Part II

Theory and critiques
3. Theoretical frontiers in world-systems analysis
The structures of knowledge

Conceptualizing the sociocultural arena of historical capitalism

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Scholars of the modern world-system acknowledge the *longue durée* of historical capitalism as a unique and unitary “world” constituting their unit of analysis. However, as Fernand Braudel noted a half-century ago, “mental frameworks are also prisons of the *longue durée*” (2009: 179), thus recognizing that the human experience is one of phenomenological wholeness which does not end with questions of politics and economics. It is this sociocultural domain of historical capitalism (Braudel’s “mental frameworks”) that the structures of knowledge approach conceptualizes from a world-systems perspective.

Both analysts and entrepreneurs have generally supposed knowledge to be a vital aspect of the processes through which capital is accumulated. Nonetheless, over most of the past half-century—not incidentally, the period of Kondratieff downturn and the crisis of US hegemony—accounts in both the scholarly literature and the popular press of the “information society” and the “knowledge society” have exploded and the lexicon has expanded to include the likes of “knowledge economy,” “knowledge capitalism,” and “cognitive capitalism.” Now, developments in world-systems analysis allow us to argue that the transformation in this area is deeper and much more fundamental and consequential than most analysts today, or the frameworks from which they work, might imply; indeed, it is associated with the transformation of the system as a whole (see Hopkins and Wallerstein 1996).

Over the past three decades, significant progress has been made in developing modes of integrating the analytically distinct arenas of production and distribution, the economic, and decision making and coercion, the political, in terms of long-term processes and their medium-term fluctuations. Their great overarching structures, the core-periphery axial division of labor and the interstate system, were the first to be widely recognized and examined in depth in reference to a formal conceptualization of their internal relations and the ways in which they related to one another to assure the reproduction of the modern world-system as a whole. However, there was also “a third fundamental aspect to the modern world-system … the broadly ‘cultural’ aspect … even though little is systematically known about it as an integral aspect of world-historical development … [and] much preliminary conceptual work needs to be done” (Hopkins et al 1982: 43).

The term “systematically” here is crucial. As it has been argued that the modern world-system is constituted inseparably of its regularities and the constant change it exhibits, it became clear that for the structures of knowledge approach, the first step would have to be an elaboration of a
conceptual framework analogous to that which had been conceived for the economic and political spheres, particularly the specification of the primary *longue durée* structure or structures of this “third arena”—of cognition and intentionality—and the cyclical rhythms and secular trends of their processes of reproduction that could be recognized over the entire life of the system. The structures of knowledge approach is the outcome of this work (for details and further elaborations see Lee 2003, 2010; Lee and Wallerstein 2000; Wallerstein 1991, 2004).

For centuries, knowledge in the Western world was relegated to either the earthbound or the heavenly. Although each was constituted in different ways, each afforded access to both what was true, or not, and what was good, or not. The late medieval period experienced the beginning of a shift toward measurement in terms of equal quanta and calculations exempt of human values (e.g., double-entry bookkeeping), and away from spiritual connotations of time and space. This was all to the profit of merchants and bankers, artisans and eventually manufacturers, sailors and military men, artists, and musicians, that is anyone who had to actually accomplish something in the real world. As the standing of the commercial classes rose, the authority of the medieval system declined and a radical epistemological divorce of truth (facts) from the good (values) restructuring the acceptable grounding of knowledge claims, unknown at any other time or place in the world, came into being along with the axial division of labor and the interstate system.

The secular trend of the processes reproducing this basic structure, “rationalization,” might at times also be called “scientization” or “secularization.” The pursuit of objectivity, or the view from nowhere that sidestepped agency, history and subjectivity, progressively privileged formal rationality or disinterested calculation as a generalized means of instrumental action over substantive rationality, the normative pursuit of specifically situated ends. The organization of knowledge into two separate domains, one in which human values are an inseparable component and one excluding human values *a priori*, took the form of the division between the humanities and (what would come to be known as) the sciences. This arrangement was eventually characterized as the “Two Cultures” (Snow 1965) and its internally contradictory nature has been manifested in recurring dilemmas admitting at best medium-term solutions.

The set of intellectual and institutional structures of knowledge defining the geoculture of historical capitalism has been periodically reconstituted through a series of medium-term fluctuations we shall call “logistics.” Akin to waves of economic expansion and contraction and cycles of geopolitical hegemony, they express the realignments that have assured the reproduction over the long-term of the basic structure, the intellectual separation of facts from values institutionalized in the sciences and the humanities, that has constantly been under pressure from the material contradictions endogenous to the system as a whole.

The use of force to assure accumulation is expensive. If the interstate system organizes the application of force to assure acculturation, the construction and development of the structures of knowledge put in place will reproduce the (always contested) bases that applied to the much cheaper mechanisms based on consensus that have operated in and through successive medium-term restructurings. That is to say, they will focus on what is possible and legitimate to think (and therefore to do) in a given society and who are the appropriately authoritative agents for which kinds of decisions about which kinds of actions in that society. The image of these repeating patterns of development, the logistics, may be thought of as an elongated S-curve that exhibits slow initial growth, then builds rapidly, and finally flattens out as it approaches an asymptote or limit (rather than a wave-like rise and fall).

The first logistic corresponds to the period of long-term inflation and deflation running generally from the emergence of historical capitalism through the first third of the eighteenth century. The Thirty Years’ War, the Westphalian solution, and the establishment of Dutch hegemony mark the middle of the period.
The tenuous movement in the direction of secularization and the incipient separation of facts from values, the true from the good, become increasingly apparent. The synthesis of Baconian induction, Cartesian reductionism and deduction, and a quantified real world manifested in the work of Galileo brought forth a mechanistic model. The model, symbolically and substantively manifested in the work of Isaac Newton, was also interventionist. Bacon noted that “the true ends of knowledge [are] for the use and benefit of life” (1620: 15). He was echoed by Descartes: a “knowledge that is very useful in life and that in place of the speculative philosophy taught in the Schools … make ourselves, as it were, masters and possessors of nature” (1637: 33). In this first great shift towards secularization, God as final cause or internal governing principle (rather than external goal) is removed from the dominant vision of order in nature and the creative potential of a supreme being is transferred to John Locke’s rational individual and sovereign majority.

The second logistic runs from the mid-eighteenth century through the late nineteenth century. It too is marked midway by a thirty-years-long world war and the reestablishment of a state of hegemony in the interstate system, with Great Britain as the leading power. The medium-term resolution of the first logistic was confirmed and consolidated, and sealed when Pierre Simon de Laplace “took the final and crucial step towards an ideology of total determinism” (Hahn 1967: 18), raising “science” to the epitome of authoritative knowledge.

Built on the model of celestial mechanics, classical science held that observable effects were physically determined and the discovery of universal laws would lead to prediction of both future and past—since reversibility was a feature of the mathematics of the laws of motion. Furthermore, when gravity, the motor of motion, was located in matter itself, that quintessential attribute of the Supreme Being—creativity—was bestowed on man. The humanities, at the opposite pole of the structures of knowledge, were concerned with the finitude of the unique and unpredictable rather than the certitude of regularities but they also had to account for change, including emergence. Individual agency was the solution they proffered and imagination served as the connecting link between mind and world.

This period was further characterized by the extension to all of the Enlightenment ideal of rationality. In terms of practice, resistance to coercive labor control made by the oppressed and exploited of the world in the name of freedom became increasingly insistent and effective. One of the legacies of the French Revolution was the idea that the social world was one of change, not of stasis. But if change was the norm and all humanity was capable of rational thought and behavior, the question then became the direction of change, and how to deal with this question in the real world of social upheaval depended on mutually exclusive value orientations. The alternatives available in the early nineteenth century, which made mutually exclusive appeals to values, were either the worldwide extrapolation of the ideals of liberté, égalité, and fraternité, the Rights of Man, Free Trade and Democracy or a return to the ancien régime of authenticity, tradition and the organic community, and opposition to laissez-faire liberalism. Neither offered a way forward on which any consensus could be reached to the political confrontations between radicalism and conservatism, or to the threat to capital accumulation of both. From the late nineteenth century, this structural antinomy, the relation between meaning or values and systematic knowledge, became a subject of vigorous debate in both philosophy and economics; eventually, the objective, value-neutral, problem-solving spirit of science was advanced to resolve questions in the domain of human action.

The universal laws that characterize the natural sciences depend on a Newtonian or reversible time associated with absolute determinism and therefore the certainty of predictions. The Human Studies, by contrast, are eminently historical, not time-reversible, and therefore prediction of the future is uncertain. However, the scientific study of society was what many put forward as a framework for a separate, or third, disciplinary domain between the sciences and the humanities.
If one could uncover the laws governing change in this domain (that is, of human action or the social), or complementarily, delineate what could be considered essential features of different human sub-groups (that is, facts of nature) and therefore hardly amenable to change, one could predict within some reasonable and diminishing margin of error and thus control the future without depending on decisions grounded in the relativity of human values. Herein lies the functional link between the social sciences and reformist liberalism. The institutionalization of a set of disciplines to constitute this domain would function to guarantee ordered change—the predictable impact of policy interventions—in the name of (some putatively value-neutral) “progress.” “Scientific” control would be exercised by “experts” and based on “hard facts.” In political and economic terms, this amounted to liberal incrementalism maximizing accumulation by guaranteeing, that is legitimating, wealth and wage hierarchies based on differentiated status group attributes and minimizing class struggle through the promise of progress from generation to generation.

Despite efforts to preserve the role of values in the production of authoritative knowledge, the eventual consequence of the late nineteenth-century debates determined the intellectual and institutional arrangements for the subsequent construction of knowledge in the social sphere, that is, the grounding by epistemological default of a scientistic third culture, the social sciences, based on the “scientific” criteria of value-neutrality and a neutral or absolute time. The universalist assumptions of the social sciences (either additive or law–given) and their sectorialization (the division of the social world into separate fields treated as private reserves by the separate disciplines) tended to have the political consequence of obscuring underlying organizational arrangements and historical feedback mechanisms, and thereby made organization to produce social change much more difficult.

Thus, the third logistic begins in the late nineteenth century and although exhibiting crisis, does not seem to be exhausted. It is also marked by a thirty-years-long world war that resulted in a new state of hegemony in the system as a whole. The political tensions of the second logistic were resolved in the medium-term with the new liberal consensus of popular sovereignty and public welfare extrapolated worldwide as Wilsonian “self-determination of nations” and Rooseveltian “economic development,” the structural equivalents of national-level universal suffrage and the welfare state (Wallerstein 1995: 137). These innovations were supported by the consolidation and institutionalization of the social sciences in disciplines and university departments separated on the basis of what were deemed proprietary theories, methods and subject matters.

The two cultures conception of knowledge, the sciences and the humanities with the social sciences poised precariously in between, was at its apogee during the two decades following the end of the war in 1945. Its dominance was never total, however, and a number of approaches were developed from multiple disciplinary vantage points (e.g., General System Theory, the non-fiction novel) that contested the prevailing model in terms of theoretical frameworks, or methodological practices, or even proprietary subject matters, and sometimes all three. By the end of the 1960s, however, challenges to the liberal order (such as the Vietnam War, the civil rights, feminist and student movements, and the active engagement of third-world scholars and activists) grounded in practice the direct challenge across the disciplines to the dominant two cultures structure that would be embodied in cultural studies, science studies and complexity studies. Moreover, this was not to be simply the beginning of a medium-term, conjunctural, adjustment (a fourth logistic) but a secular crisis and part of the transformation of the modern world-system as a whole.

Cultural studies recognized the inadequacies of received categories of analysis, stressed relationality, decentered and destabilized the naturalized, taken-for-granted separation of the humanities and the social sciences and the divisions among the social sciences, and emphasized values and
interpretation in social analysis. What makes this of particular importance is that these attributes collectively undermine the bases of the disciplinary structure defining and organizing what counts as legitimate and authoritative knowledge in the modern world that have come under scrutiny from developments in the social sciences and the sciences as well.

Sciences studies (including “sociology of scientific knowledge,” “social studies of science,” and “science and technology studies”) with bases in the social sciences has taken the development of science itself as an object of analysis. It includes a critique of the dualism of “humans” and “nature” and a close examination of the contingency of scientific knowledge, its (social) constructedness, and its local situatedness. Collateral developments in the social sciences, which attacked the “scientific” underpinnings of the social sciences from within, embrace new disciplinary and departmental groupings that contest the fact–values divide and illustrate how essentialist categories of difference have underwritten the subordination of entire groups; a formal conceptualization of this latter problem is one of the achievements of the structures of knowledge approach. 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 situate women in society. Scholars of “race and ethnicity” in the West have attacked essentialism as well while disputing Western universalism and objectivity, and many studying “non-Western societies” have highlighted alternatives to the Western development model and pointed to the implications of these alternatives for epistemology.

The importance of the above developments is vastly accentuated by what has been happening in the sciences. At the very moment of the worldwide triumph of the Newtonian worldview—a deterministic world of natural laws based on time–reversible dynamics—a new knowledge movement that would challenge its premises directly, and thus the structures of knowledge as a whole, began to emerge. This movement, which eventually came to be loosely known as complexity studies, grew out of concrete research into complex phenomena in nature arising from very simple mechanisms (especially at the humanly perceivable, macro level). It represents a synthetic approach as opposed to a reductionist one in a shift away from a framework emphasizing equilibrium and certainty and defining causality as the consistent association of antecedent conditions and subsequent events; in a word predictability, amenable to experimental replication and hypothesis testing. Work especially in what is known as “chaos,” or seemingly random behavior that displays an underlying order—order-in-chaos (strange attractors); order-out-of-chaos (dissipative structures, self-organization); and visual representation of pathological functions and natural forms exhibiting noninteger dimensions (fractal geometry)—either calls for a reappraisal of the assumptions of classical science or actively undertakes a reconceptualization of the objects of study, methods of analysis and goals of inquiry long taken for granted as “scientific” practice.

Implicit in complexity research is a new sense of the meaning of time. In the light of instability and chaos, and the association of the arrow of time with order as well as disorder, Ilya Prigogine has maintained that the laws of nature now express possibilities instead of certainties. 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. The recognition that probability is more fundamental than trajectories implies what Prigogine calls “the end of certainty,” and the end of certainty in scientific prediction connotes an open future of creativity and choice in natural systems and, as a consequence, a vindication of freedom, agency and creativity in the development of social systems, and their study. These reflections take on particular significance in times of crisis when systems have moved “far–from–equilibrium” and are experiencing the instabilities inherent in transitions (see Prigogine
The emphasis in complexity studies—on contingency, context-dependency, multiple, overlapping temporal and spatial frameworks, and deterministic but unpredictable systems whose development displays 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.

Thus, at the lower end of the hierarchy of the structures of knowledge, cultural studies attests to the disintegration of the boundary between the humanities and the social sciences. At the upper end, the concurrent developments in complexity studies bear striking resemblance to the concerns of those working on questions in the human world, and “objectivity” associated with externalism is called seriously into question by the identification and study of the feedback mechanisms of complex systems, including historical social systems. In this crisis of the two cultures, the ontology itself underpinning the legitimacy and authority of knowledge constructed on the “scientific” model, which is at the foundation of the hierarchy of the structures of knowledge as we have known them, is undergoing a transformation: the vision of the natural world as composed of independent, interacting units—billiard balls or nation-states or individuals suitable for comparison—is giving way to an emerging sense of the world as made up of fundamentally deterministic but unpredictable systems.

Nonetheless, as the epistemological groundings of disciplinary diversity fade, the subject matters we now think of as composing the humanities and the social sciences that “discipline” our thinking and actions will not disappear, nor will those that we think of today as belonging to the natural sciences disappear either. Their future must be that of producing non-contradictory knowledges, for it is the overarching structure itself that is changing and thereby rendering the segregation of subject areas according to their contradictory epistemological premises increasingly problematic. Participating equally in the production and reproduction of the human condition, such fields as music and literature, chemistry and astrophysics will cease to be cultivated in worlds apart. The intellectual sanctions and practical justifications for independent disciplines in the social sciences, where epistemological ambiguities were never put to rest, are collapsing too, with much of the best work impossible to categorize as belonging uniquely to a single discipline.

In the construction of systematic knowledge of human reality, we are thus presented with arguments for the reunification of “is” (the realm of facts, or necessity—the goal of science) and “ought” (the field of values, chance or now more properly possibility—the challenge of the humanities). This will be the hallmark of a social science for our times, a historical social science, necessarily singular and transcending disciplinary boundaries. The structures of knowledge approach suggests that it will have to do two things. First, this historical social science must be premised on the unity of the regularities of social relations, their structure and change, their history. Therefore, process becomes the primary methodological concern. Second, with obvious impact on the debates over Eurocentricism and what have always seemed to be the cross-cutting effects of such status categories as race, gender and class, the unity of structure and change supposes the integration of values as integral to inquiry, not simply as a matter of the personal inclination of the analyst.

The most promising model is that of research that results in, or at least implies, the individuation of possible futures. It combines the human quest to connect with the reality of the world with the realization that we are all moral agents and obliged to work politically to favor the making of a better world as we see it. It is what Immanuel Wallerstein has called “utopistics” (Wallerstein 1998). Social analysts may now make the shift from constructing and verifying theories to imagining and evaluating the multiple possible consequences of diverse interpretative accounts of human reality and the different courses of action they suggest. This then is the barest outline for
a unified historical social science as an alternative to the predictive, Newtonian model of social scientific inquiry. Neither nomothetic nor idiographic, historical social science recognizes both those changing features and changeless elements of our world, a world limited nonetheless by a beginning and an end, and the role of values as the key to our differing conceptions of the worthiness of various possible futures and thus of what actions are to be taken—and therefore to the creation of authoritative but not of necessity universal knowledge of human reality for our times.

For instance, one of the most important concrete developments of the many already underway today (and which will have enormous impact in the years to come) is the way the divide between the scholarly and non-scholarly is now facing challenge (indeed, the divide between authority figures and those over which they hold sway). Academics and laymen alike, we have all been impacted by the advances in information technology and communications. From its inception, the modern world-system has been characterized by innovations in communications that have made information more easily disseminated and thus ever more widely and cheaply available. The technological innovations that set this trend in motion did contribute to the conjuncture from which emerged the capitalist world-economy, and today the so widely-hailed developments of the past two decades are both the culmination of a long-term trend and part of the conjuncture that will eventually give rise to a successor system.

One result of this process as it is playing itself out is a state of affairs that is incompatible with the reproduction of the structures of knowledge as we have experienced them over the past five centuries. Indeed, contemporary developments extending the long-term trend are actively dismantling those structures and reorienting the processes of their reproduction. As a result of advances in search engine technology, everything on the internet is equidistant from every other thing in cyber space, as well as from every single individual user. Every classification criteria too, then, is equal to all others; concomitantly, the scholar no longer inhabits a privileged space in the world of knowledge. No literature can remain proprietary; academics and non-academics alike can and now do access literature, and intervene directly in debates without regard for scholarly discipline or institutional status. The disciplines themselves, indeed all institutions and the “status” they enjoy, are thus deprived of much of their gate-keeping function and thereby destabilized. Just as new cultural communities and political constituencies are being created around issues previously segregated in non-communicating areas of knowledge, the consequences of rethinking the opposition between ideas and action are already having an impact on political practice as well as in an expanded conception of market interactions.

In conclusion, for those of us whose intellectual questions concern historical capitalism, giving equal analytic consideration to the construction and reproduction of the two-cultures divide on the same terms as the processes of the axial division of labor and the interstate system integrates the “cultural” realm into analyses of long-term, large-scale social change from the world-systems perspective. This is in line with the injunction that to understand change we must first have a clear idea of that which has remained the same. Over the longue durée the hierarchy of knowledge forms, the intellectual and institutional structures of knowledge, separated an epistemology that excluded values from truth claims from one which explicitly included human values in understanding the world. The structures of knowledge stipulated the imaginative horizon of the thinkable and unthinkable, and thus validated and legitimated what might be done and by whom, in terms of intentional action, at any time and place.

Today, however, developments across the super disciplines of the sciences, social sciences and the humanities have undermined the role of the sciences as guarantor of “truth” (even the conception of truth-values governed by the law of the excluded middle), and thus have destabilized the hierarchy of the structures of knowledge, undercut the pretensions to “scientific”
authority in the social sciences, and had the effect of devaluing supposedly “scientific” considerations in long standing debates involving such antinomies as structure versus agency, determinism versus freedom, and order versus chaos in the analysis of social reality. The result has been to lay bare the mechanisms of the “naturalization” of status categories, accomplished by giving them “scientific” legitimacy and cultural authority, that ground the underlying consensus associated with the development and deployment of strategies of exploitation and domination, and resistance to them, as a long-term process.

Thus, a historical social science that includes creativity and choice and is no longer at crosscurrents with a holistic experience of social relations is already under construction. The classical considerations of “who, what, when, where, why” and the “view from nowhere” are shifting to the questions of “for whom, for what, for when, for where, from whose point-of-view.” Nonetheless, since the final outcome of systemic transformations is unpredictable, the struggle for the future will call for committed, purposeful action in favor of what we consider the most desirable of the possible alternatives. Although from the perspective of the system as a whole, normatively motivated micro-choices and struggles appear quite random, from the point of view of the individual actor they are highly rational and may be focused on specific system outcomes. This is not so much the simple return of agency, but the manifestation of the fundamental relationship between agency and structure. During this period of instability, in which the future is an open future, such small fluctuations—interpretative work meaningful for our times, including that from scholars without institutional affiliations, for instance—will be capable of massive amplification, to the point that eventually some set of irreversible choices will “determine” the emergence of a qualitatively different social system.

References

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