

## **Engaging Complexity in Business and Technology: Rethinking old Ideas Humanistically and Ecologically**

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### **Abstract**

*Even after more than two centuries, classical economic thought--and its neo-classical derivatives--continue to influence ways of doing business. Many of those ideas, albeit timely and innovative when first conceived, have degraded over the years, and now have significant perverse human and ecological consequences. A number of ideas that underpin contemporary business enterprises make sense on some level, yet become toxic when taken to extremes. Most notably, these include: the emphasis on economies of scale, hyperspecialization, the "law" of comparative advantage, the reification of the "invisible hand" of the market, and the tendency to externalize latent aspects of the production process. In a related vein, technological innovations, many of which do contribute to society, often have unanticipated consequences with particular regard to human well-being and the natural environment. We examine these interrelated strains of modernity through a humanistic lens, and conclude with ideas about how a balance among business interests, technological innovation, and humanistic concerns can facilitate cultural integration on the human level, and lead to a more mature and sustainable relationship between human society and the natural environment.*

**Key Words:** mismatches of modernity; perversities of scale; entropy of ideas; critique of economics

### **Introduction**

Particularly since the advent of industrial economies that have evolved over the 19<sup>th</sup> and 20<sup>th</sup> Centuries, the world has undergone tremendous growth in population, urbanization, literacy, education, secularization, industrialization, complexity in the division of labor, technological innovation, and an increasing interconnectedness of global exchange networks. Taken together, these and related processes comprise what we might call modernity, which involves complexification on a number of levels, particularly of that connected with an elaborate division of labor and an increasing differentiation in society. These are manifested in terms of the numbers of roles available, of levels and gradations of inequality, and of a rise in individualism (for a sociological overview of these processes see Durkheim 1893/1964; Durkheim and Mauss 1902/1961).

In a related vein, social scientists and historians have referred to the phenomenon many have called The Enlightenment—a corresponding intellectual and cultural movement that helped to usher in modernity. This focus emphasizes certain aspects of the broader modernization processes, such as literacy, the rise of ‘democratic’ systems, freedom of religion, and a rise of a faith in science to understand and address human problems.

Modernity comes with a number of tradeoffs which, if not balanced, lead to serious social and environmental problems. In the heady days of the Enlightenment, when people saw themselves being freed from the authority of religious traditions, there was, for many, an almost unbounded hope that science and technology would push the natural limits and solve problems of society. This hope has been fulfilled to a degree, albeit not without tradeoffs, some of which have upset the natural balance of the world’s ecosystems.

While the promise offered by industrialization has exceeded even the wildest dreams of the early pioneers of modern business and technology, the humanism of the Enlightenment project has struggled to keep apace. In the words of Garrett Hardin (1968, 1998), technology creates problems it cannot solve. The Humanism needed to make sense of the technology and global business of the Third Millennium offers promise, and yet we face problems for which there are no, or inadequate moral and cultural codes to understand, much less to manage.

### **Mismatches of Modernity**

The world abounds with examples of mismatches between what business and technology have been able to arrogate, and what the culture is able to assimilate, much less accommodate. What, for example, are we to make of the Octomom phenomenon, of Global environmental change, of the existence of bombs that can destroy all the humans in the world while allowing cockroaches to survive?

Ways in which societies have addressed constraints from prior eras have at times led to problems bigger than the original ones they had been designed to address. If anything, with intensification and widening scale, this trend has increased over time.

Consider for example that the internal combustion automobile was thought to be a solution, not only to limits in transportation, but to urban pollution problems as well. In the sense that much of the urban pollution came from horse manure and other by-products in the city streets, then the automobile did in fact give some relief. But as we now know, automobiles created other difficulties, such as petroleum based pollution and greenhouse gas emissions.

This is not to argue against any sort of progress. Rather, it is a counsel to take that progress judiciously, looking closely at the tradeoffs of a given social or technological change. It is important to follow up with addressing the inevitable problems that do occur, in a spirit of good faith.

### **The Entropy of Ideas in General, and of Neo-Classical Economic Ideas in Particular**

Even as ideas develop and are refined through intellectual effort and research, their popular understanding may degrade. Entropy is an important metaphor for what happens in the diffusion of ideas. The point of this essay is not so much to critique the ideas of classical economists per se, as to re-examine how they have come to serve as a default way of doing business around the globe (see Lux 1990; Stiglitz 2003). Ideas from a crude, dumbed-down version of 18<sup>th</sup> Century economics has come to dominate much of mainstream thinking here in the 21<sup>st</sup> Century.

A number of ideas from economics make sense on some level, yet when taken to extremes, become toxic. Some of these most notably include: the emphasis on economies of scale; hyperspecialization; the law of comparative advantage; the reification of the “invisible hand” of the market; the tendency to externalize latent aspects of the production process; and the assumption of a world populated with rational actors with access to large amounts of undistorted information that they understand and act upon deliberately.

### **Scale Problems as Exemplar**

The principle of economies of scale holds that with increasingly large scales of production, the efficiency of the overall operation goes up, thereby yielding more output for a given amount of effort. Yet it is the case in social systems, of which the economy is a part, that increases in size eventually lead to qualitative changes as well.

Social sciences in general, and particularly economics, tend to ignore tipping points, beyond which adding another increment leads to some reorganization of the system itself. In any system, there typically are interactions, thresholds, indirect effects, and other non-linearities (Prigogine and Stengers 1984; Burns and LeMoyne 2003a).

In many business systems, there is a bias toward large scale, manifesting in large projects and investments at the expense of smaller and more ecologically sustainable ones. This also includes a bias toward unsustainable agricultural practices such as monocropping, large concentrated agricultural feeding operations (CAFOs) at the expense of small and ecologically integrated farming.

When considering concentrations of wealth and poverty, immiseration and risk, that accompany doing economic operations on a global scale, serious questions cry to be addressed. Rather than taking it as a truism that larger is better, perhaps a more useful approach would be to ask what is done optimally at what scale? For whom and for what is it optimal?

As Max Weber (1921/1978) pointed out in *Economy and Society*, in large scale formally rational systems, efficiency of the system itself (many aspects of which may indeed be measurable in terms of money) tends to trump the needs of the people subject to it. To that, we would add that it also trumps environmental concerns through monetarizing non-monetary values (e.g. fresh air, clean water) or by ignoring (“externalizing”) them completely.

### **Cultural Diffusion**

Cultural diffusion occurs on a number of levels, from the nation-state to the individual. It is often mediated and facilitated by the institutions, not just within a society but across boundaries as well.

Of course, some institutions, particularly in modern society tend to be more influential than others. The world business economy is, in many instances, a lead institution. That is to say that once the economy engages in a practice it tends to diffuse to other areas and to other institutions, each with their own culture. Much of the institutional culture of the world business economy has diffused from the routinized practices and customs of laissez-faire economics that originated in Britain, particularly with Adam Smith and his followers (for extended discussion, see Lux 1990).

Ideas have consequences, particularly when they form people’s world views (Weaver 1984; Worster 1994). One of the by-products of British and, particularly, U.S. hegemony, is the wholesale teaching and internalization of a particular circumscribed set of Adam Smith’s ideas (Lux 1990). These include a faith in reifications such as an ‘invisible hand,’ a belief in the efficacy of scale, and an almost magical belief in the ability to externalize environmental costs, virtually without limit. Modern day apologists (e.g. Julian Simon 1983) for these ideas or their close variants are often accepted without question, particularly since they coincide with the formal academic training of many economists and business school graduates, as well as with the narrow self-interests of environmental free riders.

### **Perversities of Comparative Advantage**

When individual workers are highly specialized in just a small and focused part of a larger project, and those tasks are coordinated, the overall productivity will far outstrip a simple aggregate of each individual making the overall product. Again, taken at face value and within circumscribed ranges, this gives the appearance of an obvious truth—the very sort business school students dutifully put in their notes and memorize for the test, but rarely examine critically.

By extension, people specializing at what they could do efficiently and leaving the other tasks to others who could do their respective tasks more efficiently would redound in efficiency for the overall system. David Ricardo (1817) moved the focus of Smith’s absolute advantage theory to what became more popularly accepted in mainstream economics--the principle of comparative advantage. It soon became known as the law of comparative advantage.

Ricardo’s law was repopularized in the 20<sup>th</sup> Century by Paul Samuelson (1947/2011) who, when challenged to name a single principle of economics that was both non-trivial and true, argued that the law of comparative advantage fit both criteria. But is it true and, if so, under what conditions? More importantly, even if it is “true” is it true in such a way that it could or should trump other considerations, most notably human well-being and ecological sustainability?

Samuelson (1947/2011) himself, for example, attempted to synthesize a number of important ideas from within (particularly the ideas in the tradition of J.M. Keynes) and without (most importantly, thermodynamics) economics with the dominant neo-classical model. Yet if we were to engage a humanistic, or perhaps a sociological, analysis, we would need to consider the trajectory of such ideas in the common consciousness.

Epistemological considerations about the trajectory of ideas, and particularly their degradation (“dumbing down”) are critical (Burns 1999). This is acutely the case when the degraded ideas of a discipline have such a hold on the common consciousness.

### **The Viciousness of a Once Timely Idea now out of Balance**

“They left the busy scene and went into an obscure part of town, where Scrooge had never penetrated before...the ways were foul and narrow, the shops and houses wretched, the people half naked, drunken, slipshod, ugly. Alleys and archways, like so many cesspools, disgorged their offenses of smell, and dirt, and life, upon the straggling streets; and the whole quarter reeked with crime, with filth and misery.”

Charles Dickens, from *A Christmas Carol* (1843/1962: 94)

Taken at face value, these interrelated economic principles—economies of scale, hyperspecialization, and the law of comparative advantage—sound quite reasonable. With the *Wealth of Nations* appearing in 1776 in the early stages of the industrial revolution, these became guiding principles of the workhouses of urban England.

The excesses of what this wrought in the early Industrial Revolution served as much of the fodder for novels by Charles Dickens and were critiqued by social theorists such as Marx and Engels (Stearns and Burns 2011). Yet by the early 20<sup>th</sup> Century, these principles had gained enough momentum, particularly in the eyes of those with access to capital and the concomitant political power to bolster it, to base entire systems of production on them.

Frederick Winslow Taylor designed what was arguably the first modern assembly line for Ford in order to produce the Model T. Taylor refined the ideas of Smith and Ricardo to devise a system he termed Scientific Management (for extended discussion and thoroughgoing critique, see Braverman 1974). The guiding principle was to take a highly complex operation such as building an internal combustion automobile, and to break it down into literally hundreds of component aspects. Ironically, although it was critiqued by V.I. Lenin, many of Taylor’s ideas were incorporated into the Soviet style of productivity that grew in uneasy juxtaposition to the capitalism of the West.

### **Revisiting Old Ideas to Restore Human Balance**

The invisible hand of the market, as adumbrated by Adam Smith is still taken as a truism by many people. This holds that there is a wisdom within markets that guide prices to conform to an equilibrium between supply and demand. If there are shortages of a needed resource, the market, it is assumed, will adapt to increase the price which in turn will decrease demand for that resource and encourage people to find other ways to address their need or desire.

Although he articulated the idea nearly 240 years ago, there is a faith that Adam Smith’s invisible hand of the market will redound to the common good. If that ever was true (and we are not necessarily suggesting that it was), it most certainly needs extensive qualification. Without that, the invisible hand becomes a truism, an article of faith no more or less bona fide, for example, than the old belief in “phlogiston” in alchemy.

With the invisible hand, questions about time and scale would need to be examined closely. How long, for example, does the invisible hand take to operate? When does it and when does it not operate? How tight or loose is the feedback loop? If it works in the smaller scale, does it also work in truly global dimensions that far outstrip even the scale of what the forward thinking Smith could have imagined.

Even if it did work with total “efficiency”, precisely as it should in the textbooks, so what? At best, it privileges the variable of market price over other aspects of life and the human condition, most notably health and the natural environment.

It may be, for example, that the price of wood does indeed go up with deforestation. But again, we ask so what? Higher prices do not get the wood back. In fact, it could set off a perversity in the market to actually increase cutting; as wood cutters and shrewd arbitrageurs see rising prices, the incentive to cut goes up. That is precisely the sort of scenario that has led to depletion of certain fish stocks. As overfishing led to shortages, prices rose—particularly in luxury markets. The rise in price drew people to fish for endangered species more, exacerbating the problem of overfishing even further (see, for example, Schnaiberg and Gould 2000).

If the invisible hand works efficiently within certain ranges, it tends not to work nearly as well at the margins. Schnaiberg and Gould (2000), for example, discusses the perverse effects of luxury goods markets, particularly when there are huge concentrations of capital in a few hands. What is “rational” for the rich may in fact be irrational for someone with more limited resources, and vice versa. What logic does the market then follow?

## **Time Frames and Feedback Loops**

Shortages, of course, are of central concern with the natural environment, and they are relevant here as well. In fact, economics tends to reduce shortages to an economic problem—one of supply. Yet that is a limited way of looking at shortages. More profoundly, shortages may come to compromise the well-being of the planet and its ecosystems, threatening the health or even lives of those dependent upon it. When they do, it will be on their own time trajectories, which may or may not be amenable to the time it takes the market's invisible hand to awaken.

While the idea of the invisible hand guiding the market, particularly to encourage ingenuity when it is needed to solve problems of shortages, has been around since the time of Adam Smith, it has most recently been championed by influential economists (e.g. Julian Simon 1983), and has become particularly so with neo-conservative think tanks and talk show hosts.

Here, the common way of thinking leads us astray. Certainly if one resource is depleted, the invisible hand of the market will see to it that another resource is substituted. But even if that is true, it is myopic at best. The fathers and grandfathers of many of the current day pirates off the Somali coast were themselves fishermen. As the fish stocks became increasingly depleted, the prices rose temporarily, until they became so depleted that the region could no longer sustain that level of fishing. People then went into a different "resource" of pirating. The market can be said to have "adapted," but surely even the most ardent of true believers could see the perversity of this.

In what time frame does the invisible hand work? It may well be that shortages do indeed encourage ingenuity because, after all, as the folk wisdom dictates "necessity is the mother of invention." But particularly in a time when technology and population pressures are creating problems and shortages at a rapid pace, can the pace of ingenuity keep up? Further, new inventions have their unintended and unforeseen consequences as well, which in turn will require a need for a focus of attention and resources.

Yet shortages do not occur in a vacuum. Some inventions really do take time to develop and to get right. Particularly in cases of something deeply embedded in the culture (such as gasoline and the cars dependent upon it to function), precipitous shortages can cause serious social dislocation and chaos (for further discussion, see Homer-Dixon 2001).

## **Hard and Soft Limits to Growth**

To be sure, there is a place to consider the law of supply and demand—but with what limit? Even if it is true that the market is subject to the laws of supply and demand, the ethical question arises as to whether it makes sense to let things go until the harsh reality of undersupply with inelastic demand has brought misery to humanity. What creates supply and demand? Much of demand is created through advertising or, more accurately, facilitated through advertising (e.g. Green et al. 1991).

Here it is worthwhile to consider the differences between soft, voluntary limits and hard limits. Using a resource until the bitter end represents a hard limit. Let us consider the example of using gasoline in the internal combustion engine. Continuing to rely on fossil fuels to the exclusion of alternatives speeds that fateful day, of course, but what happens in the mean time?

Given that oil is a limited, non-renewable resource, the depletion of oil makes a scarce resource scarcer with use. This tends to price low end users out of the market. In a truly free market, there typically are only hard limits. A cross-cutting entity (e.g. government regulators) can do nothing and wait for the hard limit to kick in, or can spread out the effect by putting, for example, a heavy tax on usage.

Any resource is distributed unequally, and that inequality gets more severe and more complex with greater shortage. The entire social system works differently under conditions of shortage than under plenitude. Much of dystopian literature and film focuses on the social distortions accruing in response to shortages.

One way a society can handle shortages is to wait until the last minute and deal with undersupply and hyperdemand. Economists such as Julian Simon assert (perhaps even correctly, at least in part) that societies will switch to alternative resources. But at what cost? Even if the law of supply and demand proves to be true, it still behooves a society to consider how to lighten the blow.

The time and trajectory of change are crucial social variables that tend to be ignored in the glib fatalism of belief in the invisible hand.

A gradual change allows people to adapt, perhaps even gracefully. A quick change is typically catastrophic (for an extended discussion, particularly in the post-Soviet case, see Stiglitz 2003). Perhaps a fitting analogy is stopping a runaway truck. Gradually applying the brakes or crashing into a wall will both stop it—but why willingly choose crashing into the wall?

### **Notes on Sustainability and Equity**

Every time a resource is used, it impacts others. Particularly with globalization, there is the increased ability for resource transfer between places. This process is characterized in the literature in terms of unequal ecological exchange, the ecological footprint, and metabolic rift (for reviews, see Jorgenson 2003, 2004; Jorgenson and Burns 2007).

Processes of resource transfer are guided by norms. While those norms may not be explicitly stated, people ignore them at their peril. The norm of the ‘free’ marketplace is no small part of the default, although a truly free market may be neither common nor desirable. Ideally, a normative system is most rich, nuanced and robust when tempered by humanistic concerns.

Joseph Stiglitz (2003) in *Globalization and Its Discontents* discusses how the global normal default becomes the neo-classical model, overlaid with a particular variant of ‘free trade’ as promulgated by institutions such as the International Monetary Fund and the World Bank. It is not so much a conspiracy, as a set of assumptions that make sense in some limited contexts of time and place that when making attempts to universalize them, often have catastrophic consequences.

### **Perverse Consequences of Science Technology in an Age of Globalization**

“One of the most highly developed skills in contemporary Western civilization is dissection: the split-up of problems into their smallest possible components. We are good at it. So good, we often forget to put the pieces back together again...

“This skill is perhaps the most finely honed in science. There we not only routinely break problems down into bite-sized chunks and mini-chunks, we then very often isolate each one from its environment by means of a useful trick. We say *ceteris paribus*—all things being equal. In this way we can ignore the complex interaction between our problem and the rest of the universe.”

Alvin Toffler, Foreword, *Order Out of Chaos* by  
Ilya Prigogine and Isabelle Stengers

Technology is subject to socio-entropic processes as well, although they sometimes manifest in different ways. The serious ecological consequences of these artifacts—not of the scientific method itself, but of the *de facto* way the method has come to be used—are experienced later, when the science is cast into technology. This is due to several factors. In ignoring related but externalized aspects of the ecological system of which the process under scrutiny is part, there is an increase in entropy in the overall system proportional to the negentropy (or degree of technological innovation) in that circumscribed part.

This creates imbalances in the system. In some smaller cases particularly, the fallout may still be something the natural ecosystem can process. Yet much of technology tends to be organized around routinized large scales of production and consumption, and so small systemic eccentricities, or imbalances, tend to be magnified. This combination of entropy in parts of the system, multiplied by large scale production, leads to potentially catastrophic consequences. This then is the crux of why “technology” is such a potential problem in the contemporary era of global scales of production and consumption.

### **Externalities of the Scientific and Technological Method are Analogous to Those in Business**

The scientific method, as it subserves technology and business interests, is in some ways analogous to, and in other ways quite distinct from, the economic method (as practiced in orthodox business schools and economics departments throughout much of the world, and particularly in the United States) (McCloskey 1998).

The science of narrowly business-driven technology tends to focus on circumscribed aspects of reality and in so doing largely to ignore others.

In its focus on some circumscribed aspect of an overall system, science and the technology stemming from it, is able to bring a greater level of control over what is under its microscope. Yet imposing order on some aspect of a system often imposes entropy on other parts of the system (Prigogine and Stengers 1984). Typically, the most profoundly affected parts are those most closely connected ecologically with the part under study and manipulation, and yet defined out of the system for purposes of scientific investigation and technological development.

The problem with the culture of business and its relationship with technology, particularly in late modern times, is not so much a hostility to the natural environment (although there is plenty of that to go around), nearly so much as the tendency to treat the environment as an externality. Put another way, there is a general tendency to view the natural environment as if it is limitless, when in fact it is not.

A culture having enframed the use of plastic throwaways may fail to fully consider, for example, that virtually every bit of plastic ever manufactured is still in existence. Some of it may have been recycled, of course, but it does not biodegrade in any time frame that is workable (Freinkel 2011). If, for example, plastic had been manufactured at the dawn of the Neolithic era, it still now, millennia later, would not have moved substantially toward returning to the natural state of its constituents.

### **Humanities as Ways of Integrating the Human Experience and Moving toward Sustainability**

“[No] civilization can be called complete until it has progressed from sophistication to unsophistication, and made a conscious return to simplicity of thinking and living.”

Lin Yutang, from *The Art of Living*

By sustainability, we mean the balance between people using resources in the present in such a way as not to compromise the ability for others to use them in the future. In a sense, to act sustainably is to act equitably toward those in the future. Technology in the Third Millennium will in no small part be charged with unwinding many of the problems its imbalances have had a hand in creating, particularly over the course of the most recent centuries.

Business and Technology have been intimately intertwined with the takeoff since the industrial societies, and even more so at the dawn of the Third Millennium. And yet the rest of the culture follows along in various states of disarray, as it struggles to catch up.

To understand and engage the problems of modernity, calls for stepping out of the treadmill of business and technology long enough, at least on occasion, in order to examine them critically. The humanities offer such a vantage point, as do many of the spiritual practices of prior times, such as meditation and reflection.

By humanities, we mean, in broad terms, ways of understanding and coming to human terms, and integrating fully into the human experience, all aspects of existence. Technology and business are arguably leading aspects of human culture. Yet we struggle to make sense of many of those innovations and practices.

The respective humanities represent approaches to beholding and bringing meaning to the human experience. They include, but are not limited to, philosophy, music, art, history, religion and literature.

Various art forms evolve in attempts to make sense of experience. The Novelist, Milan Kundera (2003)--perhaps best known for his book *The Unbearable Lightness of Being*--makes a case that the advent and evolution of the novel form is itself a way of struggling with modernity. Just as humankind became mechanized, materialized, there was a concomitant need to plumb the depths of consciousness. The American novelist, Flannery O'Connor (1961), develops a number of related ideas in her essay on *The Nature and Aim of Fiction*.

While the modern discipline of psychology was one such approach, the novel form, in the hands of writers like Dostoevsky, Dickens, Woolf and James was a non-scientific, humanistic way of doing so. As such, while the insights of psychology and the novel (and by extension, the humanities) may converge at times, they are distinctly different approaches to beholding and making sense of the human condition.

## ***Conclusions***

Although a major burden has been placed on resources particularly in the industrial age, the cultural awareness and sense of what to do about it in many ways have not caught up. Major swaths of human culture have been founded upon a bedrock of individuals and social collectives acting as though resources are unlimited. For decades, if not centuries, that was close enough to the experience of many, that it came to be true by definition. Combine that ‘truth’ with a tendency to seek for universals (perhaps imposing them, even if unwittingly, in the absence of their actual discovery), and we get something akin to what we do have, for example, in many parts of American culture (e.g. Nash 2001; Cronon 1992; Hietala 2003).

This serves to point out some key principles and to consider how the system is likely, or perhaps even bound, to fail. Quantitative differences eventually reach a tipping point, and when they do, the system may move toward collapse. Yet the social and political systems relying on it may not adapt in a way to keep pace. Rather, they may be embedded in a system of values based on a time or set of conditions that no longer exist.

Ideas in general tend to get dumbed down and packaged. These sorts of processes can sometimes distort the original idea into something close to its opposite. A distillation of the parts of economic and social theory that catches people at their worst and makes virtues out of selfishness and alienation seem to have worked their way onto the national and world stage through, inter alia, a culture of narcissism (e.g. Lasch 1991). The tragedy of the commons oozes from the cracks in the invisible hand.

As a rule of thumb, failure to reflect and engage on problems in any realm, particularly in the spheres of business and technology, stresses the system toward a tipping point. Tipping points typically can only be seen retrospectively—they are not necessarily discernible, even very shortly before they happen. Once that threshold has been passed, however, there is a gestalt switch, after which the problems become significantly more acute to the point of qualitative change, and in more pressing circumstances.

By ignoring a problem, we squander the luxury of addressing it before it has passed a tipping point. This is a recursive process, in which ignoring incipient problems pushes the system toward a more profound level of problems and in turn tipping it toward catastrophic change.

The human fascination with the dystopian, post-apocalyptic imagination is perhaps an attempt to make sense of this phenomenon. We can see this reflected in literature and film, in works such as *Fight Club* and *The Hunger Games*.

The extensions of assumptions beyond empirical ranges almost invariably fall short of engaging an overall ecology. An imbalance has occurred from the overuse of some aspects of science relative to others. We have come to a point where science and technology, and perhaps even the considerable aspects of civilization stemming from them, are laden with patterns of convergent/analytic thought that are no longer held in balance by a vibrancy of holistic/synthetic thought (Schumacher 1975).

Paradigms guiding the juggernaut of business and technology would do well to incorporate explicitly a humanism tempered with humility about the outcomes, including the latent consequences, of their enterprise. Where, for example, do certain business practices and technological processes stand within the scope of history and the trajectory of life? It is important, crucial really, that cultures inquire of the businesses and technologies they inspire and demand, to incorporate humanistic ideas into their thinking—in essence to embrace a new level of complexity that attempts to fit the pieces back into a coherent whole.



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