Japan and South Korea—the magnitudes may have reflected, in part, the effect of economic enrichment, rather than a cause. But in China, at the time poor even in relation to other underdeveloped countries, the percentage was around the mean of the advanced western countries. Insofar as the operation of the modern economy depends on generalized interpersonal trust, the key

[30] This observation undermines the soft materialist thesis of Eric Jones (2003, 2006), according to which religions and other cultural traits may slow down economic trends but not prevent desired economic activities for long. There is no basis for believing that every cultural trait is equally malleable in any given context, or that malleability is invariant to context. The mechanisms at play may differ, and some will support multiple social equilibria. Both of these facts point to complexities that Jones disregards.

[31] Inglehart, Basañez, and Moreno (1998), table V94. See also Inglehart (1997), pp. 172-74.

to China's breathtaking advances may lie, then, in historical processes that made its people more trusting of strangers relative to those of other economic laggards.

7. Conclusions

If civilization constitutes a system of complementary social traits, and some of the complementarities are between elements of the "material" world and those that belong to "culture," there is yet another reason to be deeply skeptical of theories of long-term economic performance that fit neatly into a "materialist" or "culturalist" category. It is easy to identify cultural traits shaped by material incentives. The ineffectiveness of the Islamic interest ban is just one among many historical examples. It is equally easy to find causalities running in the opposite direction. In India, beliefs in ritual impurity have constrained occupational choices and hiring decisions for centuries. But such examples do not come close to explaining why the Middle East or India became, or have remained, economic laggards. Start searching for the mechanisms at play, and you find that they involve causal relationships that cross the presumed material-cultural divide in both directions.

A more fundamental problem with these purist approaches is that traits themselves may stretch across the presumed divide. Trust offers a case in point. Anthropologists have long considered trust—societal, communal, ethnic, sectarian, professional—to be among the characteristics of culture. Their thick descriptions of social dynamics are often replete with observations concerning trust or mistrust of subgroups such as officials, bosses, clients, peers, and co-ethnics. But an expanding share of economists have come to view trust as integral to economic performance. They recognize that it is essential to making markets work their wonders. Some economists have been advising governments and international organizations that economic privatization and liberalization programs should not be expected to yield equal results everywhere; in places where trust or other critical market institutions are lacking, the results may disappoint. They have also taken issue with the approach of liberalizing economically as fast as possible, and in many areas as possible. If some changes are easier to accomplish, an ordered approach may avoid perverse results and consequent political reactions.[32] The arguments offered in support of these critiques and proposals typically hinge on interactions among variables that "cultural studies" specialists readily treat as elements of "culture."

When students of global history argue that in some places impersonal exchange is relatively harder to institute, or that the transition from private to public cooperation occurs relatively less smoothly, they too blur the distinction between cultural and material variables. The factors that they invoke to explain observed patterns include economic institutions embedded in religion or tradition, such as kinship relations and the economic teachings of religion. In systemic approaches these are seen as co-evolving with various other social variables, including ones widely treated as material or cultural. This lessens the analytic usefulness of positing such categories.

The last claim justifies an emphasis on interdisciplinary cooperation and fertilization in inquiries into civilizational patterns. If key variables cannot be classified as strictly economics, sociological, political, religious, or cultural, they cannot be the preserve of any single academic discipline. Narrowly tailored studies conducted within established disciplines will continue to generate information vital to civilizational research. But progress toward solving questions involving civilizational performance will require forays across disciplinary boundaries. These forays must be based on systemic thinking that takes account of institutional complementarities.

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[32] Rodrik (2005).

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