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Troubled Visions of the Information Age:

A Study in the History of the American Future

The significance of the future in American intellectual history

As a country with a profound sense of destiny, America has never wanted for prognosticators. For nations, as for individuals, the future is a place of projection, a realm of ambitions and anxieties, and as projection is fundamentally an imaginative act, the future is, of course, also a place of imagination, which oddly enough makes it a particularly fascinating place for the historian.

When John Winthrop famously declared that America would be like a city upon a hill, he did not (presumably) draw on any privileged or preternatural knowledge of what the future held for the young colonies. He drew, rather, on the hopes that he and his fellow colonists had for their enterprise, and those hopes speak volumes about how the colonists saw their project and their world. To use another prominent example, consider Edward Bellamy's *Looking Backward* or Ignatius Donnelly's *Caesar's Column*, the key utopian (and depending on one's view of *Caesar's Column*, dystopian) novels of the Gilded Age. The future scenarios detailed in both works proved, in their utopian bent, well off the mark, but both books remain historically significant for what they tell us about the anxieties of Gilded Age America. As time passes, texts that were written as windows to the world of the future transform into windows to the imagination of the past. Thus, the idea of the "future" in American thought becomes an invaluable resource to the intellectual and cultural historian.

The advent of the industrial age into which Bellamy and Donnelly peered occasioned no small amount of speculation, but many of the best remembered prophets of the era weren't the novelists. They were theorists, critics, economists and philosophers—serious thinkers, all, and men of considerable imagination. A Saint-Simon or a Marx or Veblen may have been arguing from logically acceptable premises and invoking intellectually respectable "laws" of development or historical process, but at some point, each visionary made an imaginative leap—the character and result of which had a lot to do with the beliefs and prejudices he brought to the project. For these writers, the dawning of the industrial era—and the sweeping change it seemed to promise—opened a window for utopian and dystopian projection.

Now a certain scholarly and novelistic interest in the future has, of course, been something of a historical constant in America and elsewhere, but some particular periods, specifically those that witnessed great technological advance and seemed, to contemporary observers, pregnant with the seeds of a radically new social or economic order, are marked by an upsurge. The early industrial era was undoubtedly such a period. Mid-nineteenth century Americans continually commented on "the annihilation of time and space" as thousands of miles of railroad track and telegraph line bound the country together. Cheaper and more abundant electricity near the century's end coupled with new processing technologies and economies of scale in industry seemed to signal the appearance of a new industrial society peopled by new industrial men. Theorists and writers took note—prolifically.[1]

[1] Several authors and historians have, of course, tried to use past visions of the future as entry points to cultural history. Most of these efforts, however, draw on popular culture and visions presented as fictional or fantastic rather than ones at least purporting to be social-scientific. See, for example, Alan Trachtenberg, *The Incorporation of America* (New York: Hill and Wang, 2007 [1982]); Howard Segal, *Technological Utopianism in American Culture* (Chicago: University of Chicago Press, 1985). One notable exception, *Imagining Tomorrow: History, Technology, and the American Future,* does explicitly concern

A similar horizon opened to the American mind in the middle of the 20th century. The industrial era, some argued, had reached its twilight in America. A new day was dawning—a day of changes that one prognosticator imagined would be "bigger, deeper, and more important than the industrial revolution."[2] Another saw the "foundations of a vastly different kind of social structure than we have previously known."[3] This sort of thinking gained adherents through the tumultuous decade of the 1960s, as would-be theorists of the new order looked to the future and what began as trickle of books and articles built into a wave of publications that would crash on the American cultural and intellectual scene in the 1970s.

Just as it had for their predecessors (the early theorists of industrial society) a century before, the prospect of a radically new era inspired these writers—self-styled futurists, futurologists, social forecasters, or anything but—to imaginative acts of projection, and like the theorists of the industrial age, they viewed the future through a window that was decidedly a prism of their present. To the historian of today, the verisimilitude of these visions is of little interest. We, after all, *know* what the year 2000 looked like. What is worth pursuing is the imagination that spawned these scenarios. To that end, I'm proposing to crawl backwards through their window to the future and to consider a unique moment in the history of the American social imagination, a moment that I believe has gone largely unconsidered and underappreciated for its novelty.

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imaginings of the future inspired by the development of new technologies, but the sole chapter on information technology offers a negative example and focuses, in fact, on the lack of socio-technological vision on the part of innovators in the early development of computing. See Joseph Corn, ed., *Imagining Tomorrow: History, Technology, and the American Future* (Cambridge: MIT Press, 1986).

[2] Alvin Toffler, *Future Shock* (New York: Random House, 1970), 14.

[3] Daniel Bell, *The Coming of Post-Industrial Society* (New York: Basic Books, 1976 [1973]), xv. My pagination throughout this essay refers to the 1976 edition.

American futurism in context

The crusty meta-narrative most commonly trotted out to chart the history of social ideas in post-WWII America traces an arc from general consensus to general disagreement (or put gently, diversity of voice and opinion). That's an oversimplification, but with regard to the transformation of the intellectual climate in the social sciences mid-century, it holds more than a grain of truth. The sister schools of "consensus" thinking among Americanist historians and the modernization theory that had dominated thinking in sociology, development economics, and political science through the 1950s came under attack with the democratization of the academy and the rise of both the New Left and an insurgent, more thoroughly conservative right. And the "postmodern turn" lay just around the corner. Or so the nutshell version goes. The reality, of course, was somewhat more nuanced and disorderly than this. Recent work by Nils Gilman has restored some depth to the modernization theorists, and the New Left and emerging (neoconservative) right are well understood as intellectual movements.[4] Postmodernism has received no shortage of attention. The one body of work that remains conspicuously absent from intellectual histories of the period is that of an ambitiously interdisciplinary group of futurists.[5]

[4] Gilman's *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore: Johns Hopkins University Press, 2003) is extremely useful in understanding the post-WWII history of the social sciences as they influenced Cold War policy. For a first hand acquaintance with the thought of the modernization theorists, see the single-volume 1966 collection *Modernization* (Myron Weiner, ed., *Modernization* [New York: Basic Books, 1966]).

[5] Note on terminology: The issue of labeling is a sticky one and may as well be dealt with here. Of the three authors central to this essay, only Alvin Toffler described his work as futurism, despite the fact that all three wrote extensively and explicitly on the direction in which America seemed to be heading. One might be tempted to call the trio informationalists—as the new economics of information provided a common jumping off point, but it's a term that none would have recognized at the time and one that retrospectively is only commonly applied to Daniel Bell. Moreover, the informationalist label sets them at an artificial distance from a larger dialogue of which they were very much a part. That dialogue centered on the American future—specifically on the possibility of anticipating and guiding it and engaging in a process of societal transformation on "a highly conscious basis" (Bell's wording). Accordingly, "futurist" strikes me as perhaps the most apt term, one loose enough to be properly inclusive but not so loose as to be useless. Beyond that, labeling becomes a bit of a parlor game. A modifier seems needed as these authors shared something that did serve to set them apart from their contemporaries, but even they themselves were unsure what that thing was exactly. They were all reaching for whatever it would be that lay beyond the

The omission is not insignificant, as a critical survey of even just a few key works spread over only half a decade sees the group posing innovative policy solutions to some of the era's great problems, breaking with the broad social-scientific consensus of modernization theory, and laying the foundation for what will develop into the theory of the information society.[6] To date, no comprehensive or systematic history of the futurist boom in American social thought has been published, and such a project, of course, is well beyond the scope of this essay. Here, the focus will be on a few key works by three prominent authors—Peter Drucker, Alvin Toffler, and Daniel Bell—researched during the 1960s and published in the half decade between 1968 and 1973. The texts chosen are all different with much in common and flawed but highly influential. Each writer here examined maintained a conspicuously high profile in his respective sphere, and taken together, their texts run the spectrum from breezy pop-sociology to academically technical specialist literature and high theory. In their variety, they should evince some of the futurist boom's breadth and imagination.

Like the modernization theorists (and the subsequent New Left and right), these authors addressed themselves to the twin questions of America's identity and place in the world. That they came up with very different answers from those of their counterparts has much to do with the fact that they drew upon a different set of influences or refracted some of the same influences through quite a different intellectual prism. In the way of

organization of industrial society. Toffler called it the "super-industrial" and Bell, the "post-industrial." In a nod to Bell, who would likely rankle at being grouped with Toffler in the first place, I'll refer to them as post-industrial futurists.

[6] Stopping short of wading into another fiasco of labels, I will say that the definitive statement here is Manuel Castell's work on the "network" society in the "information" age See Castells, *The Rise of the Network Society* (Oxford; Malden, MA: Blackwell, 2000). The term "information society," apparently derives from the Japanese formulation *johoku shakai* (coined in the 1960s and imported to the West a decade later). Castells credits Bell and the French writer Alain Tourraine as intellectual forebears in the area of informationalism (which, Castells instructs, bears a relation to information analogous to that of industrialism and industry), but his study is an encyclopedic synthesis acknowledging literally hundreds of niche pioneers and commentators.

influences, the post-industrial futurists shared an interest in the theories of the 1960s media prophet Marshall McLuhan and the Austrian economist Joseph Schumpeter, whose work only began to gain traction with American intellectuals in the 1950s.

While not necessarily enamored of McLuhan's singular mastery of aphoristic obscurantism, they held as axiomatic several of his key insights into electronic media and information networks. In 1964, McLuhan's revolutionary *Understanding Media* famously conjured a new world: "Our specialist and fragmented civilization of center-margin structure is suddenly experiencing an instantaneous reassembling of all its mechanized bits into an organic whole. This is the new world of the global village."[7] It was within McLuhan's new world that the futurists posited their theories of a new American society.

To a distinctly McLuhanian emphasis on the transformative power of new technologies, they joined an amalgam of new economic theory. Like many social thinkers of the period, they borrowed from Schumpeter and the work of an ascendant contemporary of their own, the modernization and development economics guru Walt W. Rostow, but the futurist take on this combination of texts was a distinct one. They followed the basic developmental scheme of Rostow's *Stages of Economic Growth* to its endpoint, an industrial society culminating in an "age of high mass consumption"—with job growth and consumption bound together in a perennial increase.[8] But the futurists hacked off the conclusion, and in an inspired, twist they ran the Rostow scheme through Schumpeter's engine of "creative destruction" and freed it of the teleological celebration of the mid-1950s American present that undergirded much of the modernization camp's

[7] Marshall McLuhan, *Understanding Media* (London: Routledge Classics, 2001 [1964]), 101. My pagination refers to a recent edition and may not be compatible with the original.
[8] Walt Whitman Rostow, *Stages of Economic Growth* (Cambridge: Cambridge University Press, 1960).

cheerleading.[9] Looking beyond Rostow's vision of modern economic maturity, they saw a new age taking shape along the lines laid out in the work of the Princeton economist Fritz Machlup.

By the early 1960s, it was clear to anyone who was really paying attention that American economic production had already witnessed some transition from an industry to a service base.[10] Machlup saw that the emerging economy was an idea whose time to be quantified had come, and his great insight was that a large part of service sector growth was being driven by, as he put it, the "production and distribution of knowledge."[11] There would be—and to a degree, still is—considerable negotiating of the terms *knowledge* and *information* and the definitions thereof, but the fact that Machlup was on to something compelling remained clear.[12] In describing the economic contours of the new age, he was acknowledging (and giving intellectual, empirical basis to) the elephant in the room.

Machlup made a somewhat unorthodox move to dispense with what he saw as the duplication implicit in the phrase "knowledge and information" by collapsing the two into knowledge itself. "[I]n the ordinary uses of the word," he wrote, "all information is knowledge."[13] Although Machlup himself seemed uncomfortable at times with this semantic legerdemain, the legacy of his study suggests that the ends—the first economic

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[9] For an elaboration of "creative destruction," see Joseph Schumpeter, *Capitalism, Socialism and Democracy*, 3rd ed. (New York: Harper & Row, 1950 [1942]), 81-86.

[10] More than twenty years earlier, Colin Clark had theorized such a transition as inevitable in an advanced industrial economy. See *The Conditions of Economic Progress* (London: McMillan & Co., 1940).

[11] Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton: Princeton University Press, 1962).

[12] Castells takes his definition of knowledge from Bell (175) and information, from Marc Porat. See Porat, *The Information Economy: Definition and Measurement*, (Washington, DC: US Department of Commerce, Office of Telecommunications, publication 77-12 [1]), p.2. Knowledge is "a set of organized statements of facts or ideas, presenting a reasoned judgment or experimental result, which is transmitted to others through some communication medium in some systematic form." Information, then, is "data that have been organized and communicated." Machlup, on the other hand, defined information simply as knowledge communicated (15).

[13] Machlup, 8.

quantification of knowledge production—justified the means, and I would argue that it was precisely his purposeful manipulation and definition of terms that allowed him to do this in a meaningful, believable, and not overly technical way. His broad use of 'knowledge' enabled the identification and quantification of several sectors (research, education, media of communication, information machines, information services, etc.[14]) of an overarching "knowledge industry" and the ultimate conclusion that the production and distribution of knowledge accounted for a very significant percentage (around 29%, he estimated) of the 1958 GNP and showed signs of increasing.[15] After Machlup, people could talk credibly about a new economy based on knowledge workers and the flow of information, and the futurists of the next decade were among the first to do so.

A relationship between McLuhan, Machlup, and Schumpeter (much of which has long since become convention in discussing the economics of the information technology revolution) was by no means the only novel constellation in the post-industrial futurists' visionary galaxy. They considered America and the world from a profoundly interdisciplinary perspective that ranged well beyond the intellectual traditions of most social science discourse. Their theorizing was as likely to be informed by ideas borrowed from ecology or cybernetics as from anthropology, and they shared a fascination in the emerging fields of operations research and systems theory (both of which had grown steadily out of the technological forcing-house that was World War II). In this richly cross-pollinated intellectual milieu, they searched relentlessly for pieces of the unique connections they needed to build something approaching a new, post-industrial whole.

[14] Ibid., 48.
[15] Ibid., 399-400.

State-of-the-art and the speculative style

If the basic organizational fact and metaphor of the industrial society was the factory, in the society that came afterward, the factory would be replaced by the computer. On this theoretical linchpin, the post-industrial futurists agreed—despite the fact that looking out from the 1960s, the computer as they imagined it (and as we indeed now know it) was a long time coming.

Today's crop of information scholars are, of course, well familiar with the timeline of 1960s and '70s IT development and know, for example, that the Pentagon developed COBOL (Common Business Oriented Language) in 1960 and that ARPANET (the precursor to the Internet) started in 1969, and moreover, they understand the meaning of these innovations as episodes in the history of computing. Such is the benefit of hindsight and the ability to draw on well-documented and established historical narratives, but the early theorists of the new age knew no such benefit.

A curious and significant paradox of their writings, then, is the fact that while the new social, political, and cultural developments that they identified were purportedly driven by "scientific and technological" forces, none of the authors articulating this vision were writing as technologists, and they were little concerned with the workings of technology as such. Moreover, the emergent information technologies had hardly begun to hint at—to say nothing of reaching— their ultimate ends and capacities at the time of the discourse addressed in this essay (and it seems doubtful that they have even fully done so today). Indeed, in an article on the applications of information technology published by the automation and computing specialist John Diebold in the same year (1962) as Machlup's *Production and Distribution*, the former wrote:

> "Information technology will produce changes in how we do our work and in what do with our lives. It will raise many new problems—technical, economic, social. We know little today about the form the technology will assume. But we can be sure that it will raise great problems and produce great change."[16]

This, from someone close to the cutting edge. In the same vein, Machlup noted in his text that if he had begun his book a few years earlier, "there would hardly have been enough material for an entire chapter on 'information machines.'"[17] Although he did manage a broadly inclusive chapter on 'knowledge producing' devices, his discussion of computing technology and the nascent IT economy accounts for only a little more than half of that chapter.

As Castells reminds us, "only in the 1970s did the new information technologies diffuse widely, accelerating their synergistic development and converging in a new paradigm."[18] And that "convergence" in the 1970s hardly constituted a new social order presenting itself as a *fait accompli*. Through the 1960s, computers remained largely business machines—mainframes, minicomputers (which were bulkier than the name would suggest), terminals, and supercomputers—and had yet to figure in the consumer electronics market. The development of the microprocessor by Intel's Ted Hoff in 1971 kick-started the diffusion of micro-electronics, and four years later, Ed Roberts, an engineer operating out of a garage in Albuquerque, introduced the Altair—the prototype of what could reasonably be called a microcomputer. Most of the early orders filled by Roberts's company, MITS, went to *Popular Electronics*-type hobbyists, and many of those hobbyists received home-assembly products that didn't actually work. In 1975, Bill Gates (whose

[16] Diebold, John. "The Application of Information Technology" in *Annals of the American Academy of Political and Social Science*, Vol. 340, Automation (Mar., 1962), p.37.
[17] Machlup, 295.
[18] Castells, 39.

drop-out would become the stuff of legend) had only just left Harvard, and the personal computer remained in its infancy.[19]

Accordingly, the work of the theorists of the 1960s who followed Machlup exhibited a limited degree of technical understanding precisely because they were looking into an inchoate technological future. Such a perspective suggests that there exists a history of American social thought that parallels and, I would argue, anticipates the history of computing.

Revisiting a 1986 essay by the historian Paul Ceruzzi offers another way of looking this. Discussing the development of early information and computing technology as an unforeseen revolution, Ceruzzi posed an interesting question: Why did the inventors and early commercial manufacturers so drastically underestimate the computer's potential market (and by extension, socio-economic import)? Ceruzzi went on to elaborate a brief history of what might be called a lack of socio-technological vision on the part of the computer's early developers.[20] The argument seemed to support Schumpeter's dictum: "Technological possibilities are an uncharted sea."[21]

Perhaps so, but Ceruzzi did not consider the history of socio-technological vision on the other side of the technological divide.[22] Had he done so, he might well have agreed

[19] The historiography of information technology and computing is large and growing. Paul Ceruzzi has written an excellent, well-organized overview. See Paul Ceruzzi, *A History of Modern Computing* (Cambridge, MA: MIT Press, 1998). An engaging, on-the-ground history of the PC that continues to attract a general audience is Paul Freiberger and Michael Swaine, *Fire in the Valley: The Making of the Personal Computer* (Berkeley: McGraw-Hill, 1984). See also Castell's brief history of the IT revolution and the establishment of what he dubs a corresponding "socio-technical paradigm" (Castells, 38-76)—which paradigm, of course, has some intellectual roots in the works discussed in this essay.

[20] Paul Ceruzzi, "An Unforeseen Revolution: Computers and Expectations, 1935 – 1985," in Joseph Corn, ed., *Imagining Tomorrow: History, Technology, and the American Future* (Cambridge, MA: MIT Press, 1986), 188-201.

[21] Schumpeter, 118. It's worth noting, however, that Schumpeter followed that pronouncement with the reassurance that "there is no reason to expect slackening of the rate of output through exhaustion of technological possibilities."

[22] The common conception of a dichotomous intellectual culture comes, of course, from C.P. Snow. I invoke him here only to suggest that the works of some of the authors discussed in this essay represent a bold effort to bridge that disciplinary gap.

with a dictum from Peter Drucker—that the analysis of new technology "is, as a rule, not well done by the technologist himself."[23]

Peter Drucker and the management of *Discontinuity*

Actually, when Drucker suggested that the analysis of new technology ought not to be done by the technologist, he immediately followed with this: "It is done best by someone who thinks as an entrepreneur."[24] That's a fairly epigrammatic statement from Drucker and serves rather well as a point of entry to his writings on the question of the American future, a question which he often framed as one of innovation (usually organizational) and the proper allocation of resources (usually human).

Widely hailed as the father of modern management, Peter Drucker came to the business world's attention in the 1940s.[25] By the 1960s, the remarkably prolific Drucker had established himself as a sort of cottage industry. It could well be said—and has been—that the history of Drucker's writings through the 1940s and '50s constitutes the history of management theory itself.[26] While a professor of politics and philosophy at Bennington College in Vermont, Drucker finagled a research position at General Motors, and the two years he spent at GM culminated in the publication of his landmark study, *Concept of the Corporation*. His next book, *The Practice of Management*, capitalized on his previous success and his greatly expanded readership and solidified his position as America's pre-eminent business guru and management theorist.

[23] Drucker, 48.
[24] Drucker, 48.
[25] Peter Drucker passed away in November of 2005 and was widely and publicly eulogized. The general contours of his biography and body of work are well known. What I repeat here is included only to establish a few currents and connections in his social thought and is not intended to be a thoroughgoing analysis of his voluminous writings.
[26] John A. Byrne, "The Man Who Invented Management," *Business Week* 28 November 2005: 96+. Available online at <http://www.businessweek.com/magazine/content/05_48/b3961001.htm>.

But Drucker, who in his career published on subjects from Kierkegaard to Japanese painting, was far from a straight business writer—a fact made clear by several works that bookend his mid-century management classics. Born in Austria in 1909, Drucker came of age in the twilight of Weimar Germany, and his first publication—a pamphlet on the conservative philosopher Friedrich Julius Stahl—was banned and burned by the Nazis. The rise of the Nazi totalitarian state as a tragedy of industrial society became the subject of Drucker's first English language book, *The End of Economic Man*, and one can easily read the deep social and humanistic engagement that runs throughout his early work against the experience of Nazism. Both *The End of Economic Man* and *The Future of Industrial Man* make the case that fascism was a disastrously failed attempt at human organization in an industrial society, and the prescriptive theme of harmoniously organizing people into a productive and spiritually bearable socio-economic system (advanced or post- industrial) would regain prominence in his post-*Managment* writings.

In the works that immediately followed *The Practice of Management*, Drucker set out upon Schumpeter's "uncharted sea"—insisting all the while that his writings should not be taken as "futuristic." If not futuristic, his late-1950s work became decidedly more forward-looking. His *Landmarks of Tomorrow* (1957) opened with an introduction subtitled "This Post-Modern World":

> "At some unmarked point during the past twenty years, we imperceptibly moved out of the Modern Age and into a new, as yet nameless, era. Our view of the world changed; we acquired a new perception and with it new capacities. There are new frontiers of opportunity, risk, and challenge."[27]

If Peter Drucker had never been terribly impressed with what other American social thinkers celebrated as "modernity," he now openly anticipated the opportunity implicit in

[27] Peter Drucker, *Landmarks of Tomorrow* (New Bruswick: Transaction Publishers, 1996 [1957]), xv.

something radically different. By the late 1960s, he was a seasoned explorer of possibility, and in 1969, with the publication of *The Age of Discontinuity*, he articulated his most comprehensive vision of the new society America was fast becoming.

His analysis moved quickly in time—comparing past to present and offering social and economic policy prescriptions for the future. Looking backward from 1968, Drucker felt that America had reached a point of disjunction with its industrial past, a point of discontinuity. A turning point had been reached, a time for "both new policies and the sloughing off of deeply entrenched practices of our industrial society."[28] This sense of rupture not only similarly marks the writings of Daniel Bell and Alvin Toffler, but is a hallmark of the futurist mode—the window to future opening for projection.

Drucker saw the first half of the 20th century as having been determined by the working out of Victorian economic and technological trends, as maturation of the industrial system, but that maturation would not culminate in a prolonged advanced industrial, high consumption hey-day (à la Rostow). It would witness, as the preceding decade indeed had, changes in the economy—a slow down of industrial growth as heavy manufactures developed overseas, on the one hand, and a budding of potential sources of a new dynamism, on the other. Drucker placed the transformation of the domestic economy described by Machlup in a larger scheme of global development and, in an echo of Colin Clark, suggested that such a transformation was inevitable. The "aging" modern industries (i.e., automotive, agricultural, petrochemical, etc.), he wrote, were precisely the industries on which the developing economies had to be based. "And", he added, "developing countries need so much creative energy for social and cultural innovation that they cannot

[28] Drucker, *Discontinuity*, 41.

afford the risky, dangerous, and demanding process of technological innovation on top of it."[29]

Technological innovation—properly managed—would be the business of the developed world, specifically of the new American economy. The beating heart of this business of innovation would be the computer, which Drucker described as being to the "information industry roughly what the central power station is to the electrical industry."[30] Continuing with that metaphor he made one of the book's grandest prophesies: "The impact of cheap, reliable, fast, and universally available information will easily be as great as that of electricity."[31]

Rather than trying to prolong the advanced industrial moment or fretting about a potential economic slowdown, America needed to be focused on developing the new industries and markets implicit in the new information technology. Declining productivity of traditionally invested capital ought to work as a mother of invention. After all, he reminded, "as a country's investment in knowledge and education goes up, employment in mass-production increasingly becomes a misallocation of the human resource."[32] The new economy—indeed, the country—needed entrepreneurial thinking, Drucker urged, because "whether we like it or not, to maintain technological leadership and to encourage technological innovation will become increasingly important in the next decades."[33]

Technological leadership figured as the defining feature of *Discontinuity*'s vision of American political-economy, and Drucker framed his ideas in a thoroughly globalized,

[29] Ibid., 22.
[30] Ibid., 24. Drucker, it's worth noting explicitly defined knowledge as applied information (269).
[31] Ibid., 27.
[32] Ibid., 72.
[33] Ibid., 71.

McLuhanian world.[34] Electronic media, he suggested, communicate economics. The global flow of information was transforming the whole world into one economy—an economy governed by perceptions rather than institutions, and "the whole world, whatever its actual economic condition—and whatever the political system in force in a given area—has one common demand schedule, one set of economic values and preferences."[35] Thus, if America wanted to remake the world (i.e., win the Cold War), its best hope of doing so was through economic means—exploiting the universalized demand schedule of the "global village" through vigorous technological leadership and increased economic interpenetration. On the importance of the globalizing economy Drucker went so far as to argue even that the multi-national corporation might be the *only* institution capable of "transcending national lines and yet respectful of national sovereignties and local cultures."[36] In essence, Drucker was arguing that what we might now call "soft power" was America's best weapon (and a weapon made more powerful through deregulation).

No fan of what he regarded as the inefficiencies and inflexibility of government thinking (characterized here by an inability to abandon or adapt), Drucker transformed the Cold War political dilemma of mutually assured destruction and proxy wars into a question of informational economics, one predicated on reading new markets and stimulating growth. He attempted a similar hat trick in his consideration of the social and cultural dimensions of the new society.

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[34] For Peter Drucker's interest in and friendship with Marshall McLuhan, see Drucker's memoir, *Adventures of a Bystander*, (New York: John Wiley & Sons, 1998 [1977]) 245 - 254. Note, particularly, Drucker's belief that the 1960s marked the "discovery of technology as a human activity" with a social dimension.

[35] Drucker, *Discontinuity*, 79.

[36] Ibid., 97.

"Technology," he began, "is no longer separate and outside of culture but an integral part thereof."[37] New technologies represented not only new means of doing and making, but also new means of being, in a very human sense. Drucker believed that new information technologies coupled with new strategies of organization (some of which—like the ideas of networking and modularity—seemed to be implicit in the technologies themselves) would create new communities and help the members of the new society reach a level of fulfillment that had often been elusive in the industrial model. As Drucker saw it, the pressing social questions of the 20th and 21st centuries would be the role of the individual in the emerging society and how that society would meet the expectations of the knowledge worker.[38]

One of the distinctive features of Drucker's futurist vision was his concept of individual fulfillment and the means of its attainment. In *Discontinuity*, personal opportunity and flexibility of role within society represent the strongest possibilities for individual fulfillment. Drucker, here, saw a chance to remedy the ill that lay at the very heart of the industrial system—its hyper-rationalistic tendency to economize the human as a factor of input. In opening the widest possible horizon for the determination of one's role in society (one's proper allocation), the new post-industrial model could better guarantee the individuality that defines the individual.

And if width of horizon could be measured in terms of educational and professional opportunities, fostering the knowledge industries and maintaining economic growth and dynamism became essential priorities.[39] Thus Drucker closed the circle, holding out the

[37] Ibid., 39.
[38] Ibid., 280.
[39] Drucker was explicit on this: "Education has become the first value choice of modern man (311)."

possibility of a new identification of business interests and social well-being. As he wrote near the conclusion of his work:

> "The great strength of American society throughout our history lay in our willingness to use human resources, in our willingness to put ability, ambition, and dedication to productive use wherever it arose."[40]

The break with history at which America had arrived offered a chance to make good on that historic willingness, and if Drucker saw in history a saga of trying to square human fulfillment with socio-economic organization, then the future suggested the possibility of a new solution, of better allocation of the human individual producing a healthier social whole.

The surprising technological humanism of Alvin Toffler, career futurist

Peter Drucker's 1969 meditation on the future of American society became an international bestseller (huge in Japan) and received significant attention in popular and scholarly publications, all while the author himself claimed to be only a thoughtful student of the present—"the future that has already happened," as he became fond of calling it. Drucker kept up the appearance, at least, of disavowing the role of a publicly anointed great prognosticator.

Alvin Toffler, on the other hand, made no such disavowals and was more than ready to be anointed by the public, himself, or anyone else as the future's chosen prophet. And indeed, one of his most prescient insights, in retrospect, was that the American public of the 1960s and '70s had a nearly insatiable appetite for prediction. After leaving an associate editorial position at *Fortune* magazine in 1961, Toffler had carved a lucrative niche for himself catering to that appetite and by 1970, could call himself America's most

[40] Ibid., 331.

famous futurologist. He had published widely in magazines and journals, served as an advisor to IBM, done research under the aegis of the Russell Sage Foundation (which also funded Daniel Bell), and taught a course on the "sociology of the future" at the New School for Social Research. The hype and anticipation leading up to the release of his 1970 book, *Future Shock*, virtually guaranteed that it would become something of a cultural event. A *New York Times* interview with Toffler that ran just before *Future Shock* hit the shelves noted that the book's financial success had been assured in advance "by the fact that it [had] been chosen by three book clubs—as a Literary Guild alternate for August, as a main selection of the Guild's Mainstream nonfiction club and as a main selection of the Psychology Today Book Club." The *Times* writer then mentioned that an adapted excerpt of the book was running in that day's issue of *New York* magazine.[41] And the *Times* had it right: In another Toffler interview, 36 years later—this one with TV host Tavis Smiley—the *Future Shock* author proudly claimed that the paperback edition of the book had sold more than 8 million copies in the US alone.[42] Whether historians want to take Toffler seriously or not, there can be little denying the enduring cultural prevalence of his ideas.

To read *Future Shock* nearly forty years after its initial publication is to consider how a book can be important and indeed influential without being particularly good (in terms of analytical rigor or accuracy of long range predictions). Toffler, whose improbable career has proved nothing if not the fact that he is a remarkably shrewd self-marketer, anticipated this. His text included an early, well-conceived disclaimer that also acted as a sort of programmatic statement: "In dealing with the future at least for the purposes at

[41] "'Future Shock': The Stress of Great, Rapid Change," *New York Times*, July 24, 1970, p.28.
[42] Interview with Alvin Toffler. Interview by Tavis Smiley. *Tavis Smiley* (Smiley Group Inc.). June 16, 2006. Transcript available online at PBS archive: <http://www.pbs.org/kcet/tavissmiley/archive/200606/20060616_toffler.html>.

hand, it is more important to be imaginative and insightful than to be one hundred percent 'right.' Theories do not have to be 'right' to be enormously useful." History seems to be on Toffler's side here, and while in no way denying the presence of considerable schlock in *Future Shock*, I do, of course, share Toffler's belief "in making use of the [imagined] future as an intellectual tool"—if in a slightly different manner.[43] In that spirit, I will disregard the breathless prose and more egregiously wacky predictions (undersea settlement, for example) and focus on what remains worth revisiting.[44]

Future Shock consists of four hundred plus pages of pop-sociological investigation of the process of change hung on a weak thesis, which concerns the titular phenomenon (basically culture shock rendered diachronic but rooted in a single culture—i.e., the disorientation of colliding with one's future unprepared). The *Future Shock* thesis, as one of the few recent scholars to consider Toffler's work puts it, "never became intellectually respectable." But the book became, and seemingly remains, something of a cultural touchstone for its expression of the future as an uncertainty—a promise twinned with threat—that would be resolved as "a consequence of what people did or failed to do."[45] The brain of the book, then, turns out to reside fairly near its heart—in a surprisingly vigorous social conscience intent on developing a means of planning and foresight that is at once more socially aware and less "coldly technocratic."

Toffler's near future structurally resembled that envisioned by Drucker—a "third stage" economy à la Machlup and an "organizational geography…[that] can be expected to

[43] Toffler, 6-7.
[44] Ibid., 168-70. To Toffler's partial credit, his discussion of the possibility of a "New Atlantis" contained elements of a more sober consideration of resource strain and the capacity of humans to adapt and engineer their environment.
[45] Richard A. Slaughter, "From Future Shock to Social Foresight: Re-contextualizing Cyberculture" in Dareen Tofts, et al, eds., *Prefiguring Cyberculture: An Intellectual History* (Cambridge, MA: MIT Press, 2003), 264.

become increasingly kinetic." His forecast of a new organizational system predicated on project management and goal-oriented temporary divisions echoes Drucker's call for flexibility and adaptation in business and government (although Drucker often wanted government to adapt itself out of the picture), and once again, technology dominates as an economic and social force. It feeds on itself, driving growth, fueling innovation, and effecting the sort of ripple-pattern changes in the larger society and culture that the media theorist Neil Postman would famously describe as "ecological."[46]

The central technology in Toffler's analysis was the computer, which functioned as both socio-economic fact and a powerful symbol—suggestive of a new worldview. "The computer," he wrote, "has touched off a storm of fresh ideas about man as an interacting part of larger systems."[47] An ardent believer (as was Drucker) in this new holism himself, Toffler's sociology of the future very nearly presented one of the ecological "laws" that would be popularized a year later by Barry Commoner: Everything is connected to everything else.[48] In a text that has argued consistently for the broadly transformative, almost deterministic power of technology, positing humankind at the center of a great web of interconnectedness creates an important tension. The human use of technologies becomes not only a species defining act but an act that is decisive for an entire system, and the logic according to which new technologies are developed and implemented attains paramount importance.

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[46] Toffler, 16, 112-13. Giving credit where it's due, Toffler has always had an uncanny knack for turning catchy phrases and tapping the zeitgeist. "Future shock"—as an idea and phrase—enjoyed several years of wide circulation in the lexicon, and Toffler entitled a 1980 book that further mined Machlup and the well-worn conceit of a economic stages (agricultural, industrial, and post-industrial or informational) simply *Third Wave*. For Postman on technological change, see: Neil Postman, *Technopoly: The Surrender of Culture to Technology* (New York: Vintage Books, 1993).

[47] Ibid., 29.

[48] Toffler was definitely familiar with Commoner and quotes his early work on the possibility of an environmental crisis. For the famed laws of ecology, one of Commoner's most popular contributions, see: *The Closing Circle: Nature, Man, and Technology* (New York: Knopf, 1971).

Turning his investigation to the logic that governs this process, Toffler was dismayed by what he saw—and what he didn't see:

> "In the West, the basic criterion for filtering out certain technological innovations and applying others remains economic profitability. In communist countries, the ultimate tests have to do with whether the innovation will contribute to overall economic growth and national power…Both systems are now obsolete—incapable of dealing with the complexity of super-industrial society."[49]

Whatever else it may have been, Toffler intended *Future Shock* to be a strident call for a conscious technological policy and the regulation of technological advance according to a criterion other than the blatantly profit-seeking.[50] In his view, it had become "undeniably true that…[i]n our haste to milk technology for immediate advantage, we have turned our environment into a physical and social tinderbox."[51] *Future Shock* placed the blame for this scenario squarely with technocratic planning, "itself a product of industrialism" and in its ruthlessly economizing rationality and short-range time bias, reflective of "the values of that fast-vanishing era."[52]

The future of planning, as Toffler imagined it, would not only operate with a view to a much longer-range time horizon, it would also be more socially aware (capable of meeting "post-economic goals") and profoundly democratic. His system of "social futurism" called for the establishment of a technological ombudsman, the broad re-orientation of public education to "pre-adapt" youth to meet the organizational goals of the

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[49] Toffler, 390-91.

[50] In some ways, he seems to have imagined that his text—or some of it, anyway—might be adopted as a manifesto of sorts for a sweeping social movement already underway. Citing popular protest against nuclear testing, offshore drilling, and the nuclear arms race as examples, Toffler suggested that much of the civil unrest of the 1960s could be understood as "an incipient worldwide movement to control technology"—an assertion that echoed Peter Drucker's belief that the 1960s witnessed the discovery of technology as a human activity with a profoundly social dimension (381).

[51] Ibid., 379-80.

[52] Ibid., 397. Toffler's identification of an economizing mode of valuation with an industrial system is meant to parallel the need for the super-industrial system to develop a "post-material" value system.

new society[53], and the institution of a system of social future assemblies (basically charged with various forms of the question: What should America be like?) that would constitute a "continuing plebiscite on the future."[54]

With this last idea, more than any other, Toffler's futurism tapped into the question of a new American identity and revealed itself as—in very large part—a call for imagination, and indeed, near the end of *Future Shock*, Toffler explicitly lamented the cultural "lack of utopian ideas around which to organize competing images of possible futures."[55] In the prospect of an American public made fully conscious and in greater control of its future, Toffler thought he might have hit upon a way to free the transformative means of technology from a Weberian economizing rationality that was blind to social ends and at the same time, to free the future from a heedless technological determinism. Such, anyway, was the rather noble ambition of Alvin Toffler's pseudoscientific bestseller of 1970.

Daniel Bell and *Post-Industrial* pessimism

Judging from sales figures, *Future Shock* found millions of fans. Daniel Bell, arguably the most famous American sociologist of the 20th century, was not among them—although he appears to have read the book. Twice in his own venture into "social forecasting," Bell took shots at Toffler, dismissing the latter as a "popularizer" and taking

[53] Toffler argued that the mass education then in place was "the ingenious machine constructed by industrialism to produce the kind of adults it needed (354). His point was a valid one, but his suggestions on how to overhaul the system and curriculum were vague and not terribly realistic. Among them was the idea that public school curriculum would be subjected to a continuous committee review process evaluating material in terms of its application to the likely future (363).
[54] Ibid., 423.
[55] Ibid., 412.

issue with his claim of a general "accelerative thrust" of change in American society. Not surprisingly, both mentions of Toffler were relegated to footnotes.[56]

If one were looking to identify an emblematic establishment intellectual of the American social science scene between the triumphant end of WWII and the messy denouement of Vietnam, Daniel Bell would be a pretty good choice. His landmark work *The End of Ideology: On the Exhaustion of Political Ideas in the 1950s* (1960) was celebrated as a definitive summation of a decade of intellectual consensus and became a key text for the modernization school.[57] Bell argued that—relative to the 1930s—American intellectuals of the mid-century clustered in a narrow range of the ideological continuum. Radicalism had largely lost its appeal in favor of "a rough consensus among intellectuals on political issues: the acceptance of a Welfare State; the desirability of decentralized power; a system of mixed economy and political pluralism."[58]

Bell's narrative of emerging intellectual consensus can be read as the story of his own intellectual trajectory writ large.[59] Between his undergraduate days at City College of New York in the 1930s and his doctoral work at Columbia in the 1950s, Bell had shed his Trotskyist leanings and approached the mid-point (more or less) of the ideological spectrum. And if the 1950s had witnessed the decline of ideological (i.e., radical) politics and a basic settling of the corresponding question of American identity, the 1960s opened the way for the elaboration of social policies within the general bounds established by the "rough consensus" on socio-politics. It was to the elaboration of those policies that Bell

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[56] Bell, 59n, 318n.
[57] Gilman provides a useful summary of the importance of the end of ideology thesis to the larger discourse on modernity and modernization in the 1950s and '60s. See *Mandarins of the Future*, 56-68.
[58] Daniel Bell, *The End of Ideology: On the Exhaustion of Political Ideas in the 1950s* (New York: Free Press, 1960), 402-03.
[59] For a survey of the intellectual environment out of which Bell emerged, see Joseph Dorman, ed., *Arguing the World: The New York Intellectuals in Their Own Words* (New York: Free Press, 2000).

turned himself in the 1960s, and in keeping with the dominant thinking of the day, he placed his faith in the tools of technocratic planning and the techniques of the emerging specialists in "social forecasting" (respectively exemplified in the 1960s by the government's Planning-Programming-Budgeting System and groups like RAND Corp's Institute on the Future and, of course, the American Academy of Arts and Sciences Commission on the Year 2000, headed by none other than Daniel Bell).

While Bell and his colleagues busied themselves with the production of a continuous stream of reports and writings working out possible trajectories in the American future, the American here and now of the late-1960s was not going as planned. Consensus was foundering. Radicalism had re-emerged in American politics and within the academy. Deindustrialization and economic slowdown loomed. Vietnam—a war prosecuted by planners—was producing a strong argument that Americans knew less than they thought they did. The relatively clear continuity and coherence that the1950s present had promised to extend into the foreseeable future had grown suddenly troubled.

It was against this backdrop that Daniel Bell completed and published *The Coming of Post-Industrial Society* (1973), a summation of nearly a decade of work on social forecasting and the likely contours of the American future.

Interest in Bell's speculative enterprise ran high. Covering the book for the *New York Times*, the sociologist Norman Birnbaum wrote, "When Daniel Bell declares that society has changed, it does not follow that it has done so. But it does follow that many people will think it has."[60] The structural picture that Bell advanced was not unlike that of his fellow futurists:

[60] "For people who have everything: more knowledge and less consensus," *New York Times Book Review*, July 1, 1973, p. 1+.

> "[T]he major source of structural change in society—the change in the modes of innovation in the relation of science to technology and in public policy—is the change in the character of knowledge: the exponential growth and branching of science, the rise of a new intellectual technology, the creation of systematic research through R & D budgets, and as the calyx of all this, the codification of theoretical knowledge."

He established, in other words, the growth and importance of knowledge production as the central and determining factor of the new socio-economic system. The cultural character (or in Bell's words, the value system) of that order would be defined by its attitude toward science. For the past hundred years, he argued, the quest for knowledge had been driven by a "boundless ambition to substitute a technical order for a natural order," and the advent of post-industrial society meant a "recasting of this technical quest in even more powerful form."[61]

More than half of *The Coming of Post-Industrial Society* was given over to a lengthy exposition of Bell's structural argument, and in its repetition and occasional contradiction (Bell identifies several different issues as *the* central question of the post-industrial society), that half feels very much like the cobbling together of a decade's worth of research and previous publications hammering at the same basic set of ideas about the economic transition of the recent American past and near future. The text takes a more interesting—and ultimately darker—turn in its second half, wherein Bell returned to the question of values in the post-industrial society.

He broached the question initially as one on the potential of technocratic planning. "'The transformation of society,'" he wrote, "is no longer an abstract phrase but a process in which governments are actively engaged on a highly conscious basis."[62] In Bell's estimation, this was "perhaps the most important social change" of his age, and it was an

[61] Bell, *Post-Industrial Society*, 44-45.
[62] Ibid., 345.

enterprise to which he had already shown considerable commitment. Continuing, he elaborated on the near-realization of the technocratic dream, suggesting that "the combination of the computer and cybernetics [had] opened the way to a new 'social physics'—a set of techniques, through control and communications theory, to construct a *tableau entière* for the arrangement of decisions and choices."[63] The prospect was tantalizing, but the paradigm of technocratic rationality seemed to point to a potentially dangerous impossibility.

On the one hand, Bell cited the famed "impossibility theorem" of Nobel Prize winning economist Kenneth Arrow as a mathematical argument against the conception of a rational organization of a society.[64] Social preferences (and accordingly, policy) had to be determined according to a system that would sacrifice some measure of fairness or inclusion in order to be functional—a line of reasoning that not surprisingly led some critics to label Bell as either an elitist or an apologist for the shortcomings of 1960s technocratic planning.[65] And on the other hand—in an argument that while certainly more nuanced was not entirely unlike Toffler's, Bell saw the "overriding crisis of the technocratic mode" in the Weberian end of rationality itself. Casting F. W. Taylor as an early technocrat, Bell argued that the initial failure of technocracy in the industrial era was the loss of cherished ends ("the freeing of time from the inexorable rhythm of economic life") in a sea of Taylorist means (resulting in the ironic end that "all time has become an economic calculus").[66] If, as Bell had previously suggested the advent of post-industrial

[63] Ibid., 346-47.
[64] Ibid., 366. Arrow became famous in the 1950s for his proof that that—crudely and simply put— there was no consistent method making a fair choice among three or more candidates using a preferential voting method.
[65] See, for example: "The Future—Who Can Imagine It?," *Wall Street Journal*, September 12, 1968, p.16.
[66] Ibid., 352, 475.

society meant a "recasting of this technical quest in even more powerful form," what cherished ends might be lost among the means of post-industrial hyper-rationality?

The problem of defining those ends was a crucial one for Bell. As he put it "only when men can decide what they want, can one move to the questions of how to do the jobs."[67] But beyond (or perhaps beneath) the question of establishing priorities for a social policy agenda, Bell forecast—and feared—a deeper incoherence, the possibility of an age without an ethos. As the Protestant ethic had shaped the development of capitalist society and socialism had been the ethos of the Soviet system, Bell imagined a scientific ethos at the core of post-industrial society, but he was troubled by the idea that advanced, capitalist society had already spawned not only its own critique but what he termed an "adversarial culture"—essentially the repackaging of certain ideals of bourgeois-rattling high Modernist critiques in art and literature as a counter-cultural lifestyle of mass hedonism.[68] Bell imagined, with evident distaste, the possibility of a society without a transcendent ethic, a future order at odds with itself.

That sounds very much like an early volley in the culture wars of the ensuing decades because that's exactly what it was. Bell's 1960s stint as a reigning public authority on the future of American society segued into a new decade in which his most famous writings would be marked by his cultural conservatism. Indeed, *The Cultural Contradictions of Capitalism* (1973), which along with *The End of Ideology* remains his best known work, elaborated exactly the "adversarial culture" thesis that appeared at the end of *Post-Industrial Society*. One can argue, then, that when Bell identified the American "lack of a deeply rooted belief system" as "the cultural contradiction of the

[67] Ibid., 337.
[68] Ibid., 475-480. Bell's initial essay on "The Cultural Contradictions of Capitalism" was published in 1970 in *The Public Interest*, which he had co-founded in 1965 with Irving Kristol.

society, the deepest challenge to its survival," he viewed the future through his own conservatism, darkly.[69]

Navigating by ancient maps

Restored to their larger context, the American futurists of the 1960s and '70s played a unique and interesting role in the intellectual and cultural history of the period. At a basic level, they tapped either a "sense of living in an interstitial time" (Bell's words) or "the public concern that technology has contributed to a polluted, overpopulated world and has shaken man's traditional values, leaving nothing to replace them" (a reading of the zeitgeist attributed by the *Times* to Toffler's publishers). The sheer profusion of futurist texts during the period suggests that there is certainly something to the idea that people were keenly interested in and anxious about the future. Prophets, it seems, are most sought after in times of uncertainty, and one can argue that these American prophets, regardless of any insight into the future, may well have inspired a closer look at the present.

And on that level, futuristic social thought can be appreciated for the contributions it made to larger conversations. A new understanding of American society suggested an attendant body of new policy solutions—or at least a new angle from which to approach problems unsolved or unacknowledged. As Nils Gilman has recently argued, the modernization paradigm that held sway through the 1960s had at its heart an approving notion of post-WWII American society as the exemplar of Western modernity. For the modernization theorists—many of them prominent figures in the social sciences, "[m]odernism was a polysemous code word for all that was good and desirable."[70]

[69] Ibid., 480.
[70] Gilman, Nils. *Mandarins of the Future: Modernization Theory in Cold War America*. Johns Hopkins University Press. Baltimore, MA: 2003., p. 7.

Modernity meant industrialization and democracy, economic growth and stability, rationalization and rationality; moreover, it meant the enshrinement of these ideas as ideals and of modernity as a coherent, consistent whole. Gilman attributes the collapse of the modernization paradigm in large part to the cracks that were starting to show in the veneer of modernity itself. The futurists explored those cracks and through them, viewed the coming era.

As I have argued, they by no means saw with perfect clarity. Much of what they got right has now become part of the intellectual tradition that current thinkers like Manuel Castells draw upon in describing our thoroughly networked, informationalized society, but even the missteps of the futurists have historical value. We can study their "futures" for the anxieties that characterized their present, and we can use their imaginative view to the future as a window to the imagination of the past. In the introduction to *Future Shock*, Alvin Toffler compared 1960s futurists to the ancient mapmakers who "set down on paper their bold conceptions of worlds they have never seen."[71] Now, the futurists who foretold the Information Age *are* the ancient mapmakers, and it is up to the historian to explore the worldview implicit in those dusty maps.

[71] Toffler, 7.