MARKING TIME: THE CHRONOCENTRIC VISION OF THE POST INDUSTRIAL NARRATIVE

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The ideological dimensions of post-industrial accounts reflect the political element in the theorists assumptions of a particular position on the question of the nature of social change and the implications that can be drawn from the study of past events for the understanding of present ones. By the term ideology is meant a set of prescriptions for taking a position in the present world of social praxis.

The idea of a new industrial era, which is brought about by the progressive possibilities of technology as a distinct final stage in the evolution of history, has long attracted fairly wide attention. Since the eighteenth century enlightened thinkers have welcomed such a "new era," on the grounds that technology gave society control over nature and that economic abundance gave society mastery over its own destiny that broke the age old cycle of growth and decline, formerly the fate of nations. The notion of an historic disjuncture that succeeded industrialism has been set forth in one form or another since the development of the industrial revolution; being given serious consideration by scholars from Auguste Comte, Karl Marx, and Henry Adams to W.W. Rostow and Daniel Bell who popularized the term "post industrial society."

Most generally, the term "post-industrial society" suggests that mechanical industry has been displaced from its former role as the central and constitutive element of social, economic, and cultural affairs. The concept of post-industrial society (Badham, 1984) arose from the perception that technological advance had ruptured the calm earlier attributed to a mature industrial society. Its force, in the hands of its exponents, came from a general diagnosis of social transformations that could never be adequately summed up in purely mechanical or economic terms. Although the term "post-industrial society" rests on the citations of the early landmark books on the subject, Daniel Bell's *The Coming of Post-Industrial Society* (1971) and Alain Touraine's *The Post-Industrial Society* (1971) the concept can be found in Western and American intellectual discourse from the establishment of the industrial revolution.

Reading post-industrial theory it is evident that to consider the forms of historical relations described requires a formal theory of the historical work. This analysis examines post-industrial theories as a narrative which is a conceptual artifice, an accomplishment in prose and figure, which share a similar form, embody similar themes, and share similar ideological assumptions. These post-

industrial narratives are chronocentric, that is they use figure and number to spatially present data, marking time in a linear direction to produce a lawful account of historical change. There are, this analysis will demonstrate, selective affinities e.g. the cause of change, the divisions of change, and the results of change, among the various descriptions of post-industrial society. These selective affinities are based upon the structural homologies which can be discerned among the arguments. The post-industrial narrative perspective shares a homogamous narrative structure which organizes the elements of the historical field in an ideological way. The concept of post -industrial society, this analysis contends, is not simply an analytic abstraction. It is a political tool that plays an important role in creating order out of historical change. Post-industrial theory is conveyed through a literary method that is political practice. Post-industrialism's narrative strategy binds it to an ideological canon which posits a chronocentric reflection of the world. The style and form of post-industrial writing can be characterized in terms of a linguistic protocol used to prefigure the historical field.

In his study of "academic sociology" Ben Agger (1989:1) analyzed "the literary nature of mainstream sociology," identifying the structure of sociological texts and their accompanying ideologizing discourse. In his study of "the historical imagination in nineteenth-century Europe," Hayden White (1973 p.ix) treated the historical work as "a verbal structure in the form of a narrative prose discourse." The post -industrial theorist's pursuit of invariant social change also takes a literary form susceptible to cultural and political interpretation. As Agger (1989) and White (1973) used the frame of reference of literary theory to "deconstruct" scientific writing and historical writing, this analysis joins literary analysis to an examination of post-industrial writing. This analysis examines post-industrial writing as a literary project supported by certain rhetorical, technical and figural devices, a project in which literary strategy supports ideological ends. Through an analysis of the narrative ground on which post-industrialism's idea of social change is constituted, the analysis will illuminate the ideological nature of post-industrial theories.

This analysis treats the work as a linguistic structure in the form of an historical narrative. It holds that a philosophy of history subsists in the social texts of post-industrialism, that post-industrial thought is a form of historical reflection that includes a formal theory of history. Within post-industrialism's dominant writing style certain things happen. Post-industrial narratives combine a certain amount of "data," theoretical concepts for explaining this data, and a structural content, linguistic in nature which serves as an accepted paradigm of historical explanation. This literary strategy and its attendant formal protocol is tied to a ideological canon which postures a chronocentric reflection of the world.

These post-industrial chronocentric narratives interpret the rise of technological civilization as a spatial movement in time from the vital to the rational. The advance of history is marked and measured. The present is seen as the glorious culmination of a progression from the primitive and misguided to the refined and enlightened. Captivated by a notion of linear historical

determinism, in similar formulations they describe science and technology as they work as an independent force to infuse rationality in the historical process as a whole, giving history the spatial functions of direction and purpose.

In general these post-industrial chronocentric narratives embody five features. 1) Each describes history as a surface upon which the advancement of technology is recorded. 2) History is reified as a physical process whose momentum and direction can be measured. This process is presented in a figural form. 3) Each has relied upon some formula for the measurement of historical development. 4) Each has a concept of system which implies some generally final, fixed character of structure--a point in a spatial dimension conceived as a state of rest. 5) And each uses the past to justify the present.

The concepts of post-industrial society and other non-prefixed concepts, have pictured the movement of history and the agents of that movement in remarkably similar chronocentric narratives as the following pages will attempt to demonstrate. Different theorists, different times--strikingly similar images and conceptual packages of history (see Table I). Reading post-industrial theorists one is struck by the sameness and similarity of the texts and arguments. A schematic overview is possible precisely because post-industrial writing is so homogeneous in its logic and structure of narrative presentation. Thus, one can reconstruct them as a single account of historical development, more continuous than discontinuous. This understanding is a purposeful design of artifice, an accomplishment of prose and figure, a narratively conveyed figural display of invariant social patterns:

Figure 1

Agent of Change----- Historic Divisions----- Static Culmination

Post-industrial theorists elaborate a post-industrial narrative, that describes the trajectory, the measurable components, and the destination of post-industrial society.

This analysis proceeds on two levels on inquiry. It seeks to analyze, first, the family characteristics in the works of important post industrial theorists, and second to link the structure of their historical imagination to ideology, to a chronocentric perception of modern social change. The following pages are a textual explication of the post industrial narratives of some significant twentieth century social theorists. Then, by tracing transformations in the way post industrial theorists characterize those elements and dispose of them in a specific narrative in order to gain an explanatory affect, the deep structure of their historical imagination is characterized. Finally the conclusion examines the ideological consequences of post industrial chronocentric narratives.

Chronocentric Interpretations of Historical Development

The work of Lewis Mumford follows the dominant protocols of the chronocentric post industrial narrative.[1] He narrates social change using rhetorical and figural devices. His early studies of technological society took the form of an inquiry into the purely factual aspects of technological change. His earliest book on technology, *Technics and Civilization* (1934), is a contribution to an understanding of the machine in history and its reverberations in society. Mumford here argued that there were three major phases in technological history, the Eotechnic, Paleotechnic, and Neotechnic.

Mumford argued, employing figures and tables, that the essential characteristic of each historical phase was the material that shaped it, and the source of its energy. In the Eotechnic phase, the dawn of the technical process which lasted from A.D. 1000 to 1750 the principle material was wood, and its motive powers were wind and water. Its most important invention was the development of the experimental method in science. Humanly controlled and socialized through the guilds, it reached extraordinary efficiency and provided the utilization base for a comparatively harmonious socio-economic order. The Dutch landscape of the 16th and 17th century provides a pleasing example of this life style, with its great batteries of windmills in a rural and semi-rural guild environment.

The Paleotechnic, or older technical stage, found its leading materials in iron and coal, its motive power in steam, and its seat in the factory town, as exemplified in the grimy, dark, dehumanized mill towns of England during the 19th century. This period, beginning in 1700 and coming to a close in the twentieth century was Mumford felt the most ugly, empty, sordid, machine-ridden and dehumanized epoch of human history...the era of "carboniferous capitalism." Its brutal contempt for life Mumford (1934:165) commented, "was equaled only by the almost priestly ritual it developed in preparation for inflicting death." On the whole it was "a rubbish-strewn avenue" from the more idyllic Eotechnic period of the forest and the watermill.

The Neotechnic phase was the emergent phase that industrial society was entering into. Electricity was its central source of power. Its major materials were synthetic rubber, glass, new alloys, lighter metals, and rare earths. The scientific method, whose chief advances had been mathematics and the physical sciences, examined other domains of experience. These new patterns, stemming from the new knowledge of organic forms, were being carried over into industrial structure, social organization and forms of art. Whereas in the Eotechnic and Paleotechnic phases humanity gradually became adapted to the machine, the clock and the steam engine determined the kind an individual's participation in production and activity; the Neotechnic phase reversed the tendency. In this phase the machine would become the servant of humanity and its planned use would be motivated by an organic view of life that would bring social welfare into the central role of the social process, making satisfaction rather than production and acquisition the goal of industrial life.

Mumford is relatively optimistic about the Neotechnic phase. He concedes the prevalence of "cultural pseudomorphs," the persisting Paleotechnic practices in the present, but is buoyed by the possibility of a rational economic society. Mumford presumed that a change in the tempo of life was imminent. The increasing acceleration which seemed so notable from Eotechnic unity to Paleotechnic multiplicity would no longer characterize society. Mechanical achievement was approaching its own natural limits imposed by the nature of its elements. "We are now faced," he wrote:

> with the period of consolidation and systematic assimilation...Our machine system is beginning to approach a state of internal equilibrium. Dynamic equilibrium, not indefinite progress, is the mark of the opening age: balance, not rapid one-sided advance: conservation, not reckless pillage...Once we have generally reached a new technical plateau we may remain on that level with very minor ups and downs for thousands of years.(1934:429-430)

Due to this condition, Mumford felt, the classical idea of infinite progress then might be supplanted by the idea of balance, movement forward was approaching its natural limits imposed by nature.[3] Mumford's literary method is political practice wherein the world under account is frozen in the lens of description.

Roderick Seidenberg narrates the development of organizational procedures which he claims has led to the arrival of a "post historic" society. The measure of the "post historic" society was the rise of organizational innovation in development. In the course of technical and social history Seidenberg detected what he (1951:4) called a "morphological determinism," an "organizational compulsion" which constituted and inevitable mode of operation in the development of society. "We may be certain," he (1951:11) wrote, "that the future world, whatever its character, will have passed through the sieve of organization."

There is a spatial course of human development that is apparent to Seidenberg as an objective fact; that is the evolution from instinct to intelligence. He, like other post industrial theorists, relies heavily on the languageless narratives of quantity, figure, and symbol to portray historical changes. He describes this evolution as if it were a physical process. The "texture of events" reveals a "significant direction" a "probable trajectory," "an unmistakable trend" in human development. History, in Seidenberg's formulation, is the record of successive transformations in which intelligence usurps the function of the instincts. Seidenberg notes three linear stages, prehistoric, historic, and post-historic. In the prehistoric stage humanity shares a primordial instinctual harmony with nature. Whereas the instincts are essentially static and fixed, the intelligence is dynamic, exploratory, and purposive. Under the guidance of intelligence in the historic stage, these relationships tend to find expression through conscious consent, regulations, proscriptions, and laws. Through speech the relationships established by the intelligence are formulated

into a "superior" body of knowledge characterized by a verifiable tradition. Through science (1951:60) humanity came to a "definite turning point" in its relation to the environment. History, a period of ever increasing change, would then climax in a "post historic" phase, a relatively fixed state of stability and permanence. Seidenberg foresaw an era of mechanization which would be "post historic," since universal rationalization would provide a stability to society that resulted from the erosion of instincts and passions and the perfection of administration.

Through the machine (1951:135) the drift toward organization had been "broadened into an obligatory and all-pervasive principle, encompassing in its sweep the whole of life." As in the process of crystallization, the rate of change tended toward a climax:

> The organization of society will unquestionably proceed until its final crystallization shall have been achieved ecumenically, because of the relationship of this trend with the inherent dominance of the principle of intelligence. But the process, once dominant, implies in turn a steady decrease and retardation of social change -- the gradual slowing down of the momentum of history until, indeed, we shall be confronted by the inverse of our historic ascent in ever more delayed sequences of stability and permanence in the conditions of life.(1951:179)

Seidenberg narrates a motionless world, thus promoting it. "Man will accept the centripetal pull of organization as a kind of social gravitation," Seidenberg (1951:188) concluded, "at once universal inescapable, and beneficent."

Analyzing the power of the spirit Teilhard de Chardin reached much the same destination. In his evolutionary theories he narrates a figural path of spiritual ascendence, evolution perceived as spiritual rather than biological, became the measurable pathway to collective redemption. He (1965:20) quoted with approval Huxley's dictum that humanity was nothing else but evolution becoming conscious of itself. Humankind's evolution Chardin held was now social rather than biological. Material advance augured the progress of humanity toward even greater interdependence and cohesion. "Our earth of factory chimneys and offices," he (1965:215) observed, "seething with work and business, our earth with a hundred new radiations -- this great organism lives, in the final analysis, only because and for the sake of a new soul." He welcomed this as a step toward the collective redemption of humanity and disparaged of those who were critics of industrial civilization. He (1964:24) spoke depreciatingly of "the nightmares of brutalization and mechanization which are conjured up to terrify us and prevent our advance." Individuals might resist progress but the race could not. "Absolutely nothing" he (1965:229) held could halt humanity's advance toward "even greater interdependence and cohesion."

Chardin examined the direction, inherent possibilities, and trends of evolution. Through paleontological analysis Chardin (1964:127) concluded that evolution passed through several stages of development on the way to an "omega point." He insisted that the differentiation of groups was maintained only up to a certain point. Once that point had been reached, divergence and differentiation yielded to confluence and convergence. He projected an evolutionary threshold, a process of human convergence that was tending to a final state.

Chardin's thesis was that humanity was evolving into a superorganism, a collective being which he called the "Noosphere." By a continuous accumulation of properties, a phenomenon Chardin (1965:235) termed "controlled additivity," life became more and more complex a domain of interwoven consciousness, a form of "super-life." The Noosphere implied an inter-thinking humanity as new type of organism whose destiny was to realize the ultimate possibility for evolving life on this planet. "Is not what is happening at the present time," he (1964:120) asked "the closing of this special thinking circuit?" At the summit humanity would be absorbed into (1965:261) "the evolutionary equilibrium of the Noosphere." For Chardin there is nowhere to go but forward, to extend the curve of hominisation to the omega point of psychic communion.

Harvey Cox opens *The Secular City* with the portentous pronouncement that a new era in human history is emerging from the secularization of life. He uses design and number to directly reflect the world at large. Cox applauded the secularization of modern society and the emergence of a "technopolitan" individual living in a world from which God had withdrawn. In the anonymity, mobility, bureaucracy and organization of the secular city Cox saw the principle foci at which the purpose and activity of God and the responsibility and activity of humanity for the humanization of society intersect. Because of his perspective, Cox (1971:54) maintained, urbanites were able "to discern certain elements of the Gospel which were hidden from his more religious forebears."

In his enthusiastic support of the secular city Cox identified it with the Kingdom of God. He relied heavily on the notion that the Kingdom was the process of the realization of rationality in history. Cox welcomed the advent of technopolis because of its use of a rational pragmatic approach to the problems of life. Technopolis, made possible by technology, introduced a qualitative change in Western civilization. He saw the structures of technopolis as preferable to those societies which coped with the problems of life through the instrumentalities of myth, ritual and tradition. He (1971:55) described a schematic linear movement from the tribe, bound by mythology, to the town, bound by metaphysics, to the technopolis reaching maturity in the secular city, free from myth and metaphysics and presided over by the pragmatic technopolitians. Cox beheld the action of God in history in a novel, spatial way. In his eschatology there was no vertical transcendence, but a horizontal advance to a technological eschaton.[2]

Perhaps the most inclusive and comprehensive statement of this spatial horizontal view of history was articulated by W. W. Rostow. Rostow (1960) examined the national economies of Western European countries according to a set of stages, which he commended not only as a theory of economic growth,

but as a "theory about modern history as a whole." Rostow claimed that his generalizations applied to the history of the world since 1700. Rostow uses figure and number to present data and relies on science to established scientific authority to produce a lawful account of the social world.

Rostow's description of modernization is essentially a technological theory of historical development. The stages are generalizations from "certain factual observations" about the sequence and causes of development in modern societies. Rostow identified all societies in terms of five categories: the traditional, the preconditions for take off, take off, the drive for maturity, and the age of high mass consumption. In the apathy of traditional society, the idea of technological altering of the environment was negligible. Rostow noted (1960:8) the technological constraints that existed in such pre-Newtonian times, and asserted that when technology was lacking, social change was lacking as well; a "ceiling" existed over social attainment.

With the insights of modern science and the industrial revolution a pattern of linear growth was established which continued until the present. During the preconditions for take off, the introduction of technology in some sectors set the economy into motion -- which in turn induced changes in other areas, not the least important of which was the building of an effectively centralized state. In response to the developments in science and technology the institutions of society were modified in order to cope with the new technologies. The "great watershed in the life of modern societies" was the third stage in the sequence, designated by the airplane metaphor of "take off." In the "take off" the old resistances to change were laid to rest. Growth became a normal condition.

After the "take off" there (1960:58) followed a long interval of sustained, if fluctuating, progress, as the now regularly growing economy drove to extend modern technology over all of its economic activity. The economy became more refined and technologically complex. Maturity was the stage when the economy had absorbed technological know how and effectively applied it to the bulk of its resources. This led to the age of mass consumption, a "post maturity economy" in which the production of goods and services were available in great plenitude. Momentum was then maintained by "extending the tricks of modern technology beyond the sectors modernized during the take off." In maturity, society was able to effectively apply the range of modern technology to all of its constituents.

Kenneth Boulding writes of the start of the "postcivilized" era. The distinctive characteristic of this new age for Boulding (1964:6) is the beginning of science and the acceleration of technological change. Boulding emphasizes the possibility of the guidance of society in the new emerging period. He (1964:149) concludes that if man is able to avoid a major nuclear conflict, and if the population explosion can somehow be controlled the future of the "post-civilized society" will take the form of a "stable, closed-cycle, high-level technology."

As the title of Zbigniew Brzezinski's book indicates, *Between Two Ages*, an old age is giving way to a new age. The key to the momentous changes in

historical movement, Brzezinski proposes, lies in the fact that communications is replacing labor as the basis of the technological system. Energy, he contends, is used to affect states of consciousness rather than to move physical objects. Brzezinski buttresses his argument with charts showing the increase in the possession of radios, televisions and telephones which he supposes to be indicative of the means of shaping culture and society. Electronic rather than mechanical physics is the archetypal symbol of the new era. The "technetronic society" is a society that is shaped culturally, psychologically, socially, and economically by the impact of technology and electronics. The most industrialized countries, Brzezinski argues, are emerging from the industrial age of their development, and are entering an age in which technology and electronics are becoming the principle determinants of social change, social structure and the historical transformation of society. Technetronic America is shaped not in factories but in the electronic laboratories and centers of learning. Industrial employment is supplanted by services with automation and cybernetics replacing the operation of machines by individuals.

Noting the advances that had been made in the fields of communication and education, Brzezinski observed, the advent of the "technotronic revolution," was not territorially confined but was "spatio-temporal:"

> This new revolution almost simultaneously affects the entire globe, with the result that fads and new forms of behavior move rapidly from society to society... Unlike the industrial age, which required that a society undergo extensive industrialization before the new proletarian class could become socially significant, the spatiotemporal technetronic revolution directly reaches those receptive to it because they have access to communications and because their state of mind is formed by factors outside their immediate social context.(1977:107)

To Brzezinski the world was a place, a location. The spatial curvature of the earth provided the course for the movement of history.

Victor Ferkiss narrates a similar chronology. According to Ferkiss, humanity is at a "watershed" in which the historical transformation that is taking place is creating a society-increasingly unlike its industrial predecessor. Humanity is on the threshold of a self transformation, of attaining new powers over itself and the environment. "There is no doubt," Ferkiss intones (70 x(i) 31) "but that the era of the new man will soon be upon us. For the existential revolution is a reality. At the deepest level of human existence man as we have known him is on the verge of becoming something else." In the present era, he argued, the technological elements underlying industrialism had combined to raise the position of technology in civilization "to a 'critical mass.'"

The industrial era, Ferkiss observed, was already in the process of being superseded by a new phase in human history and industrial man was evolving into something different and superior--"technological man." The changes that were taking place in human society; centralization, the substitution of

communication processes for work as a primary activity, and automation presaged the end of industrial civilization and its replacement by technological civilization. Ferkiss (1970: 202-203) is clearly enthusiastic: "Technological civilization. Ferkiss (1970: 202-203) is clearly enthusiastic: "Technological man will be man in control of his developments within the context of a meaningful philosophy of the role of technology in human evolution. He will be a new cultural type that will leaven all the leadership echelons of society. Though individuals might resist progress, humanity as a whole would move toward even great interdependence and cohesion. "Technological man" would eventually internalize the basic concepts and principles of technology (1970:207) to "make them much a part of his instinctive world view that they inform his personal, political and cultural life."

Daniel Bell's concept of the "post-industrial society" is an authoritative re-statement of a long line of social thought developed by theorists from Adams to Mumford and Brzezinski. Its central ideas are by now familiar. Rather than breaking any new ground, Bell offers an extensive and ambitious synthesis of what advocates of the "new era" of the technological society have written over the last couple of decades. His primary contention is that there is a new historical situation in which there is a change in the character and status of knowledge. Knowledge, Bell holds, has become the most important social force, and the professionals and the technical workers constituted the most important social group.

"Post-industrial society is characterized," Bell argued (1976 xiv), "not by a labor theory but a knowledge theory of value." Pre-industrial society was largely extractive, its economy was based on agriculture, mining and fishing. Industrial society was fabricating, it used energy and technology to manufacture goods. The post-industrial society becomes (1976 x(i) xii) "one of processing, an infrastructure of communications networks strategic for the exchange of information and knowledge."

According to Bell post-industrialism augured a new change in the "techno-economic system;" an historic metamorphosis in Western society. The productivity of the machines, which were once the bases of industrial society had, he commended, created the material foundations of a new order in which the citizens were assured a reasonable equality of basic goods and services. The older economic rationality of the market was then superseded by a new socially conscious rationality -- administered by the centralized state and its educated functionaries. In the post-industrial society scientists and researchers would replace businessmen as the key personnel of social institutions, and the (1976:112) "character of the new stratification system will be the division between scientific and technical classes and those who stand outside." The scientific elite represented a new class which was destined to replace the bourgeois, the way that the bourgeois replaced the feudal lord.

The alleged eclipse of economics as a system of thought or motive principle of society figured too in French theorist Alain Touraine's account, *The Post-Industrial Society*:

The most widespread characteristic of the programmed society is that economic decisions and struggles no longer possess either the autonomy or the central importance they had in an earlier society which was defined by the effort to accumulate and anticipate profits from directly productive work...Nowadays, it depends much more directly than ever before on knowledge and hence on the capacity of society to call forth creativity....The principal difference between the programmed society and capitalist industrialized society is that social conflict is no longer defined within a fundamental economic mechanism, and that the whole complex of social and cultural activities is involved more or less directly--but never simply--in this conflict (4-6, 25)

In Touraine's description of post-industrial society economics has declined, supplanted by a broader conflict.

The conflict in the post-industrial society, Bell asserted, would not be the cleavage of one class set against another. Instead conflict would take the form of a clash between two opposed modes of thought which Bell termed the economic mode and the sociologizing mode. The economic mode stressed functional efficiency and proficiency management. The sociologizing mode set broader, communal, non-economic goals that might entail loss of both output and efficiency. In industrial society economic values prevailed; post-industrial society Bell (1976:274-284) thought would represent the triumph of the sociologizing mode.

This view of the post-industrial society, a society that Bell felt would be taking place in the next thirty to fifty years, was predicated upon his graphic conceptual analysis. Bell used what he termed "axial principles" and "axial structures" as a means of grounding his analysis historically. "It is," he (1976:xxv) wrote, "an effort, empirically, to identify the substantive character of structural changes in society as these derive from the changing nature of the economy, and the new and decisive role of theoretical knowledge in determining social innovation and the direction of change." Bell used the axial principles to plot the trajectory of his social forecast and to legitimate his polemical extrapolations. Bell tried to demonstrate graphically, citing increases in the skilled population, the percentage of the GNP spent on knowledge, and the increase in research expenditures, that the centrality of theoretical knowledge was becoming more and more predominant in advanced industrial societies, that it was in fact, the axial "thread" leading to the post-industrial society. His narrative approach to social change is rooted in fetishistic citation and figural procedures.

However, Bell does more than highlight the centrality of particular principles or "facts." He uses these "fact" to chart social changes in the character of principles, institutions, and structures. He charts the number of white collar workers, the creation of the service economy, the expansion of the professional and technical classes, and the expansion of the codification of knowledge into abstract symbols. What Bell has done is to take the essential premises of historical developmentalism and to apply them, not to abstract social systems,

but to concrete historically formed entities. Whereas Tocqueville deduced the characteristics of democracy from his perceptions of America, and Weber created ideal types for heuristic purposes, Bell is after a theory of change that will account for what has happened structurally in the United States.

From its establishment at the beginning of the industrial revolution, Bell argues, there has been a pattern of linear growth that has continued through the present. Examining history as a physical process, Bell plotted the "trajectory of history," mapped the "growth" of occupational categories, delineated the structural "trends" in society, and measured the "rate," "pace," and "momentum" of change.

Since Bell, the concept of post-industrialism has sometimes been integrated into other concepts. In his noted article on "The Cultural Logic of Late Capital," Frederic Jameson described the so-called "postmodern" consciousness as arising from a sense of "some radical break" having occurred in the span of recent historical experience. There Jameson found a watershed often described in sociological terms as the rise of "postindustrial society." Though Jameson was dubious about the merit of the phrase, he nonetheless suggested, as has Jean-Francois Lyotard that the two terms "postmodern" and "postindustrial" go together in some fashion as definitions.

One may ask whether the concept of post-industrialism retains any value from the vantage point of the present, or whether it ought to be relegated to the realm of period pieces. In 1980 Alvin Toffler's popularized version of the post-industrial argument, *The Third Wave*, was a major bestseller. Yet instead of reinvigorating the discussion, Toffler's book appears to have marked an ending. In the 1960's there have been relatively few major statements of the post-industrial position, and such figures as Cox, Rostow and Bell have turned to other questions. Moreover, there are also signs in the 80's and 90's of an explicit rejection of the post-industrial framework. A significant volume by Stephen Cohen and John Zysman is subtitled *The Myth of the Post-Industrial Economy*.[3] History has seemingly not lived up to the expectations to its billing in the post industrial script.

Conclusion

The previous section, a sort of master plots of post-industrial thought, describes the striking similarities in post-industrial narratives. There are as the previous section has demonstrated significant homologies in the arguments (See table I). The elements in the historical field are organized by post-industrial theorists into a narrative by the arrangement of the data to be dealt with in the temporal order of their occurrence; inaugural motifs-Eotechnic, Neolithic and Traditional, transitional motifs-Paleotechnic, Modern and Industrial, and terminating motifs-Neotechnic, Noosphere and Technopolis. The descriptions of social change, the periodization, and the trajectory and destination of historical change are very similar in post-industrial narratives.

Through a disclosure of the narrative ground on which post-industrialism's idea of social change is constituted, this analysis has attempted to establish the ideological nature of post-industrial theories. The dominant style is a constitutive act which determines both the kinds of objects which are permitted to appear in the field as data and the possible relations that are conceived to obtain among them. The ideological implications of post-industrial theory appear in the narrative in which an aesthetic perception (the movement of history) and a cognitive operation (the post-industrial argument) can be combined so as to derive prescriptive statements from what may appear to be purely descriptive or analytical ones. Thus, the post-industrial theorists examined in this analysis study history in order to divine the laws that govern its operations and write history in order to display in narrative form the products of those laws. Post-industrial narratives combine data and structural content to elaborate a paradigm of historical explanation. The figural and spatial conceptualization of historical change serve an ideological canon. The very claim to have discerned some kind of formal coherence in the historical record brings with it theories of the nature of the historical world and of historical knowledge with ideological implications for attempts to understand the present. For to speak of a post-industrial society, in which everything is new and unprecedented, is to imply that only the present and future count. In this respect post-industrial theory sets up the past as an adversary. The past is used not merely to explain, but to justify the present. The past is pictured by the theorists described in these pages as inevitable and purposeful—as preparation. The childlike and faltering development of the past is seen as a naive stage that precedes maturity. Post-industrial theory through narrative presentation flattens the historical universe of wide open possibilities into the dimensions of the present. Past and present are not only chronologically separate, but epistemologically unequal. The superiority of post-industrial society is retroactively asserted. A narratively conveyed figural display of invariant social patterns is used to convey the trajectory of history which leads to the Neotechnic stage, the Noosphere, and the Technopolis.

Post-industrialism's literary method is a political practice wherein the world under account is frozen in the lens of description. Post-industrial writing presents an unalterable world of social patterns. Post-industrial theorists take the position that industrialism would give way to a further stage, in which the alienating effects of modern life would be overcome and society established on a more efficient, egalitarian, and rational basis in a Neotechnic era, a Noosphere, and the Technopolis. Adams, Mumford, Chardin, Cox, Bell et. al. hold that the eradication of industrial arrangements is a necessary stage in the development of a higher civilization that will establish a secular utopia and bring history to a happy ending. They contend that history advances in a single direction, that no developing society escapes the iron law of historical motion, and that opposition to such historical necessity is escapism. The argument is crafted to perpetuate itself and thus the world sheltering it. Such a map closes off historical

possibilities that might still be open. In portraying history as static, post-industrial theorists aim to bring it about.

Post-industrial narratives often treat what is brought into conceptual existence as if it had an actual existence. None of these theories of technological development address consciousness and culture seriously as the matrix in which economic industrial behavior is formed. The literary work produces a conception of the world governed by intractable laws, thus diminishing the emancipatory imagination. Historical destinations have been tailored to describe "reality" in limiting imagination and innovative action. They are a way of inuring people to their alleged fates in post-industrial society. Post-industrial theorists portray people as invariant features of a figurally reflected world. They deny any capacity for historical understanding or autonomous action on the part of collectivities. They also ignore the independent role of the state in social change, treating the state merely as a product of underlying social forces, ignoring its capacity for autonomous initiative. Post -industrialism dehistoricizes imagination into a discourse centered around the axiom that advanced society necessarily diminishes autonomy. Thus, post-industrial society becomes the future of all possible industrial societies.

These post-industrial narratives close off radical reformulations of history. The subterranean political purpose is freezing the present into future. History written in this mode tends to be oriented towards the determinations of the end or goal toward which all the process in the historical field are tending to. These texts reflect and reproduce the present. No matter how desireless in tone, post-industrial theory desires the present world. It entices submission with its postured lawfulness. It wants to produce and reproduce the very world it announces as a fissionless totality.

Figural and descriptive analyses, reinforce their conception of the world and preclude other narrations of it. The argument gains legitimacy when handled figurally, a literary defice chosen to make the argument convincing. In these figural presentations history is seen exclusively as a physical process on a temporal surface. Alterations that occur in society are described much like those that occur in the state of inanimate objects. They are spoken of therefore, in terms of speed, force, momentum, energy, and acceleration. Technological development is seen to go forward virtually of its own inertia, resist limitation, and have the character of a self-propelling, self-sustaining, ineluctable flow.

In post-industrial thought history holds an objective status, statistics and calculus are used as a means for studying human events. It reflects and reproduces "facts" as the fate of Western society. Historical development is periodized by the theorists considered in these pages into chronological segments. Scientific technique cuts reality into periods, sections, regions and fragments in order to take them up in accord with appropriate perspectives and methods. It is characterized by a kind of metaphorical dominance that conceptualizes human behavior and society itself as determinate objects capable of controlled observation, measurement, and predictability. In these discussions,

history is a metaphor of formalistic technological development that is beneficial and linear.

Post-industrial theory reifies history, it reduces quantity to quality, and time to space. The products of history are objective--so many televisions, inventions, white collar workers. History is explained as a physical process whose momentum can then be measured, whose changes can be graphed, and whose additive progress can be calibrated on a line. In doing so they reduce patterns and goals to instrumental operational terms. They narrate a spatial history which instead of explaining technology through history, claims to explain history through technology. That which comes before or lies outside the mechanical phase is largely discounted. Post industrialism reflects and reproduces these facts as fate; the power of the social is frozen by discourse. Post industrial theorists study history in order to divine the laws that govern its operations and write about history, marking time, in order to display in a narrative form the effects and patterns of those laws.

Endnotes

1. One of the early social theorists who construed historical processes in the form of a post industrial narration was Henry Adams. Adam's essay on the phases of history in many ways prefigures the conclusions drawn by many of the enthusiastic advocates of post-industrial society. Adams distills data and uses a figural model of change to make ideological claims. Adams perceived the force of the Dynamo to be linked to new forces in history--the new changes he saw around him in economic, social, cultural, and political life. Awed by the portent which the dynamo held for society, the rate of change and momentum brought to the affairs of humanity, Adams set about to discover the laws of history that accounted for the staggering expansion and increase he saw in the flow of technological energy.
    To plot the line of history that led from the unity of Chartres to the multiplicity of his age, Adams searched for a direct sequence of cause and effect that would account for "all the phenomena of human history." Looking back over the tumult of history, Adams plotted the rising curves of the rate of scientific discovery, of coal output, of steam power, and the transition of mechanical to electrical power. From these studies Adams believed that he had discovered a "law of acceleration" in human history based on the fact that with the introduction of modern energy sources the complexity of civilization seemed to double and re-double at exponential rates. The rate of increase, he (1949:171) exulted, might serve as a "dynometer" of history.
    In 1909 Adams wrote an essay, "The Rule of Phase Applied to History," where under the persona of "physicist-historian," he (1949:291) used the law of inverse squares as a standard of measurement for social acceleration and proposed it "as a general law of history." The law of inverse squares led to

the conclusion that the history of thought was in passage through three phases, each with a duration in years that was the inverse square of the duration of the preceding phase. He assumed that a Mechanical Phase, issuing from the thought of Galileo, Bacon and Descartes, had been initiated in 1600 and lasted 300 years until the next phase, the Electrical Phase in which the invention of the dynamo turned society sharply into a new era. Thus, the Electrical Phase would have a life equal to 300 or about seventeen and one half years. Then around 1917 it would pass into an Etheral Phase that would last only 17.5 years. Given this constant rate of acceleration, thought (1949:308) would be brought "to the limit of its possibilities in the year 1921." Thus, according to the phase rule, society Adams wrote, was achieving a consciousness of itself in terms of science. In this phase of pure mathematics and metaphysics, there might be, he (1949:308) commented, a "subsidence" of consciousness and an "indefinitely long stationary period."

2. The anthropologist Leslie White like Cox and Chardin linked human culture to technological development. White saw culture as consisting of three components, which he referred to as the techno-economic, the social, and the ideological. White defined the techno-economic aspect of a culture as the way in which members of the culture deal with their environment, and it is this aspect that determines the social and ideological aspects of the culture. White considered the manner in which culture adapts to its environment to be the most significant factor in its development. In *The Evolution of Culture* (1959) White stated his basic law of evolution, that culture evolves in proportion to the increased output of energy on the part of each individual, or to the increased efficiency with which that energy is put to work. For White culture evolved in direct response to technological progress.

3. Celebrators of post-industrialism have been silent in recent years. As Fred Block (1990 x(i) 5) has noted "In the 1980's there have been relatively few major statements of the postindustrial position" and those who have written about it have turned to other questions. There is post-industrial classification, but post-industrial analysis has seemingly ceased to exist. The assumptions of post-industrialism are incorporated in some scholarly works, but not explicated. When post-industrial assumptions of history appear in the intellectual landscape, they appear as background rather foreground.
    In her recent study of the significance of the "smart machine" in the workplace Shoshana Zuboff (1988:401) held that the relationships that existed in the new learning environment of the modern workplace could "be thought of as posthierarchical." In such a "posthierarchical" workplace (1988:401-402) the differentials of knowledge, power and responsibility would "shift and flow and develop there character in relations to the

situation, the task, and the actor's at hand." Although Zuboff does not analyze the historical transformation of work, focusing on the uses of new technologies, she describes a pattern of historical motion, in which the technological transformations in the workplace lead to greater equity and stability.

The assumptions of post-industrialism are also formulated in Hegelian trappings by Francis Fukuyama in his essay "The End of History" in which he argues (1989:4) that underlying trends in production and consciousness have brought social development to "the end of history as such, that is the end point of mankind's ideological evolution and the universalization of the Western liberal democracy as the final form of human government." Fukuyama examines the genesis of this idea in the works of Hegal and Alexandre Kojeve, and examines the proof in recent geo-political transformations, particularly the passing of Marxism-Leninism and the implementation of perestroika. Thus, Fukuyama (1989, p. 18) envisions a "post-historical period" in which there is "just the perpetual caretaking of the museum of human history."

Postmodern theory schematically resembles post-industrial theory. An example of this similarity can be found in Charles Jenck's and Maggie Keswick's book *What is Post-Modernism?* Their chart "The Three Era's" traces the three eras of pre-modern (1000 BC 1450), modern (1450-1960), and post-modern (1960-), associating each with a specific mode of production and social organization. It periodizes history, provides an account of the previous social order--modernity, the new social order--postmodernity, and a description of the rupture between them. Postmodern social theory is also elaborated on a foundation of post-industrial assumptions. Braudrillard and Lyotard associate the postmodern with trends in post-industrial society, postmodernism is seen as the aftermath of the industrial age. Braudrillard describes the end of the era of modernity dominated by production and industrial capitalism and the advent of postmodernity constituted by simulations in a post-industrial era. Lyotard conceives of postmodern society as a society of computers, information, and scientific knowledge in which technology and knowledge become principles of social organization. Postmodern theorists such as Braudrillard and Lyotard accept theories of post-industrialism as accounts of the present age. Postmodernism involves a radical break with a dominant culture and aesthetic at the post-industrial moment.

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THE ORIGINS OF RACISM: THE CRITICAL THEORY OF OLIVER C. COX

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Oliver C. Cox's theory of race relations and its impending problems in connection with the rise of capitalism have not been applied or addressed to the same extent as that of his contemporaries. Why does the work of Oliver Cox continue to be largely ignored and set aside? We will first look at Cox's hypothesis and some of the concepts he uses, his argument regarding the genesis of racism, and his criticisms of some of his better known contemporaries that may well have contributed to the bitter relationships he encountered.

Introduction

The phenomenon of racism has been and continues to be an issue of concern for societies around the modern world. Today it is an issue to be dealt with daily in our news and in our neighborhoods. Various scholars and sociologists have presented theories to explain the genesis of and continued growth of racism in modern society. Some of the better known sociologists are Gunnar Myrdal, W.E.B. DuBois, Robert E. Park, and E. Franklin Frazier. One sociologist's theories of racism still lies dormant in the shadows of those theorists. Oliver C. Cox developed a competent and detailed theory of race relations and its impending problems in connection with the rise of capitalism, but his theories to this day are not applied or addressed to the same extent as those of the other sociologists.

Cox held the hypothesis that "racial exploitation and race prejudice developed among Europeans with the rise of capitalism and nationalism; and that because of the world-wide ramifications of capitalism, all racial antagonisms can be traced to the policies and attitudes of the leading capitalist people, the white people of Europe and North America" (Cox 1948:322). Cox developed this hypothesis around some principle concerns "differentiating his understanding of "race prejudice" from the other forms of social intolerance, tracing the historical origins of racial antagonism, and analyzing the situation of Negroes in the U.S. as an aspect of "political-class relations" (Thompson 1989:146).

I will look at some of the concepts Cox uses, his argument regarding the genesis of racism, the consequences of bearing a Marxist label, and review his criticisms of some of his better known contemporaries that may well have contributed to the bitter relationships he encountered.