

Ethics, Information, Ontology: Reflections on Public Policy

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Abstract

This paper attempts to inquire into the general problematic of the Information Age from two different directions: first at the level of *policy* (broadly construed so as to include both state and non-state regimes or instruments of regulation and control); and second at the *ontological* dimension. The latter will be understood here to include both the fundamental understanding of reality (or *being* as such) as well as the self-understanding of that new form of human existence that emerges in the Information Age, designated as *Homo cyberneticus*.

The first inquiry will be formulated in such a way that the question of policy is brought to bear on various levels of phenomena associated with the ongoing developments in information- and communication technologies, from state level security issues to non-state levels of regulation or intervention in the workplace, educational institutions, and the family. The ontological inquiry arises from within the social-scientific perspective on developments associated with the Information Age. That is to say, the radical changes in the ways human beings interact with one another, and equally radical alterations in our relations to reality as such, lead to or necessitate a philosophical inquiry into the “meaning of being” in this Age of Information. The ethical implications of these inquiries will be addressed by invoking Michel Foucault’s “philosophical ethos” conceived as the demand for an *ontology of the present*.

Introduction

In order to address the question of policy in the Age of Information it will be necessary, first of all, to clarify what sort of regulatory regimes, instruments and mechanisms are to be included under the rubric of “public policy.” It will also be helpful to indicate, at least in some preliminary way, why it is that our present epoch (roughly including the advanced industrial or post-industrial nations in the early twenty-first century) is to be labeled “Information Age.” The latter task can be dealt with more succinctly.

Given the widespread and ongoing development of information and communication technologies—particularly intensified, and at an accelerated rate over the course of the last two decades—it is hardly necessary to cite expert testimony in order to justify a term already in popular use: the *Age of Information* is upon us, even if the precise referents or implications of this designation remain somewhat vague. J. David Bolter, in an early assessment of the “computer revolution” from a humanistic perspective, offered the following observations: “As a calculating engine, a machine that controls machines, the computer does occupy a special place in our cultural landscape. It is the technology that more than any other defines our age. Our generation perfected the computer, and we are intrigued by possibilities as yet only half realized.” (Bolter 1984, 8) A few decades further into the Information Age we can confirm that the computer occupies a special place not only in our cultural landscape, but in the fundamental ontological order of our epoch. And though the computer does indeed continue to operate as a calculating engine and a “machine that controls other machines,” it is not always recognized in

this, its *essential function*—and indeed has multiplied and transformed its uses in ways hardly imaginable to earlier generations of inventors and users. A quarter century after these remarks were made, we remain “intrigued by possibilities as yet only half realized.”

This sense of heading (or being led) into a brave new world of only partially foreseeable effects of computerization is, apparently, one of the salient and most characteristic features of the Information Age. The author of this insightful reflection on “Western Culture in the Computer Age” (the book’s subtitle) also recognizes what has been alluded to above as the *ontological* dimension of the problematic: “A defining technology defines or redefines man’s role in relation to nature. . . . The computer is giving us a new definition of man, as an ‘information processor,’ and of nature as ‘information to be processed.’” (Bolter 1984, 13) If we replace the word “nature” in this passage with “being” we would have a precise, if still preliminary statement of the ontological concerns that will be developed later in this paper. Suffice to say, for introductory purposes, that the new understanding of human being as information processor, and the new determination of “nature” (or reality) as information to be processed have been recognized since the onset of the Information Age. The computer emerges as the defining technology of our times only on the condition that human cognition and being itself are reduced, in principle, to the level of information.

What then of the question concerning the *policy*—the broad array of incentives, regulatory instruments, guidelines and mechanisms of control—through which the Age of Information directs its own transformations? If one begins by asking: Who formulates these policies? With what aims or intentions, what vision of the future, what goals or promises?—the question of policy tends to be situated in the domain of political and economic interests, which are of course enormously powerful. But political and economic interests are not always clear: Who or what *gains* from social networking? What advantages accrue, and who benefits, from widespread participation in virtual realities such as “Second Life”? The rapid and global transformations now underway seem more like upheavals with unpredictable consequences than orchestrated developments which traditional “vested interests” manipulate to their own advantage. And in any case, political and economic interests cannot alone exhaust the motivations and goals of the vast array of developments associated with the Information Age, whose impacts are registered in psychological and sociological domains, and whose transformative effects are already being felt in various levels of the education system, entertainment industry, and perhaps most importantly, in our personal lives.

A few examples should serve to indicate the range of phenomena—or the multi-dimensional extent of the problematic at hand—included under the rubric of policy measures oriented toward information and communication technologies. At the level of national or state government, we have decisions concerning security ranging from surveillance cameras in public places to preparations for cyber-warfare. Policy issues in the health-care and insurance industries include questions about the accessibility and distribution of patients’ records—questions that will be intensified in the near future, no doubt, as genetic information becomes more readily available, and easier to “rationally exploit” by way of decision-making algorithms. But also

included within the policy problematic, as here understood, would be questions of everyday use of information and communication technologies: do universities, or individual professors, allow students to use laptops in the classroom? Can parents effectively limit the text-messaging habits or on-line activities of their children? Ultimately, how do each of us—as denizens of the Information Age—establish our own personal and public policy regimes in the midst of the radical transformations now underway in most aspects of our lives?

This last dimension, concerning the policy regime to be formulated and implemented within the context of each of our personal and public lives, was the subject of a study by Rita M. Hauck, published recently in the *Forum on Public Policy* (2009). This article, and no doubt many similar contributions to the vast literature on the uses and abuses of the internet, makes the claim that public policy begins in the home—or more radically, in the self. It seems to presuppose that the requisite “ethical resources” are available to each of us, allowing for morally right choices and responsible behavior in our forays into cyberspace: “When one enters cyberspace, one should stay focused on the integrity of one’s posts: good advice for checking e-mail, searching the web, uploading, downloading, traveling, walking, talking, pretending or imagining in cyberspace. . . Careful focus on the integrity of posts will enhance sensitivity to everything one encounters in cyberspace and enhance overall values, morality and standards.” (Hauck 2009, 15) Well-intentioned wishful thinking? Perhaps. But it leads to a consideration of the relation between these “overall values, morality and standards” and the radical transformations (still, no doubt, only partially understood) underway in fundamental aspects of human existence, as sketched out above. How, indeed, can our collective or individual *values* serve as basis for *policy formation* in the midst of this radically transitional epoch, our own “actuality” designated as the Age of Information, given that these prevailing values are themselves subject to change, along with our basic ways of interacting and communicating with one another, along with the profound changes in our self-understanding (as processors of information), in our relation to nature, and in the “ontological status” we attribute to—and claim as—human beings?

The following pages attempt to pursue this question further, or at least to articulate it more clearly and confer upon it the urgency it deserves. This will be done by presenting a chronological sequence of observations on the emerging Information Age made by leading social scientists from the latter part of the twentieth century, Margaret Mead and Daniel Bell, and by one of the most astute observers of the computer revolution in its recent stages, Sherry Turkle. As will be apparent, the selections are geared toward a certain line of inquiry; and no claim to any sort of neutral survey or broad spectrum of opinion is intended here. What should become clear through this exposition of the argument is that the ontological dimension of our problematic was recognized—if not explicitly named as such—from rather early days in the Age of Information. Our concluding section will refer briefly to the philosophical ethos suggested in Michel Foucault’s contemporary appropriation of the Kantian concept of *enlightenment*. We rejoin his suggestion that critical reflection on our present condition amounts to the demand for an ontology of the present: “It seems to me that the philosophical choice with which we are confronted at present [Foucault is writing in 1983] is this: we can opt for a critical philosophy

which will present itself as an analytical philosophy of truth in general, or we can opt for a form of critical thought which will be an ontology of ourselves, an ontology of the present” (Foucault 2007).

One way of undertaking such an ontology of the present would be to attempt an *archeological* approach (again, in Foucault’s sense of the word) to the Information Age, as suggested in very preliminary and schematic form in the following selections and commentary.

The information explosion: human sciences and ethical sentiments c. 1965

Almost half a century ago, Margaret Mead, one of the leading anthropologists of her generation, published an article in the *New York Times* entitled “The Information Explosion.” It begins, rather optimistically, with the following thesis:

In the past, when a new invention or set of inventions or discoveries produced a tremendous transformation in society, men did not have the concepts and analytic tools to assess what was happening. But today, when we are facing a new transformation of society that is more rapid and extensive than any has gone before, we are also facing it with all the growing knowledge that the human sciences can provide.

It becomes urgent that anticipated changes be examined, not only for their technical consequences. . . . but also on the basis of our knowledge of the accompanying changes in men’s minds, hopes, fears, and capacity to mobilize human energy. (Mead [1965] 1979, 398)

The tremendous transformation in society she is referring to here is the onset of what we now call the Information Age. The new set of inventions and discoveries said to produce this transformation would include the following: the earliest digital computing machines emerging from wartime research projects led by Alan Turing, John von Neumann and others; Claude Shannon’s “Mathematical Theory of Communication” (1948) and Norbert Wiener’s set of mathematical equations describing feedback relations, presented in *Cybernetics: Control and Communication in the Animal and the Machine* (1950). (A more complete archeological inquiry would of course include these authors and texts, as well as even deeper layers to be found in the work of Charles Babbage, James Clerk Maxwell, and G.W. Leibniz.) By 1965 it was clear that a momentous transformation of society was indeed underway. Mead was neither the first nor would she be the last to compare this transformation to the industrial revolution, predicting that the “computer revolution” would eventually prove to be even greater in its impact on society than its predecessor; indeed, she claims it would be a more radical transformation “than any that has gone before.” What is most interesting in this remark, however, is Mead’s claim that the *differentia specifica* that sets the “information explosion” apart from previous historical upheavals and transformations is our present ability to observe, to monitor, presumably to understand and reflect on what is happening thanks to “all the growing knowledge that the human sciences can provide.”

It may be tempting to distinguish here between the “human sciences” and the social sciences (in particular, as philosophy might be included in the former grouping but not the latter), but we will assume that what she refers to here are those sciences that allow modern societies to observe their own dynamics. These would include sociology, psychology, economics and history, political science, anthropology, linguistics, etc.—all offering “growing knowledge” (especially by the second half of the 20th century) of the inner workings and dynamic forces that shape modern industrial or post-industrial societies. It is by virtue of this social-scientific knowledge that the enormous transformation already underway could, in principle, be guided and consciously directed by the society which is itself being transformed.

Clearly implied in Margaret Mead’s remarks, and what makes her perspective so strikingly optimistic, is the claim that the knowledge provided by the social sciences can, in principle, help us *make the right choices* in guiding or steering the radical transformation that modern societies are (still today) undergoing. Above all, our social-scientific “concepts and analytical tools” allow us to examine anticipated changes associated with the information explosion, according to Mead, not only for their technical consequences (for example, increased economic productivity) but also on the basis of what we will refer to here as their impact on *ethical sentiments*. It is easy to read into this idea some quasi-dialectical or reciprocal relation between the prevailing values or mores of society and the transformation brought on by the information revolution. Surely if the technical consequences are impacting the human life-world, the latter in turn can (or should) in principle exert some sort of control or decision-making in the realm of large-scale societal choices. The question arises, then, as to what extent the “computer revolution” can be regulated by policy instruments? We leave this last term rather vaguely defined, so as to include, again, both state and non-state levels of possible regulation. We also wish to imply, as does this author, that the purported or desired regulation would be in principle based on something like social mores or prevailing ethical sentiments.

It is worth following Mead’s remarks a little more closely. In her own words, it is equally urgent that we examine the anticipated changes “on the basis of our knowledge of the accompanying changes in *men’s minds, hopes, fears, and capacity to mobilize human energy.*” [Emphasis added.] The latter term is perhaps the most interesting and important in this series, but if we wish to equate what she is referring to here with some construal of *ethical sentiments*, it should suffice to point out that the anticipated changes to be ushered in by what we now call the Information Age were understood at the outset to bring about “accompanying changes” in our *minds, hopes and fears*. Obviously it is only, strictly speaking, on the basis of this human “life-world” dimension, and from the perspective of “hopes and fears” that the technical consequences can be anticipated, monitored, and eventually appropriated and accepted by society. That is to say, some recognition of the dialectical relation between ethical sentiments and public policy is recognized here: social mores play a role in selecting which of the anticipated changes are actually pursued; but at the same time, these changes—profoundly affecting, for example, the ways human beings communicate with one another—alter or impact those social mores, and to some extent give rise to radically new ethical sentiments.

Passing over the underlying assumption of a certain technological determinism here, we might draw out two not entirely trivial theses from Mead's article: first, that the computer revolution is unique in that we now have the capacity to observe and understand (and presumably guide) this radical transformation of modern society; and second, that this transformation will also directly affect the hopes and fears and minds—broadly speaking, the ethical sentiments—that constitute the human life-world dimension of the post-industrial society that emerges from such transformation. This at any rate is one perspective from before the informational deluge.

Consciousness and public policy: selecting alternative futures

The American sociologist Daniel Bell made the following observations in his Introduction to an important study, *The Computerization of Society*, the “Report to the President of France” prepared by Simon Nora and Alain Minc in 1978.

The computerization of society will shape, allow, facilitate, determine—which verb will be the operative one depends upon *our consciousness and public policy*—an extraordinary transformation, perhaps even greater in its impact than the industrial revolution....

It is a rare moment in cultural history when we can self-consciously witness a large-scale transformation (as distinct from a revolution.) Few persons realized, when the industrial revolution was beginning, the import of what was taking place....Today, with our greater sensitivity to social consequences and to the future, we are more alert to the possible imports of technological organizational change; and this is all to the good, for *to the extent that we are that sensitive*, we can try and estimate the consequences and decide which policies we should choose, consonant with the values we have, in order to shape, accept, or even reject the alternative futures that are available to us.” (Bell 1981, x-xi) [Emphasis added.]

By the late 1970s there was little doubt that the onset of the Age of Information constituted a large-scale transformation; the only question, for Bell, is whether this transformation will be shaped, allowed, facilitated or determined by the computer revolution. Which of these options is to become *operative* depends on our consciousness and the public policy that, presumably, corresponds to it. In terms distinctly reminiscent of Mead's, this author articulates more clearly the interpretation suggested in our gloss above. What Daniel Bell makes explicit here is that our consciousness of the ongoing *post-industrial* transformation (to name it with the term Bell himself coined), that is to say, our awareness and understanding of what is happening with this so-called computerization of society, will determine how active a role human beings will be able to take in shaping or guiding the transformation. The less we are conscious of what is happening, the more the transformation will be *determined* by technological

developments themselves; whereas if we are sufficiently self-reflective (as a society) the new post-industrial socio-economic and political arrangement will be made possible or *facilitated* (not determined or *dictated*) by the computer revolution. For this author, the choice is clear, and more importantly, *there is a choice* that societies face in the midst of becoming post-industrial: not whether such a transformation will or should occur, but whether it is to be a transformation society consciously *undertakes*, or one it merely *undergoes*.

We are interested, again, in focusing attention on a certain presupposed relation between public policy and ethical sentiments—the latter designated here as the prevailing *set of values* of the modern society in post-industrial transition, which become *operative* (in policy formation) to the extent that we are *sensitive* to the changes taking place. Like Mead fifteen years earlier, this author recognizes that such “sensitivity” depends not only on the individual consciousness of each member of society, but more so on the ability of the social sciences to identify and monitor (and to some extent, predict) the most important features of the transformation ushered in by the computerization of society. When Bell declares that today, “with our greater sensitivity to social consequences and to the future...we are more alert to the possible imports of technological organizational change,” it is clear that he is not referring to any individual’s sensitivity or awareness, but to our collective ability to recognize what is happening to us as a society. What he is referring to, presumably, is what the German Sociologist Niklas Luhmann will later call the “resonance capacity” of modern societies: that is, society’s capacity to register and respond to external threats, or in this case, to its own internal dynamics.

Consciousness, sensitivity, and awareness of the transformation thus depend on the proper functioning of the social sciences. According to Bell, our values become relevant—or operational—only if we, as a society, are focused on the transition: *we must be attuned to the information revolution in order to take an active part in shaping its course*. To be informed is the prerequisite for action, for selecting or rejecting the various alternative futures projected by the computerization of society, as envisioned through the sensitive lenses of the social sciences. To the extent that we fail to do so, our ethical sentiments will play little or no role in guiding the decision-making, as wave after wave of information and communication technologies are introduced. In Bell’s words, our future will be determined by the technological imperatives or “instrumental reason” inherent in the computerization process itself. Consciousness, awareness, moral sensibility will play little or no role in selecting the course of technological development that corresponds to society’s prevailing values unless we, individually and collectively, are sufficiently attuned and “sensitive” enough to the changes that are happening to take an active part in shaping our own societal pathway. Whether or to what extent this awareness and this sensitivity are sufficiently developed is by no means a merely rhetorical question: three decades ago the question could be posed in a vaguely speculative, more or less cautious or prophetic tone; today it is a matter of practical and compelling urgency.

The question that emerges here hinges on what we will call the *ontological status* of the human being. Will human beings retain their status as autonomous subjects—shapers of their own individual and collective destinies—or will we become *objects* of technological

developments that we ourselves have set in motion, but which we are no longer conscious or aware of, no longer sufficiently sensitive to register their impacts? What if it turns out that the progress of the transformation itself, the coming of the Information Age, somehow renders us insensitive, dulls our consciousness and weakens our awareness of the radical changes in societal structures and interpersonal relations that constitute the brave new digital world for post-industrial humanity? And again, the question is not posed rhetorically, but in an attempt to point to its pragmatic urgency: Is it possible to conceive of a set of policy-level steering mechanisms capable of guiding the transformation in directions desired on the basis of prevailing ethical sentiments? Or are those policy instruments and ethical sentiments both, increasingly, determined by the technological advances themselves?

For Daniel Bell, writing thirty years ago, the choice seems to be *up to us*; and his formulation goes beyond that of Margaret Mead's insofar as he directly presents his readers with this challenge. Our present inquiry is attempting to follow up—in a very schematic, perhaps anecdotal way—the subsequent development of this choice. Which is not to say its *outcome*: for that it is, presumably, too early to determine. For the sake of this study, at least, we assume that fundamentally the choice is still open, the societal decision still pending.

Computerization and Subjectivity: “What kind of people are we becoming?”

We take as a third historical-chronological perspective, Sherry Turkle, professor of psychology at MIT and author of *The Second Self: Computers and the Human Spirit* (1984). In the Introduction to this book, on the verge of the widespread appropriation of the personal computer in the United States, she writes:

Most considerations of the computer concentrate on the ‘instrumental computer,’ on what work the computer will do. But my focus here is on something different, on the ‘subjective computer.’ This is the machine that enters into social life and psychological development, the computer as it affects the way we think, especially the way we think about ourselves...The question is not what the computer will be like in the future, but instead, what will we be like? What kind of people are we becoming? (Turkle 1984, 5)

Here we reach a point of recognizing that the computer changes not only the ways we work and interact with one another, alters not only our relation to nature and our uses of leisure and entertainment, it affects *the way we think about ourselves*. Or to put this into appropriate ontological terms: the computer affects our self-understanding, our understanding of *the kind of beings* that we, as human beings, *are*. Much of Turkle's book looks into the ways in which computers, already in the early 1980s, are beginning to affect our psychological development and our sense of what is unique about human beings. In particular, she deals at length with the potent idea that *consciousness* or thinking is simply a form of *information processing*. No longer conceived “merely” as an agent of social transformation, as it was by Bell, the computer is now conceptualized as intervening into human reality as such: it becomes the *subjective* computer.

What this author seems to be saying here is that the computer enters into or encroaches upon human subjectivity insofar as it begins to alter the way in which we understand our own human existence. The rational animal becomes the information processor. Insofar as the computer alters our sense of who and what we are, it affects not only our *perspective* on “what it means to be human,” it alters human subjectivity as such.

One does not need to be a Hegelian, or even a Kantian, to recognize that reflexive self-awareness or self-consciousness is a crucial element of human subjectivity. The mode of being that belongs properly to human being as such is not *given*, but determined by humanity’s own self-understanding. Insofar as that self-understanding is radically altered in our cybernetic epoch, the “computerization of society” must be seen to have ontological implications. To be sure, these implications can only be hinted at here; but that, perhaps, is sufficient for situating the ethical-political “policy” problematic in a new dimension. To inquire into the problematic of public policy in the Age of Information, and to ask in particular about the possibility of control or regulation of those radical transformations taking place at levels ranging from the global economy to pre-school education, is to recognize that what is at stake is the ontological status of human being as such. Going beyond the astute observers quoted above, perhaps due to the increasing potency and increasing *reality* of the computer revolution (still here, in 1984, effectively in its infancy), Turkle recognizes the philosophical dimension of the problematic: the computer is no ordinary tool; it profoundly alters the self-understanding of its users.

In Turkle’s formulation quoted above, it is no longer clear that the social sciences might still have an active role to play in directing the course of the post-industrial transformation of society. She asks only, “What kind of people are we becoming?”—not what *should* we become? Nor what kind of people, based on our prevailing set of values and moral sentiments, we might *wish* to become, “facilitated” or enabled, say, by the computer revolution. To be sure, some sort of simple observation or monitoring of the developments, some more or less “raw data” on the course of societal transformation must be gathered before any normative judgments can be made. But our question now has to take the following form: Can the social scientific monitoring of ongoing developments, now that we have entered into the Information Age, still rely on societal values or norms in order to formulate ethically-based policy guidelines? Do we still have the choice, articulated so clearly by Daniel Bell, of playing an active role in shaping or selecting our future? At the point of entry into what we might call the Information Age proper (given that the personal computer became widely available only in the mid 1980s), it is no longer obvious—at least not to this observer—that human beings will retain the ontological “steering capacity” to direct the new reality that post-industrial society is forging for itself. This author focuses in her research mainly on the psychological level of the problematic, while pointing quite compellingly to the philosophical and ontological questions looming large on the not-too-distant horizon.

Identity on the Internet: “Inventing ourselves as we go along”

A decade later, the same author wrote *Life on the Screen: Identity in the Age of the Internet* (Turkle 1995). By this point the question of “what kind of people we will be,” as the computer

revolution continues, is not so much answered as intensified—that is, formulated with increasing lucidity and urgency. (Albeit with a strange sort of post-humanist “enthusiasm”—and here I wish to invoke the sense that David Hume gave to this word: *enthusiasm* signifying a certain unquestioned endorsement, a certain lack of critical reflection, which is to say, a lack of enlightenment.)

In the story of constructing identity in the culture of simulation, experiences on the internet figure prominently, but these experiences can only be understood as part of a larger cultural context. That context is the story of the eroding boundaries between the real and the virtual, the animate and the inanimate, the unitary and the multiple self . . . But it is on the internet that our confrontations with technology as it collides with our sense of human identity are fresh, even raw. In the real-time communities of cyberspace, we are dwellers on the threshold between the real and the virtual, unsure of our footing, inventing ourselves as we go along. (Turkle 1995, 10)

If Sherry Turkle exhibits a form of Information Age enthusiasm here (and she is by no means unique in this), it is perhaps more positively understood as a perspective that wishes to “leave the question open” as to the nature of those developments that are transforming our society and the degree to which human beings in post-industrial societies still have the capacity to determine our collective fate. [Her general tone seems to have shifted only slightly in subsequent publications.] In any case, what I would like to take up from the remarks quoted here is the claim that it is *on the internet* that the decisive encounter between technology and the human dimension is taking place, in ways that are “fresh, even raw.” What she means by these adjectives is brought out in other phrases used throughout her study: the incredible new possibilities opened up for the experimental play of a subjectivity which is no longer unitary: philosophical problems are “brought down to earth” (“earth” here referring to the internet!). The troubling new reality ushered in with the internet forces us to confront the fundamental ontological upheavals that accompany the full-blown manifestation of the Information Age; and it is to Turkle’s credit that she recognizes these upheavals as philosophical (as opposed to, or in addition to, the psychological, economic, political, sociological, and global upheavals), even if she finds the new reality, for the most part, more exciting than troubling.

Avoiding for now the question of whether the internet constitutes a *neutral ground* for the ontological encounter with technology or a level playing field for the confrontation between human being as such and its new informational reality, we should note that according to this meticulous observer, the blurring of the distinction between the virtual and the real has encroached upon even our old-fashioned, “off-line” real-time social experience. The human dimension itself now (and henceforth?) straddles this ontological divide—we are “unsure of our footing” but pretty certain as to which way we fall if we slip. Perhaps there is no reason to fear the abyss of the virtual—the digitized self, on-the-screen social existence, the “connected” or “wired” life that no longer feels nostalgia for some sort of (imagined, romanticized?) pre-technological life-world—and in any case our task here is not to judge on this matter. That is to

say, simply, that our inquiry is neither polemical nor prophetic: no attempt is made here at a “critique” of the Information Age (though we will return to this important little word in our conclusion), nor is there any pretense to predict future developments from within the midst of this multi-dimensional transformation which is still very much ongoing, still increasing in potency, perhaps, still “moving forward,” as we like to say.

Instead what I wish to emphasize is how our inquiry into the status of the human being in the Age of Information has now touched on the *ontological dimension*: for Turkle, in terms of the no-longer-sharp division between *the virtual and the real*. Indeed, when we approach this sort of ontological zone of indeterminacy, the very meaning of “the real” loses its solid ground. For the societies and human subjects who now find themselves poised “on the threshold between the real and the virtual” even the most well-focused and perspicacious social scientific observations will no longer suffice. In order to even properly formulate the question we have been concerned with here (presumably a precondition for mapping the contours of this very complex problematic, and eventually deciding on a desired course), it will not be enough to ensure a certain degree of “awareness” of technical consequences or individual/collective self-reflection on the actual developments that are increasingly shaping the world we live in.

These questions themselves take on an ontological significance—that is to say, they necessitate a general inquiry into the *meaning of being* as such, and of “man’s relation to being.” Here, we can only point to this radical reformulation of the inquiry with very preliminary (and not quite articulate) gestures, taking the “eroding boundaries between the virtual and the real,” in Sherry Turkle’s words, as point of departure. This virtual/real ontological divide is, to be sure, not the only way in which the question of being arises for *Homo cyberneticus*, denizen of the Information Age; but it is one that is presented forcefully and succinctly in *Life on the Screen*—and one which seems to transcend, for better or worse, the ethical-political dimension that was retained in our earlier selections. Both Mead and Bell held out the possibility for post-industrial societies to steer their own course through the technological thickets of the computer revolution, presumably on the basis of what we have referred to here as prevailing ethical sentiments. In the two installments from our last author (Turkle’s books from 1984 and 1995—each on the cusp of a major advance in the trajectory of the computer revolution, the introduction of the personal computer and the internet, respectively) there is no obvious consideration of ethical or public policy issues.

Two somewhat loaded philosophical terms, *enlightenment and critique*, have come up more or less inadvertently in our gloss on Turkle’s remarks—two terms or concepts considered anachronisms today (originating as they do, in an earlier, more philosophically optimistic epoch of Western modernity). Michel Foucault nevertheless managed to articulate a sort of minimalist “philosophical ethos” in his latter years, precisely through a reconsideration of these two terms. It is this *ethos* (something less, no doubt, than traditional *ethics*), designated as demand for an *ontology of the present*, that can serve as guide and motivation for the ontological inquiry into the Age of Information sketched out only schematically in this paper.

Conclusion: Toward an ontology of the present

The critical ontology of ourselves has to be considered not, certainly, as a theory, a doctrine, nor even as a permanent body of knowledge that is accumulating; it has to be conceived as an attitude, an ethos, a philosophical life in which the critique of what we are is at one and the same time the historical analysis of the limits that are imposed on us and an experiment with the possibility of going beyond them. (Foucault 2007, 118)

In case this is not clear: nothing like a *critique* of the Information Age has been attempted or proffered in these pages. In fact, strictly speaking—that is to say, in the Kantian sense—no critique is possible for the Age of Information, for unlike *pure reason* (whose position has been usurped by information processing) there is no conceivable operation by which *information* would have the capacity to establish its own limits. Pure reason, by way of the technical rigors of Kant's philosophy, does recognize in itself this capacity to *determine its own limits*; and the means by which it achieves this self-limitation is called *critique*. The fortunate epoch in which this critique is to be imposed on reason—imposed “from within” *by* reason itself—properly names itself an age of enlightenment, for by establishing and recognizing its self-imposed limits, reason also empowers itself insofar as it also determines, for the first time on rigorously certain grounds, the scope of its *legitimate* use. Kant famously declared that late eighteenth century Europe was not yet *enlightened*, but it was a period of *enlightenment*—that is, one in which rational human existence develops its mature capacities by establishing its essential limits.

Enlightenment refers to an activity: a way of thinking, of acting, and of interacting with others. An *activity* and not a condition or goal or the name of a historical period, enlightenment refers to the *process* by which individuals, societies, eventually mankind as a whole will finally come to maturity by recognizing self-imposed limits and enjoying the fruits of the legitimate exercise of critical reason within those limits. Our present Age of Information, by contrast, is defined by an entity that has no capacity for self-reflective critique: information posits no bounds for itself, nor does it recognize or establish its legitimate domain by means of critical self-limitation. Information, of course, doesn't *do* any of these things, for unlike reason it is inert, passive; it lacks what Kant termed the spontaneity of consciousness. Even if computers do in fact “program” other computers, and to be sure, very sophisticated technological machinery is required for the making of microchips, neither binary digits nor semiconductors nor the worldwide web are capable of in any way *acting* or *thinking* on their own. But it is true, nonetheless, that *Homo cyberneticus* has to a large extent “outsourced” its capacity for thought (now reduced to information processing) to digital devices and databases, and in doing so, it seems, has rendered derisory those quaint eighteenth century notions of critique and enlightenment.

What does it mean to claim, as many do today, that the amount of information human beings produce has been increasing exponentially in recent decades? And what are we to make

of the fact, cited in a recent book review, that Americans now “consume” on average, 34 gigabytes of information per day, more than a three-fold increase within one generation? Does this supposedly impressive flow of information somehow indicate that we are using our *reason* at exponentially increasing rates or performance capacities? Disregarding the quality of “content” delivered to our individual or collective consciousness via information channels of ever-expanding bandwidth and speed—and assuming that the entity called information, measured in bytes, uploaded and downloaded by digital devices now populating the planet in the billions—is consumed, eventually, by *consciousness*, it seems highly unlikely that this orgy of information processing has anything to do with concepts like reason, critique, or enlightenment (as sketched out or invoked above, in the Kantian sense of these terms).

The Age of Information may indeed be an *enlightened age*, insofar as it depends quite obviously on the achievements of scientific and technological advance over the course of the last two or three centuries; but it is surely not an age of ongoing *enlightenment* in which reason’s self-critique simultaneously establishes limits and guidelines for the legitimately rational development and improvement of human existence as such. Consciousness loses itself in the world of information (or better to say: the world *as* information.) Reason does not recognize its own limits via critical reflection in blogs or chatrooms or in quasi-experiences in virtual reality. The faculty of reason, which constituted the humanity and dignity of man for the epoch that designated itself as the Age of Enlightenment, denatures itself to the busy-ness of information processing in the epoch that takes its name from this activity. How, then, are we to revive or resuscitate some meaning for anachronistic concepts like critique or enlightenment?

Michel Foucault turned to Kant’s brief essay, “What is Enlightenment?” in a number of lectures and writings from the late 1970s and early 80s. These texts, along with Kant’s original essay, are published together in *The Politics of Truth* (Foucault 2007). What Foucault emphasizes in his repeated references to this “minor” piece is a certain *attitude* Kant adopts in relation to his own present historical reality, i.e. Europe of the late eighteenth century—an attitude that Foucault himself will appropriate and explicitly endorse under the heading of a *critical ontology of the present*. And it is this attitude that our inquiry into public policy vis-à-vis Information Age developments also takes up, if only in these concluding remarks, in order to suggest both fundamental motivations and possible directions for further investigation into this crucial problematic of our times. If the question arises as to *why* this political-ethical-informational problematic deserves critical attention, an answer might begin to emerge from Foucault’s interpretation of Kant’s understanding of enlightenment (as opposed to *the Enlightenment*) as an “exit strategy” or means of egress from Western humanity’s self-imposed immaturity (willing subjection to authority):

Kant defines *Aufklärung* [enlightenment] in an almost entirely negative way, as an *Ausgang*, an ‘exit,’ a ‘way out.’ In the text on *Aufklärung*, he deals with the question of contemporary reality alone. He is not seeking to understand the present on the basis of a totality or of a future achievement. He is looking for a difference: What difference does today introduce with respect to yesterday? [...]

Kant indicates right away that the ‘way out’ that characterizes enlightenment is a process that releases us from the status of ‘immaturity.’ And by ‘immaturity,’ he means a certain state of our will that makes us accept someone else’s authority in areas where the use of reason is called for. (Foucault 2007, 100)

Now, the “positive” goal or implication of this negative definition of enlightenment as a *way out* or means of escape from a certain historical-political-ethical condition would be something like critical-rational *maturity*: the will to use reason in all those areas where critical judgment is called for (rather than submissive obedience to authority.) For Kant as well as Foucault, this implication is suggested rather than explicitly thematized or fully developed. But a brief consideration of this critical-rational maturity—calling for Western humanity to finally grow up and take responsibility for its own words and actions and beliefs—should provide a key insight into contemporary relevance of this Kantian motif, appropriated by Foucault two centuries later, for the problematic which has been the focus of this study.

To be sure, we do not wish to equate that figure or form of human existence in the Age of Information referred to in these pages as *Homo cyberneticus* with the condition of “immaturity” or weakness of rational will that Kant diagnosed and sought to overcome in his conception of enlightenment. The twenty-first century policy issues related to developments in communication and information technologies are not limited to concerns about privacy and security (though these concerns attract most attention), but include, more broadly, all the ways and means by which we, today, willingly allow our consciousness to be directed by what might be termed *external structures* (i.e., informational patterns, mechanisms, algorithms, engagements and decision-making procedures *outside* of consciousness itself.) Whether these external structures are downloaded from the internet onto hard drives or embedded in the programmed patterns of videogames on hand-held digital devices or built into the “worlds” of virtual reality increasingly inhabited by our avatars, in all cases, the consciousness of the “player” (web surfer, gamer, or generally “wired” citizen) submits itself to an outside force or entity. Consciousness gives up its essential spontaneity in order to be entertained, occupied, engaged with an elsewhere, somewhere, anywhere outside of itself.

It is of course crucial to recognize that these external structures that consciousness submits itself to are not at all what Kantian critical reason resisted or reacted against under the rubric of “traditional authority” (or the authority of tradition.) The structures we are concerned with here—those that public policy must somehow adjudicate in this Age of Information—are effective and formidable obstacles to the *free use of reason* (that enlightenment attitude and activity that Kant set against immaturity), insofar as consciousness comes to understand itself as information processing. Hence the ontological dimension of the problematic: the primary decision for state and non-state levels of policy regulation of information and communication technologies concerns the ontological status of human existence as such. If we wish to decide how to regulate teenagers’ text-messaging habits (American teens send and receive several

hundred text messages per day, on average), or to control employees' access to the internet or use of personal e-mail in the workplace, if we wish to decide for ourselves how many hours to spend in social networking or virtual warfare, indeed if we wish to prepare our nation for cyber terrorism or protect the population from information overload, we have to first come to an understanding of the *kind of being* we, as human beings, might wish to claim or aspire to as our own proper mode of being.

The very preliminary reflections put forth here have attempted to simply point to this ontological dimension. The very schematic and partial "archeological" inquiry begun here into the self-understanding of the Information Age as it develops under the gaze, and perhaps with the guidance of social-scientific observation, would serve as a basis (if properly expanded and carried out more thoroughly) for assessing and orienting our private and public policies vis-à-vis those technological advances that define our epoch and determine its new reality. We appeal to Foucault's philosophical ethos in conclusion here, invoking an updated and perhaps minimized Kantian "critical" attitude toward our present in order to indicate the motives (and stakes) involved with such a project. Our plea is for nothing more—or less—than an ontological inquiry into our present reality.

An appropriately adjusted enlightenment attitude or critical reason *today* would aspire to recognize the limits imposed on consciousness by the ontological contours of the Information Age. Ongoing information-technological advances are increasingly determining how we act, how we communicate with one another, and how we conceive of our own existence. We now seek to understand the structures and limits imposed by these technological advances precisely in order to prepare for the possibility for transcending or transgressing them: this would be our new Foucauldian task of enlightenment. In response to the question as to what philosophical motives or grounds might enable us to simultaneously resist and "work through" the technological epoch we now inhabit, the last word is given to Foucault: "I shall thus characterize the philosophical ethos appropriate to the critical ontology of ourselves as a historico-practical test of the limits that we may go beyond, and thus as a work carried out by ourselves upon ourselves as free beings." (Foucault 2007, 115)

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