Technological Paradigm in Ancient Taoism

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Abstract
Heidegger, Winner, and Ellul's critiques of Western technology focus on a notion of efficiency that subordinates to itself all non-instrumental values. An alternative conception of efficiency is proposed based on the Taoist theory of non-action (wu-wei). The ancient Taoist text, The Chuang Tzu, reveals a type of efficiency that is effective, resourceful, and entrepreneurial. It is a form of action which has an intimate rather than alienated relation to technology, and which is sensitive to the ethical and aesthetic values that Heidegger and Ellul claim are excluded from the Western conception of efficiency.

Keywords: Taoism, Technology, Efficiency, Chuang Tzu, Heidegger, Ellul, Embodiment.

Introduction

Modern Western technology has been criticized by thinkers like Heidegger and Ellul for placing the value of efficiency above the beautiful, the good, and the holy. The danger of which Heidegger and Ellul speak is the subordination of art, morality, and religion to technological forces, where all values become secondary to instrumental value. Efficiency, however, plays a central role in the writings of ancient Taoism, particularly the *Chuang Tzu*, in which there are numerous images of efficient action. One of the most interesting and provocative is that of the butcher Cook Ting who cuts up oxen by effortlessly moving his knife without hitting ligaments or tendons. There are hollows and spaces, Cook Ting explains, that offer no resistance. He claims, as a consequence, it has not been necessary for him to sharpen his knife in 19 years, even after cutting up thousand of oxen. By comparison, he says, cooks that cut and hack need to change their knife often.

Cook Ting is contrasting two different kinds of technology and technique. Both types of cooks are effective in cutting up oxen, in the sense of getting the job done, but Cook Ting is efficient as well, for the absence of resistance minimizes effort and maximizes effectiveness. The graceful and rhythmic movements of Cook Ting, were observed by a ruler who remarked that in watching Cook Ting he had "learned how to care for life," thereby elevating efficiency to a central principle of living. (Chuang Tzu, 47). In the Taoism of Ancient China, efficiency is not associated with the dehumanizing effects of technology. It is a different concept of efficiency than the one usually associated with machine technology. The alternative notion of efficiency in Taoist literature implies a radically different view of rationality and its relation to action than that found in Western culture. The value of efficient action in Taoism does not require limitation from without by moral, aesthetic, and religious values. On the contrary, efficiency demands a fitting-in with non-instrumental values that is the path of least resistance necessary to effectively achieving any end. The efficiency that finds itself in harmony with these non-instrumental values is

effective, while the efficiency that sets itself in conflict with them fails to achieve anything but the loss of the human and the destruction of what is natural.

The Criticism by Ellul

The principle on which modern technology depends is that the value of any means is reducible to how efficiently it does what it is meant to do. Jacques Ellul captured this reduction in his definition of technology as "the totality of methods rationally arrived at and having absolute efficiency… in every field of human activity" (Ellul, xxv). Contemporary technology manifests itself as a totality of means characterized by absolute efficiency, and not by the end it is meant to serve. Absolute efficiency is absolute in two senses. It is absolute in so far as it aims at achieving the end in the most efficient manner, that is absolutely efficient, and it is also absolute in the sense that all other values are subordinate to it, that is, efficiency is absolute. The reduction of value to instrumental value is such that the user of the tool becomes judged by the same criteria used to value the tool. The machine reinforces instrumental thinking to the extent that the machine regulates human action. The controller becomes the controlled and must think like a machine to function in a mechanized environment. Clocks and calendars are machines that regulate human life, and when lives are so regulated, they tend to become as mechanical as clocks and calendars themselves.

The mechanization of human life is the result of recent developments in the relationship between technology and economic production. The history of technique is the history of the search for absolute efficiency, and technique, as the ensemble of means to achieve absolute efficiency came into its own only with the industrial revolution (Ellul, 52-53). In the more historical section of his *The Technological Society*, Ellul explains that up to the nineteenth century, "the search for greater efficiency… played a role, but it was one factor among several" (Ellul, 73). Other factors would range from the aesthetic to the religious, ethical, and political. It is only with the Industrial Revolution of the nineteenth century that "society began to elaborate an exclusively rational technique which acknowledged only considerations of efficiency" (Ellul, 73). Before that, technique was constrained first by the Greek concern with self-control, and then by Christian morality and the humanism of the 16th century. Technique was, thus, subordinated to life and culture including moral and aesthetic concerns. Today, on the other hand, technological progress "is no longer conditioned by anything other than its own calculus of efficiency" (Ellul, 74).

The example Ellul offers to illustrate this preoccupation with the aesthetic aspect of tools is the increasing diversification of designs in sword making.

> It was impossible to conceive of a tool that was not beautiful. As for the idea, frequently accepted since the triumph of efficiency, that the beautiful is that which is well adapted to use—assuredly no such notion guided the aesthetic searchings of the past…. On the contrary, aesthetic considerations are gratuitous and permit the introduction of uselessness into an eminently useful and efficient apparatus. (Ellul, 72-73).

The 19th century freed technique from its aesthetic constraints and brought about an aesthetic subordinated to efficiency: "A style then developed based on the idea that the line best adapted to use is the most beautiful" (Ellul, 73). Streamlining in the design of automobiles is an example of this development. This is the origin of the modernist principle that form follows function.

The same happened with "moral flourishes" (Ellul, 74). The invention of the steam-powered engine brought such an enormous increase in productivity that moral considerations could not limit its use. The increase in the efficiency of weapons only forced people to find more "creative tactics of self-justification" (Lienhard, 139). It was more properly the case that a moral system had to be found that would justify the adoption of more and more efficient machineries. The paradoxical nature of atomic weapons, by the use of which, differently from any normal means, "every end will be destroyed together with the entire world in which 'ends and means' have existed" (G. Anders, in Mitcham et al. 132) did not stop the invention and use of them. Ellul puts it this way: "Technique never observes the distinction between moral and immoral use. It tends, on the contrary, to create a completely independent technical morality" (Ellul, 97). Quoting Jacques Soustelle, Ellul reminds us of a basic law guiding technology: "Since it was possible, it was necessary" (Ellul, 99).

Ellul's explication of the history of technology as a process of reduction of all values to the value of efficiency does not end with a solution. As technology becomes more autonomous, human beings lose the power to control it, and thus end up being controlled by it. Not surprisingly, then, the most Ellul offers is an invitation to "transcend" technological determinism "by an act of freedom" (Ellul, xxxiii), not to check and guide technology, which to think possible is "vanity" (Ellul, 428), Ellul suggests that we approach technology with a consciousness built on experience, and possibly face it with acts of resistance, such as we find in modern environmentalist movements. Ellul's acts of freedom that transcend technological determinism must be understood against the background of his theological commitments. His solution is at best the familiar subordination of technological value to a value system that is outside it, which in Ellul's case is some form of religious transcendence that is higher than the ethical and aesthetic.

The Criticism by Winner

Langdon Winner's solution is that problematic technologies should be "taken apart with the expressed aim of studying their interconnections and their relationships to human need" (Winner, 330). This method is, he writes, "one way of recovering the buried substance upon which our civilization rests." This "buried substance" consists of that "original understanding of technology as a means that, like all other means available to us, must only be employed with a fully informed sense of what is appropriate. Here, the ancients knew, was the meeting point at which ethics, politics, and technics came together" (Winner, 327). [1] Again, we find, as in Ellul, the conception of a historical change, from an "appropriate" technology to one that departed from its original meaning. An appropriate technology is one that satisfies ethical, political, technical, and, aesthetic conditions. For Winner, this broader understanding of techné has, over time, narrowed down to a technological lifeworld whose defining characteristic is greater and greater efficiency.

Technology is a problem for Winner in the same way Frankenstein's monster was a problem for Dr. Frankenstein. Dr. Frankenstein's creation is the embodiment, in fiction, of Winner and Ellul's autonomous technology. Like Frankenstein's creation, modern technology presents "the perils of

[1] Winner and Ellul are not the only philosophers complaining about the detachment of the technological from the ethical, the aesthetic, and the political. Francois Lyotard characterized Western technology as blindly following "the principle of optimal performance: maximizing output and minimizing input" (Lyotard, 44). This principle marks also a reduction of the range of technological concerns to efficiency. "Technology is therefore a game pertaining not to the true, the just, or the beautiful, etc., but to efficiency: a technical 'move' is 'good' when it does better and/or expends less energy than another" (Winner, 44).

an unfinished, imperfect creation" and points to "the continuing obligation of the creator" to care for it (Winner, 309). The pattern is the same:

> At the outset, the development of all technologies reflects the highest attributes of human intelligence, inventiveness, and concern. But beyond a certain point, the point at which the efficacy of the technology becomes evident, these qualities begin to have less and less influence upon the final outcome (Winner, 313-4).

At this point, when a technology proves its efficiency, its human creator lets go of it. The creator is not concerned with the consequences of its efficient application relative to an already existing milieu.

> It is at this point that a pervasive ignorance and refusal to know, irresponsibility, and blind faith characterize society's orientation toward the technical. Here it happens that men release powerful changes into the world with cavalier disregard for consequences; that they begin to "use" apparatus, technique and organization with no attention to the ways in which these "tools" unexpectedly rearrange their lives…. (Winner, 314).

The drive towards absolute efficiency manifests itself fully: "One only wants the technical thing to be present in its utility" (Winner, 315).

According to Winner, people shaped by the paradigm of "narrow utility" (Winner, 327) and fully driven by the search for the ideal of absolute efficiency will not feel any discomfort about the direction technology is taking. On the contrary, they will celebrate human creativity and ingenuity, and will not hesitate to dub religious objections as superstitions, ethical doubts as irrational fears, and aesthetic concerns as obsolete. Part of Winner's solution involves a democratic critique of new technologies. As he argues, new technologies should be "intelligible to nonexperts" and highly conditional and provisional so that they can be rejected if proven harmful. We should give priority to those technologies that tend to make their human users least dependent on them (Winner, 326-7). Still, the "supremely important step" (Winner, 327) is to change our relation to technology and abandon "narrow utility" in favor of a broader conception of efficacy that involves political and ethical considerations. It is this broader sense of what is proper that allows a critical evaluation of new technologies, according to Winner.

Implicit in both Ellul's and Winner's solution to technology is the assumption that technology can be rationally controlled, objectively appraised, and morally evaluated. In both cases this optimistic rationalism is tempered by an appreciation of the historical momentum of Western technology and its power to shape values and perception and consequently to make very difficult adopting a neutral and objective attitude towards it. Heidegger, by contrast, takes this limitation further and regards technology as the defining worldview of Western civilization making it impossible to stand outside it except under extraordinary circumstances which now will be shown to go far beyond rational critique and moral evaluation.

The Criticism by Heidegger

This concern with an unbalanced relation between efficiency and other values is found in Heidegger's notion of the "single manifold" (Heidegger, BW, 316). According to Heidegger, techné originally involved an experience of the coming together of usefulness (*techné*), beauty (*poesis*), truth (*aletheia:episteme*) and holiness (*promos*). A successful, effective adoption of a

technique or tool occurred only on condition that all four aspects of the single manifold were present. In this sense, a useless, but beautiful object effects a disintegration of the single manifold, which upsets the relationship between the human and the tool. Just as the useful is not to be separated from the beautiful, art does not belong in museums, because it is then artificially disengaged from the world of the useful and the holy. According to Heidegger, modern, Western technology is a *Gestell* that reveals as resource whatever comes within its interpretative view. In a purely instrumental *Gestell*, things are valued exclusively for their usefulness. The danger lies, in reducing techné to mere instrumentation.

The remedy to this reductionism is to see techné as art, not as the art that is merely memorialized in museums, but as *poiesis*. Heidegger's notion of the single manifold is meant to show us the four basic existential conditions comprising technical praxis. These conditions are not qualities of the object, but relational aspects belonging to the meeting of the human and the machine. The tool has to be beautiful, in the sense of not violating aesthetic sensibility. It has to be useful, in the sense that it has to perform its function efficiently. It has to be true, in the sense that it has to "bring forth into the splendor of radiant appearance" the realm of possibilities inherent in the use of the technological artifact. Finally, it has to be holy in the sense that it allows for "the safekeeping of truth," of the lived, experiential revelation of what the tool brings forth in the realm of possibilities (BW, 315-316).

Heidegger and the Turning

Heidegger's single manifold is not an invitation to return to a golden epoch, which is not in our power or even desirable to retrieve. The saving power is already embedded in our present understanding of Being as dominated by the search for efficiency for its own sake. Heidegger suggests that a "free relationship" can be established with technology which does not require either a rejection of technology in the way of luddism or a blind acceptance of all that is technological (Heidegger, QCT, 287). Technology is not something to be controlled. Technology is a way of thinking and acting out of Being, a way in which Being reveals itself to us as a particular kind of being. The technology that is a danger is characterized by a narrowly utilitarian, calculative, instrumental thinking. Of course, this way of thinking reveals to us not only the device as a useful tool, but also the kind of being we are who is capable of seeing it as a device, and the kind of society structured around this way of seeing. It is this all-encompassing cultural paradigm, which Heidegger calls the *enframing*, that makes it so difficult to understand the historical and metaphysical nature of technology. Still, as this particular form of thinking, this paradigm, is a particular historical mode of being that has come to be, it can also cease to be, and be replaced by other paradigms.

The awareness of the historical nature of technology is a freedom towards the possibility of other cultural paradigms in which technology takes on a different meaning. Heidegger considers the transition to a new and different technological paradigm in what he calls the "Turning." The Turning is a transfiguration of technology in which nature is not viewed as exclusively instrumental, and efficiency is not the dominant value. Heidegger speaks of the transfiguration to a new technological paradigm as occurring suddenly in a flash and literally happening before we know it and are able to articulate it. It is like a lightening stroke, and Heidegger speaks of it as a "flashing glance" (Heidegger, QCT, 45) into a new and radically different worldview. With what attitude should we dispose ourselves toward this coming event that is the Turning? Heidegger

says that the lightening flash comes out of stillness: "Will we see the lightning-flash of Being in the essence of technology? The flash that comes out of stillness, as stillness itself?" (QCT, 49)

The stillness stills the thought and action that would merely repeat the same Gestalt from which the Turning turns away. This stillness is also that attitude of questioning which Heidegger says is the piety of thought (QCT, 35). It is still because it does not give itself over to the conventional modes of thought which its age considers as constituting the methods of the positive sciences. Heidegger says,

> All mere chasing after the future so as to work out a picture of it through calculation in order to extend what is present and half-thought into what, now veiled, is yet to come, itself still moves within the prevailing attitude belonging to technological, calculating representation. (QCT, 48)

Pious thought, or what Heidegger also calls "meditative thinking," in comparison to calculative reasoning, is thought that understands itself to arise out of an unseen ground which can never be an object of discursive thinking. For Heidegger, truth is not a matter of a correspondence between the word and the object. Because of the hermeneutic circle, where the factual is a function of thought, the grounding of thought must occur elsewhere than in fact. This ground is that out of which the vision of the totality of things arises. This is what Heidegger means by metaphysics, which he says, "grounds an age in that through a specific interpretation of what is …it gives to that age the basis upon which it is essentially grounded (QCT, 115).

With such an understanding we look at Taoism's characterization of technology with the expectation of perhaps finding a vision of the world that is an alternative to Western technology, not necessarily one to which Western technology can turn, but one with which it can be contrasted and compared, particularly with respect to the nature and role of efficiency. The attitude of Taoism neither resists nor obsesses over efficiency. It is, to use Heidegger peculiar expression, a "releasement towards things" (1966, 54). Heidegger says that

> We let technical devices enter our daily life, and at the same time leave them outside… as things which are nothing absolute but remain dependent upon something higher. I would call this comportment toward technology which expresses "yes" and at the same time "no," by an old word, *releasement towards things*.

This "something higher" is referring to our relationship to Being which takes the form of the metaphysics of the age. Heidegger's Turning is one more affirmation of Heidegger's view that technology is metaphysics. The Turning, therefore, is not only a new technological paradigm, but also a different relationship to Being, that is, to an interpretation of what-is.

Not only are we not able to think our way to a new technological paradigm, but for Heidegger there is nothing that we can do, no positive action that we can perform that could bring us to it. Heidegger says that,

> technology will never allow itself to be mastered, either positively or negatively, by a human doing founded merely on itself. Technology, whose essence is Being itself, will never allow itself to be overcome by men. That would mean, after all, that man was the master of Being. (QCT, 38)

To say that technology is the essence of Being itself is to say that technology is a metaphysics and as such is not something which man stands outside of that can be manipulated and known. It is rather that out of which and through which man experiences the world. It is always presupposed by thought and action. The first and well-known line of the *Tao Te Ching* that, "the Tao that can be told of is not the eternal Tao" (Chan, 139), is a succinct statement of Heidegger's view of the relationship between language and Being, and his critique of metaphysics. The mistake of Western metaphysics is in failing to recognize the distinction between the ontic and the ontological by treating Being as a thing, such as Idea, as substance, as God, as matter, etc., that is, treating it as an object of discourse. As far as the relationship between language and the world, the *Tao Te Ching* claims that "the named is the mother of all things" (Chan, 139). For Heidegger, Being comes to presence in language. Language is the house of Being. These two claims, first, about the relation of language to Being and, second, the relation of language to the world, bring Taoism and the philosophy of Heidegger into close conceptual proximity. Heidegger's views of language and metaphysics, but also his view of an authentic relationship to human instrumental artifacts involves both a simultaneous relation to Being and to beings. To see the tool as mere instrumental fact, exclusively in its usefulness, and not as an "interpretation of what is" is precisely the condition of the relationship between the human and the technological that Taoism rejects.

A Case of Rejecting Efficiency

The ancient Taoist texts, the *Chuang Tzu* and the *Tao Te Ching*, are among other things, manuals of action, and to that extent, treatises on technique. Efficiency is a property of action. What is learned from the ancient Taoists text is that, not only must action be efficient, but it must also be effective, entrepreneurial, and innovative and as such must be thought of as part of a larger system of values that in the thought of Heidegger is called the "single manifold." From the perspective of Taoism, Western technology has a restricted concept of efficiency because it does not include the other properties of effective action. Action that is innovative and entrepreneurial redefines the distinction between what is useful and useless, and in doing so turns what was considered valueless into something valuable. This capacity to transvaluate things is a form of power that stands in contrast to a restrictive concept of power that is usually associated with machine technology. These properties of an enlarged concept of efficiency are illustrated in the *Chuang Tzu* and the *Tao Te Ching*.

There is a story in the writings of Chuang Tzu of a farmer who is irrigating his vegetable garden by carrying jars of water from a well, working very hard and getting very little results (1968, 134). A disciple of Confucius, Tzu-kung, remarks to the man that there is a machine that can make the work of watering the garden go much faster with little or no effort. The gardener is at first curious about the device, but hearing of its design, complains that such a machine would give him "machine worries" and "machine thoughts." Presumably, machine thought is instrumental thinking about means and ends, and machine worry is the concern arising out of an increasing dependency upon such mechanisms. Even though the machine would save time and effort, and get more accomplished, the gardener claims that simplicity would be ruined and the

mind would become unsettled. The gardener makes a kind of cost/benefit analysis. He judges that there would be more lost than gained in using the machine.

Of course, weighing costs and benefits is part of instrumental thinking; however, there is a state of mind which the gardener is claiming that is incompatible with instrumental reasoning and which is more central to human nature. It is worth noting that the gardener does not reject the idea of a labor saving device from the outset. He first enquires how it works. It is explained that it is made of wood, heavy on one end and light on the other. It raises water so quickly that the water seems to boil out of the device. The gardener at first is angry upon hearing this and his criticism is not that of an engineer, but of a metaphysician who claims that instrumental thinking causes the mind to lose touch with its true nature. However, one wonders, since the gardener at first inquired about the design of the device, whether or not a different sort of machine would have satisfied him. Would the gardener reject the plow and shovel for turning the soil by hand, or riding in a carriage for walking by foot? Although the text is not clear about what the criteria are for accepting or rejecting a particular technology, some criterion is applied.

The story of the gardener does not end with the gardener's criticism of the machine. Tzu-Kung felt ashamed after hearing the critique by the gardener and felt stunned when the gardener further made criticism of his teacher Confucius. Tzu-kung says that what he learned from Confucius was that the way of wisdom was to "spend little effort and achieve big results," which is a succinct definition of efficiency. However, Tzu-Kung recognizes in the gardener someone for whom "achievement, profit, machines, [and] skill" (1968, 135) have no value. Fame and the praise and condemnation of the world have no meaning to him. Tzu-kung describes him as someone who "never knows where he is going." The gardener seems to be the embodiment of the non-technological mind that is devoid of reasoning about antecedent and consequent, means and ends. Tzu-kung reports all of his impressions to Confucius.

Confucius's response is that the gardener is a fake. Confucius says that the gardener attends to what is inside to the exclusion of what is on the outside. For Confucius, one who attends to both is able to enter the everyday world in which machines have their place, while at the same time remaining in simplicity. Confucius calls the gardener a bogus practitioner of the arts of Mr. Chaos who is described elsewhere in the *Chuang Tzu* as not having the seven openings of ordinary men that allow them to "see, hear, eat, and breathe" (1964, 97). The seven openings are the senses that bring human consciousness into contact with the world. The art of Mr. Chaos is to live in the world without instrumental thinking, without the thought of means and ends. Mr. Chaos does not think about the future and that is why Tzu-kung says of the gardener that he never knows where he is going, just like the flow of water, which is the central symbol in Taoism for how to live life. However, the criticism of Confucius indicates that the world must be engaged as well, meaning that instruments and instrumental thinking have their place, but their place must not usurp another kind of consciousness that is without means-end thinking and whose awareness of time is wholly in the present.

Not having the seven openings refers to the state of no-mind (*wu-nein*), which is the meditational state in Asian traditions that contrasts with the temporal mind that plans and calculates. Confucius claims that what is truly astonishing is the person who is able to combine both the state of no-mind with a mindfulness whose main attention is efficiency in action. Unlike the gardener who rejected a machine that would make his efforts easier and more productive, Confucius describes someone who is able to attend to both the external and the internal, and who is able to employ the machine without losing simplicity and without having machine worries and machine thoughts. Confucius is praising the ability to balance instrumental thinking with a consciousness that is

entirely devoid of thought of means and ends. The gardener had achieved the one but not the other. Such a meditational state of mind was what made Cook Ting's action efficient. He says in explanation of his skill, that "perception and understanding have come to a stop" (1964, 46-47) which allows him to go along with the natural makeup of things and pass his knife through the hollows and openings without encountering resistance.

Other instances of efficient action that balance the internal and external are found throughout the *Chuang Tzu*. There is the hunchback who catches cicadas with a sticky pole, "as easily as catching them with his hand." Confucius exclaims, "What skill you have…" and asks, "Is there a special way to do this?" The hunchback explains that no matter how numerous things are, he sees only cicada wings and nothing else. Confucius remarks on his state of mind that, "He keeps his will undivided and concentrates his spirit [i.e., his mind]" (1964, 120). There is another instance of a ferryman handling his boat with great skill. Again, Confucius asks how he does this. The ferryman explains that that he lost all fear of the water. He sees water as so much dry land and regards the capsizing of the boat as the overturning of a cart. If the whole world were to be turned upside down, it would not affect him (1964, 122). Here again efficient and skillful action arises from a state of mind that is still and free of calculative thinking. In an archery contest, when the stakes are small "you shoot with skill," but when the stakes are high you become a nervous wreck. The skill is the same in both cases but the mind is inefficient when it is no longer quiet.

Insight is found into this non-instrumental consciousness from the story of the disciple Hui who tells Confucius that he is setting out to reform a young and reckless ruler who is destroying his kingdom. After Confucius hears the strategies that Hui intends to use, Confucius tells him that he will only get his head cut off. Instead Confucius tells him to fast, which Hui interprets at first as a suggestion to fast the body. Confucius explains that it is not the body, but the mind that must fast. Confucius tells Hui that action taken from the standpoint of an empty mind is like walking without touching the ground and flying without wings, both of which are metaphors for effortless action. There is the also character of Meng-sun of whom Confucius says that he,

> does not know why he lives and does not know why he dies. He does not know why he should go ahead and does not know why he should fall behind. In the process of change he has become a thing [among other things], and he is merely waiting for some other change that it does not know about. (1964, 84)

Evidently the mind that is empty is without thoughts of present and past, means and ends. However, this is only one side of the formula for properly managing life. The other side is attending to external things and living life in the most efficient manner.

This state of mind, empty of instrumental utilitarian thinking, is a form of consciousness that is immanent and non-positional. Georges Bataille referred to is as "*non-savoir*," that is, unknowing, and thought of it as a form of intimacy in which things lose their object status, where subjects no longer stand in opposition to a world of objects, and consciousness exists in the world "like water in water" (Bataille, 23). Interestingly, for Bataille, this immanent consciousness was lost because of an original positing of the first tool as a "middle term" between subject and world (Bataille, 27). At that point, the world was divided into means and ends, present and future, and the pure enjoyment of ends for their own sake was endlessly postponed. Time lost its momentary brilliance and enfolded into a sequence of operations, instrumentally conceived. The origin of technology marks the loss of intimacy and of immanent consciousness, for Bataille. The Taoist conception of *wu-nien* (no-mind), on the other hand, is not inimical to technology; in fact, this no-

mind, which is intimacy and immanent consciousness, is compatible with and necessary for a technological engagement with the world that is efficient and effective.

Redefining Ends: The Use of the Useless

Instrumental thinking that is not balanced by a non-instrumental state of mind is not innovative, entrepreneurial, or effective. Instrumental thinking by itself is rigid and linear and forces things to conform to its own program of action. There is a story of the logician Hui Tzu who has been given enormous gourds, but complains to Chuang Tzu that he could not use them for containers because they were too heavy to carry (1964, 28). He says that they were useless as dippers because there was nothing large enough to dip them into. He decided that they were of no use and destroyed them. Chuang Tzu asks why he did not think of using them as boats to float around on the rivers and lakes and tells a story about a salve that allowed a poor family to make a meager living bleaching silk. The same salve was bought by an entrepreneur who made a fortune selling it to a king, who, in turn, used it to win a naval battle. What produced a meager living in one case made a fortune and saved a kingdom in another. The first kind of instrumental thinking was limited to one form of usefulness whereas the other kind of instrumental thinking was open to redefining what was useful and seeing usefulness in what otherwise would be regarded as useless. The transvaluation of things, borrowing a term from the philosophy of Nietzsche, is part of efficient instrumental thinking. What produces fortune is precisely creating value where there was little or none before.

Instrumental thinking that sees every thing in terms of usefulness is the kind of thinking that Heidegger criticizes in stating that technological thinking in the modern age sees all things as resource. Things are seen through the lens of how they can be used. The mountains are stone to be quarried, the forest is lumber to be sawn and milled, and the river and wind are sources of electric power. However, Chuang Tzu says that "A man must understand the useless before you can talk to him about the useful" (1964, 136). When we stand, we use only the small portion of earth beneath our feet. However, if the earth on which we do not stand, were to be removed, the part on which we do stand, would no longer be useful. To see everything as exclusively useful is to ignore the dependency of the useful on the useless and to fail to see how calculative thinking is only effective against the backdrop of a state of mind that is entirely free of calculation. It is out of that state of mind that new values arise. The *Chuang Tzu* speaks of a huge knurled tree, which carpenters ignore because its trunk is too bumpy to cut, and its branches too curved to make lintels and sills. It is useless from the ordinary point of view, but Chuang Tzu observes that since no one will ever put saw or axe to it, it will have a long life. He suggests lying beneath its shade and doing nothing. He speaks of planting it "in the Not-Even-Anything-Village, or the field of the broad and borderless," metaphors which invoke images of non-instrumental states of mind (1964, 35) before things have been differentiated and distinctions made. The field is without borders, because it is by means of borders that the thought of things arise. It is that state of mind that instrumental thinking must step back into in order to experience a redefining of its goals and a revaluation of its means. Like the big useless tree, there is also Crippled Shu who waives goodbye when the troops are called out and who is looked over when work parties are formed. Shu's handicap is a misfortune from one point of view, but a fortune from another (1964, 62). Here again a transvaluation of ends accompanies thinking about the means for achieving those ends. The capacity to reevaluate ends is necessary for instrumental thinking if it is to be more that merely efficient.

The openness to redefine ends, and thereby reinterpreting the useful and useless, is the kind of thinking that the logician Hui Tzu lacked. His logic presumably consisted in the best way of

achieving certain ends, but did not include an openness to redefine ends, which would have turned the huge gourds into something useful. This is one aspect of the criticism that the gardener made in speaking of machine thinking and a machine heart. Machine thinking is an instrumental thinking that considers only the means for achieving certain ends without contemplating the possibilities of alternative ends. Truly efficient thinking is an attention to not only the means but to ends as well, that is, it combines efficiency with effectiveness and is able to see usefulness and value in what at first appeared useless and valueless. This ability is due to the flexible, dynamic nature of the Tao, which effortlessly responds to the specific characteristics of a situation (1964, 35). Chuang Tzu calls this prerequisite state of mind "being without bent" which is clearly openness to transvaluating means and ends (1964, 103).

Action and Non-Action

Action that is flexible to both means and ends is *wu-wei*, literally non-action. It refers to a type of activity that engages in action without violating the nature of the object that is acted upon or the nature of the instrumental context in which the action takes place. An understanding of this insight can be gained by simply contemplating the distinct functions of a spoon, fork and knife. The knife is used for cutting, the fork and spoon are used for moving and raising solids and liquids. The spoon and knife can be used for cutting, but that is not their natural function. In this sense, *wu-wei* is concerned with the appropriate or inappropriate use of a tool. A tool that is appropriate arises in the world effortlessly and efficiently. Furthermore, beside the instrumental context, there is a larger human context in which the tool must fit. This fittingness is first and foremost an aesthetic matter that concerns sensibility. An insensibility to the larger context that includes aesthetic, epistemological, and religious values makes the introduction of the tool, intruding and unnatural. Technological devices born out of an exclusive focus on efficiency impose themselves on the world, while technologies that fit in the larger context of human existence grow out of it. Action that is technological in the sense of *wu-wei*, then, is natural and necessary.

The concept of Te in the *Tao Te Ching* has both moral and non-moral implications. It has been translated both as 'power' and as 'virtue'. A thing, such as a pencil, has its own Te, an intrinsic power to be what it is and to do what it does best. For example, there are surfaces which a pencil marks better than any other tool for writing, Everything, including artificial objects, have a Te. A spoon has its own natural way of being in the sense that it fits precisely the context in which it is used. (Fung Yu-lan, 101). The Te, therefore, is the power that allows for effective action. The Te of the spoon is not in the spoon apart from its user; it is not intrinsic to the spoon left unused on the table. It manifests itself only in the spoon while-in-use, and only if the spoon-in-use does not violate the integrity and simplicity of the single manifold.

> According to the theory of having-no-activity, a man should restrict his activities to what is necessary and what is natural. 'Necessary' means necessary to the achievement of a certain purpose, and never over-doing. 'Natural' means following one's Te with no arbitrary effort. In doing this one should take simplicity as the guiding principle of life. (Fung Yu-lan, 101)

If the spoon is too heavy, then it does not fit in the natural order established by the context of eating a meal. If the spoon is too ugly (or too beautiful), it imposes itself on the attention of its users. The principle of the mean is operative here. The spoon should neither be too long nor too short, neither too pointed nor too rounded, neither too cupped nor too flat. Here virtue, Te, is the mean between excess and defect. The considerations that determine what is appropriate are

virtually endless and engage not only the sensibilities of the engineer, but also those of the artist and the metaphysician.

Te has moral implications. A world moved by *wu-wei* is not beyond good and evil, but it is beyond fixed characterizations of what good and evil are. There would be no need to distinguish between good action and evil action, between good and bad machines, because actions and devices would arise naturally and organically. This fitting-into the natural order means fitting-in the single manifold of the good, the true, the useful, and the holy that is humanity, since the proper sphere for technology is given by the relationship between the user and the tool. In this sense, some technologies would be naturally acceptable, while some would be rejected. Taoist ethics is to be found at the level of aesthetic sensibility, not of moral or political understanding. Sensibility is set in motion by the type of relationship established between the human and the machine and the larger context of instrumental relationships.

A good spoon, one that is virtuous, that has Te, is not too heavy and it is not too light; the metal is neither too thick nor thin. It is polished to the degree that food does not easily stick to it. It is balanced so that it can be held easily. All of these properties are part of efficiency. The spoon could be used as a weapon to injure someone, and we may judge that to be unethical, but that limitation does not need to be imposed on the spoon from the outside by ethical standards. The spoon does not make a very efficient weapon, particularly if your opponent has a sword. Its inefficiency limits it from being used unethically. The spoon is also part of an instrumental complex, that is, a system of instrumental relationships. So the shape of the spoon should conform to the shapes of the cups and bowls with which it is used. This fitting into to the instrumental complex is part of its efficiency. In all of these cases we are talking about what makes a "good" spoon. Good in the sense of efficiency flows into good in an ethical sense. Technologies that pollute the air and water that we and other living things breathe and drink are, in the context of a consideration of ends, inefficient and ineffective, but they are also morally wrong in a broader sense than the standards of a merely human ethic.

This virtue or power of Te results in an effortless form of action that does not require deliberation about means and ends. It is efficient action but action without instrumental thinking. Flowing water is used in the Taoist literature as an analogy for the path of the Tao informed by such non-instrumental thinking. Flowing water takes the shape of its container. It is without will or plan or any form of its own. It either flows around or over obstacles, or over time wears them away. Sometimes it rises up as a powerful force; at other times it is yielding and weak. The *Tao Te Ching* evokes the effortless effectiveness of water in these few lines: "There is nothing softer and weaker than water, and yet there is nothing better for attacking hard and strong things…. All the world knows that the weak overcomes the strong and the soft overcomes the hard, but none can practice it" (Chan, 174-175). The difficulty of putting effortless action into practice is the result of the tendency to yield to linear instrumental thinking that is not open to redefining means and ends and which encounters the world with opposition and resistance. Presumably this is what the gardener saw in the machine that he refused to use.

Theories of Embodiment

Another way of understanding the gardener's rejection of the tool is to say that the machine was not a device with which the gardener could enter into an intimate relation. By 'intimate' is here meant a relationship of embodiment between the user and the tool. This intimacy occurs most notably in sports with instruments like baseball bats, golf clubs, tennis rackets where the player experiences the instrument as an extension the body. The use of the tool in the case of

embodiment is spontaneous, and non-deliberative, without reflection dividing the action into the subject as user and the tool as object. There are strong similarities between this Taoist theory of effective action and theories of tool embodiment proposed by Don Ihde and Hubert Dreyfus. In describing the process of skill acquisition, Dreyfus distinguishes stages that the use of a tool must pass through in order to achieve the maximum efficiency. Initially, the encounter with a new tool requires a step-by-step learning process that divides the action into small acts, where each act is translated into a rule that can be memorized and applied. At this stage, the use of a technological device is very slow and tentative and reaching the goal is subordinate to the learning process. Here rules are applied deliberately and rationally. The stage of expertise, however, is one in which the user is no longer limited by rules and rational deliberation. Action becomes fluid and reactive, stemming from an "immediate intuitive situational response" (Dreyfus and Dreyfus, 109). Effective action at the stage of expertise needs no deliberation, and intentionality becomes an intrinsic element of the sensible engagement with the world. In embodiment, the use of the tool or machine reaches a level of competence that eliminates all mediation between the tool and the user.

A further level of action can be identified beyond the level of expertise that most closely resembles the Taoist concept of *wu-wei*. Quoting Aron Gurwitsch, Dreyfus makes a clear Taoist observation: "we do more and greater justice to [the situation] the more we let ourselves be guided by it, i.e., the less reserved we are in immersing ourselves in it and subordinating ourselves in it" (Dreyfus and Dreyfus, 111). Dreyfus calls this "purposive action without a purpose" (Dreyfus and Dreyfus, 112). Using the example of a tennis player, Dreyfus notices that, while she is playing at the expert level, the court, the ball, the racket and all other elements of the situation, form a complete gestalt where there are no distinct parts at the moment when the ball is hit. The goal of action is already in the situational engagement; it is not imposed on it through planning and deliberation.

Merleau-Ponty defines embodiment as a process that unifies the innate structure of the body with its abilities to grasp, walk, talk, and so on, the skills solicited by the kind of world the body inhabits (a world that requires grasping, walking, talking and so on), and finally the cultural situation that makes these potential skills relevant to life. "By embodiment," Dreyfus observes, "Merleau-Ponty intends to include all three ways the body opens up a world" (Dreyfus and Dreyfus, 104). The unity of these three aspects of embodiment is what Merleau-Ponty calls "the intentional arc." The three aspects which constitute the intentional arc are (1) the innate structure of the body, (2) the physical world which the body inhabits, and (3) the cultural situation that makes actions meaningful. Engagement in the world must follow such an arc to achieve its goals, but in order to achieve them it has to project itself in a way that fits within a human personality conditioned by its pre-established position in the world. "The life of consciousness—cognitive life, the life of desire or perceptual life—is subtended by an 'intentional arc' which projects round about us our past, our future, our human setting, our physical, ideological and moral situation" (Merleau-Ponty, 157). Therefore, intentional engagement with the world includes moral, ideological and, it must be added, aesthetic considerations in order to achieve what Merleau-Ponty calls "maximum grip," that is, the sense that the subject is in the best possible position to engage the situation efficiently and effectively. With such an immersion in the world, the situation shapes action without the need to set a deliberate goal. This is full embodiment. It is illustrated by the actions of Cook Ting in cutting up the ox and in the hunchback catching of cicadas with the sticky pole. Embodiment is the criterion that the gardener used in rejecting the use of the machine for raising water.

It can be seen, therefore, that a theory of embodiment that focuses only on the conditions of efficiency in a narrow sense, that is, the skillful use of a tool, without including the context of the situation at large, would not be sufficient, to explain effectiveness. The Taoist theory has the merit of making manifest the implications of true embodiment for a theory of values in technology. Heidegger's manifold is reintegrated only as a result of broadening the understanding of efficiency to include aesthetic and ethical values. The most effective use of a tool is one that does not violate a sensibility of what the situation requires in a broadest sense, which includes both ontic and ontological concerns.

The Hinge of the Way

Technology in the broader sense, which is sensible to a larger manifold of values, finds power not only in efficiency, but also in the capacity to transvaluate instrumental complexes. The *Chuang Tzu* says that everything has its this and everything has its that. The terms 'this' and 'that' refer to opposing values. So keeping promises in one case is good and in another case bad. Symmetry in one instance is beautiful and in another instance ugly. Sometimes loyalty and trust are sacred, sometimes they are not. Something is useful in one context, but useless and a burden in another. The Way, it is said in the *Chuang Tzu*, has no boundaries that is, no thing can be defined as being such and such absolutely. Those who follow the Way cannot be said to have, or not have, a fixed this or that. The state in which there is no longer a this and that is called the "hinge of the Way" (1964, 35). The image of a hinge is used because a hinge easily swings back and forth between opposing positions. When the hinge is fitted into a socket, that is, when the state of mind that is without a this and a that is placed in a situation of action, it is said that it is able to "respond endlessly." It is then that the *Chuang Tzu* says "Great Benevolence is not benevolent, Great Modesty is not humble, and Great Daring does not attack" (1964, 39). That Great Benevolence is not benevolent means that it cannot be defined in any unqualified and unconditional sense that is the same under all conditions. Generosity cannot be defined as giving five dollars or giving five hundred. It resists being bounded by a formula. Great generosity sometimes gives everything and sometimes it gives nothing.

Responding endlessly is a quality of truly efficient action, namely, resourcefulness, which is possible provided that moral, aesthetic, epistemic, and religious values, which are the qualities of correct action, are not fixed and rigid. The form that action takes arises out of the efficiency of action, like water taking the path of least resistance, rather than having its form imposed upon it by a rule based system of definitions. Repeatedly throughout the early Taoist literature, truly virtuous action is without deliberation and premeditation, that is, without exclusively instrumental thinking. The ends of action as well as the means are determined incrementally *in vivo*.

Conclusion

Instrumental thinking which is necessary at different stages in the course of action is subordinate to a different order of thinking. In Taoism this is called *wu-nein* and it is not unlike the meditational thinking that Heidegger refers to in the Turning as the stillness of thought and action. It is out of the stillness that instrumental complexes change their value and new systems of instrumental values arise. In the language of the *Chuang Tzu*, this becomes that and that becomes this. The complaint that Heidegger directs toward Western technology, that it neither recognizes itself as a metaphysics, nor is informed by metaphysics, is an awareness that can be found in Taoism's own understanding of efficient action.

Truly efficient action in Taoism is open to transvaluating the values out of which it acts and setting itself on a new course in response to what the situation requires. This is why there is the repeated injunction in the *Tao Te Ching* to leave it be, let it alone, allow things to rest, to do nothing, since whether action is required or not is relative to a system of values. This capacity to transvaluate is the essence of innovation and resourcefulness, and is the meaning of *wu-wei* (non-action), which is effortless and acts without meeting resistance. *Wu-wei* requires *wu-nein* (no-mind), which steps out of instrumental thinking into a source of a broader system of values that cannot be made the object of discursive knowledge. The paper has noted the resemblance of Taoism's understanding of efficient action to Heidegger's critique of Western technology. Heidegger sees stillness as a propaedeutic towards an alternative technological paradigm in the essay *The Turning*. Stillness, includes an awareness of the distinction between what can be said and thought, and that out of which speaking and thinking arise, which cannot be spoken or thought, that is, to the distinction between the ontic and the ontological.

The critiques that Ellul and Heidegger make of technology presuppose a narrow notion of efficiency. However, the philosophy of action that is found in the *Chuang Tzu* and the *Tao Te Ching* add to the concept of action facets of action that are effective, entrepreneurial, innovative and resourceful, and place efficiency integrally within a manifold of values that are ethical, aesthetic, and religious. Ancient Taoism sees action and understands the useful as resting within and against a horizon of what is beyond instrumental value, and locates instrumental thinking within a state of mind that is entirely free of instrumental thought. In the language of Taoism, such action is in accord with the Tao and moves within the natural contours of the situation in which the action takes place. It does not require control from without in order to posses the values that Heidegger saw as part of the single manifold. It is a concept of efficiency that is autonomous and self-limiting and that does not require subordination to a rule based ethic, but is in fact capable of generating ethical standards.

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