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Notes for a Presentation:

Historical Social Science as a Science of Culture

Richard E. Lee

Director, Fernand Braudel Center
Binghamton University
Binghamton NY
13903-6000
rlee@binghamton.edu

The Modern World System and Its Structures of Knowledge

World-systems analysis emerged in the 1970s in articulation with the medium-term historical conjuncture that was marked by the end of the world economic expansion that had been operative over the preceding quarter century and by the decline in the hegemony in the interstate system that had been enjoyed by the United States over the same period. On the one hand, world-systems analysis was a protest or resistance movement, in articulation with the social movements associated with the upheavals of 1968, concerned with the ways the world and its functioning had been portrayed and thus what actions, in whose interests, were deemed possible, and legitimate. It was a product of the system that it sought to understand. On the other hand, world-systems analysis was also an outgrowth of the secular crisis of the processes reproducing historical capitalism in the long term. In that sense it has been a forward-looking movement

during a period of transition.

The basic premise of world-systems analysis is that historical social systems have lives. They come into being as a unique set of singular, longue durée structures; the secular trends and cyclical rhythms of their reproduction may be observed over the life of the system; but eventually the processes reproducing these structures run up against asymptotes, or limitations, in overcoming the contradictions of the system and the system ceases to exist.

The structures of the modern-world system, or capitalist world-economy, came into being in Europe at the beginning of the long sixteenth century, the period known as the transition from feudalism to capitalism. By the end of the Hundred Years' War an axial division of labor was developing between a western European core where high-wage, skilled workers produced low-bulk, high value-added manufactures and an eastern European periphery where high-bulk, low value-added necessities were produced by a lower cost work force. The long-distance trade in these commodities resulted in the accumulation (concentration and centralization) of capital in the core.

The processes reproducing this relationship over the long term—the "accumulation of accumulation" or profit making for reinvestment and thus more profit making—underwent periodic fluctuations, and the expansion of the system to incorporate new pools of low-cost labor provided the solutions that turned periods of world economic downturn into periods of upturn. A principle characteristic of the world today is that there no longer exist significant pools of labor outside the system to be incorporated at the bottom of the wage hierarchy as previously incorporated workers have militated and succeeded in negotiating higher remuneration, thus lowering the rate of profit.

The "endless" accumulation resulting from the extraction and appropriation of surplus

2

produced by labor could only take place within the context of what developed as an interstate system. Unlike the "parcellized sovereignty" (Anderson 1974), or overlapping geographic jurisdictions of feudal "realms," the multiple states of which this new system was composed were sovereign, with reciprocal rights and obligations, to the extent that their territorial extensions, and the monopoly on the use of force within them, were recognized by other states. Fluctuating flows of goods, capital, and labor could thus be controlled across semi-permeable borders throughout the system. Strong states worked to loosen controls during periods of world economic upturn and tighten controls during periods of downturn to favor accumulation and contain and defuse class conflict.

Like its economic processes, the geopolitics of this system also underwent periodic fluctuations. Competition among elites resulted in "world wars," the outcomes of which were short-lived states of "hegemony," a status of the system itself, as a whole, during which one strong state exercised military, commercial, financial, and cultural dominance, before other parts of the world-system "caught up" to become once more competitive and the cycle repeated. Three such periods may be observed: Dutch hegemony after the Thirty Years' War, British hegemony after the French Revolutionary/Napoleonic Wars, and U.S. hegemony after the thirty-years-long World War I-World War II. Significantly, over the past five hundred years, no power has been able to totally dominate the system and thus to turn it into a world-empire and today no seemingly credible scenario for establishing a new state of hegemony has emerged.

There was a third set of structures that were just as constitutive of the modern world-system as those in the arenas of production and distribution, the economic, and coercion and decision making, the political. This third arena has come to be conceptualized as that of

3

cognition and intentionality, the structures of knowledge.[1] The fundamental conceptualization of the structures of knowledge has proven to offer particularly thorny difficulties. It was not as though no one had been working on the problem; indeed, not only had questions in the cultural realm long offered rich subjects for study even at the macro level, culture had long been a central explanatory category of social analysis as well and had, in fact, given rise to an important knowledge movement beginning in the mid-1950s (see Lee 2003a). However, if the broadly "cultural" aspect of the world-system were just as constitutive as the economic and political realms, then ad-hoc, particularistic conceptualizations had to give way to a specification of the longue durée structures of this "third arena," and include the cyclical rhythms and secular trends of their reproduction. These would have to be recognizable over the entire life of the system—in other words, a conceptualization analogous to those of the economic and political arenas (see Lee 2003b).

From the beginning of the long sixteenth century, the practices of knowledge production took the form of a complex of processes that produced over time an intellectual and institutional hierarchy, a set of structures, within which authoritative knowledge was progressively defined as the "other" of societal/moral values. These processes of knowledge formation, in articulation with those sets of processes associated with the "economic" and "political" spheres, account for the dominant relational setting "disciplining" human cognition and intentionality, the "cultural" parameters of possible action. Determining micro-fluctuations indicating the direction of the transformation of medieval modes of knowing were the rise of visual representation and quantification dissociated from any value components and especially the emergence of the "modern fact" as the primary epistemological unit of valid knowledge and cultural authority

[1] See Lee (1996, 2003b), Lee and Wallerstein (2000, 2004)

(Poovey 1998; Crosby 1997)..

The medieval structures of knowledge recognized diverse fields or subject-matters; rhetoric was certainly not astronomy. What was not recognized was differing bodies of knowledge that were based on contradictory visions of the way the world worked. It was this new epistemological divide, and the hierarchy that privileged as legitimate and authoritative "factual knowledge", that would become the norm. The mechanisms of this transformation, such as the establishment of double entry bookkeeping (see Poovey 1998) and the renewal of the authority of the principle of the excluded middle, were clearly articulated with the political and economic developments we generally consider the markers of what is termed the transition from feudalism to capitalism. These markers included the rise in the status of merchants and the legitimation of profit making (the *virtù* of the balance in the "bottom line"), the development and integration of the world market, and the transformation of the basic political entities of "realms" based on "parcellized sovereignty" into "states" with borders.

The creation of the modern fact enabled the metamorphosis of the merchant into the capitalist by establishing the legitimacy of profit rooted in the virtues of "balance" inherent in the system of double-entry bookkeeping. With profit distinguished from usury, the accumulation of accumulation could take off. At the same time, however, there were concomitant effects which redefined the structures of knowledge. The modern fact could be affiliated with both specifics (of commerce) and their generalization (within a system which ordained the individual creditworthiness of merchants and their credibility as a group). The possibility of such a double identity drove the processes of rationalization, the secular trend in the arena of the structures of knowledge, which, depending on circumstances, might be labeled "scientization" or "secularization." The pursuit of objectivity—the view from nowhere; the erasure of agency and

history, in short, of subjectivity in whatever form (see Megill 1994)— embodies the progressive privileging of formal rationality, disinterested calculation as a generalized means of instrumental action, over substantive rationality, the normatively-oriented pursuit of specifically situated ends. The structures of knowledge of the modern world-system are, then, unique, like its economic structures (those of production and distribution) and political structures (those of coercion and decision making); indeed, no other historical system has created two antithetical, contradictory epistemological bases for the production of knowledge, one excluding human values a priori and one in which human values are an inseparable component.

The long-term trend deepening this structure underwent two great conjunctural adjustments or "logistics" analogous to the waves of expansion and contraction in the economic arena and the cycles of relative concentration of power in the geopolitical realm (see Lee 2003b). The first consisted of the seventeenth-century Newtonian synthesis between Baconian induction and empiricism and Cartesian deduction and rationalism, which created the foundation for the dominant theoretical approaches and methodological practices in the sciences and led to the solidification of the separation of the sciences from the humanities.

With the common purpose of mastering nature, two avenues in the search for truth independent of received values were charted in empiricist appeals to the senses and an inductive method and rationalist espousals of reason and a deductive method. During the eighteenth century, the Newtonian fusion of these two modes produced a synthesis of experimental and empirical approaches incorporating hypothesis construction and mathematical demonstrations. Classical science henceforth would be concerned with the discovery of universal laws governing a regular and constant nature that would lead to the prediction of change, both future and past. With the displacement of the divine viewpoint to man, the humanities, not concerned with the

ordered certitude of regularities in the world of nature but with the chaotic finitude of the unique and unpredictable in the human world of conflicting values, could appeal to individual creativity for a "rational" understanding of emergence and change. Along these two lines, the long-term intellectual and institutional opposition of the sciences and the humanities, what has come to be called the "Two Cultures", reached a clear delineation over the course of the nineteenth century (see Lee and Wallerstein 2004).

Within this basic structure, the social sciences emerged in the nineteenth century as a medium-term solution to the tensions internal to the structures of knowledge that no longer offered practical ways of addressing the evolving geopolitics of the world-system. In the aftermath of the French Revolution it was no longer possible to imagine a static world; however, modes of interpreting social change in the human world, as marked off from the natural world, made contradictory appeals to values. The mutually exclusive alternatives were either order achieved through the authority of tradition or chaos arising from unfettered democracy. Neither offered a solution, on which any consensus seemed possible, to the political confrontations between conservatism and radicalism that threatened capital accumulation.

The medium-term resolution of this dilemma was the late nineteenth-century creation of the social sciences, situated between the sciences and the humanities. The putatively value-neutral social sciences, which seemed to offer the possibility of a "scientific" or non-value-oriented policy-making process in the service of "progress", came to occupy a tension-charged space in the wake of the irresolvable contest between the equally value-laden but mutually exclusive positions taken by conservatives (tradition, order) and radicals (democracy, anarchy) in the humanities on the political future of the world following the French Revolution. The key controversies in this process were the late-nineteenth-century *Methodenstreit* in the German-

speaking world (in both philosophy and economic history/economics: Dilthey and the Baden neo-Kantians, Schmoller, Menger) and the English order and anarchy debates (Carlyle, Arnold, Mill)—the one taking place in the context of state-formation and development in the Germanies, the other in the context of British political unrest at home and uprisings in the colonies.

Instead of value sets, on which the politics of both the right and the left had been founded, the social sciences increasingly ordered collective decision-making along the lines of Mill's suggestion that from the "science of society" come "guidance" (Mill 1843: 64). T. H. Huxley called on the objective, value-neutral, problem-solving spirit of science to realize progress without moralism. On the occasion of the opening of Sir Josiah Mason's Science College, Birmingham, in 1880, Huxley delivered a lecture in which he asserted that

> if the evils which are inseparable from the good of political liberty are to be checked, if the perpetual oscillation of nations between anarchy and despotism is to be replaced by the steady march of self-restraining freedom; it will be because men will gradually bring themselves to deal with political, as they now deal with scientific questions (Huxley 1881: 158-9).

The political consequences of this medium-term solution were the “scientific” legitimation of the association of particular “nations” or “peoples” with individual states, the hierarchical placement of groups on a racialized and gendered world division of labor, and the rise of the “new liberalism” effectively eliminating clear alternative political agendas on the right and on the left, but holding out the fig leaf of, at least generational, progress to the exploited.

Thus, this division of labor found on one side the factual, universal, positivistic, empirical, objective, fact-producing, and quantitative disciplines of the sciences engaged in explaining order in a world where past determined a predictable future via universal laws. On the

8

other side was to be found the particularistic (for instance, with regard to social contexts, locales, or time frames), chaotic, value-oriented, and qualitative disciplines of the humanities where scholars dealt with an unpredictable and relativistic world of free human agency. In their quest for legitimacy after 1945, the social sciences deepened their efforts to emulate the putative universalism of the natural sciences. They were, nonetheless, divided on questions of both theory and method. On the one hand, universalism was expressed in quantification and the comparative method in economics (econometrics), sociology (structural-functionalism), and political science (behaviorism), while, on the other hand, universalism was expressed additively in the more narrative bent of history and anthropology. Although all the disciplines exhibited to some extent both tendencies, scientism seemed to be gaining throughout. Similarly, even the humanities, in their effort to retain a credible voice, sought to echo the decontextualization, atemporality, and presumptive objectivity of the sciences with approaches such as “new criticism” and “close reading”.

The result was the institutionalization of a set of disciplines, the social sciences, which would function to guarantee ordered change in the name of “progress” through “scientific” control, exercised by “experts” and based on “hard facts”; in practice, this amounted to liberal incrementalism maximizing accumulation and minimizing class struggle.

The social sciences divided the study of the human world into isolated domains separated intellectually in disciplines and institutionally in university departments. Oriental studies and anthropology were concerned with the great civilizations and the “tribes” of the non-modern world respectively; history handled the past of the modern world; the present of the modern world was further divided among economics, political science and sociology, which treated the market, the state, and civil society as isolated fields. Although economics, political science and

9

sociology leaned more toward the sciences while history, Oriental studies and anthropology tended to be more humanistic, even within the disciplines there was no consensus on the composition of their data (quantitative, qualitative), or the appropriateness of their methods (statistical, narrative), or the nature of their "scientific" universality (discovery of laws, elaboration of exhaustive descriptions) on which they based the legitimacy of their claims. However, from the moment of the greatest intellectual and institutional success of this structure in the period immediately after 1945, the scholarly legitimacy of the premises underlying the partitions separating the disciplines and the practical usefulness of the distinctions became less and less self-evident, and after 1968 were overtly contested.

These then are the three analytically distinct but functionally, and existentially, inseparable structural arenas of the modern world system: the axial division of labor, the interstate system, and the structures of knowledge. They define a singular "world." And that world is unique in human history in that from the time of its emergence it has expanded to incorporate the entire globe. It is this world, then, that constitutes the unit of analysis of the world-systems perspective.

A persistent question for both analysts and activists has always been why the exploited majority, although successful in agitating for improved conditions in the medium term, has never been able to entirely change the rules of the system. Historically, world-economies have been unstable and have generally transformed into world-empires or disintegrated. The modern world-system, in contrast, has not (yet) met either fate. "[T]he secret of its strength ... is the political side of the form of economic organization called capitalism ... [which] as an economic mode is based on the fact that the economic factors operate within an arena larger than that which any political entity can totally control. This gives capitalists a freedom of maneuver that is

structurally based" (Wallerstein 1974: 348). What matters for the system as a whole is not where state borders are drawn (they have, in fact, changed greatly over time), but rather that there exists a fragmenting mechanism per se (the process of state formation) defining a hierarchical ordering of multiple centers of power that can unilaterally impose resolutions to struggles among competing interests, but, with maximum legitimacy, only within their exclusive geographic perimeters. Classes, as economic phenomena, are formed at the level of the division of labor, at the level of the world-economy; the answer to the political question why the exploited majority simply does not rise up is of course that it does, periodically. Actual class struggle, however, always remains fragmented since political movements organize to effect change where the primary organs of power and decision-making are located, in the states.

Now given the structure of the world-economy, capital has always held the advantage over labor in the long term. Nonetheless, individual, competing capitalists figure their bottom lines in the short term and workers have to satisfy their needs every day. Considering the cost of active struggle to profits and wages, any deployment of force over a significant period of time is decidedly unattractive. In the medium term, the least costly outcome is the reestablishment of consensus, even though it entails the expense to local capitalists of granting some material gains to workers. These gains are kept to a minimum, for workers too absorb an expense in accepting less than they would like, by the addition of a codicil promising further progress at some unspecified time in the future. Of course, the distribution of aggregate surplus at any point in time is a zero-sum game. Acceding to some, even minimal, demands of labor in one locale has to be made up in another if ceaseless accumulation is to continue, or, to avoid a vicious circle wiping out accumulation altogether, new sources of surplus have to be found. Indeed, this is what has happened historically as the world-economy has expanded (a fundamental process of

reproduction of the system) to incorporate fresh pools of cheap labor at the bottom of the wage scale to make up at the system level what was conceded locally.

The "globalization" model acknowledges implicitly that the economic processes of historical capitalism have not changed over the past five centuries. Nonetheless, the rhetoric of globalization ignores the long-term trends of those processes and suggests that the contemporary crisis is cyclical (a downturn in comparison with the upturn of the post-1945 period) and is thus reversible. In the contemporary world, the perceived openness of the international economy and the ease with which it slips the bonds of state regulation, which globalization critics decry, expresses the recognition that the cycles of endless accumulation—expansion, incorporation, exploitation and appropriation over long distances for reinvestment—take precedence over regulative policies any state or states might try to impose. This is exactly what "world-economy" means; a world-economy functions within and over the entirety of the "world" defined by the spatio-temporal extent of its processes. On the one hand, globalization has both correctly identified and recognized as important a fundamental change relating to the politics of the modern world-system: the "external" geographic boundaries of the world-economy have disappeared. On the other hand, the reason this is important has not to do with the cyclical downturn in the perceived capacity of the states to regulate "international" capital. The significance lies rather with the long-term trend of the process of expansion having reached its asymptotic limit and the political consequences of the fact that there is no longer an "outside" available for incorporation to replenish the lowest strata of the world division of labor and produce the surplus necessary to stave off class struggle while maintaining the endless accumulation of capital.

But there is a second point concerning the periodic settlements between capital and labor,

the promise of progress. As world-scale class conflict played out in localized struggles over the eighteenth and nineteenth centuries, the contradictory demands of radicals for freedom and democracy (echoing the voices of working class victims of variously coercive modes of labor exploitation), of conservatives for order over anarchy, and of capital for assured pools of cheap labor resulted in the collapse of clear ideological alternatives on the left and the right and the emergence of the "new liberalism" at the end of the nineteenth century (see Lee 2003a, ch. 2). Coming into its own with the incorporation of the last of the regions external to the capitalist world-economy, the new liberal "consensus" inscribed some groups into subordinate positions on socially constructed but politically functional status hierarchies of race and gender. These hierarchies were translated and naturalized into "nations" of cultural/historical peoples and the dominant, politically responsible social subjects, the "citizens" of which they were made up, and the excluded "others" relegated to a secondary station legitimating their exploitation. During the first half of the twentieth century, this new liberal consensus, the geoculture of the world-system, was extrapolated worldwide in the form of Wilsonian "self-determination of nations" and Rooseveltian "economic development," the structural equivalents of universal suffrage and the welfare state at the national level within the core.

This world-liberal compact relied on strengthened state structures and piecemeal reform to insure order, that is, keep democratic tendencies in check. Its unstable equilibrium pledging progress prevailed for upwards of a century, but the promise wore thin, especially for women, ethnic and racial "minorities" and the young in the core and (ex-)colonial peoples in the periphery on whose marginalization it had depended. By the 1960s the note had come due but there was no one left ("outside" the system) to whom the promise of progress had not been made to bring on-line to pay for its (partial) fulfillment for those to whom it had been made. Even the

modernizers could see that the sequential model did not describe development in the real world and all of the social, national, and Old Left movements that had bought into the promise by targeting state power found themselves targets, along with the powerful institutions guaranteeing the processes of endless accumulation, in the world revolution of 1968.

Over the past three decades, the crisis in the processes reproducing the organizational patterns of the modern world-system in all three structural arenas, despite neoliberal efforts bolstered by the rhetoric of globalization (the idea that there is no other choice) to extend them, has become apparent. The major mechanisms through which accumulation has been guaranteed over the past five centuries by keeping costs of production down—the incorporation of new pools of lowest cost labor, the externalization of the costs of infrastructure and ecological degradation, and control over transfer payments resulting in higher taxes—have all run up against their limits resulting in rising costs of production at the world level that can no longer be offset locally.

Within the structures of knowledge, too, rationalization has entered into crisis and the attendant transformation is already changing the way we view the world, and it will eventually alter the possibilities for human action that we are able to imagine. The structuralisms spelled the demise of European humanism and positivism alike, and from the late 1960s, developments at the level of theory were mirrored on the ground of practice. Those groups which had theretofore lacked a "voice" gained admittance to the academy and began to transform it from the inside by applying their differently situated knowledge of the workings of the social world. Since then, multiple, not always harmonious, varieties of feminism have contested received premises of knowledge formation through a conception of values expressed in hierarchies of difference and power and have directly undermined the (male) universalism and objectivity by which science

laid claim to a distinctive mode of knowledge production. Their work disputed essentialist categories of man and woman and situated the female body as a pivotal site of positioning women in society through scientific discourse. In a similar fashion, scholars and activists working in the area of race and ethnicity have, as they produced their own empirical studies, built up theories of difference that challenged (Western) universalism and objectivity. Their work likewise unveiled how the essentialism of received categories of difference functioned to inscribe whole groups into subordinate positions.

Over the same period, the very premises of science have been undermined from the inside (see Lee 1992, 2004a). It took the better part of four centuries for what we now think of as the scientific model to dominate our common sense view. That model included the discrimination between true and false, in a world of independent, "objective" elements. It included the idea that explanations should be brief and simple and at their best couched in laws admitting predictability. These are exactly the notions which have lost their unquestioned intellectual legitimacy. They continue, however, to regulate our everyday thinking. Their great force resided in their naturalized, universal and trans-historical character, but they are not genetically encoded; they were constructed and may be, indeed are in the process of being, changed.

Thus, the structure of the superdisciplines of knowledge production are collapsing. Contingency, context-dependency, the collapse of essentialisms, and multiple, overlapping temporal and spatial frameworks are moving the humanities in the direction of the historical social sciences. That chance and necessity are indivisible and give rise to irreversibility and creativity in natural systems (see Prigogine 1996) are moving the sciences in the same direction. Coinciding with these developments, the intellectual sanctions and practical justifications for

independent disciplines in the social sciences is disintegrating. This is a world at the "end of certainty," argues Ilya Prigogine (1996); one in which the direction of fundamental change is unpredictable, but intimately dependent on our choices among the real historical alternatives that we can imagine for a more egalitarian world, "utopistics," as Immanuel Wallerstein argues (1998).

So, what conclusions are we to draw from the simultaneous exhaustion of the processes insuring endless accumulation and containing class struggle, and the collapse of their intellectual foundations? The upper bound of the trajectory of historical capitalism is not a point of arrival. It is a frontier of transition implying an ethical imperative to make profoundly political choices. The real story of the post cold-war world is not the "victory of the West" but the disintegration of the liberal compact which began in 1968 and was completed in 1989 (see Wallerstein 1995). The liberal consensus, the geoculture of the world-system, was a politics of medium-term increments of reformist change adding up, putatively, to endless (long-term), linear, progress. This vision depicted a golden, extrapolatable, "now" with no allusion to the ideologies of either a future transformation (socialism) or an idyllic past (conservatism). The parallel to Newtonian dynamics is clear. Science itself offered the linear development model, based empirically and epistemologically on independent units. But in the post cold-war world, liberalism has proven unable to deliver on its universalist message of progress. In its neoliberal guise it has failed in its bid to reinstate the geopolitical realities of the world characterized by US hegemony in the post-1945 period, or through structural adjustment to reproduce the conditions of the Kondratieff A-phase economic expansion of the same period.

Science now provides us with alternative models of physical reality, relationally constituted self-organizing systems and fractal geometry, and of change and transition, complexity theory and chaos theory. These all defy the law of the excluded middle that has been one of the bedrock tenets of legitimate knowledge production, and common sense, for the past five centuries. The recognition of the indeterminacy of meaning in the humanities and the "alternative knowledges" that found a home in the social sciences with the expansion of faculty and student body after 1968 to include those speaking from marginalized subject positions have highlighted the political dimension of knowledge production and undermined the idea of scholarship as a perfectly disinterested activity amenable to objective evaluation. Nonetheless, we have not reached the end of responsibility and social agendas. We are hardly at the "end of history." To the contrary; we are on the frontier "after history" when time and space can no longer be treated as neutral parameters but must be viewed as socially constructed and interdependent processual categories.

The present transition is the last frontier of historical capitalism. The future is decidedly one of transformation and abounds with possibilities. But not all of the possible futures we can envision are equally desirable. Indeed, the alternatives are becoming clear. These may be thought of in terms of the "spirit of Davos" (with reference to the World Economic Forum), a new historical system that like the present world would be "based on privilege, exploitation, and polarization," or the "spirit of Porto Alegre" (with reference to the World Social Forum), a new historical system "relatively democratic and relatively egalitarian" (Wallerstein 2006: 19). This struggle for the future, then, calls for committed, purposeful action, as no final outcomes are predictable. Lasting for the next 30-50 years perhaps, the transition will be rich in fluctuations,

that is, social instability—a lack of order already comprises the "new world order." Unstable systems, in fact, impose fewer constraints, fewer limits. The exercise of free will, for instance in the form of interpretative scholarly work meaningful for these times, is thus less restricted and, capable of massive amplification, at some point will constitute irreversible and determining moral choices for a qualitatively different social world, a new historical system with its own unique set of structures, processes of reproduction, and geoculture.

Historical Social Science for Our Times

Half a century ago, during the post-1945 period through the mid-1960s say, it was quite clear to academics and laymen alike what the organizing arrangements of the disciplines of knowledge, and the layout of the departments that expressed them institutionally, were. At the upper end of what was indeed a hierarchy of disciplines were the natural sciences; at the bottom of the hierarchy were to be found the humanities; and somewhere in a contested, amorphous, middle space were the social sciences. The departments of the superdisciplines were generally housed in different buildings on university campuses; libraries of the sciences were often separated from those serving the humanities and the social sciences; and the departments themselves published in different sets of proprietary journals.

The unquestioned prestige of the sciences was premised on what were genuine accomplishments in explaining real world phenomena and thus at least to a certain extent harnessing those phenomena, as for instance witnessed in the war effort (radar, atom bomb, etc.). There was also, however, an epistemological dimension to this prestige. The sciences purportedly dealt with the natural world in terms of universal truths, in terms of "facts," which could either be observational (specifics) or theoretical (natural laws). The key term was universal

in the sense of always, everywhere and untainted by human bias. Furthermore, scientific laws were constructed in such a way as to admit prediction. The humanities, on the other hand, in considering the world of human relations proposed anything but universal knowledge; they were relativistic and explicitly concerned with the unpredictable arena of human values. Finally the social sciences, which were also concerned with the world of human relations, sought to develop a form of knowledge about the social world that was "scientific" in the sense of being unbiased (the "view from nowhere") and admitting at least a soft form of predictability.

The acceptance of this structure, and its hierarchy, as natural and beyond question reached its peak in the immediate post-1945 period, and, like the axial division of labor and the interstate system, it became global in extent. Nonetheless, tensions have remained apparent over the past half century in the resurgences of old epistemological debates such as reductionism versus holism, structure or determinism versus agency or freedom, and order versus disorder—each antinomy manifesting an aspect of the division between facts and values, the sciences and the humanities.

Today, there is certainly a heightened sense that we live in a "knowledge-based society". There is, indeed, much discussion of this in the standard literature. Although it is quite true that analysts and entrepreneurs alike have always considered knowledge to be a central aspect of the processes through which capital is accumulated, it is only since the 1960s that the realm of knowledge has been in any way problematized, even in the short run. Fritz Machlup (1962) initiated research in this vein by examining "knowledge industries," apart from the rest of the service sector of the U.S. economy, and measuring their contribution to the gross national product. He concluded that they would soon overtake the industrial sector. Since then, both the scholarly and popular literature on the "information society" and the "knowledge society" has

exploded.

Some refer to the phenomenon as living in an age of a "knowledge economy" (e.g., Neef 1998; Cooke 2002; Acs, de Groot and Nijkamp 2002). Others suggest that we are living in an age of "knowledge capitalism." For his part, Lester Thurow considers the twentieth century as a period of transformation from a natural resource economy to an economy in which the major players are brainpower industries and in which the major sources of comparative advantage are knowledge and skill alone (1996). To cite another particularly well-known observer and analyst, Peter Drucker contends that today we are living through a transformation to a post-capitalist society. He notes that "knowledge is becoming the sole factor of production, sidelining both capital and labor" (1993: 20).

I would argue that the transformation is much more fundamental and profound than either of these or many other mainstream analysts suggest; it is the working out of the secular crisis of the processes reproducing the structures of social life of the modern world that emerged from the transition from feudalism to capitalism in Europe. However, it is only visible as a fundamental crisis from the standpoint of the *longue durée* (see Hopkins and Wallerstein 1996). Nonetheless, the recognition of this crisis is, indeed, the essential starting-point for relevant social analysis today.

The crisis was implicit within the sciences over the two decades after 1945 when voices that diverged from the standard positivistic, reductionist and analytic model in the direction of an organic, relational model began to be heard. In one way or another, these new approaches were conceived as appropriate to the study of "systems that are intrinsically complex," as Ross Ashby noted (1991: 249). The issues involved were addressed by, among others, the elaboration of General System Theory (GST) and Cybernetics.

But these have not been easy roads. In matters of application, Anatol Rapoport, an original protagonist of GST, expressed concern about the exploitation of systems approaches in the management of military organizations and in consulting work where the goal was corporate profit-making (1998: 16). Felix Geyer has articulated the larger question:

> the more realistic—and therefore less parsimonious—a theory, the more complex it becomes, and the more difficult to test the hypotheses and subhypotheses derived from it which are used in collecting and interpreting the data. . . . For the time being, sociology should perhaps . . . force itself to give up the ambition to make accurate medium- and long-term predictions, except in delimited areas of research where complexity is still manageable or can be more or less contained (1995: 28).

This statement alludes to both a boundary problem and to the ultimate ambition of the social sciences: prediction. It has become clear that defining a set of interactions for which the external context can be ignored (in the sense of having negligible impact) is extremely problematic. Furthermore, work in contemporary complexity studies shows that prediction itself is possible for only a subset of systems studied even in the natural sciences, and then only under certain, limited circumstances—much less for the world of human interactions.

Complexity studies emerged directly from research in the sciences and mathematics (see, for instance, Aida et al. 1985; Pagels 1988; Stein 1989; Lee 1992; Waldrop 1992; Byrne 1998). At the very moment of the worldwide triumph of the Newtonian worldview, that is, of a deterministic world of natural laws based on time-reversible dynamics, this new knowledge movement challenging the premises of that worldview began to take root. The rethinking that we are witnessing today represents a synthetic approach as opposed to a reductionist one; indeed, a

science of complexity holds out the possibility of representing change—that is, "describing our collective reality as a process"—without reverting to reductionism (Casti 1994: 273). It marks a shift away from the Newtonian worldview emphasizing equilibrium and certainty and defining causality as the consistent association of antecedent conditions and subsequent events amenable to experimental replication and hypothesis testing. In 1986, Sir James Lighthill, President of the International Union of Theoretical and Applied Mechanics, went so far as to apologize on behalf of "practitioners of mechanics . . . for having misled the general educated public by spreading ideas about the determinism of systems satisfying Newton's laws of motion [implying complete predictability] that, after 1960, were to be proved incorrect" (1986: 38).

Although all developments were not equally successful, what did turn out to have enormous resonance, in terms of extensive theoretical pertinence and broad areas of application, was the study of chaos. The recognition of the existence of chaotic behavior exhibited by nonlinear systems flew in the face of Laplacian predictability. As these systems evolve over time, they rapidly magnify small perturbations and are thus highly sensitive to small changes in initial conditions. Despite this, there remains evidence of an embedded order underlying the seemingly random evolution of certain dynamical systems. The development of what came to be loosely known as chaos theory on so many fronts opened up the possibility of applying deterministic models, formerly restricted to the "closed universe" of "completely predictable systems," rather than stochastic models, to certain systems that behave randomly. Such randomness, of course, leaves open a place for chance and therefore creativity and change. But in natural systems, not all theoretically possible states turned out to be realizable. Only some, those that lie on the strange attractor of such systems, will actually appear in nature. Ivar Ekeland has called this an "admirable and subtle mix of chance and necessity" (1998: 13, 12, 15).

Drawing on an immense body of work by Ilya Prigogine (which won him the Nobel Prize) and carried on with his colleagues in Austin and Brussels where complexity has been understood in terms of system "behavior" rather than of system interactions (Nicolis & Prigogine 1989), Prigogine and Isabelle Stengers (1984) presented chaos not as the opposite but as the source and confederate of order. They considered that a conceptual transformation of science was taking place. This transformation was growing out of the challenge to Newtonian mechanics associated with contemporary research in thermodynamics focusing on nonlinearity (instability, fluctuations, order-out-of-chaos) and the irreversibility of the evolution of far-from-equilibrium, open systems, characterized by self-organizing processes and dissipative structures. In the light of instability and chaos, and the association of the arrow of time with order as well as disorder, Prigogine and Dean Driebe have maintained that the laws of nature now express possibilities instead of certainties. There is no longer any contradiction between dynamical and thermodynamical descriptions of nature. Far from being a measure of our ignorance, entropy expresses a fundamental property of the physical world, the existence of a broken time symmetry leading to a distinction between past and future that is both a universal property of the nature we observe and a prerequisite for the existence of life and consciousness (1997: 222).

Prigogine, looking for the roots of time, "became convinced that macroscopic irreversibility was the manifestation of the randomness of probabilistic processes on a microscopic scale" (1996: 60). The recognition that probability is more fundamental than trajectories implies what Prigogine calls "the end of certainty" (1996), and the end of certainty in scientific prediction connotes (again) an open future of creativity and choice in natural systems and, as a consequence, a vindication of freedom, agency, and creativity in our understanding of social systems, but with particular significance in times of crisis or transition.

In the humanities, it was the turn to culture, or rather the return to culture—and the emergence of cultural studies as a consolidated knowledge movement (see Lee 2003a)—by the independent left in Britain during the 1950s that signaled the crisis of the structures of knowledge. And indeed, this was part of a specific historical conjuncture. The context was formed in the short term by the geopolitical events of 1956 (Hungary, Khrushchev's "secret" speech, Suez) that figured in the East-West struggle and in the medium-term by the multi-faceted dominance (hegemony) of the United States. On the one hand, the category of culture had enjoyed a continuity of application by the long line of social critics in the literary tradition, but in a way that had eventually depoliticized the analytic perspective it had for so long grounded. On the other hand, the delegitimation of both of the major contemporary approaches to social analysis—in the West, the quantitative, comparative method of the Columbia School and from the East, the orthodox base-superstructure model—opened a space for the deployment of "culture," repoliticized through efforts of the first New Left, as a primary analytic category.

The geopolitics of the mid-1950s came together with the 150-year trajectory of British (social) criticism (e.g., Burke and Paine, Arnold, Pater, Leavis) in the formation of the first New Left and the emergence of cultural studies. Raymond Williams, E. P. Thompson, and Richard Hoggart, each in his own way, contributed to the intellectual and scholarly (as well as political) bases of the movement(s). Notwithstanding the differences they exhibited in practical politics or analytical emphasis, the national perspective and common concerns for education, popular cultural forms and the "lived" experience of class, which they shared, represent a continuity in English cultural criticism that survived in the immediate directions cultural studies took.

In Hoggart, Williams, and Thompson, the elite, literary/critical tradition, drained of politics, intersected and combined with the theoretical and practical commitment to both politics

and history at the popular level on the Left. A renewed and refocused interest in the working class appeared as a common theme in the literature associated with the first New Left and claimed as formative by cultural studies.

From “below”, Hoggart recovered an urban working-class experience that was being undermined by commercialism and validated it in the face of elite cultural expressions. From “above”, Williams, in *Culture and Society: 1780-1950* (1958), exposed how the forces of reaction had appropriated texts of resistance. Both, however, were limited by the gradual exclusion of the politics of struggle from the tradition of criticism informing their work, a point often made by Thompson. Williams and Thompson shared a dedication to historical analysis inherent to Marxism, but neither Williams nor Hoggart seemed to be writing just history, or sociology, or literary criticism for that matter. Williams and Hoggart approached their subject matter from the humanities, but their work rejected disciplinary boundaries, and the disciplines rejected them. All the same, their work, with that of Thompson, collectively legitimated a return to class politics.

The recognition of the inadequacies of received categories of analysis, the emphasis on the relationality of the field, and this decentering and destabilization of the naturalized, taken-for-granted separation of the humanities and the social sciences and the divisions among the social sciences has been fundamental to the cultural studies project with its emphasis on values and interpretation in social analysis.

From the social sciences, sciences studies (including "sociology of scientific knowledge," "social studies of science," and "science and technology studies") has offered "exogenous" appraisals of the development of science ranging from the way the social field influenced the directions of the development of science to the contingency of scientific knowledge, its (social)

constructedness, and its local situatedness (e.g., Shapin 1995). New disciplinary/departmental groupings have also been invented, challenging the fact-values divide and illustrating how essentialist categories of difference have functioned to subordinate entire groups. Diverse strands of "feminism and gender studies" have pointed to the constructedness of the categories of "man" and "woman" and have noted how scientific discourse of the female body has functioned to position women in society. Many scholars of "race and ethnicity" in the West have attacked essentialism as well while disputing Western universalism and objectivity. By the same token, many of those studying "non-Western societies" have emphasized alternatives to the Western development model and pointed to the implications of these alternatives for epistemology. The "culture wars" and the "science wars" are striking evidence of the depth of the resistance these new developments have encountered (see Lee 2004b; Santos 2003). They are evidence of the fundamental nature of the debates and conflicts in the modern world over how valid knowledge may be produced, what are the grounds and the scope of its authority, and who may speak in its voice. Most importantly, the developments across the superdisciplines raise the concrete question of what contemporary social action may be considered legitimate.

The emphasis in complexity studies—on contingency, context-dependency, multiple, overlapping temporal and spatial frameworks, and deterministic but unpredictable systems displaying an arrow-of-time—suggests, as some scientists are beginning to say, that the natural world as they now see it is beginning to look unstable, complicated, and self-organizing, a world whose present is rooted in its past but whose development is unpredictable and cannot be reversed. In short, it is beginning to more closely resemble the social world, rather than vice versa. The question remains, if complex behavior is not amenable to explanation through hypothesis testing and theory construction because such systems, including now social systems, albeit

deterministic, are inherently unpredictable, how can we proceed? Indeed, the hypothesis testing mentioned earlier may be part of the contemporary epistemological quandary. It is part of a framework oriented towards the development of explanations for particular phenomena and the generalizations on which such explanations rest. This framework includes the corollary that once the theory is known, outcomes of specific interventions can be predicted and, therefore, social science knowledge can be exploited in policy-making. This was the basis for the cross-national comparative research (the analogue of laboratory studies in the natural sciences) on which modernization theory depended. By the 1960s, the empirical failure of this work called seriously into question its theoretical and methodological underpinnings (not incidentally, just as the world-economy entered a period of contraction, U.S. hegemony came to an end, and the politics of knowledge formation became an issue for antisystemic movements).

Embodying an analogy between narrative and simulation, social analysts may henceforth feel licensed by the developments in complexity studies to make the shift from fabricating and verifying theories to imagining and evaluating the multiple possible consequences of diverse interpretative accounts of human reality and the actions they entail. Herein lies an alternative for a unified historical social science to the predictive, Newtonian model of social scientific inquiry. It constitutes a mode of constructing authoritative knowledge of the human world, which is of engaging in science, by producing defensible accounts and future scenarios, without chasing the chimera of predictability.

Contemporary events in our globally integrated world have shown that methods that specify (often only implicitly) an exemplar and then endeavor to predict the impact of interventions designed to move supposedly autonomous units towards some ideal state perform poorly. This is what both scholars and policy-oriented analysts are experiencing, again today, to their dismay. All

the same, large-scale regularities do persist over time and particularistic "rich description", or interpretive accounts based on an understanding, *verstehen*, of local value contexts, or resorting to "human creativity" or "free will" explanations fail as well to capture the interrelatedness of structure and emergence. Furthermore, an assessment of systems approaches uncovers an inherent paradox of social analysis: "the accumulation of knowledge often leads to a utilization of that knowledge both by the social scientists and the objects of their research—which may change the validity of that knowledge" (Geyer 1995: 19). One reading of this is that social knowledge is not universal, but knowledge for specific times, today for our times, fitting nicely with findings in complex systems research and the realization that human interactions constitute such a complex, deterministic but unpredictable, system. Necessity and chance can no longer be viewed as mutually exclusive options in social research.

The combination of the conviction that there is a "real" world and that the future, although it is "determined" by the past, is nonetheless unpredictable and the parallel assaults on dualism (e.g., Barrow 1995; Prigogine 1996) challenge the epistemological status of the sciences as unique discoverers, guardians, and purveyors of valid knowledge, that is, truth, by redefining what it means to describe the evolution of natural systems. As Ilya Prigogine has argued, the "sciences are not the reflection of a static rationality to be resisted or submitted to; they are furthering understanding in the same way as are human activities taken as a whole" (1988: 3). He goes so far as to state that "I believe that what we do today depends on our image of the future, rather than the future depending on what we do today" (Prigogine in Snell & Yevtushenko 1992: 28).

The fundamental importance of the crisis in knowledge formation is underlined when we must recognize that what has been going on in the sciences had been happening in analogous

movements across the entire range of the structures of knowledge since the 1960s. The equilibrium, consensus model that, it was argued, wrote history and power out of the equation, was contested by intellectuals and activists alike. The theorizations of the challenges to the liberal order (such as the Vietnam War, and the civil rights, feminist, and student movements) were outgrowths of and contributed to challenges to the prevailing structure of knowledge in the long term. Beginning in this period, work from across the disciplines led to conclusions and interpretations incompatible with the premises on which the relational structure of the natural sciences, the social sciences, and the humanities were founded. Developments that indicate a collapse of the frontier separating the humanities from the social sciences have included widespread methodological ecumenism, the rise of structuralism and the concomitant recognition of "values" as an integral part of all knowledge formation, the renewal of an appreciation of the significance of the local and the complex, and the revival of an emphasis on contingency and temporality associated with agency and creativity (see Lee 2003a).

Across the disciplines these arguments may be represented as a concern for spatial-temporal wholes constituted of relational structures representing the persisting regularities normally associated with a "scientific" approach on one hand and, on the other hand, the phenomenological time of their reproduction and change (the ineluctable reality of the arrow-of-time) that captures the play of incommensurable differences associated with a "humanistic" approach. Difference, of course, involves values. We are thus presented with a re-fusing of “is” (the realm of facts and the goal of science) and “ought” (the field of values and the challenge of the humanities) in the construction of systematic knowledge of human reality.

Values no longer need be, must no longer be, construed simply as a matter of individual ethics or morality in the creation of authoritative knowledge in the social sphere, but must

hereafter be conceived as an integral part of a historical social science. Indeed, authoritative knowledge thus constructed would have no pretensions of universality (validity for all times and places) but rather offer defensible interpretations for particular times and places. Thus, a social science for our times, of necessity singular and transcending disciplinary boundaries, must do two things. First, it must be premised on the indissoluble unity of the regularities of social relations, their structure, and change, their history. Secondly, it must recognize that the latter supposes the integration of values as integral to inquiry, not simply as a matter of the personal inclination of the analyst.

Methods, How We Think What We Think

One still often hears the claim that all sociology is comparative; indeed, just as Durkheim asserted: "comparative sociology is not a special branch of sociology; it is sociology itself" (1982[1895]: 157). We might also observe that it is now well-accepted that meaning itself is constructed through difference. Furthermore, with the increasing importance given to the study of larger and larger units over the past half century (associated with establishing generalizability and thus the predictability of interventions), more and more social research has consciously and purposefully identified itself as "comparative". Whether one works with a large number of cases in a quantitative setting in order to establish explanations, laws or quasi-laws of cause and effect serving as a basis on which to envisage the probable consequences of some projected action, or few cases and "ideal types" qualitatively to account for historical divergences, the aim is a "balance between competing claims of complexity and generality" (Ragin and Zaret 1983: 731).

The common, everyday reality, however, is still an on-going tension between the nomothetic stance of the present-oriented disciplines of sociology, political science, and

economics and the idiographic propensity of history, anthropology, and oriental studies (this last largely superceded by area studies). Indeed, the more recent criticisms of large-scale work in the nomothetic social sciences have revolved around the absence of the historical dimension. In many respects, this represents the recognition, or the return of a recognition, of agency and complexity as co-constitutive of human reality along with the structures that constrain certain possibilities for action and promote others. The mirror image is the criticism of the idiographic social sciences as providing only non-generalizable, particularist descriptions that offer no guide to social action

In the English-speaking world during the quarter century following 1945, a particular style of inquiry, theorized as structural-functionalism and operationalized through quantitative techniques and survey data, defined the parameters of authoritative social research, especially in the nomothetic social sciences, sociology, political science, and economics. From the beginning the focus was on "systems analysis", but the methodology was inherently comparative, and most often reductively quantitative. This always implied multiple units of analysis and it was nowhere more apparent than in the macro arena, where attempts were being made to explain differential development on a world scale based on modernization theory.

Modernization theory joined policy planners (with their eyes on the East-West struggle) with social scientists (absorbed with explaining inequality). With explicit reference to GST, social structures and institutions were conceptualized as performing functions in systems where a "society" was a self-sufficient social system. Nonetheless, "societies" were ultimately associated with the state; time was transmuted into a function of autonomous society/state units simultaneously positioned at different points on a single reputed temporal hierarchy of development (horizontal history); and intentional

31

action modifying social structures was postulated as a primary mechanism of change and "progress."

World-systems analysis brought together an intellectual critique of modernization theory, and the way it concealed rather than revealed the working of the world, with the real-world politics of the antisystemic activities of the movements of the 1960s. Modernization theory failed, empirically, on its own terms: fulfilling the political imperative of institutionalizing liberalism and representative democracy, the cultural imperative of implanting meritocracy and entrepreneurialism, and the economic imperative of scratching together enough capital for economic "take-off", simply did not produce the results anticipated. The seeds of failure were in the methods of analysis; the units were not autonomous and comparable, but all formed historically and relationally in the drive for endless accumulation of capital within a single system.

For the world-systems perspective the relevant unit of analysis of long-term, large-scale social change is the "historical system". However, it was argued that historical systems were not amorphous, ill-defined "civilizations", but constituted a typology of large-scale, long-lasting structures with clear bounding criteria that included world-empires, world-economies, and mini-systems. The modern world-system or capitalist world-economy is such a historical system. Systemic; it possesses continuities in its relational patterns—in other words, its structures remained qualitatively recognizable over the long term. Historical; it has exhibited irreversible change over the long term—in other words, it came into existence at a specific time and place, underwent a spatio-temporal development that rendered it at all times and places different, and ostensibly will eventually cease to exist. Alone among historical social systems, it expanded to cover the entire globe and incorporated all other previously autonomous systems. It was, then, an

"open system". Its expansion to incorporate new pools of low cost labor represented an intake of "energy" in the form of labor-power. The system could thus overcome the entropy of its accumulation processes, capital corresponding to congealed labor. The salient characteristic of this formalization was that the elements of the modern world-system, including the categories through which social scientists, and activists, sought to understand it, were not pre-existing, timeless entities, but historically constituted by the evolution of the system's relational structure. Over the past quarter century, this conceptualization has provided fruitful ground for a great deal of work developing theoretical strategies and methodological practices that avoid reification and reductionism.

When we consider the practical issues of actual research, promulgating and putting into practice methodological practices appropriate to the world-systems framework, it becomes clear that not only our view of the world must undergo a gestalt shift, the ways in which we arrive at our understanding of that world must as well experience a fundamental transformation. It is from this particular perspective that I want to offer an example (from Lee 2004c) of how the choice of methodological approach constrains our understanding of real-world phenomena.

George W. Bush and Usama bin Laden articulate two competing, mutually exclusive visions of the world. They do, however, seem to agree significantly on two things: the nature of the struggle and the final outcome. For Bush, "the war on terror begins with al Qaeda, but it does not end there" and "Americans should not expect one battle, but a lengthy campaign, unlike any other we have ever seen" (Bush 2001: 10, 13). He ended his address on the twentieth of September 2001 by stating that the "course of this conflict is not known, yet its outcome is certain" (23). In a prayer, bin Laden exhorts "Our Lord, make the youths of Islam steadfast and descend patience on them and guide their shots" (in Alexander and Swenan 2001: Appendix 1A:

22). Both see this as a long war and as an episodic war. Furthermore, they both predict ultimate victory for their respective forces. Victory means different things, however. For Bush, victory comes in terms of the reproduction of the world substantially unaltered; for bin Laden, victory is clearly couched in terms of the transformation of the world as we know it into an Islamic utopia.

But how do we, whose profession it is to make sense of the world, much less we as citizens of the world, go about arriving at some understanding of what, on the face of it, seems an impossibly complex situation already cast in terms of diametrically opposed, mutually exclusive world views? The most common response is to look for parallels, to find “cases” that can be assimilated to a general classification and treated comparatively. This is, indeed, what we find in much of the post-9/11 literature.

For many, the events of 9/11 were most obviously reminiscent of the Japanese bombing of Pearl Harbor, 7 December 1941—the "day that will live in infamy". A complete surprise, it was considered an unprovoked, "sneak", attack on US soil (although tensions between the United States and Japan had been mounting for some time) and determined the entry of the United States on the side of the Allied powers in the Second World War.

A second parallel has been suggested in the War of 1812. This was the American front in the wars of Napoleon I. Although what actually caused the outbreak of war were clashes with the British on the western frontier, impressments of sailors and the seizure of U.S. shipping were already causes for strong resentment.

A third parallel that has been suggested are the Tripolitan and Algerene Wars. In 1800 the Pasha of Tripoli raised the tribute on Christian Nations and thus on U.S. shipping in the Mediterranean and went so far as to declare war. President Jefferson sent a squadron of warships to North Africa and after a long blockade a peace treaty was signed abolishing the annual tribute

for the United States. The United States ended all tribute to North African states in 1815 and broke the back of Barbary piracy in in that year.

Now as cases for comparison with the present situation, each of these prior phenomena presents similarities, and the consequences of designating such parallels are readily apparent. More precisely, the conclusion that can be drawn from each comparison offers a clear prognostic for the future, both in terms of actions and outcomes.

In the case of Pearl Harbor, the United States came out of the war the major victor and in a position of such power that no other coalition of states could challenge her militarily, commercially, or financially. The message is clear: staying the course and bringing overwhelming force to bear, without regard for the cost, will lead to a (new) golden age of Pax Americana and national affluence. Ideologically, this return of the United States to its position of hegemony in the world-system in the immediate post-1945 world not only remains attractive to the political right in the United States, but is, in fact, the stated goal of the Bush administration. Simply asserting the parallel gives the objective a veneer of legitimacy and the actual comparison underwrites the action to be taken and the projected outcome.

In the case of the War of 1812, what was at stake was the existence of the United States as a sovereign state and this has been one of the themes of the war on terror. Indeed, the ultimate victory of the United States in the War of 1812 determined a period of nationalistic fervor mixed with isolationism, something that we are already seeing today, where isolationism does not mean pulling back behind national borders, but rather the “go it alone” strategy seeking the maximum of control, including coercive control, over foreign relations.

In the case of the wars against the Barbary pirates, it should be remembered that besides the religious or civilizational element, there is a specific mention of such actions in the

Constitution and although the United States at this moment does not assert that there exists a state of war, "the legal state of affairs most closely resembles one we experienced at the founding of the Republic". At the time, pirates and privateers were deemed such a menace that the Constitution gave Congress the "the much narrower power [than declaring war] to 'define and punish Piracies, Felonies committed on the High Seas, and Offenses against the Law of Nations'" (Koh 2001: 158-59). Here the question was whether the United States could project force in a way that would secure the safety of American commerce and its citizens. This is a primary concern of many today, from intellectuals and policy analysts to the protagonists of social movements at the global level. The result of meeting the challenge two hundred years ago suggests the rightness of that decision, and thus of the decision to "meet the challenge" in our own time.

As simple comparisons, each of these parallels is defensible and presents a certain face validity; however, comparative sociology demands multiple and autonomous cases, which nonetheless belong to a single category of phenomena that may be characterized by the same set of variables. But how do we proceed when our unit of analysis is singular—a single case? Comparisons may not be the most appropriate mode of inquiry for answering questions about the modern world-system. Systems analysis suggests that analogies, or rather the kind of rigorous analogies that systems scientists call homologies (for our purposes, the investigation of the articulation of diverse instances to the same processes reproducing the long-term structures of the system) may offer the answer. I would, then, like to see how the outcome of our inquiry might be altered by the shift from comparing these cases to treating them as analogies. In doing this, we recognize at the level of method a conception of the processes reproducing the modern world as playing out through social time: the uniqueness and singularity of the structures, the

fluctuations that account for the long-term dynamic equilibrium of those structures, the trends that manifest the changes in the continuously recognizable system, and finally, the events, Fernand Braudel's "*poussière*".

From this perspective, Pearl Harbor may be seen as a single event, which took place, however, in the context of a hegemonic war. Thus, the analogy must be with the Thirty-Years War of the seventeenth century that ended with the Hegemony of the Dutch and with the Napoleonic Wars that ended with the hegemony of the British. The thirty-years long war of the twentieth century, of course, ended with the hegemony of the United States. That period of hegemony is over. Thus, this analogy is one that suggests that the struggle is for world leadership, a world leadership that the Americans, unlike the Dutch, are unwilling to give up. There is much to suggest that no matter what the expenditure of treasure and lives, it will be to no avail and that the harder the United States fights for a return to the state of the world in the quarter century following the end of the war in 1945, the worse will be the future, both for the United States in the long term and for the world, at least in the short and medium term (see Hopkins and Wallerstein 1996; Wallerstein 2003). The question, of course, is who or what is the challenger for world leadership.

This question is the key to understanding the analogy with the War of 1812. By prevailing in this conflict, the United States established its sovereignty within the Interstate System. That organization of mutually recognized (but always partial and fluctuating) territorial autonomy, which structurally, only demands that there be at minimum two state-like entities to avoid the imposition of a world-empire. It assures the reproduction of the world division of labor based on the law of value resulting in exploitation and the polarization of inequalities by regulating flows of capital, goods, and labor across borders and restricting resistance activities to

the state rather than the system level. Today that sovereignty is being challenged anew, but not by another state or states as it was two centuries ago, but rather by non-state entities that express a completely different conception of the organization of the legitimate use of force on a world scale; this is a challenge to that very system.

The Barbary pirates episode in American history, illustrates what Frederic Lane called "protection rents" (1979: 13) and the way that political and economic processes interact. The two wars were fought for "free trade" and certainly are analogous to the struggles today over the appropriation and accumulation of surplus that the present thirty-year economic contraction has made apparent. All the same, the free trade of two hundred years ago is not the neo-liberalism of today.

So far my examples have been one-sided; each of the cases that I have cited is based on comparisons among short-term events with outcomes manifested in the medium-term. This generally includes those who see the present period as paralleling anti-colonial or anti-imperial struggles, with the world experiencing the impact of the “weapons of the weak”. However, in world-systemic terms these are but resistances to the deepening of the structures of domination and exploitation that the expansion of the world-system had extended to the entire globe by the end of the nineteenth century. Those who would sustain that the present period is in some way special in this respect should consider that the expansion of the world-system (and resistance to it) has been one of the processes that not only has defined it but assured its reproduction over the long term by resolving its medium-term crises. Nonetheless, the conditions of neo-imperialism and globalization suggest another long-term element.

Usama bin Laden (like his adversaries) might well remember that toward the end of the nineteenth century this expansion began to reach its asymptotic limit with no part of the globe

left un-incorporated in the axial division of labor. Indeed, for bin Laden whose inspiration is to be found in Wahhabism—"a return to the way of 'virtuous ancestors,' a highly regressive, monolithic interpretation of Islam known as Salafiyya, a doctrinal propensity that for centuries encouraged strict adherence to puritanical principles" (Amanat 2001: 36)—the ideal parallel is a return to the Caliphate and the golden age of Islam on the world stage, prior to the full incorporation of the Islamic world.

But what if we were to ask the same questions that Bush and bin Laden are asking about the present situation, but answer them with an analogy that belongs explicitly to the long-term, structural time of the modern world-system?

There are good reasons to believe that, with no room for expansion, the internal contradictions of the processes of the modern world-system may no longer allow for the reproduction of the system as a whole (see Hopkins and Wallerstein 1996). The analogy, then, that I would propose for the present would be the long and episodic Hundred Years' War, the conflict out of which were born the structures of decision making and coercion, production and distribution, and cognition and intentionality that heretofore have been constitutive of our historical system.

When Edward III of England made claims on lands on the mainland of Europe and assumed the title of "King of France" in the second quarter of the fourteenth century he did so asserting his feudal rights. At the time England and France were not what we would call “states” today, but realms or *royaumes*. A century later, the English had achieved little (the government was bankrupt, the Lancastrian dynasty discredited, and civil war was on the horizon). For France, the outcome was very different. They were the big winners, but the system for which they fought, feudalism based on parcelized sovereignty and reciprocal rights and obligations, was

moribund. The cost of winning was the death of the object. The emergence of a new geo-political form laid the groundwork for the Interstate System organized as a relational system (with England and France as its founding parts) that would be formalized by Jean Bodin and institutionalized in the Treaty of Westphalia.

So George W. Bush may be right in the sense that he will "win", but winning viewed from a long-term perspective could lead to the transformation of the system that he believes he is trying to protect—much the way France "won" the Hundred Years' War. So, he is probably dead wrong, however, in thinking that he can reestablish U.S. hegemony in the world-system.

Usama bin Laden may also be right, but in the sense that even though his struggle certainly will not succeed—indeed, as Gilles Kepel (2003) has argued, militant, fundamentalist Islamism is actually in decline—it may very well lead to, or at least be part of, the transformation of the world as we know it, although probably not in the direction he would desire.

The events of 9/11, then, are like the Khobar Towers bombing of 1996, the Kenya and Tanzania embassies bombings in 1998, the attack on the USS *Cole* in 2000, and the aftermath links it to the events such as the bombings, hijackings, and hostage crises of the 1970s and 1980s and reprisals such as the attack on Muammar el-Qaddafi's compound in 1986. Indeed, Bosnia, Chechnya, Iraq—and 9/11—are specs of Braudelian dust, but they are analogous to the Battle of Crecy and the Jacquerie. Together, they are suggestive of the way analogies among instances of processes may tell a very different story from comparisons of cases.

Conclusion

In this secular crisis of the structures of knowledge, it is clear that the grand intellectual antinomies that have been the subject of hot debate for so long—holism versus reductionism, structure versus

agency, determinism versus freedom, order versus disorder, fact versus value—are dependent not just on contradictory epistemological positions, but more surely on a specific ontological view of the world as made up of fundamentally deterministic and predictable systems. We are not living the "new world order" but a transition period of "new world disorder," a time of massive fluctuations far from equilibrium in the language of complexity studies. Change will not depend only on our normatively motivated action for its initiation. During a period of wide fluctuations in the constitutive processes of a system driven far from equilibrium, including a system of social relations, small fluctuations can have enormous impact even to the extent of effecting total systemic transformation—instabilities expanding possibilities, that is, opportunities, by reducing constraints. By the same token, the direction of change will, as complexity studies show, be exquisitely dependent on small fluctuations, for instance, in the form of our value-laden decisions and actions (see Lee 2001; 2003a). "This is the time to *make the future*—precisely because everything is in flux. This is the time that Immanuel Wallerstein calls transformational timespace, that of *Kairos*, that of human choice when free will is possible (1991: 147). It is not so much the simple return of agency, but the manifestation of the fundamental relationship between agency and structure—the indivisibility of chance and necessity.

As I have argued elsewhere (Lee 2001/02), the definition of valid knowledge claims in terms of "who, what, when, where, why" and the "view from nowhere" is giving way. We may (indeed, I would argue we must), without forsaking our dedication to "science", or even *technē*, turn our attention to producing authoritative knowledge in terms of "for whom, for what, for when, for where" and "from whose point-of-view". The consequences of developments across the disciplines impinge directly on the manner in which scholars make claims for the legitimacy of their interpretations of social reality, and thus amount to overturning the dominant model, of

knowledge and reality, shaping our understanding of the human world.

There is no way, however, that we can know if the transformation underway at present, and in which we will all play our part in one way or another, will result in a more substantively rational human world. A knowledge society we have been, and will remain. But the structure of that knowledge is already changing with understandings of the natural world and human reality evolving on non-contradictory bases. Today, in a world at the end of certainly, choice matters: conscious, cognizant choice in variously assembling our exploding stock of information to create knowledge that is both historical and systemic in the form of possible alternative futures along with their inherent value orientations. The issue then truly is choice, choice among those alternatives, the necessity of exercising it, how to exercise it, and on what basis to exercise it to bring about that more substantively rational world.

These discussions are especially relevant today when destabilizing structural pressures are forcing change, but unlike the situation a century ago, those of us searching for a way out of the contemporary intellectual, political, and institutional quandaries have been liberated from the Cartesian/Newtonian constraints. The structural sequestration of the spheres of knowledge no longer appears as an unquestioned given. The study of government need not necessarily be isolated from the study of language, or analyses of market operation automatically separated from considerations of culture in departments like Political Science, English, Economics, Sociology or Art History. Indeed, it has become a legitimate proposition to say that they should not be isolated or separated. Defensible, intersubjective interpretations of relationships among constituent parts of concrete wholes on the other hand suggest a realizable mode of scholarly participation in the creation of a world where "social" is no longer forced to serve as the qualifying adjective for a dubious branch of "science."

The crisis in the field of knowledge, that is, in the structures of cognition and intentionality, is part of the overall exhaustion of the processes reproducing the structures of production and distribution in the economic sphere, and those of coercion and decision-making in the political arena. Since this is a secular, or structural crisis, change does not depend on our normatively motivated action for its initiation. By the same token, the direction of change will, as complexity studies show, be exquisitely dependent on small fluctuations in the form of our value-laden decisions and actions.

For instance, contemporary economics, in this "far-from-equilibrium" world, despite its allegiance to the principles of formal rationality, could be well placed to contribute to an understanding of the alternatives available today. But this would entail a reexamination of the inherited theoretical approaches and methodological practices—such as the primacy given to the short term in a world of competing "economies," quantification, and model-building and the premises of *ceteris paribus* and individualistic decision-making—that currently underpin the discipline. Some alternatives seem evident. Certainly, the idea that we now live in one world should not surprise. But should we not realize also that that world has been an expanding one for the past five centuries, defined by a single world division of labor and only recently has come to encompass the entire globe? Associated with the reality of such a world would be the idea that if such a "historical system" came into existence, it could also very well cease to exist when the processes of its reproduction ran up against asymptotes that no longer allowed its internal contradictions to be overcome. Thus, a historical perspective would permit distinguishing between medium-term conjunctural crises, downturns and eventual upturns, and the exhaustion of long-term trends portending a systemic transformation. All of the above, however, will only

be possible if we allow that the study of production and distribution, coercion and decision making, as well as cognition and intentionality, are part of a single historical social science.

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