

Notions of Progress

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From the horseless carriage to jet travel, from early struggles to regulate the airwaves to satellite telecommunications, the twentieth century provided a wealth of new ways to engage the world. Such progress was not without a price. The post-modern disenchantment of the late twentieth century was mirrored by an earlier crisis following the first and second world wars. Whether it was theoretical physicists deciding that God played dice, or Existentialists declaring that God was dead, our faith in reason, as well as faith itself, was called into question. We began to understand that our attempts to redefine our place in the world could create unprecedented havoc. Discussions of technological innovation, specifically the social consequences of such technology, often draw on shared notions of progress. I suggest *notion*, rather than concept or theory, because the term *notion* allows for sentiments and assumptions, unlike the terms concept or theory.

While progress can be addressed in terms of social values, i.e., greater freedoms, progress has also been associated with science and innovation. If a machine can improve quality of life or enhance our understanding, by implication the relationship between human and machine is supportive and purposeful. The question of how we are related to our machines will grow more acute in the twenty-first century. Whereas in the mid-twentieth century people wondered if machines could think, in the twenty-first century the boundaries between human and machine are being investigated in ways that extend beyond thinking. Based on her experience with virtual reality, N. Katherine Hayles (1999) writes of the “disorienting, exhilarating effect of the feeling that subjectivity is dispersed throughout the cybernetic circuit” (p. 27). Current innovations in “nanotechnology, microbiology, virtual reality, artificial life, neurophysiology, artificial intelligence, and cognitive sciences, among others” promise to alter our relationship to machines in unprecedented ways (Hayles, p. 247).

The question of progress and a concern with relatedness are elements of the same puzzle. The very idea of progress, or lack of it, indicates something about the role machines can play in one’s life. Notions about how technology can be used – to improve, subvert, destroy, extend, or interrogate – reveal the interplay of human and machine. I wish to understand the extent to which we are being not displaced by technology, but realigned. Differing notions of progress may illustrate the nature of that realignment.

Suggesting that technology merely serves our purpose fails to address the complex interdependence of human and machine. In the nineteenth and early twentieth centuries the hope was that scientific advances would help us master the mysteries of the physical world and the conundrums of the social milieu. Current assumptions about progress, to the extent that such assumptions are evident, do not afford such optimism. What notion of progress might

adequately capture the complex interdependence of human and machine in a way that illuminates our current predicament? The predicament is that we do not know where we stand. The optimism of an earlier century can no longer serve as our guide. That predicament is confounded by speed and scale. Whereas the printing press took centuries to alter social structures, technological innovation now occurs rapidly, altering our perception of both time and scale in the process. It appears that we are dwarfed by our innovations, which are daunting in their pervasiveness.

A belief in progress suggests a teleology, or purposeful development toward an end, a progression which is onward, better, and typically bigger. Though that notion of progress has created its own set of difficulties, past technological developments tended to encourage such optimism. In 1939 David Sarnoff referred to television as “an art which shines in a troubled world” (as cited in Goldstein, 1991, p. 58). The hope was that television was “a creative force which [could] be utilize[d] for the benefit of all mankind” (p.58). Today many question the benefits of television.

Notions of a grand design which might reveal the progression from past to future become increasingly problematic as the chaotic and complex nature of the world is made evident. We have lost faith in such a possibility. Writing in *The History of the Idea of Progress* (1979), Robert Nisbet argues that “Only ... in the context of a true culture in which the core is a deep and wide sense of the *sacred* are we likely to regain the vital conditions of progress itself and of faith in progress – past, present, and future” (p. 357). Nisbet suggests that there are five crucial premises which support the idea of progress:

Belief in the value of the past; conviction of the nobility, even superiority, of Western civilization; acceptance of the worth of economic and technological growth; faith in reason and in the kind of scientific knowledge that can come from reason alone; and, finally, belief in the intrinsic importance, the ineffaceable worth of life on this earth (p. 317).

Events in the later half of the twentieth century challenged each of these premises in significant ways. Nisbet argues that without these premises “faith in the once powerful idea of human progress must die altogether” (p. 318). Perhaps those fundamental premises of an earlier century are now being usurped by new premises, and by a very different notion of progress?

A world without any concept of progress would seem very strange indeed. We have not rid ourselves of the desire to think about where we are headed. Do our machines improve our lot or make our existence more difficult? Can we predict the consequences of emerging posthuman interfaces? These sorts of questions seem inescapable. The old assumptions regarding progress surface again in our explanations. Perhaps there are ways of answering the question of where we are headed without invoking the notion of a grand design. If teleology is problematic, we might consider teleonomy instead. As explained by Mark Taylor in *The Moment of Complexity*:

As end-directed but not purposeful, teleonomic processes are neither linear nor circular. On the one hand, system and environment are joined in recursive circuits that create both unexpected and disproportionate changes, and, on the

other hand, the openness of complex adaptive systems leads to aleatory changes in schemata that distinguish the point of departure from the point of arrival. (2001, p. 169)

Here we have an alternative view of what might count as progress. Though the *point of departure* is distinguished from *the point of arrival*, there is no attempt to project an intentional progression to a desirable goal. Teleonomic processes are recursive rather than linear, suggesting certain limits with reference to prediction. The adaptive nature of the system usurps intentionality. Writing about our experience of motion in the twentieth century, Gillo Dorfles suggests that “often we can succeed in conceiving of life and its ‘products’ only as evolving in a continuous and persistent *becoming*” (1965, p. 42). The “openness of complex adaptive systems” can be understood as “evolving in a continuous and persistent becoming.” The teleonomic view of progress as “end-directed but not purposeful” might suggest that the human perspective has been displaced. Biologists working on the problems of adaptation and natural selection could argue instead that we are just beginning to understand our place in the larger scheme.

All that we can know for sure is that things change. Progress and change are not synonymous. While current notions of progress may be informed by evolutionary theory, progress remains a social construct rather than a natural law. Whether a specific change might indicate progress depends less on the specific change and more on current ideas of better and worse. Everyone can agree that the word processor introduced a change, but not everyone would agree that this new way of writing indicated progress. Despite our best-laid plans, some attempts to improve our lot fail dismally, just as other changes produce unexpected benefits.

You and I might engage in a conversation about specific examples of change drawn from new types of war and science, emerging technologies and innovations in communication. We could then discuss whether such changes make things better or worse, but that conversation would take us down the wrong path, at least for my purposes at this time. To ask whether specific events make things better or worse does not reveal what guides our notion of better and worse, what *crucial premises*, to quote Nisbet, guide our assumptions. Nisbet argues that the idea of progress cannot survive the loss of its crucial premises. Those premises, based on science, reason, and the nobility of Western civilization, have been called into question. What new premises might we employ to explain a divergent view of progress, a way of addressing where we are headed in a world of tumultuous change?

The Loss and Gain:

Let us consider the loss that comes with gain. There are those who look at technological innovation and see the loss: literacy, reason, faith, or sacred traditions. Others look at innovation and see the gain: new ways of accessing information, connectivity, strange logics, or brave new communities. Writing in *The Use and Abuse of Television* (1988), J. Mallory Wober refers to challengers

and champions. He suggests that the champions of television believe that it is possible to “harness the system for the sake of society” (p. 145). With reference to television, challengers argue that “its harm outweighs its good” (p. 136). Extending Wober’s use of the terms *champion* and *challenger* to a broader discussion of technological innovation, challengers of technology are concerned with what is lost, while champions tend to focus on what is gained.

Those who value the traditions of the past understand that emerging technologies will inevitably alter those traditions. They emphasize what may be lost. The concern is that new technologies threaten many of the fundamental values of our society. Family, childhood, and privacy come easily to mind. This perspective is not merely about values. People who are concerned with the loss of tradition are also concerned with the location of knowledge in our culture. The argument about great books stands as one example. We have not seen comparable arguments about the legacy of great television.

Those who value innovation and change over tradition understand that with the loss comes gain. Perhaps simply more comfortable with change, they see potential where others see loss. Those who focus on the gain in a world of instantaneous telecommunications, fiber optic and digital communication, understand that speed and the consequent shifts in scale offer potential for growth. Innovation results in different ways of organizing information, alternative perspectives, and emergent patterns, as well as new values. In this view the promise of new forms of knowledge outweigh the loss of tradition, suggesting that progress may be viewed as “a good in itself independent of direction or end” (Mumford, 1934, p. 184). The ideology of progress surfaces here in so far as progress is valued for its own sake.

The challengers and champions disagree about what might count as progress. Those who challenge technological innovation fear that such progress can undermine pivotal traditions. They are interested in preserving the structures of the past for the sake of stability. By contrast, those who champion innovation believe that change can result in new opportunities. They value the future rather than conserving the past. Either way there is a price. Emphasize tradition and lose the opportunities created by innovation. Emphasize innovation and lose those very social structures that create stability.

These perspectives are, each in their own way, correct; yet the resulting dichotomy necessitates a balance between tradition and change. Historically it has been difficult to establish that balance. The very idea of better and worse, of loss and gain, supports an understanding of progress that is future-directed. Notions of progress tend to direct one’s attention to the future rather than the past. By contrast, the past, as well as the traditions of the past, are viewed as less effective, less powerful, or less valuable. Of course, it is never quite that simple. We understand that we pay a price, sometimes a terrible price, for our innovations. Loss and gain, tradition and innovation, better and worse: these terms structure the discourse on progress. What other ways of thinking about progress might transcend such dichotomies?

Progress is a recent notion. In *The Idea of Progress* (1920), J. B. Bury suggests that

It did not occur to Plato or any one else that a perfect order might be attainable by a long series of changes and adaptations. ...Such an order, being an embodiment of reason, could be created only by a deliberate and immediate act of a planning mind (p. 11).

Bury argues that “the idea of human progress...is based on an interpretation of history which regards men as slowly advancing – *pedetentim progredientes* – in a definite and desirable direction” (p. 5). We no longer accept “an interpretation of history which regards men as slowly advancing ... in a definite and desirable direction.” By the middle of the twentieth century, many questioned whether humans were advancing at all. The wars were simply too costly, hunger, disease and bigotry too immense. As Mumford states in *Technics and Civilization* (1934) “To assume that a later point in time *necessarily* carries a greater accumulation of values is to forget the recurrent facts of barbarism and degradation” (p. 184).

Earlier notions of progress are illustrated by “the great chain of being” which implied a progression from the lowest grade of sentient life to the highest. In *The Language Instinct* (1994) Steven Pinker suggests that “Though most educated people profess to believe in Darwin’s theory, what they really believe in is a modified version of the ancient theological notion of the Great Chain of Being: that all species are arrayed in a linear hierarchy with humans at the top” (p. 342-343). Pinker refers to a ‘modified version’ of the Great Chain because the ancient theological notion would place God at the top and humans somewhere below God. The desire was to identify man’s place in the world, as well as indicating the progression of life forms. According to Arthur O. Lovejoy in *The Great Chain of Being* (1978), “It was in the eighteenth century that the conception of the universe as a Chain of Being, and the principles which underlay this conception – plenitude, continuity, gradation – attained their widest diffusion and acceptance” (p. 183) “Next to the word ‘Nature,’ the ‘Great Chain of Being’ was the sacred phrase of the eighteenth century, playing a part somewhat analogous to that of the blessed word ‘evolution’ in the late nineteenth” (p. 184). Progress could be visibly captured in the Great Chain.

The postmodern response to the idea of progress is negation, silence, absence. The postmodern usurps dichotomies in favor of the implicit, the unspoken, the gap. We grow increasingly interested in locating that which escapes our categories. In a mad desire for escape, we deny the power of our terms in order to find a way beyond such structures. The idea of progress is revealed as a myth. In 1920, long before the infatuation with postmodernism, Bury asks if progress “must not...too, submit to its own negation of finality?” (p. 352). Bury argues that “Progress itself suggests that its value as a doctrine is only relative, corresponding to a certain not very advanced stage of civilisation” (p. 352). Bury suggests that in the future another equally powerful concept will replace our notion of progress, a concept which in turn will influence human thought and emotion. The postmodern denial of progress and Bury’s views on the idea of progress share a common theme. Both Bury and the postmodern perspective understand that progress implies an endpoint, a destination, indicating a purposeful rather than random series of events.

Transcendence or Negation:

Let us consider two specific cases of twentieth century scholars who argued for, and against, progress. I will contrast Piere Teilhard de Chardin's vision of progress as a cosmic becoming with Baudrillard's rejection of progress as a positive force. The differing views of these two scholars provide the necessary counterpoint for yet a third view of progress. The paradox of the twentieth century was that powerful accomplishments were seemingly matched by equally confounding disasters. Our belief in progress was checked by the growing awareness that our best efforts could result in unpredictable consequences. The views of Teilhard and Baudrillard exemplify those contradictory themes. Teilhard explores the potential promise of technological progress. What Teilhard recognizes as spiritual promise Baudrillard identifies as postmodern dread.

As a Jesuit priest and paleontologist, Teilhard sought to reconcile faith and science. He saw in the technological developments of the twentieth century a great potential for the evolution of the human race. According to Nisbet, Teilhard was convinced that "finally it is upon the idea of progress and faith in progress that mankind, today so divided, must rely and reshape itself" (1979, p. 316). Teilhard believed that humankind was evolving toward greater intensity and complexity. As explained in *Hymn of the Universe* (1965), he envisioned "the plurality of individual acts of reflective consciousness coming together and reinforcing one another in a single unanimous act" (p. 127). He argued that as we change our environment technologically, we move toward the creation of the noosphere, a term Teilhard coined to describe that domain of collective thought that encircles our physical existence:

To say this is simply to say (what is indeed probably enough) that the stuff of the universe does not achieve its full evolutionary cycle when it achieves consciousness, and that we are therefore moving on towards some new critical point. In spite of its organic connecting-links, the existence of which is everywhere apparent to us, the biosphere still formed no more than an assemblage of divergent lines, free at their extremities. Then, thanks to reflective thought and the recoils it involves, the lines converge and the loose ends meet: the noosphere becomes a single closed system in which each element individually sees, feels, desires, and suffers the same things as all the rest together feel them (p. 127).

Teilhard is offering a teleological view of progress, the end prefigured the beginning, like the seed which contains the flower. He argues that "we are like the leaves and buds of a great tree on which everything appears at its proper time and place as required and determined by the good of the whole" (p. 93). In his vision there is order and purpose to the universe.

Teilhard saw the possibility of an evolution based on the "geometric progression" of economic and cultural links: "each man demands his daily ration of iron, copper and cotton, of electricity, oil and radium, of discoveries of the cinema and of international news" (Teilhard, 1959, p. 245). It is probable that McLuhan and Walter Ong, were influenced, each in their own way, by Teilhard's radical depiction of faith. Ong lived for a time in a Jesuit house with

Teilhard in France and both would have known Teilhard's work. Marshall McLuhan echoes Teilhard's theme in *Understanding Media* when he asks:

If the work of the city is the remaking or translating of man into a more suitable form than his nomadic ancestors achieved, then might not our current translation of our entire lives into the spiritual form of information seem to make of the entire globe, and of the human family, a single consciousness (1994, p. 61)?

In so far as Teilhard's writings offered a new perspective on the biblical story of creation, his views were considered highly unorthodox by the Roman Catholic Church. For our purposes, it is useful to explore Teilhard's teleology because it is just such a perspective that is most difficult for us today. Earlier notions of progress have fallen out of favor, in part, because we find it challenging to believe that there might be a recognizable endpoint. It is ironic that Teilhard was offering a teleological argument at the very time that others were questioning whether humans had the wisdom to navigate an increasingly complex social and political world.

By contrast the postmodern philosopher Jean Baudrillard struggles against "the terrorism of the code." According to Mark Taylor in *The Moment of Complexity* (2001), Baudrillard suggested that we are caught in the program which "pre-scribes the course of development in advance in such a way that what appears to constitute change is actually the unfolding of a code implicit from the outset" (p. 69). For Baudrillard, innovation and subsequent transformation are inherently problematic. He wishes "to free the real from the codes that seem to destroy it" (Taylor, p. 69). One thinks of binary codes, genetic codes and linguistic codes that order and constrain the potential for expression. Baudrillard understands that the code exemplifies constraint. In "The Structural Law of Value and the Order of Simulacra", he writes:

In truth, there is nothing left to ground ourselves on. All that is left is theoretical violence. Speculation to the death, whose only method is the radicalization of all hypotheses. Even the code and the symbolic are terms of simulation – it must be possible somehow to retire them, one by one, from discourse (1984, p. 59).

He seeks escape. Progress is a myth: "We all pander to this myth, the alpha and omega of our modernity, without which the credibility of our social organization would collapse" (1980, p. 138). Baudrillard sees the opposite of progress in the development of modern societies: "the *social* regresses in direct proportion to the development of its institutions" (p. 139). His work exemplifies a radical rejection of the social code as well as all things identified by that code: communication, meaning, progress. What remains is the fascination that arises with the negation of such constructions. We are left with an awareness of the ways in which we are beguiled.

For Teilhard faith dictates that transcendence is the inevitable consequence. For Baudrillard, the future is constrained within the codes that dictate and obscure the present moment, as well as future possibilities. Escape is the necessary option. In either case, the future is contained like a seed in the present. The code, syntax, or map contains the possibilities; in one case the possi-

bility for spiritual awakening, in the other case an inevitable negation. The ideas of both Teildhard and Baudrillard suggested the linear progression to an endpoint, though they do not agree on what that endpoint will be.

An Alternative Notion of Progress:

Let us give up the idea of a destination because it may no longer offer an explanation of where we are headed. As long as I know where I stand, as long as I believe there is a recognizable progression of events, it is possible to speak of the future as a destination. Such a view of progress privileges the human agenda, even as it suggests that our machines serve to advance that agenda. Consider instead the notion of progress as a teleonomy, of a “system and environment [are] joined in recursive circuits” of “unexpected and disproportionate changes” (Taylor, p. 169). With this notion of progress, it is not clear where we stand. We exist as part of an unpredictable system, defined by “unexpected and disproportionate changes.” Though *the point of arrival* can be distinguished from the *point of departure*, it is not possible to know in advance either that we are making progress or that we have arrived. Give up the idea of a destination and several other things are lost as well. It is difficult to discern a linear progression, or to grasp the consequences of our interaction within the system. We suspect that we are becoming increasingly dependent on our machines, even as we question whether technology undermines human agendas.

Without a linear progression or any sense of a destination, without the ability to understand the future consequences of our interactions, it seems progress is no longer possible. Perhaps Bury was right that the concept of progress corresponds to “a certain not very advanced stage of civilisation” (p. 352). Or perhaps the twenty-first century will be defined by an alternative notion of progress that takes advantage of the unpredictability of open systems. Postmodernism’s contribution was to question those historical premises which supported an earlier idea of progress. A new notion of progress demands different premises. Such premises arise from an altered sense of scale, emerge from the challenge of understanding of our place in the world. Whether dealing with acid rain, economic globalization, or the consequences of social hierarchy, we are forced to confront our interdependence. The sheer flow of information makes it difficult to avoid this point. We are caught in a magnificent web that is not of our own design. The human agenda is inevitably called into question. We suspect that we are not in charge, even as we struggle to take charge of forces that we do not understand.

Technology helps to advance our understanding of the world. In turn we are confronted with a world that is more complex and convoluted than we might have imagined. The uncertainly implicit in theoretical physics, the mysteries of the genetic code, the ambiguities of cultural stereotypes, the power of recursive processes, all imply consequences we can barely imagine. Meaning cannot be spelled out in advance, “is not guaranteed by a coherent origin; rather it is made possible (but not inevitable) by the blind force of evolution finding workable solutions within given parameters” (Hayles, p. 285). Technology increases

the flow of information. We become aware of the talk of the universe, from sun dust to cellular growth. The conversations are poetic, scientific, aesthetic, moral. Taylor explains that "As feedback loops become more intricate, the relation between past and present becomes more complex" (p. 168). He argues that "Progress in this context is measured by the increase of diversity and, correlatively, the growth in complexity" (p. 169). Bury argues that progress "is a theory which involves a synthesis of the past and a prophecy of the future" (p.5). Our increasing awareness of diversity and complexity make it more challenging to discern the connections between past and future.

The perspectives of Teilhard and Baudrillard infer a notion of progress that is perhaps out of step with current experience. Teilhard's teleology provides a synthesis of past and future, suggesting grand design. His vision identifies the gain. Baudrillard's denial of progress, his rejection of the code, exemplifies the loss. However, a concern with loss and gain, tradition and innovation, better and worse – cannot explain a notion of progress that emerges from an unpredictable system, defined by "unexpected and disproportionate changes." Teilhard's noosphere cannot be predicted. We cannot know our evolutionary path in advance. Baudrillard's denial of the code cannot account for the way in which progress usurps the code. The code changes, it contains ambiguity, a kind of randomness "not simply as the lack of pattern but as the creative ground from which pattern can emerge" (Hayles, p. 286). In the twenty-first century, a notion of progress that captures current experience must in some way address randomness, as well as design. The mystery is that each requires the other. The fundamental premises have shifted.

Human beings can no longer pretend to occupy a privileged position. We are but part of a larger complex and unpredictable system. We did not design the system. Despite our fondest dreams, we are not in charge of the system, nor do we fully understand our place in that system. "The great chain of being" served for a time to explain our place in the world. The idea of a grand design captured our fantasies. We wished for a teleological perspective that might offer a secure vision of our future. A new view of progress emerges in response to our increasing awareness of complexity and uncertainty. The challenge is to recognize the ways in which we must think differently about both our place in the world and our future.

Let us carefully examine the ways we think about the future, in order to discern our place in the present. Explanations of where we are headed cannot be based on a hierarchical structure. The denial of progress merely clears the way for alternative notions of progress, notions that might account more successfully for randomness and ambiguity. We are mystified by the varied ways in which technology usurps, intrudes, and transforms experience. Increasingly our technology appears to take on a life of its own, performing functions humans cannot perform, recording and synthesizing information, identifying patterns, revealing tacit connections between past and future. The concern with whether computers could think obscured the larger issue of how technological processes inevitably alter human perception and cognition. Did machines ever simply serve our purposes? Yes. On a daily basis, our technology can facilitate conver-

sations as well as dreams. Technology also alters our relationship to the larger world, challenging our place, changing our agenda, and undermining our faith in where we are headed. We must think again about past and future, about what it might mean to make progress in a world defined by randomness, characterized by uncertainty: a world rich with possibilities and shadowed by dread.

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Abstract

The question of progress and a concern with relatedness are elements of the same puzzle. The very idea of progress, or lack of it, indicates something about the role machines can play in one's life. Notions about how technology can be used – to improve, subvert, destroy, extend, or interrogate – reveal the interplay of human and machine. What notion of progress might adequately capture the complex interdependence of human and machine in a way that illuminates our current predicament? To ask whether specific events make things better or worse does not reveal what guides our notion of better and worse, what *crucial premises*, to quote Robert Nisbet (1979), guide our assumptions. In the twenty-first century, a notion of progress that captures current experience must in some way address randomness, as well as design. We must think again about past and future, about what it might mean to make progress in a world defined by randomness, characterized by uncertainty: a world rich with possibilities and shadowed by dread.

(166 words)

Contributor's Note

C. Waite is Chair and Associate Professor at Hamilton College, Clinton New York. Her recent book, *Mediation and the Communication Matrix* (Peter Lang, 2003) explores the phenomenological consequences of an environment filled with ubiquitous screens. Work in progress includes a second book which draws on the themes of earlier research to investigate emergent social forms.

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