"Reasons to Be Cheerful, part 3"* (Or why the Artificial May Yet Save Us)

* With apologies to Ian Dury and the Blockheads ("Reasons to be Cheerful, part 3," 1979).

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I.

All societies have a sense of the future. Ours, largely, does not. This immediately suggests the peculiarity of our situation. The break with the previous century in this respect is decisive. Modernity is defined by the creation of the future as compensation for the loss of the organic continuity of the past. "Is not to be modern to know clearly what cannot be started over again?"1. After 1900, to design is to design *for* the future, it is to bring the future into being *as a contemporary possibility*. Politics worthy of the name is little different. The vision there is on behalf of a future that can be made better than the past. The slogan "from the existing to the preferred situation" (Simon) becomes a generalized credo.

Yet the most memorable cultural statement of the last forty years—The Sex Pistols' "No Future!"—has none of these connotations, except in their absence. Since then, notwithstanding paid enthusiasms for the virtues of the market or for the everlasting development of new technologies (both really repetitions of the same), we have existed in

a kind of stasis. Francis Fukayama was roundly condemned for his thesis about the end of history, yet this was only perhaps because he hit a nerve by saying something no one wanted to hear.[2] The truth is that the future has, for us, disappeared—at least as an affirmative possibility.[3] Despite the almost magical hopes that some vest in Silicon Valley (or in endless economic growth if one is Asian), the future is for most that which conjures up an underlying fearfulness about what may be to come. Yet so distant are we from this, so wrapped in the short-term, that not even fearfulness is allowed to reach the condition of impelling action.[4]

That we feel our future is no longer assured is not surprising. The exponential increase in destructive capacity (represented not only by the two world wars but the apparatuses of human desolation perfected in the concentration camps and the gulag) developed across the 70 or so years up until 1945 issued in the postwar nuclear stand-off. This intensification of destructive capacity threatened the possible annihilation on a daily basis for almost 45 years.[5] Though the fall of the Berlin Wall in 1989 did not quite usher in Francis Fukayama's end of history, and the quick (atomic) end to history seemed to recede a little with the end of the Cold War, the sense of impending fatality was replaced soon after. Any sense of furturority wsa assailed not only by a succession of economic crises, culminating in the bank failures of 2007-8, but also by increasing evidence of man-made climate change, and at scales that threaten a severe break with patterns of climate, ecology and settlement that we have known as a species since the end of the last ice-age. Today, no serious person denies the strong likelihood, close to certainty, of global warming and climate change. Yet the very lack of action with respect to this

threat means that, on the contrary, as the headlines of a despairing pair of articles recently had it, on current evidence, "We will watch the rise in greenhouse gases until it is too late to do anything about it."[6]

It is not just the scale of what we are now engaged with that warrants pessimism.[7] The real problem lies elsewhere, in the gap between our compulsive inability not to act disastrously in pursuit of accumulation, and our equal but perhaps even more abject inability to act collectively to deal with these threats.[8]

II.

Yet this reading of our situation is still too immediate. If we are going to attempt to move from nihilistic despair (however disguised this might be by technological enthusiasm) we need a more structural look at our position. In particular, we need to understand that the totality of what we are experiencing today is not just more of the same, or a continuity with what was only with newer technology, but represents a qualitatively new historical condition. As well as containing an acute potential for disaster, this new condition contains other possibilities for acting and becoming. It is on this basis that we can hazard the possibility, though as yet remote, that we can avoid catastrophe and conceive of the chance of a humane future.

The easiest way to grasp what is involved here — not just as continuation of what is, but as the emergence of a new historical condition, one in which the artificial constitutes world and forms the horizon and medium and the prime determining condition of how we

are — is to consider these three diagrams. (Figures 1, 2, 3) Crude to the point of absurdity, their value is not for all that negligible.

In the first, artifice is central but limited. We can agree that there is no human becoming without artifice and the artificial, but under the conditions of hand labor artifice is always difficult, always limited. Things are crucial but rare. The ability to have an effect on nature is limited except in defined locations, such as by stripping forests. In this era attention is bound to be on the vagaries of chance. Here is the invention of the gods, or God, and the attempt to access fate by determining and obeying law.

In the second, artifice is shown as a logarithmic spiral. The industrial revolution's vast increase in productive capacity was enabled through the combination of the exploitation of fossil fuels as power and technology-as-method, both propelled by the sense of the possibility in the drive for accumulation. By 1917 Fordism has set up developments that after 1945 make industrialization a global phenomena. But if nature remains still the ultimate horizon, then in Nietzsche's terms the "gods have fled." The fiction that what is made is not made becomes seen for what it is, first in relation to kings, second to the gods. The latter now command only religion. Scientific law and its research models, command mentality.

In the third diagram, artifice encompasses: it constitutes world. Today it is gradually becoming apparent to us that, from around 1945, the world entered into a 60- or 70-year transition in which industrialization became global, and what we can call the incomplete

artificial world of the early twentieth century is transmuted into the condition we are now beginning to experience, in which the artificial, and not nature, is the horizon, medium, and determining condition of the world: its totality. The historical markers of the transition are destructive: the A-bomb, the acceptance of global warming, and the definition of our age as "Anthropocene." But the new conditions opened by the artificial are by no means the only ones.

Two overarching qualifications apply.

The first is obvious but requires reiteration. The artificial is by no means confined to technology.[9] Today it means the combination of technical systems, the symbolic realm, including mind, and the realm of our transformations and transmutations of nature.[10]

The second is that the artificial does not oppose nature in a simple binary opposition. Rather it, or rather we, affect a synthesis. A genetically modified tomato is neither purely natural nor purely artificial. It belongs rather to the extended realms of living things that are, as we ourselves are, a hybrid between these conditions. Neither nature nor the artificial nor the human are today pure.[11] No longer, as we still wish to think, merely a quasi-autonomous (and inferior) realm within the world (the "standing reserve" of made things that we can do with as we wish), the universal infiltration, reach, and ubiquity of the artificial constitutes a historical transition in the conditions of our becoming. The revolution portended by this development should not be underestimated. It opens an epoch for humans that is essentially unsurpassable. In an essential sense we are now condemned to the artificial as the essential horizon and medium of our becoming.

It is perhaps not surprising that in any explicit manner we cannot yet think this. But this is also a source of our unhappiness. Not to be able to think the conditions of our time means not to be able to think what determines us. To be blind to what is emerging is not just to be blind to what conditions our acts, it is also to fail to see the possibilities that the artificial opens. In terms of escaping our destiny towards catastrophe, it renders impossible any affirmative apprehension of the artificial. Because we cannot think the artificial, because we cannot see it, because we fail to understand it, we cannot think what resources it might offer us. Because we cannot think about these resources, so we cannot think past the present.[12] Abject capitulation to the norm is maintained by our inability to grasp what is opened by the historical trajectory we are living through.

III.

The form that the artificial will take is by definition incomplete. This is precisely the issue. This will be the political question of this century, along with how we overcome the destructiveness of an inverted economy devoted to individuated private accumulation and greed. Yet if the artificial cannot be known as such, its outlines, or at least some of its salient aspects, are already visible. In terms of redeeming the title of this essay, I will consider seven aspects of the artificial as world that open possibilities for praxis beyond those we historically inherit. By no means definitive, they are in some ways more metaphorical than literal, more indicative than recipes for action. Nonetheless they are relevant in noting directions for thought and action. The issues I will touch on concern

law and its absence, propositions, the possible, mediation, negotiation, technology and its overcoming, ethics.

1. **No Law/Configuration**. Given the manifest indifference of nature to our fate it was natural, or so we say, that in earlier human epochs we would seek to personify fate and attempt to formulate laws that explained and accounted for fate. As this gradually transformed into seeking to grasp the nature of what is, it became equally natural to seek not only God's law, but the laws of nature. It is equally natural, or so we say, that the realm of laws that effectively connect finite, brief, and tenuous life to what is enduring should be valued over mere realms of appearance. Even as the more theological aspects of this projection lose force under the pressure of the rise of science, science provides compensatory logic for the relevance of law in that, as Francis Bacon intimated, it is precisely access to natural law that gives us the knowledge to create instruments of power beyond those gained by empirical experience alone. Heidegger too has maintained that law is the very subject of experimental science; that one experiments, in the modern sense, in order to prove or disprove law, to prove or disprove that which is the case. Law then is central to the modern project, for on it depends the certainty of things in their condition of objective measurability.

But when we turn to the artificial we find a peculiarity, or rather two. The prime condition of the artificial is not that things are, but that things could be other. In the artificial there is no absolute "what-is," which means that there is no law. Since this statement seems at first sight absurd, let me explain. Previously, it seemed possible that

law could determine wholly artifice, thus giving the artificial something of the authority of the given, making artifice an objective fact. This is the point that Herbert Simon makes when he says at one point in The Sciences of the Artificial, "I have shown that a science of artificial phenomena is always in imminent danger of dissolving and vanishing. The peculiar properties of the artifact lie on the thin interface between the natural laws within it and the natural laws without. What can we say about it? What is there to study besides the boundary sciences—those that govern the means and the task environment?"[13]

But in fact, as we pursue this notion or pursue the character of the artifact, we see that, in artifice, no law is ultimately possible. To be sure, as Simon pointed out, "those things we call artifacts are not apart from nature. They have no dispensation to ignore or violate natural law."[14] But this is to state the matter very incompletely. That which cannot ignore or violate natural law nonetheless cannot, in its configuration, be subject to law. A simple example will suffice. Consider a half dozen chairs of different configurations. While each may obey, in detail, the natural laws appertaining to the forming of timber or the bending of metal, in their configuration they obey no law. Plato was thus wrong in this instance. No ideal chair exists. In artifice there are only chairs. This reflects the general truth that the artificial does not know law but only instances and possibility. What matters in the artificial is the configuration that things take.

2. **Proposition.** Configuration in the artificial is always the negotiation of complex incommensurable requirements; requirements which meet, and are to some degree

resolved, in the artifact. But since the artifact is always in the end the contingent and

unpredictable outcome of an essentially unstable relation of forces, no final resolution of

a configuration can ever be achieved. All artifice has therefore the character of a

proposition. It is an exploration of the possibility of what an X might be. What replaces

law (rule) and the certainty of method is the radical uncertainty of the proposition, in

which the artifact — any artifact — inhabits a double condition, one that can scarcely be

expressed verbally but can be expressed typographically in the form "This!?" The artifact

is "This!": existent, possessed of reality, possessing these attributes and showing them

forth, that is, exemplifying them. And also "This?": the artifact as quasi-fact, as like

nature in its quasi-objectivity as a proposition, constituted as a form, which implicitly, if

not explicitly, offers a question to the world..

 3. **The possible**. That the artificial is therefore, in strict terms, a world beyond law

and beyond certainty means that the propositional is structurally inherent to the artificial;

that in the artificial there are no absolute facts means that the artificial is a world of the

possible, not as extrapolation, or as subjective will ("I demand!"), but as its deepest

condition. The artificial, we might say, brings possibility into objective being or, rather,

it reveals, according to the principle that the higher reveals the lower, that possibility is

now not only the future and everlasting condition of the human — the human as

becoming not being — but is perhaps the very condition of the universe.[15] In short, in the

artificial we grasp a universe of possibility, of becoming, not of being. In that sense we

break with what Adorno called the "pure self-presentation" of being, imagined as a fixed

and determinant point. Instead, we now objectively occupy the realm of culture as

possibility. To put this in reverse, as the artificial constitutes the realm of our possibility, so possibility now becomes the very realm of our being.

One might well argue that this is the definition of the human, that the possible is what human culture has always stood for. Yet this is not how we have historically seen it. All too often culture, particularly in its classical anthropological uses, has been seen as an instrument of continuity, a reproduction of sameness, and resistance to change. Culture in that context stood for inertia, not movement and change.[16] By contrast, the onset of the artificial as objectively the realm of the possible means that notions of the artificial and of culture as possibility resonate sharply: "Culture … is about making things different from what they are; the future different from the present. It … is that which accepts that … 'things are not necessarily what they seem to be', … that 'the world may be different from what it is." [17]   It stands not for continuity but for the "concern with keeping the forever inexhausted and unfulfilled human potential open, fighting back all attempts to foreclose and preempt the further unraveling of human possibilities, prodding human society to go on questioning itself and preventing that questioning from ever stalling or being declared finished. … To say 'culture' is to make another attempt to account for the fact that the human world (the world molded by the humans and the world which molds the humans) is perpetually, unavoidably and unremediably *noch nicht geworden* [not yet accomplished], as Ernst Bloch beautifully put it."[18]

4. **Mediation.** If the artificial performs transmutations on the status of law and the possible, it is also necessarily concerned with the centrality and position of mediation.

All artifice is essentially mediation. Seen through the artifact, this is Herbert Simon's basic proposition: "We can view the matter quite symmetrically. An artifact can be thought of as a meeting point — an interface in today's terms — between an inner environment, the substance and organization of the artifact itself, and an outer environment, the surroundings in which it operates. If the inner environment is appropriate to the outer environment, or vice versa, the artifact will serve its intended purpose." [19]

Rather than "meeting point" or "interface," the more accurate term here would be mediation. Relations go at least two ways, not, as Simon suggests, merely one.[20] All artifice is made on behalf of human subjects.[21] Any artifact is therefore the meeting point of at least two external relations or outer environments; that of human subjects and their relations, to whom it is irreducibly addressed, and that of existing artifacts and the wider physical environments in relation to which, or in the context of which, it acts. The inner configured environment of the artifact itself, referring here simultaneously to its mode of internal organization and its modes of operation, is therefore a negotiated mediation between the realm of the subject and the objective conditions of the complex contexts in which it operates.

Put differently, if the artificial is mediation (if that is its essential, radically contingent status), then transformational acts within the frame of artifice as world, be they design or politics, are by definition acts of complex mediation that take place between irreducible demands and conditions that cannot be bracketed or wished way, nor merely dominated,

but must be taken up in their weight and negotiated in terms of a propositional configuration ("This!?"). In this situation, the situation of the artificial as world, the speculative, propositional, and negotiative conditions of configuration and mediation (critical affirmation) become the prime, and necessary, characteristics of practice (praxis) as a whole.

5. **Negotiation of Incommensurability**. Much of technology, in the tight sense of the term, has been devoted to the attempt to deny its condition of mediation, first, through the lessening of the status of the configuration of the artifact in favor of laws determining it; second, as a disavowal of complex negotiation.[22] Thus, for example, in scientific technology, relations are two-fold: obedience to understood rules as the determination of the configuration (certainty); minimal second-order adaptation of the technology to the demands of the environments — economic, technical, human, social, ecological — within which the artifact will operate.[23] By contrast, the moment we move to accepting complex relations, we are confronted with incommensurable moments and demands. These moments are incommensurable because in belonging to qualitatively different realms (i.e., speed *and* safety in travel, dependence *and* independence in aging), they can neither be subsumed within a null environment nor adequately represented a priori before their always incomplete resolution in a configuration that is necessarily the relational outcome of complex negotiation between incommensurable moments and demands.

6. **Surpassing "technology."** Forty-five years after Simon first drafted The

Sciences of the Artificial, what he perceived as emergently in process, has intensified,

expanded massively in scale and impact, and today constitutes an effective, though by no

means seamless, totality. We have seen that by the late 1930s, Heidegger was already

disinclined to see technology purely as such. Today we can go much further. The realms

of technical systems, symbol systems, and the artificial adaptation of nature, which in

1968 were still relatively distinct (at least in our minds, though less so then in praxis),

have today become almost co-terminus, or at least it is now impossible, in practice, to

make a clear distinction between the one and the other.[24] The most obvious and far-

reaching linkage is between technologies and language, where the old distinctions

between work and interaction, on which an entire sociology was built, have given way to

a much more uncanny condition.[25] Of significance here, both intellectually and

practically, is this merging of symbolic and technological capacities that renders the idea

of a pure technology redundant. To put it another way, technology as a concept can now

be seen to belong only to the short industrial era. Born out of a division of labor useful in

utilitarian terms to differentiate what could be objectified and treated as if it lacked

relation to the subject, objective movements within technology itself are pushing beyond

the limits technology gives itself. A small case in point is Kevin Kelly's book, *What

Technology Wants*. At one point Kelly lists 13 aspects or virtues that his technology

seeks to realize. It will strike anyone reading this list that technology seeks increasing

"efficiency, opportunity, emergence, complexity, diversity, specialization, ubiquity,

freedom, mutualism, beauty, sentience, structure, evolvability,"[26] and that comparatively

few of these terms apply or are consonant with technology as we know it. Most go

beyond. A few are all but incompatible when thought within traditional limits. Technology arrives, then, for humans at the point at which even internally it reveals itself in excess of itself as concept and finds itself dissimulated in a world of the artificial that cannot be other than our world.

That technology is overcome by being surpassed, that it is incorporated into the wider notion of the artificial, makes us more aware of the degree to which our mental capacities, including of course language but all symbol-making capabilities, are not simply natural but are themselves artifacts.[27] If, on one side, this calls forth the hubristic projects of Artificial Intelligence, with their declared ambitions of creating an artificial brain, this also causes us perhaps to be more aware that human mental sensibility was formed, came into being as such, through artifice; that the artificial is therefore both the condition of human becoming, that without which the human could not be,[28] and through which we may become, in Vattimo's telling phrase, "(finally) human." The condition of the latter is seeing our own conceptions of what constitutes artifice transformed under the workings of the artificial itself. The end of technology, which is also the end of representation — we are living through the high wave of the latter now at the point where representation, so constitutive of the modern, begins to be eclipsed — is the beginning of the artificial proper, where what becomes central, as already suggested, is the resonance and attuning of artifice to subjects, worlds, and nature. Thinking the artificial in this sense is therefore that transitive appropriation of what-is as that-which-we-have-made, which overcomes the older splitting and brings us back to technology, not as a pseudo-mastery, which actually masters us, but as a dialogical and dialectical relationship of

mediation. On that basis destructiveness can be accepted and incorporated without illusion and without mastery.

7. **Ethics.** What obtains with respect to praxis is paralleled in terms of ethics. The replacement of law by the possible, and the primacy given to mediation and negotiation, transforms the ethical situation that obtains between possibility or the proposition and mediation. Simon's famous definition of design as the "devising of courses of acting to move from existing to preferred situations"[29] reminds us that the artifact is not the end of poietic activity, that its end lies in the situation and, even more precisely and essentially, in the humans who are the actors or subjects in that situation. Since situations are irredeemably bound to the human, then activities that engage actively with them — as design and politics do as essential moments of their acting, the situation as the very nexus of their work — are necessarily ethical, and in two senses.

First, because the situation is the very locus of ethics: "There is no need for an 'ethics' [in general] but only for a clear vision of the situation ….to be faithful to the situation means: to deal with the situation according to the rule of maximum possibility; to treat it right to the limit of the possible. Or, if you prefer, to draw from the situation, to the greatest possible extent, the affirmative humanity that it contains."[30]

Second, because the situation that necessarily has the human as its center calls for a concomitant responsibility by the subject. If the subject is always immediately or ultimately the subject of artifice — that to whom it is without exception addressed —

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then subjects must acknowledge, vis-à-vis the world, vis-à-vis others, vis-à-vis

generations to come, this radical anthropomorphism; they must take on board the

responsibility (costs, consequences) for being the necessary center of all situated activity.

The first of these two ethical transformations gives content, demand, to Simon's

"preferred situations" and, thus, to mediation in general. The second delineates the

radical responsibilities that the inescapably anthropomorphic subject must take on board

as the price paid for centrality. The onset of the artificial as world is the condition where

this responsibility can no longer be so easily sloughed off. A politics adequate to the

condition of the artificial as world begins here.

IV

Nothing that is said above exhausts the artificial. On the other side, if it scarcely justifies

the title. (We have no warrant to be cheerful in the face of disaster, but there is placed on

us a requirement to act to the best of our ability to avert disaster.) The orientation towards

intervention is affirmative in the sense that Alain Badiou beautifully caught when, in a

sharp critique of the modern, purely critical (passive) stance of philosophy, which he

aligns at one point to distance from the real, he argued that thought today — and that

means also practice today — must intervene into the paradoxical real. But if you

intervene, says Badiou, this act necessarily shifts you from criticality to affirmation:

"Why is it affirmation? Because if you intervene with respect to a paradoxical situation,

or if you intervene with regard to a relation that is not a relation, you will have to propose

a new framework of thought, and you will have to affirm that it is possible to think this

paradoxical situation, on condition, of course, that a certain number of parameters be abandoned, and a certain number of novelties introduced. And when all is said and done, the only proof for this is that you will propose a new way of thinking the paradox."[31]

The paradox of our time is that we have made that which we cannot yet think. The artificial, understood aright, is our possibility as well as the source of the dangers that beset us, though these lie, as we have seen, as much if not more in the attitudes we bring to the artificial rather than to any essence' of the artificial. Thinking the paradox of the artificial — in action, through the manner in which we remake the world — is turning the prosaic nihilism of our age towards a resonant affirmation of what is possible for our history beyond accumulation and catastrophe. Reasons to be cheerful? Not quite. Reasons for possibility? Certainly.

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[1] Roland Barthes in the essay "From Work to Text," in English in *Image/Music/Text*, translated Stephen Heath (Glasgow: Collins, 1971).

[2] *The End of History and the Last Man* (New York: Free Press, 1992). Fukayama was substantively wrong —'What we may be witnessing is not just the end of the Cold War, or the passing of a particular period of postwar history, but the end of history as such.... That is, the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government'—yet correct in that as the notion of progress except in quantitative economic and technological forms disappeared so to have real notions of the future. The end of history therefore means, the end of the future.

[3] I use the term "affirmative" in a particular sense that is the opposite in many ways of how Marcuse used it in in his 1937 essay 'Culture as Affirmation.' Marcuse was concerned to define the ways in which bourgeois culture more or less directly (and -critically) affirmed bourgeois society. After a long period in which "affirmation" in Marcuse's sense has been transmuted into varieties of what I name as prosaic nihilisms, it becomes possible to use the concept again in a critical manner. This is the mode in which it is used in this essay, i.e. as the counter to nihilism or resignation and in something of the sense that Adorno and Horkheimer intended when they wrote in the preface to *Dialectic of Enlightenment*, "today critical thought (which does abandon its commitment even in the face of progress) demands support for the residues of freedom, and for tendencies towards true humanism, even if these seem powerless in regard to the main course of history,' (London, Verso, 1979) p. ix-x. The term is used actively too in the sense too that Badiou deploys it in his lecture published as *Philosophy in the Present* (London: Verso, 2009). The latter is discussed in the body of the essay. See the concluding section to chapter One.

[4] Heidegger's savage post-war comment, 'even the immense suffering that surrounds the earth is unable to awaken transformation' applies today not only to the suffering of others but to the future suffering of ourselves. Not even this motivates our beginning to act otherwise.

[5] ' As the architect Peter Eisenman said of this period, today we live within 'a new sensibility born in the rupture of 1945. This sensibility was neither predicated in the tenets of modernism nor brought about by

their failure to achieve the utopias of the present. Rather, it emerged from something unforeseen to modernism, in the fact that not since the advent of modern science, technology and medicine has a generation faced, as it does today, the potential extinction of an entire civilization The Futility of Objects' *Harvard Architectural Review* 3, Winter 1984, p. 65.

[6] 'This week it is announced that the concentration of carbon dioxide in the atmosphere has passed 400 parts per million for the first time in 4.5m years. Since it is continuing to rise at a rate of about 2 parts per million every year this means that, on present course, it could be 800 parts per million by the end of the century. At that point talk of 'mitigating' the catastrophic risks of climate change would be moot.' Martin Wolf, *Financial Times*, 'We will watch the rise in greenhouse gases until it is too late to do anything about it' May 14th 2103 and "The Climate Change Skeptics Have Won," May 21st 2013.

[7] 'Arctic melt is 'economic time bomb' ' *Financial Times*, July 25 2013, p. 4. A recent report puts the economic cost of Arctic melt through higher methane emissions 'at up to $60tn.' 80 per cent of the damage will occur in the developing countries. This means, in effect, that the developing world will be left to itself. A safe prediction of this century is ethnocide on scales that will make the last (murderous) century appear relatively benign.

[8] It is entirely typical in this respect that the only concentrated international action in the last decade was the brief moments of dealing with the banking crisis in 2008.

[9] By the late 1930s Heidegger was already disinclined to see "technology" purely as such. 'This name includes all the areas of beings which equip the whole of beings: objectified nature, the business of culture, manufactured politics, and the gloss of ideals overlying everything. Thus "technology" does not signify here the separate areas of the production and equipment of machines.'[9] Martin Heidegger, "Overcoming Metaphysics" (Chicago: University Chicago Press, 1977) ibid. p.93

[10] Herbert Simon, in the late 1960s, understood it this way:. 'The world we live in today is much more a man-made, or artificial, world than it is a natural world. Almost every element in our environment shows evidence of human artifice. The temperature in which we spend most of our hours is kept artificially at 20 degrees Celsius; the humidity is added to or taken from the air we breathe; and the impurities we inhale are largely produced (and filtered) by man. Moreover for most of us—the white-collared ones—the significant part of the environment consists mostly of strings of artifacts called "symbols" that we receive through eyes and ears in the form of written and spoken language and that we pour out into the environment—as I am now doing—by mouth or hand. The laws that govern these strings of symbols, the laws that govern the occasions on which we emit and receive them, the determinants of their content are all consequences of our collective artifice. One may object that I exaggerate the artificiality of our world. Man must obey the law of gravity as surely as does a stone, and as a living organism man must depend for food, and in many other ways, on the world of biological phenomena. I shall plead guilty to overstatement, while protesting that the exaggeration is slight. To say that an astronaut, or even an airplane pilot, is obeying the law of gravity, hence is a perfectly natural phenomenon, is true, but its truth calls for some sophistication in what we mean by "obeying" a natural law. Aristotle did not think it natural for heavy things to rise or light ones to fall (Physics, Book IV); but presumably we have a deeper understanding of "natural" than he did. So too we must be careful about equating "biological" with "natural." A forest may be a phenomenon of nature; a farm certainly is not. The very species upon which we depend for our food—our corn and our cattle—are artifacts of our ingenuity. A plowed field is no more part of nature than an asphalted street—and no less. These examples set the terms of our problem, for those things we call artifacts are not apart from nature. They have no dispensation to ignore or violate natural law.' And Simon adds, in a point we need to consider deeply: At the same time they are adapted to human goals and purposes. They are what they are in order to satisfy our desire to fly or to eat well. As our aims change, so too do our artifacts—and vice versa.' Herbert Simon, *Sciences of the Artificial* (Cambridge: MIT press, 1996) p. 2-3

[11] In the same way, technology, which begins in the factory gradually moves ever closer to the subject (the home, consciousness, the body) to the point where today the distinction exists only artificially, for heuristic convenience, not by nature. Though we dislike acknowledging its implications, the human being is today fundamentally *made*.

[12] Which means also that we cannot think past that which historically determines how we act. A culture that prides itself on dissembling history is in fact in thrall to it: all the more so that it pretends to despise it.

[13] Simon, *Sciences*, ibid. p.131

[14] Simon, ibid. p.3

[15] In turn, do we now see the universe revealed as less determinate and law-like, more *radically* contingent than we imagined (in the sense that the configuration of the universe itself—and its laws—are not immune to the law of the configuration of all things; that they are not simply law determined but are the outcome of the contingent negotiation of forces).

[16] 'Culture was what made people willingly do what they must do (that was called 'ethos', Values' or 'standards' - cognitive or cathectic), or rendered their actions regular independently of their will (that was called 'learning' or 'acculturation')' Zygmunt Bauman in Z. Bauman and Keith Tester, *Conversations with Zygmunt Bauman*, (Cambridge: Polity, 2001) p. 31-32

[17] Ibid. p. 32. We can add an earlier formulation of the same concepts: 'Culture pushes at human experience in that it brings into relief the discord between ideal and real … it exposes the limitations and imperfections of reality … it conjoins and blends knowledge and interests … culture stands and falls on the assumption that accomplished reality is not the most authoritative much less is it the only object of interested knowledge. The unfinishedness, incompleteness, imperfectness of the real, its infirmity and frailty, undergirds the status of culture in the same way as the authority of the real buttresses science.' Zygmunt Bauman, *Culture as Praxis* (London: Routledge, 1982)

[18] Bauman, *Conversations*, ibid. p.32

[19] Simon, ibid. p.6

[20] If the artificial is a mediation between the "inner" environment of the artifact itself (its configuration) and the "outer" environments to which it refers and in relation to which (on behalf of which) it must act then, once we see these environments not in the singular and as matter of physical law (Simon) but in their existential, social and ecological pluralities then it is obvious that the relations between an any artifact or system (physical or political) and (i) human subjects in social relations; (ii) existing artifacts likewise in complex social, technical and economic relations (and operating within complex and irreducible systems of power; and (iii) natural laws and conditions, is *necessarily* a matter of complex negotiation between irreconcilable or incommensurable moments and demands

[21] This is Elaine Scarry's argument. See especially chapter 5 of Scarry, *The Body in Pain* (Oxford: OUP, 1985).

[22] Technology seeks to dissolve incommensurability or negotiation by thinking technologies on the basis of their putative operation in a law-determined, and (ideally) in socially and environmentally null (abstracted) world. Just so can one create systems of 'bounded rationality'—which are in many ways the pre-requisite for successful action. At extreme this allows for the technology to be determined, as far as possible, on the basis of single ideal representation—a mathematical equation that establishes performative certainty *before* it is configuratively codified.

[23] Nuclear technology is the obvious instance.

[24] The last place where such distinctions are still institutionalized are the universities whose litany of major subjects taught has barely altered over the last century.

[25] The designer Jamer Hunt offers some acute observations on this condition. Beginning by noting that Science historian and theorist Donna Haraway, exploring the dissolution of this boundary as far back as 1985, prophetically declared, 'Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed … our machines are disturbingly lively, and we ourselves frighteningly inert,' he continues: 'The designed, artificial world that envelops us is coming alive with communicative possibilities. There was a time when our tools of communication were distinct from our bodies: we spoke into a telephone wired into the walls of our home, or we hunted and pecked and clicked at a keyboard to type data into a personal computer. That era is vanishing as quickly as it arrived. Instead we are drifting into a new alignment, in both mind and body, with technology that is far more immersive, encompassing, and confounding. Surrounded by synthetic voices that talk to us and near-invisible sensors that observe and learn us, we are entering an age of uncanny technologies. These animated electronic encounters sketch the contours of an evolving land-scape, illuminating the psychological and political implications of our warm, wet embrace of technology. We believe we are deft at negotiating the thinning boundary between human and machine, but in the thrumming traffic we are often left grasping at electronic shadows. Jamer Hunt, "Nervous Systems and Anxious Infrastructures,' in Paola Antonelli, (ed.), *Talk to Me* (New York: MOMA, 2011) p.48

[26] (New York: Penguin, 2010) p. 270

[27] The continuing, even increasing, relevance of Simon's *The Sciences of the Artificial* is that his interests in on programming and psychology lead him early to this understanding, hence his emphasis on the

artificiality of (for example) economic rationality, the logic of thought processes, procedures of memory and learning.

[28] A quotation from Philip Rawson may suffice. 'To their makers and users pots have always been a kind of two-way revelation, first of man to himself as a creative and independently working agent, and second of the world to man as a medium, imbued with 'reality', which he is able to transform.' *Ceramics* (Oxford: OUP, 1971, 8). In other words, artifice is the realm of revealing to humans the character of themselves as acting-agents and of the world as that which is capable of transformation and adaptation.

[29] Simon, ibid. p. 111

[30] Alain Badiou, *Ethics* (London: Verso, 2001) p. 15. Adapted quotation.

[31] Alain Badiou, *Philosophy in the Present* (London: Verso, 2009) p. 81