

Balancing Sustainable Development:

Philosophy of Technology and Aesthetic Evaluation

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2009

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The modern environmental crisis threatens not only the ecological systems that support human and non-human life on this planet, but also human understanding of itself and its place in the world. Environmental destruction is self-destruction. The imperative to reverse this destruction is therefore not mere altruism or responsibility, but self-preservation. The modern degradation of the environment and human life is the result of overly quantitative thinking manifested in the proliferation of distracting technological devices and a system of decision-making that is overly reliant on economic science. The devices and the economic system are both the result of unbalanced thinking and also perpetrators of it. The hope for rehabilitation of our consciousness and behavior lies in mindful employment of technology and social systems. It is crucial that we become aware that we are engaged daily in the process of transforming the world to reflect the creative potential of humankind in our particular context in that world. A fundamental reform of consciousness and behavior is required to ensure that the environment reflects our full creative potential rather than only our destructive potential. By making this choice, we are also preserving our freedom to do so.

The modern discourse of sustainable development proposes reform of human systems to prevent transgression of resource limitations, but fails to get to the heart of the issue of environmental destruction. It does not explicitly name the metaphysical source of the contradiction that allows human societies to claim to value their environment while simultaneously destroying it. It does not identify the structural distraction that allows us to persist in destruction while under the illusion that we are being productive. If sustainable development aims to be a process by which we may reform this destructive relationship with our environment, then it must include aesthetic as well as technological considerations. Without this balance, sustainable development cannot provide a solution to the modern crisis that is ecological, economic, and metaphysical.

The most quoted text, and *de facto* founding document of the concept of sustainable development is a report published in 1987 by the World Commission on Environment and Development (WCED) entitled *Our Common Future*. Commonly referred to as the “Brundtland Report,” this document acknowledges and emphasizes the destruction that human activity has inflicted on natural systems. It also recognizes that many of humanity’s “broad areas of concern” are intimately inter-related: “These are not separate crises: an environmental crisis, a development crisis, an energy crisis. They are all one.”<sup>1</sup> I agree with this assessment and I commend the WCED for boldly naming this crisis before the destruction was as evident as it is today. However, the accelerating pace of environmental destruction since 1987 demonstrates to me that there are more fundamental issues of consciousness at the root of the problem than the Brundtland report was able to identify. Without explicit reference to the mind-frame that perpetuates and motivates our destructive behavior, it is impossible to understand how fundamental our reform must be. This paper is an attempt to articulate the unbalanced consciousness that I see to be the essential cause of the environmental crisis.

The first section, “Sustainable Development,” introduces the founding principles of sustainable development and some of the concepts that are generally associated with that ideology. The next section, “Environment as Technology,” explains how the proliferation of modern technology has engulfed the natural world, replacing the biosphere with a technosphere. This recent event compels us to reconsider our relationship with our environment as one that is created and designed rather than granted. The section entitled “Distraction” uses Albert Borgmann’s device paradigm to describe a mechanism of the modern technological world that enables us to unintentionally destructive of our environment. “Instrumentalism and Determinism” introduces common misconceptions about technology that contribute to its misuse. “Danger” explores Martin Heidegger’s fear of “the supreme

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<sup>1</sup> Brundtland, et al. *Our Common Future*, 4.

danger” inherent in modern technology that demands careful attention for our own sake, beyond mere concern and responsibility for the planet. “Alternative” introduces an “aesthetic cosmology,” exemplified by the Chinese Daoist tradition. This alternative way of evaluation is presented as a sample of that which may be obscured by the “rational ordering” that tends to dominate decision-making discourse in the modern world. “Contestation” and “Salvatory Potential” discuss a contemporary philosopher of technology’s critique of Heidegger’s analysis of the danger of technology and saving power of poetic dwelling. Finally, “Balanced Thinking” presents a brief proposal for a more appropriate way to evaluate and achieve techno-economic development that is not only sustainable but also better aligned with human interests.

### **Sustainable Development**

Within the scope of “sustainable development,” *Our Common Future* identifies two key concepts: *needs* and *limitations*. The environment is perceived as having an exhaustible quantity of natural resources that humans rely on. These materials must not be exhausted, and so restraint is urged. This imperative leads the report to officially define sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>2</sup> In response to this broad goal, efficiency and substitution are posited as primary ideals of sustainable development. By using fewer materials to meet more needs, we leave more for the future. By substituting renewable resources for non-renewables, we attain sustainability. Under ideal market conditions, production and distribution efficiency is optimized and technical ingenuity allows us to find substitutes for scarce resources in order to meet demand. Efficiency and substitution are the specialties

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<sup>2</sup> Brundtland, et al. 43.

of economists and engineers, and they are who we look to for evaluation of and progress towards sustainable development.

I agree that needs and limitations are important considerations of immediate relevance, and economists and engineers are needed to solve these problems. I agree that the economic and technological development is the best way to distribute resources and overcome limitations to meet basic needs. Economists and engineers step far beyond their bounds, however, when they claim that sustainable development is the path “that sustains human progress not just in a few places for a few years, but for the entire planet into the distant future.”<sup>3</sup> There is a great danger in conflating human progress with techno-economic development. “Human progress has always depended on technical ingenuity and a capacity for cooperative action.”<sup>4</sup> The problem with this idea is that the main concern of sustainable development is not to improve or preserve the environment that we inhabit, but to sustain techno-economic growth as an end in itself. Human well-being is a secondary by-product of our productivity.

In “Sustainable Development as a Contested Concept,” Michael Jacobs compares the term *sustainable development* to other political terms such as *democracy* and *social justice* as a contestable concept that may be debated at a secondary, political-implementation level, but maintains first-level core principles that are more or less unanimously accepted. Jacobs introduces sustainable development as a relatively novel ideology that is critical of the current development trajectory and serves to re-orient our societal goals. He outlines six core principles of sustainable development, which he draws from the Brundtland Report, *Caring for the Earth*, and *Agenda 21*<sup>5</sup>. They are: environment-economy integration, futurity, environmental protection, equity, quality of life, and participation. Jacobs’ argument is that modern political discourse accepts these principles as first-order priorities under the

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<sup>3</sup> Brundtland, et al. 4.

<sup>4</sup> Brundtland, et al. 37.

<sup>5</sup> See bibliography for full citation

umbrella term sustainable development, and political debate concerns the second-order interpretation of how they should be implemented.<sup>6</sup>

I object to Jacobs' understanding of sustainable development as a first-order, universal objective on two grounds. First, it takes for granted that economic development is a universal good more or less synonymous with "human progress," and implies the associated values of growth, production and consumption. He neglects the possibility that it is the idea of "human progress" that is relatively novel, while "sustainability" has been the objective of pre-modern societies for centuries. Second, although this interpretation includes a value of "environmental protection," it makes no mention of nature or wilderness, thereby leaving the term "environment" open to include the technological environment. By this calculus, as long as human needs are met and limitations are overcome, it makes no difference how these services are provided. In fact, technology is privileged over nature in this mode of evaluation because it is more efficient and capable of substitution and renewal. The technological environment is more "sustainable" than nature because it provides more consistent service.

### **Environment as Technology**

In the provocatively titled book *The End of Nature*, Bill McKibben argues that the biosphere has already been swallowed by the technosphere. Prior to the Twentieth Century, the world was predominantly composed of undisturbed nature, and humans used technology to design insular spaces of comfort. Humans and all life-forms were sustained by a natural environment that needed no assistance or design to function effectively. In the last century, however, the world has become a world-by-design, and even the remaining "natural" spaces are technological by virtue of their being intentionally preserved and designed (i.e. national parks). The global scale of the conversion from

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<sup>6</sup> Jacobs, "Sustainable Development as a Contested Concept," 26.

biosphere to technosphere is made complete by the engineering of the climate. Anthropogenic climate change is a global problem that requires a technological solution. Now that we must design the global climate to be suitable for human life, no niche of the global ecosystem can be said to be untouched by technological design.<sup>7</sup>

McKibben sees the “End of Nature” as a great tragedy, and perhaps it is. I consider it a necessary development in order to sustain the current human population in comfort. I see no way to restore the global system to a biosphere, short of massive human population declines and control. Bypassing nostalgia for a lost Eden, I would like to emphasize the implications of the realization of its loss. Now that we live in a world-by-design, we are compelled to design it to be the best world that we can create. There is no longer any remaining purely natural space, devoid of human design, to which we may expand if we are unsatisfied with the way our world is developing. There is a growing consensus, for example, that we must design the climate so that the average global temperature does not increase more than a few degrees above current levels. This is considered by the scientific community to be a necessity for survival.<sup>8</sup> This is a good task for scientists such as economists, engineers, and ecologists, because it concerns needs and limitations and represents a clear objective for humanity.

Design is not a merely technical task, however. It is equally aesthetic and technical. Good design includes consideration of beauty and purpose as well as structural stability. Design of the global environment should not be left to economists and engineers. World-building is also self-building, and I refuse to delegate that important task entirely to scientists. Aidan Davison eloquently articulates the stakes at hand in an article titled “Rapt in Technology”:

This is the essence of the dynamic of technology-as-environment: things and thinking, materiality and consciousness are in each and every moment and place the product of

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<sup>7</sup> McKibben, *The End of Nature*.

<sup>8</sup> 4<sup>th</sup> IPCC report, 2001.

the other. Their relationality is the precondition of agency. Technology-as-environment names nothing less than the generative reciprocity of self and world. It names the human capacity to respond to particular conditions in time and space – social, ecological and cosmological – so as to transform them, projecting forward in time and space particular *meanings* and *purposes* that reconstitute in unpredictable ways the concrete conditions in which, by equally indeterminable processes, new needs and purposes are born.<sup>9</sup>

These “meanings and purposes” that Davison refers to are outside of the domain of science. Science is not capable of grasping meaning or purpose, except in the sense of cause and effect. When we think about the kind of meaning and purpose that Davison refers to, we are doing ontological and ethical philosophy. We are no longer asking questions that begin with “How...?” but with “Why...?” Scientists are very good at answering how, but not why. For this reason, I reject the overly quantitative language of sustainable development as the solution to designing our world to “sustain human progress” indefinitely. We need a more balanced mode of evaluating that purpose.

If we evaluate our world-building design with a balanced mode of thinking, we may come to realize that growth of the technological economy is not a first-order priority. Just because economic growth has historically been loosely correlated with an improvement in the material quality of life does not mean that economic growth is an *a priori* good. Mark Sagoff emphasizes this point: “The most confirmed hypothesis of social science research may be that money does not buy happiness.”<sup>10</sup> The tendency to think in this way has distracted us from what is often lost in the process of economic growth, such as natural beauty and the richness of inter-personal relationships. By treating man and nature as resources of development, we are easily distracted from these essential priorities. As

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<sup>9</sup> Davison, “Rapt in Technology”.

<sup>10</sup> Sagoff, *Price Principle and the Environment* 9.

philosopher of technology Albert Borgmann says, “the market and capitalism explain much in economics, less in politics, and next to nothing as regards responsibility and the good life.”<sup>11</sup>

I am worried that by using an overly technological discourse, sustainable development can easily be used as justification for harmful behavior. By remaining within the same unbalanced mode of thinking that caused the crisis, sustainable development is unable to provide the solution. The change that is needed is not a mere shift of development trajectory; it is a fundamental shift of consciousness. The first step in such a shift is to diagnose the source of this harmful thinking. I do not believe that humans are an intentionally malicious or destructive species. Most people in the world would at least give lip-service to the goal of a healthy and flourishing global environment for personal as well as altruistic reasons. Yet, every day humans degrade that environment as a result of our innocuous daily actions. This implies that environmental destruction is not an ethical issue as much as it is a structural issue. Borgmann’s device paradigm provides an excellent illustration of how overly technological thinking and behavior can distract us from our priority to design our world and ourselves to the best of our creative ability.

Although technology is -- by my definition -- that which is designed, the result of technological transformation is not always that which was intended. The destruction of the environment that occurs every single day is not the result of maliciousness; it is the result of careless design. The technosphere which we have constructed up to this point is full of mechanisms which disguise the full consequences of our actions from us. This distraction is what allows societies full of caring and well-meaning people to perpetuate violence and destruction on a daily basis.

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<sup>11</sup> Borgmann, “Reply to My Critics,” 346.

## **Distraction**

In *Technology and the Character of Contemporary Life*, Borgmann lays the blame for our disengagement on the proliferation of technological “devices” in the modern world. Devices provide a commodity while disburdening the user from concern with how it is produced. They provide convenience at its highest efficiency, pure consumption without the evidence of the burden of production.<sup>12</sup> Convenience is the availability of ends without the burden of consideration of the means by which they have come into existence. The separation of means and ends is the key mechanism by which technological devices distract people. We tend to forget that many things were destroyed in the process of making a commodity so readily available.

Borgmann contrasts the disengagement of production and consumption of commodities provided by devices with engagement by way of “focal things and practices”. These are simply activities which prompt us to say “It is good for us to be here.”<sup>13</sup> They are activities in which the means and ends are united into a fulfilling and centering experience. Borgmann exhorts us to push aside devices to preserve focal things and practices, which he considers increasingly rare in the modern life. For example, Borgmann would say that a family that microwaves individual portions when they are hungry has allowed the microwave device to distract them from the focal practice of communal meals. It is true that every individual’s preferences are more efficiently and conveniently satisfied by the microwave, but the family mealtime is sacrificed. More relevant to our discussion, the convenience of an individually-wrapped, instant meal distracts the consumer from the origins of his food and the energy, resources, and technological transformation that brought it about. A family that takes the time to prepare a meal from raw materials will tend to be more aware of the extent of the human and technological energy that went into its production.

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<sup>12</sup> Borgmann, *Technology and the Character of Contemporary Life*, 77.

<sup>13</sup> Borgmann, *RMC* 359.

Borgmann believes that we have a choice to engage in focal practices, but we allow ourselves to be distracted by the “glamour” of the “promise of technology,” which is “from the start connected with the aim of liberating humanity from disease, hunger, and toil, and of enriching life with learning, art, and athletics.”<sup>14</sup> Borgmann not only questions whether this promise is fulfilled, he would also like to say that it is a dubious goal in the first place. We should not seek to be liberated from simple activities such as cooking our food from raw materials, for these engage us with reality rather than distract from it. Technological liberation and enrichment ironically come with technological dependency and disengagement from that which really matters, namely focal practices.

Borgmann distrusts the “peculiar way in which the promise of technology guides and veils the shaping of the modern world.”<sup>15</sup> By allowing technological devices to distract us with this promise, we have engaged in careless transformation of our world. Our prioritizing of economic development in pursuit of the promise of technology has been an *ad hoc* world-building project. Our personal lives are ultimately less fulfilled by the devices that we work so hard to produce and consume than by simple focal things and practices. Furthermore, we are distracted from awareness of the unintentional environmental destruction that also results.

As long as we overlook the tightly patterned character of technology and believe that we live in a world of endlessly open and rich opportunities, as long as we ignore the definite ways in which we, acting technologically, have worked out the promise of technology and remain vaguely enthralled by that promise, so long simple things and practices will seem burdensome, confining and drab.<sup>16</sup>

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<sup>14</sup> Borgmann, *TCCL* 36.

<sup>15</sup> Borgmann, *TCCL* 39.

<sup>16</sup> Borgmann, *TCCL*, 199.

There need not be this contrast between the seductive siren device and the homely but wholesome focal practice, however. I believe that it is possible for the modern individual to engage in worthwhile activity, even with the aid of technological devices. The distraction does not come from the device itself, an inanimate object, but from our thinking about them and behavior in relation to them. The key to engaging in focal practices is to focus, to be aware, and to be mindful. The choice that we make is not only between technologies to use but between modes of thinking about technology and our relationship with it. It is a choice between awareness and distraction. Devices are not the agents of the destructive action, only distractions from the consequences of our actions. They are disguises that violent acts wear to appear harmless. This is a danger, but it is not the “implicit guiding pattern for the transformation of human existence and the world”.<sup>17</sup> To speak of it as such is to imply its inevitability, its deterministic certainty. Borgmann would like to resist deterministic interpretations of technology, but ultimately under-emphasizes the human power to choose. I am not as concerned as Borgmann that devices will disengage me from activities that I consider central to my life. I am capable of seeing value in activities other than production and consumption, and choosing engagement over distraction. We are also collectively capable of this important choice as a pluralistic society. We make this choice any time a community chooses to switch from diesel to alternative fuel vehicle fleets, for example. Although this is a technological advance, it is one that is undertaken with awareness of the consequences of fossil fuel extraction and a desire to mitigate them.

The distracting power of technology is dangerous, however. It allows us to do violence without being fully conscious and aware of it. The complex origins of every device that we use - from the transport we use to the food that we eat - are so far removed from the context in which it is presented to us that we are often unable to imagine the full extent of the repercussions of our consumption, even

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<sup>17</sup> Borgmann, *TCCL*, 77.

if we think we know. We are rarely fully aware of all that is destroyed or the new dangers that are formed in the process of making the commodity available. The device paradigm is helpful in understanding the role of our relationship with, and understanding of technology in environmental destruction. This “guiding pattern” is a good way to conceptualize how we have come to build a world in which people are able to do extraordinary acts of violence to a world that we claim to care for.

The distracting allure of the promise of technology is evident in the discourse of sustainable development, exemplified by the work of Jacobs, and in Brundtland, et al. The modern promise of technology in these political documents is to liberate us from the problems of pollution and poverty and enrich us by allowing for the continuation of indefinite economic growth. Technological efficiency is touted as an ideal by which we may produce and consume more every year, and overcome resource limitations. Borgmann identifies a “central vacuity” in the modern technological lifestyle that persists in the ideal of efficiency. The obsession to maximize production distracts from the important considerations of what to produce and why. We easily forget that techno-economic development is the origin of large-scale pollution, which was considered a by-product of the comforts of technological devices. As technological solutions are presented to technological problems, the spiral of techno-economic development continues and sustains nothing but itself. We easily forget that techno-economic development is only good in relation to how well-oriented it is to a carefully designed and balanced world-building project.

### **Instrumentalism and Determinism**

Modern perspectives on technology value novelty, convenience, and most of all efficiency. These are perceived as the essence of good technology. Yet, these values only sustain technological development itself. They make no reference to the human agents who created the technology in the first place. This limited account of technology does not recognize that technology is never external to

the human condition. Technology is the human mind manifesting itself in the world. It is a world-building project that represents the un-differentiation of mind and world:

[Technology is] the site of our encounter with that which lies simultaneously beyond us and within us: not as the antithesis of 'nature', but as the medium through which and in which human and world embrace, inhabiting each other.<sup>18</sup>

Davison identifies two conflicting yet co-existing and equally ill-conceived conceptions of technology that fail to recognize the essential role that technology plays in how we experience the world.

The first misconception is 'instrumentalism,' by which Davison means the understanding of technology as a collection of neutral devices that exist as mere means to human ends. This ideology perpetuates the illusion that we may put down our technological devices at any time and be free from them. This sharp division of pure means and ends overlooks the profound effect that technology has on our behavior and experience, and therefore on our understanding of morality and ontology. It underestimates the world-building power of technology that shapes us as we shape it. It blinds us to the way that every extension of capabilities that technological development reveals to us also obscures and destroys a significant portion of the world in that transformation.

The second modern misconception of technology is what Davison calls 'determinism'. We have a tendency to perceive technology as a product of science, and therefore objectively independent of human intention. Science merely describes the world-machine as it is, and technology merely manifests the potentialities within this system. By this kind of thinking, Edison did not invent the light bulb, he discovered it. Furthermore, once these new technologies are introduced, we are powerless to resist their allure. Borgmann's device paradigm has deterministic tendencies if we interpret the glamour of the

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<sup>18</sup> Davison, *RIT*, 5.

device as an irresistible temptation over which we have no control. Technological determinists will argue that resisting technological progress is not possible or productive in our modern culture.

The deterministic conception of technology disregards the human agency in technological development. Technology is not external to the human mind which designs it. It does no more than it is made to do. It has no mind of its own, and therefore cannot be dominating or malicious. Davison writes, "Technology in all of its manifestations is as ambivalent, unpredictable, honorable, and as depraved as are human agents."<sup>19</sup> Technology may not be a neutral instrument, but it is certainly not a deterministic force outside of our control. Borgmann agrees, when he writes that "The rule of technology is not the reign of a substantive force people would bear with resentment or resistance."<sup>20</sup> Technology is, after all, that which is designed.

Our confusion about how to reconcile these two accounts of technology causes us to "sleepwalk" through technological development, says Davison.<sup>21</sup> We pursue progress and efficiency in the development of technology without considering the self- and world-transformations that we are responsible for. Borgmann also rejects instrumentalism and determinism, and deems them a continuation of the means-ends dichotomy that allows for the promise of technology to distract us from focal practices. Both of these philosophers of technology owe a great debt to Martin Heidegger for identifying the importance of modern technology to our experience of the world.

## **Danger**

In *The Question Concerning Technology*, Heidegger does not go into as much detailed analysis as Borgmann about how devices disorient us, but he does recognize the great danger, which he calls "the

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<sup>19</sup> Davison, *TCMS*, p. 101.

<sup>20</sup> Borgmann, *TCCL*, 105.

<sup>21</sup> Davison, *TCMS*, 98.

supreme danger,” of technological distraction.<sup>22</sup> The danger is that by allowing techno-economic development to determine the course of our world-building, we surrender our human freedom of choice. By limiting our consideration in the design of the world to a quantitative analysis, we do not realize the full potential of the human mind to reveal itself and the world.

Heidegger argues that our dependency on technology locks us into a calculative understanding of the world, at the expense of *poiesis*, or “poetic dwelling”. Heidegger is nostalgic for more primitive forms of technology, which he thinks were less alienating and challenging of nature. He never abandons hope for the promise of technology, however, which he considers to be revealing and unconcealment of truth. He distinguishes technological revealing from the revealing of *poiesis*, which is granting and bringing-forth. Technological revealing (*techne*) is an aforementioned revealing, in the sense that one can imagine the form of a ship or a house and then perform the actions necessary to bring it about. Rather than revealing the granted mysteries of nature for appreciation, technology employs a gathering, organizing, quantifying mode of thought that allows us to reveal the patterns and structures of nature that can be grasped and replicated for use by man. Heidegger reminds us that according to ancient Greek thought, the aim of technology is the same as that of art: revealing and unconcealment of truth.<sup>23</sup>

The ordered revealing that guides technology does, however, come with a great danger; it tends to obscure other modes of revealing. Once man can assign a pattern to nature that can be replicated and used for prediction, there is a tendency to believe that man has grasped, and therefore mastered, nature. Once we believe that we fully understand nature, we are deluded into believing that we may control and dominate it. Hence we have the “laws” of physics, which are intended to explain, describe, and attribute the way physical bodies relate to each other. It is easy to forget that these are laws *from* nature – languages by which we can catch a glimpse of the workings of the myriad things -

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<sup>22</sup> Heidegger, “The Question Concerning Technology,” 26.

<sup>23</sup> Heidegger, *QCT* 13.

rather than laws *for* nature. Heidegger calls the ordered revealing of science and technology “Enframing (*Gestell*)”.<sup>24</sup>

Enframing is that mode of thinking which attempts to gather nature into a structure that can be explained by the logical patterns of the human mind. This quantitative and calculative mode of thinking is useful for revealing the human power to shape and order the environment. It is useful for organizing men and women for a productive effort. It is dangerous, however, when it encounters something which does not fit into the framework. The quantitative mode of thinking tends to be self-centered and cannot recognize its own limitations. Other modes of revealing and bringing-forth (*poiesis*) are discredited or discarded. “Where this ordering holds sway, it drives out every other possibility of revealing”.<sup>25</sup>

The difference between technology as revealing and technology as challenging is directly related to Borgmann’s discussion of the division of means and ends. Nature, in being challenged by modern technology to fit man’s framework, becomes a mere means and is quantified as a resource. It is no longer appreciated for its intrinsic value but only for the value of the service that it provides. Heidegger uses the example of the Rhine river that has been harnessed by a hydro-electric dam, “What the river is now, namely a water power supplier, derives from out of the essence of the power station.”<sup>26</sup>

The great “monstrousness” that Heidegger identifies in this way of thinking is that humans are simultaneously reduced to a mere means. By being challenged to order and challenge nature, people become resources or instruments that are only capable of that specific activity and are compelled to participate. Heidegger compares the way in which a forester goes about his business in the modern age as opposed to the way his grandfather may have done the same job. While the grandfather may have been able to maintain a sense of freedom of choice and awareness in his activity, the modern forester is “commanded by profit-making in the lumber industry, whether he knows it or not. He is made

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<sup>24</sup> Heidegger, *QCT* 18.

<sup>25</sup> Heidegger, *QCT* 27.

<sup>26</sup> Heidegger, *QCT* 16.

subordinate to the orderability for cellulose, which for its part is challenged forth by the need for paper, which is then delivered to newspapers and illustrated magazines".<sup>27</sup> The forester is challenged, just as the natural ecosystem is, to provide greater and greater amounts of paper to meet demand and make a livelihood. Slim profit margins compel him to harvest as much as he possibly can rather than the right amount for himself and the forest. In being challenged and ordered, he is no longer realizing his essence as human, and he is a mere means, a machine. As the forest is destroyed, the man is unwillingly and unwittingly transformed into a destroyer rather than a creator.

For Heidegger, the essence that humans are in danger of losing to technological distraction is the freedom to reveal the world and be aware. A human is more than a machine insofar as she maintains this ability. Machines do not create meanings or purposes. They operate according to some rules and within given limitations. They are unaware and are only good in relation to how well they can achieve the task that they are given. Humans, however, are more than simply task-achievers. *Techne*, *episteme*, and *poiesis* are all pursuits of humans directed to the goal of revealing, bringing-forth, and unconcealing truth. As long as a person is aware and mindful of what he is doing and his place in relation to the myriad things, he is more than a machine. He encounters his essence insofar as it is revealed to him by a balance of the varied modes of thinking.

Hubert Dreyfus elucidates the implications of the instrumentalizing of humans in the modern technological world:

Heidegger's concern is the human distress caused by the technological understanding of being, rather than the destruction caused by specific technologies. Consequently, he distinguishes the current problems caused by technology – ecological destruction,

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<sup>27</sup> Heidegger, *QCT* 18.

nuclear danger, consumerism, and so on – from the destruction that would result should technology solve all of our problems.<sup>28</sup>

Dreyfus argues that Heidegger is worried about technology's effect on the human ability to encounter his own essence even more than the possibility that the unintended consequences of technology should damage our material world. The idea that technology should one day “solve all of our problems” by super-efficient use and distribution of resources and thereby leave us impoverished of an awareness of what it is for which we are working so hard, is terrifying. Sustainable development is a dangerous concept with destructive potential if we take seriously Heidegger’s fear of the “supreme danger”.

The blockbuster film trilogy, *The Matrix*, illustrates a radical vision of a reality in which ecological limitations are overcome, and human needs are provided for in a way that causes the critical observer to re-consider these priorities. The premise of the movie is that human beings are unwittingly farmed for their energy by machines that were originally created by humans, ironically flipping the means and ends dichotomy on its head. Although the earth is a wasteland and the air is un-breathable, the majority of humans sleep in individually-wrapped, technologically sustaining pods, and dream that they are in a world much like the one we know, meanwhile unaware of the efforts of the machines to keep them alive as an energy source.

The big question of *The Matrix*, however, is “If we feel no suffering, do we care that we are being deceived? Might we not be content to be eternally dreaming from within a comfortable unconsciousness?” In the movie there is a small, heroic group of freedom fighters that is leading an armed resistance against the machine oppressors in order to reclaim the scorched planet and awaken humankind from its eternal daydream. The most intriguing character, however, is the one member of the rebellion who only wants to go back to sleep in his comfortable pod. He cuts a deal with the

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<sup>28</sup> Hubert Dreyfus, quoted in Davison, *TCMS*, 133.

machines to betray his rebellious comrades in exchange for the ability to permanently forget the harsh reality and return to the dream world of blue skies and humans at the top of the food chain. In the movie, this character is obviously a villain because of his betrayal, but he is interesting because he forces every person who watches the movie to consider the question: "Would I rather sleep in oblivious bliss or struggle for a bleak truthfulness?"

This question is obviously an extreme example, but it brings to the surface the question about what it is that we would like to sustain through technological development. The traitorous rebel made the choice to submit to technology and allow himself the personal experience of comfort and complacency at the expense of awareness of his own instrumentality. The other rebels make the choice to fight technological determinism at the expense of the comforts of distractedness. This choice between comfort and awareness gets to the heart of the human essence that Heidegger believed ought to be sustained.

The greatest danger of the comforts of distraction is that in the imprisoning dream-world, the deluded one perceives himself as master.

Meanwhile man, precisely as the one so threatened, exalts himself to the posture of lord of the earth. In this way the impression comes to prevail that everything man encounters exists only insofar as it is his construct. This illusion gives way to one final delusion: It seems as though man everywhere and always encounters only himself... In truth, however, precisely nowhere does man today any longer encounter himself, i.e., his essence.<sup>29</sup>

By convincing himself that nature can be fully described and mastered by an ordering way of thinking, humans are distracted from other modes of thinking, which are capable of revealing our essence. The

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<sup>29</sup> Heidegger, *QCT* 28.

ordered mode of thinking is unbalanced without the prioritization and guidance of the aesthetic mode. By surrounding ourselves with technology, we believe that we are constructing a world in which we are in control, but we are actually enslaved to it because we are no longer capable of the revealing of mind and world. Heidegger's philosophy affirms the message of the film; the villain has sold his soul to the machines, and in pursuing blind comfort and illusion, he is no longer capable of revealing his essence, which is awareness. By allowing himself to be distracted, he becomes a comfortable slave, and this is the danger of which Heidegger warns us.

Heidegger would likely argue that humanity has blindly been led down the same path of the film's villain by technological distraction and enticement. As we order and challenge nature with modern technology, we are ordering and challenging ourselves, and thereby transforming nature and ourselves into mere instruments of technological development. The mindless comfort that we find in technology, such as when we sit down in front of a television for lack of anything better to do, is obscuring the freedom to encounter our own awareness. Heidegger is clear that the choice of technological distraction may be seductive, but it is a great danger.

"Man becomes truly free only insofar as he belongs to the realm of destining and so becomes one who listens and hears, and not one who is simply constrained to obey".<sup>30</sup> The choice of comfort in technological distraction sacrifices this freedom. It causes one to wonder whether the choice made by the villain in the film was an exercise of freedom in itself. Can we freely choose to enslave ourselves? Heidegger would deny this possibility, and so would Borgmann. Freedom is in unconcealment of truth, awareness of and engagement with reality. Whatever may compel us towards an unbalanced, overly quantitative understanding of being is a metaphysical compulsion that distracts us and denies us a genuine experience of the revealing of our essence.

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<sup>30</sup> Heidegger, *QCT* 25.

Michael Zimmerman's interpretation affirms this perspective of Heidegger, "Like Deep Ecologists, Heidegger holds that modernity's quest to emancipate humanity by gaining power over nature has become a quest for power for its own sake."<sup>31</sup> The ideal of sustainable development perpetuates this quest for domination. The ideal of efficiency strives for emancipation from limitations of energy and resources. It strives for ultimate power, and in this striving we have forgotten something about living. That which is lost or obscured by an overly technological understanding of being is *poieisis*, or meditative dwelling. Technological devices and overly quantitative thinking obscure the aesthetic mode of revealing.

### **Alternative**

Heidegger's emphasis of the aesthetic mode of thinking has a parallel in the Chinese Daoist tradition. David L. Hall and Roger T. Ames have written extensively on Daoist thought as an alternative to the western tradition of philosophical thought, particularly for approaches to ecology.<sup>32</sup> I consider Daoist thought to be a valuable addition to the environmental discourse that must necessarily emerge from a global dialogue. Hall and Ames often discuss the Daoist "aesthetic cosmology," which provides a significant contrast to the "logical cosmology" of western philosophy. "Rational order is that sort of ordering which instantiates or realizes a presupposed structure or pattern. This sort of order is broadly quantitative and mathematical in the sense that the elements signaling the order are replaceable, substitutable." This is contrasted with the aesthetic mode, in which each particular element is "irreplaceable".<sup>33</sup> Hall and Ames' discussion of aesthetic cosmology articulates a mode of understanding

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<sup>31</sup> Zimmerman, "Martin Heidegger: Antinaturalist critic of Technological Modernity" 61.

<sup>32</sup> Hall "On Seeking a Change of Environment," Hall "From Reference to Deference: Daoism and the Natural World," Ames "Putting the *Te* Back in Taoism," Ames. "The Local and the Focal in Realizing a Daoist World".

<sup>33</sup> David Hall, *OSCE* 105.

the world that Heidegger would say tends to be obscured by enframing. They use an ancient tradition to explain an alternative mode of thinking more clearly than Heidegger was able to.

Ames' discussion of the Daoist terms *de* (德, integrity), *wuwei* (無為, nonaction), and *wuhua* (物化, transformation) provides a clear path to an understanding of the aesthetic mode of thinking. Ames deploys thorough knowledge of Chinese language and philosophy to consider the meanings of these important terms. He emphasizes that "the process of existence" in the classic Daoist text, *Zhuangzi* (莊子) is often referred to as *wuhua*, or "the transformation of things".<sup>34</sup> In the Daoist tradition, this transformation has no agent – it is not God or man manipulating nature according to some design or immutable law. It is endless transformation that occurs as the result of the interaction of the myriad things. Due to the amazing power of modern technology, however, the rapidly accelerating material transformation of the world has been commandeered by humankind. The power of technology has placed agency of the transformation in humankind's hands, which has so far mostly demonstrated its destructive potential in relation to the natural environment. With careful design, however, humankind is also capable of creative transformation from biosphere to technosphere.

Daoism is a tradition that has no morality or calculus for determining good behavior, but it does advocate *wuwei*, which literally translates to "nonaction". Ames agrees with the analysis of most scholars that this literal translation fails to communicate the meaning of *wuwei*, which he most clearly defines as "the particular authoring itself, on the one hand, deferring to the integrity of the environment, and at the same time demanding that the environing conditions defer to its integrity".<sup>35</sup> He is emphatic about the importance of awareness of both integration and integrity (*de*) in the Daoist tradition. The integrity of a thing lies in its unique role as a particular manifestation of the infinite

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<sup>34</sup> Ames, *PTBT*, 131.

<sup>35</sup> Ames, *PTBT*, 138.

possibilities of time and space. Awareness of integration lies in every individual's ability to recognize her essential inter-connectedness to the myriad things that compose the infinite reality.

Ames would like to take this definition a step further, and here he draws the connection between *wuwei* and the aesthetic ordering of Daoism. He makes the implicit assumption (which I am willing to grant) that any individual who has a clear awareness of his integrity and integration would choose creativity over destructiveness. Once a person recognizes not only his own integrity but also the integrity of the environment and his essential embeddedness in that environment, any clear-minded individual would choose to "maximize the creative possibilities of himself in his environment".<sup>36</sup> The word "creativity" captures the link between integrity and beauty quite aptly. That which has no duplicate deserves to be valued as such. This interpretation of *wuwei* builds on esteemed scholar Angus Graham's interpretation as well as Ames' own reading of the *Dao De Jing* and *Zhuangzi*.

*Wuwei* therefore enables an individual to act in a way that does not make it "false to itself" by providing the agent with awareness that allows her to be creative rather than only destructive.<sup>37</sup> This is not a logical evaluation that establishes criteria for morally good or bad action. Rather, it is an aesthetic evaluation in which "we distinguish *wuwei* from *yuwei* by the **quality** of the creative event – in the same way that we distinguish a good piece of music from a bad one, or a good painting from one that is not so good."<sup>38</sup> This method leaves room for interpretation and dissent in the evaluation. It can only be agreed upon by way of dialogue and compromise.

Ames provides an excellent quotation from Hall to illuminate how one might distinguish *wuwei* activity by virtue of its emphasis on relationships of creativity, in contrast to an ethic that evaluates relationships of power:

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<sup>36</sup> Ames, *PTBT*, 140.

<sup>37</sup> Ames, *PTBT*, 137.

<sup>38</sup> Ames, *PTBT*, 139.

Whereas “power” often suggests the correlative concepts of domination and control, “creativity” is a notion that can be characterized only in terms of self-actualization. Unlike power relationships that require that tensions among components be resolved in favor of one of the components, in relations defined by creativity there is no otherness, no separation or distancing, nothing to overcome.... Creativity... requires that each element of a relationship be continually in the state of creating the other.<sup>39</sup>

Because *wuwei* activity responds to awareness of both integrity and integration, it allows the agent of action to be creative rather than merely competitive. It is easy to distinguish power from creativity. Power is a calculative comparison that measures one thing against another, and decisively favors one over the other. Creativity is an aesthetic judgment that recognizes the unique beauty of each thing in its context. The beauty of a particular thing need not detract from the beauty of others, but can contribute to the creation of more beauty. A person is made more beautiful by recognizing beauty in nature or in another individual, for example. The concept of integration renders power relationships relatively insignificant in the Daoist world, for each individual is essentially dependent on the rest for self-actualization. Transformation which favors one individual at the expense of another achieves nothing.

Technology and economic decision-making often lock us into relationships of power, rather than creativity. We pursue super-efficient transformation of the environment in the name of economic growth, but rarely consider the aesthetic standards of integrity and integration. We assume that we are being productive in this effort, but transformation without creativity is only destruction. Technological efficiency favors mass-production and substitutable parts, which are inherently short on integrity. Natural things, by way of contrast, have integrity as unique living individuals. If we do consider the transformation that we are authoring, we tend to consider it in terms of “net gain,” “cost-benefit,” or

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<sup>39</sup> Hall, quoted in Ames, *PTBT*, 138.

“maximum-yield,” rather than creativity.<sup>40</sup> Discourses on sustainable development that advocate “balancing environmental and economic interests” are evaluating power relationships, rather than the aesthetic of creativity. They are focused on the dominating capacity of technological transformation rather than its creative potential.

All transformation both creates and destroys. Development does not produce value out of a void, but rather transforms the beauty of nature into the beauty of the creative human mind. What is missing from the calculative perspective of technological transformation in the discourse of sustainable development is the quality of the creation and destruction. An aesthetic evaluation of the particulars that are created and the particulars that are destroyed in transformation is impossible to achieve by a quantitative or economic analysis. It requires careful observation, consideration and deliberation. Aesthetic evaluation strives to recognize the value of a thing based on its integrity as a unique particular and also its essential integration into its environmental context. This kind of evaluation is not as simple or efficient as a quantitative comparison. It is, however, more complete and balanced. It reflects the complexity of the task at hand: world and self-construction.

The modern world-order that structures interpersonal and inter-group relations is based primarily on economics, which is a quantitative method of decision-making and interaction. Even the most well-intentioned economists, such as ecological economist Herman Daly, attempt to give a numerical value to nature, life, art, and all of creation in order to fit them in as resources for the economic machine.<sup>41</sup> A more balanced world-order that operates on a balanced world-view must allow for and give a value to qualitative judgments. Aesthetic quality complicates and enriches the evaluation of world-transformation. It may not be as efficient as the calculative mode of decision-making, but it is a

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<sup>40</sup> Brundtland, et al. 45.

<sup>41</sup> Daly, “Elements of Environmental Macroeconomics”.

way to be more aware of the role our actions play in the design of our world and our selves. It allows us to consider the relationships of creativity rather than just those of power.

Successful rehabilitation of the modern world consciousness requires that we create a socio-political-economic system which allows individuals to act *wuwei*, as understood by Hall and Ames. Such a system would feature opportunities for individuals to make decisions based on aesthetic as well as quantitative judgments. Rather than quantifying nature and life to fit into the economic system, the technological economy would be qualified. Dialogues on techno-economic development would include considerations of open space and lost ecosystems in addition to cost-benefit analysis. We would be allowed to value creation rather than only domination. Concretely, this would mean that rather than only evaluating the net number of trees cut versus the net number of jobs created, each project of development would be evaluated in its local context as a creative transformation of our environment and our selves. Only by this careful, balanced mode of deliberation and evaluation can we eliminate the contradictory nature of our global “development” that tends to be destructive.

### **Contestation**

In *Technology and the Contested Meanings of Sustainability*, Aidan Davison dismisses Heidegger’s aesthetic remedy to the danger of technological transformation. He is not convinced of the ability of the aesthetic mode of thinking to counter the destructive potential of modern technology. He particularly dislikes the Dreyfus interpretation in which:

We are cautioned by Heidegger not to rush headlong into action aimed at solving an evident but, he assures us, nonetheless inessential problem such as the destruction of a river valley... Heidegger insists that in our urgent hurry we will miss the real threat,

which is not to the valley or even its displaced human residents, but to the possibilities for human thinking itself.<sup>42</sup>

Davison ridicules Dreyfus' interpretation of Heidegger which articulates greater concern for a deformed understanding of being than for physical destruction of the environment. He argues that the material consequences of the development of technology cannot be held less harmful, or separate from the harm done to our understanding of being. Davison is worried that potential activists, concerned with the dangers posed by the techno-economic development, will heed Heidegger's words as an exhortation to sit and read and write poetry rather than rising to appropriate action.

Davison accuses Heidegger of retaining an instrumentalist concept of technology: "by adopting our place as artful and meditative dwellers, technologies become instruments once again: we can set them aside at any point."<sup>43</sup> He interprets Heidegger as suggesting that we withdraw from technology and deny it the opportunity to deform our encounter with our essence, rather than take action to reform technological practices. Davison counters that aesthetic evaluation will not save us from the ecological crisis; it will only turn us farther from a healthy relationship with technology.

Davison's ire is raised by the Dreyfus interpretation, which draws on the memorial address which Heidegger gave in 1955, in which he says that the human essence may not be preserved through *praxis* but only through the "intention to pit meditative thinking decisively against merely calculative thinking."<sup>44</sup> Davison argues that this sharp dichotomy of modern, calculative thinking against meditative thinking is dualistic and simplistic. There is no allowance for the ambiguity of modes of thinking. "The line between opposing our calculative orientation to thinking and disregarding embodied human

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<sup>42</sup> Davison. *TCMS*, 134.

<sup>43</sup> Davison, *TCMS*, 136.

<sup>44</sup> Heidegger in Davison, *TCMS*, 137-138.

suffering is fine indeed”.<sup>45</sup> By de-valuing calculative thinking and reasoned, practical action, Heidegger runs the risk of implicitly condoning the real and immediate destruction taking place on earth.

Davison makes reference here to the essential dependence of humankind on technology and technological modes of thought. Relieving the suffering technology has caused will require its active and immediate reform from within. Davison agrees that there is a danger that participation in this kind of thinking could simply perpetuate the technological perspective of being, but refuses to advocate idle meditation over activism as he thinks Heidegger does in the Dreyfus interpretation. “We have need of not only the saving power latent within genuinely poetic thinking and acting, we have need of the saving power of practical moral judgment in our everyday forms of life.”<sup>46</sup> Retreating to academia and art will not sustain the environment or the human condition. Action is needed, and Davison does not think that aesthetic appreciation is enough to motivate it.

### **Salvatory Potential**

Davison does not give Heidegger enough credit. The “saving power” that Davison refers to above exists, for Heidegger, in technology as well as in poetry. We need not divide our behavior dualistically into technological over and against poetic. Heidegger’s essential idea in *The Question Concerning Technology* is that humans seek unconcealment of truth in both technical and poetic activity. As long as we can be aware of this goal, both modes of thinking and activity are valuable and necessary. They are essential parts of the human understanding of being that cannot be separated. The rehabilitation of our destructive behavior does not lie in art instead of technology, but in artful use of technology.

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<sup>45</sup> Davison, *TCMS*, 136.

<sup>46</sup> Davison, *TCMS* 138.

Davison is correct in determining that the destruction of the environment, the destructive behavior, and the unbalanced consciousness are not separate issues requiring distinct responses. They are causes and confirmations of each other. They are avoidable, and they exist not because we have made bad choices, but because we have failed to choose. Overly quantitative thinking -- by way of technological distraction and reliance on economic decision-making -- obscures both the causes and effects of self- and world-transformation from individuals and societies. Economics oversimplifies the decision-making process and leads us to believe that the course of development is already determined by our needs and limitations. Technological devices distract us from the consequences of our actions so that we are not immediately aware of the inadvertent violence in our modern lifestyle. We have allowed techno-economic development to determine the course of our transformation rather than taking responsibility for the design of this essential project. Davison calls this behavior "sleepwalking" through techno-economic development.<sup>47</sup>

Heidegger reminds us with the poetry of Frederic Hölderlin that "where the danger is, grows the saving power also".<sup>48</sup> He resists both instrumentalist and deterministic interpretations of technology, and declares the essence of technology "ambiguous".<sup>49</sup> Although it is true that technology holds a dangerous power to transform man and world, it also contains the "saving power [that] lets man see and enter into the highest dignity of his essence".<sup>50</sup> This is a reference to the power of technology to liberate us from a survivalist mentality into a revealing awareness. Our needs must be met in order to allow us to consider matters of awareness; technology may be distracting, as Borgmann demonstrates, but hunger and thirst are arguably more so. The comfort that technology brings is liberating to an extent. Before it obscures alternative modes of revealing, it first enables them.

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<sup>47</sup> Davison, *TCMS* 98.

<sup>48</sup> Heidegger, *QCT* 28.

<sup>49</sup> Heidegger, *QCT* 33.

<sup>50</sup> Heidegger, *QCT* 32

“Everything rests on this... catching sight of what comes to presence in technology, instead of merely staring at the technological”.<sup>51</sup> This is where the saving power of technology lies. The value of technology does not lie only in its power, but in its power to enable creativity. Technology is capable of radical transformation of the environment, and it is that transformation of which we must “catch sight” and be aware. The technology itself can become a distraction from the transformation which it brings about, however, and that is dangerous. Technology is useless unless it provides a creative relationship between the designer and the designed.

The liberating power of technology is often evident when it saves us time, reduces distances, or extends our lives. These functions are not liberations, however, without the accompaniment of the second part of the promise of technology, which is enrichment. Without enrichment, liberation is empty. The freeing of time and space is negated by the distractions that we subsequently fill them with. Enrichment is an aesthetic term which must be evaluated as such. Enrichment cannot be measured by economic value or efficiency. The promise of technology is as much aesthetic as it is technical, and it is important to evaluate technological progress by balanced standards.

"Essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it. Such a realm is art".<sup>52</sup> Technology must be reformed in a practical and technical way. This does not mean however, that technology must merely become more efficient, or more powerful and dominating. Our relationship with technology will only be reformed when we evaluate it in the same way that we evaluate art. The promise of technology will only be fulfilled when it is capable of revealing our creative potential. If we continue to pursue technological development in the overly quantitative mode, there is a great danger that we will perpetuate the deterioration of our world and our lives.

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<sup>51</sup> Heidegger, *QCT* 32.

<sup>52</sup> Heidegger, *QCT* 35.

Sustainable development is a technical discourse that proposes a calculative fulfillment of the promise of technology. It promises to perpetuate the growth of our technological environment to make the world more comfortable and suitable for human life. A perfect technological environment by this definition is one that has overcome the limitations of the natural environment to consistently provide for the needs of human beings. The shortcoming of this perspective is that it promises liberation from needs and limitations without referring to the enrichment that can result. It idealizes empty efficiency which accelerates the transformation of the world, but fails to acknowledge that this transformation is only good if it reflects the creative potential of the human mind. There are efficient destroyers as well as efficient creators, and sustainable development does not distinguish between them. Without opportunities for aesthetic evaluation of technological development, sustainable development is merely perpetual transformation rather than perpetual creative transformation.

### **Balanced Thinking**

In order to avoid being co-opted by agents of destructive development, environmentalist discourse must address more than the technical discourse of sustainable development is capable of addressing. The exclusive attention to the environment as a provider of services and resources is limiting, and frames human beings as mere producers and consumers. Sustainable development is a good technical objective for certain sectors of society, but it should not define the nature of our relationship with our environment.

I do not mean to be callous towards parts of the world where needs and limitations are very serious and immediate concerns. The so-called “developing” nations do achieve significant benefits from techno-economic growth as people are made capable of supporting themselves and their families. This is not to say that aesthetic evaluation should play no role in the development of these places, only that the pressing nature of their needs do merit a technical response. The continuation of the reliance on

techno-economic development in the “developed” nations, however, is oxymoronic and destructive. Once a certain standard of living is met, attention must be turned from survival and comfort to aesthetic creation, from liberation to enrichment. Without this transition, we are susceptible to the distraction that Borgmann fears and the danger that Heidegger fears.

Aesthetic evaluation of our integrity and integration in our world includes awareness of the value of the natural things that are destroyed by technological transformation. Some may value them more than others, and these conflicts must be resolved in a dialogue, by way of democratic processes. World design and transformation is a global project, and therefore should be cooperative rather than competitive. Rather than quantifying and ranking our values by economic analysis, design and decision-making should be democratic processes. The aesthetic value of the environment is bound to be a controversial topic, and should be confronted and discussed as such, rather than disguised by a quantitative analysis that assume to tell the whole story. If we presume to be able to improve upon the beauty and resourcefulness of nature, we should be sure that we are doing so with careful technical and aesthetic design. We must remember that all transformation is not only creation, but also destruction.

This important addition to environmental discourse requires the rejection of economics as a science of decision-making. Economics can provide a quantitative analysis of the costs and benefits of a particular project of development, but these will never reflect the full extent of the creation and destruction of a transformation of the environment. The conflicting values of interested parties could never be quantified. The attempt to do so is an oversimplification that will always privilege the powerful interest rather than the creative one. Disguising valuation and decision-making as a science does nothing more than distract from the actual task at hand by implying that the choice should be clear once the numbers are crunched. Environmental design is not a simple or straightforward task and should not be disguised as such by pseudo-science.

Balanced thinking and careful design of the world is not a moral imperative but a prerequisite for achieving non-contradictory action (*wuwei*). If there is such a thing as human progress, sustainable development is incapable of leading the way, and should not presume to. I do believe in human progress, but not as quantified by Gross National Product. Progress is only possible in relation to how well a society allows individuals and communities to transcend mechanical responses to needs and limitations and create, preserve, enable, and appreciate beauty in themselves and the world.

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