

Heidegger and Nishitani on Nature and  
Technology  
海德格與西谷啟治論自然與技術

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## Abstract

The environmental predicament in which we currently find ourselves—widespread pollution, increasing loss of biodiversity, global warming—involves harm to the natural world through the human over-use of various modern technologies. Since we depend on the natural world for our survival, this harm is beginning to jeopardize human well-being too, and yet we seem to be powerless to stop or restrain it. Since environmental problems are now global in scope, a bilateral perspective from Europe and East Asia may help to illuminate some of the reasons and factors behind them. In particular the reflections on technology of Martin Heidegger (1889-1976) and Nishitani Keiji 西谷啟治 (1900-1990) continue to be relevant to our current situation. The Daoist philosopher Zhuangzi (an influence on both Heidegger and Nishitani) provides an appropriate backdrop for the discussion by recommending that we be sceptical about technology less because of its potential for destroying the natural environment than for the detrimental effects it has on the user's heart and mind. Heidegger discusses technology because he believes that we are "chained to" it, and that we can be freed from this bondage by adopting new ways of thinking. Our lack of freedom with respect to technology stems from our misunderstanding of it as something we have control over, whereas the reality is that our technologies are controlling us.

Nishitani would agree with Heidegger that we aren't in control of technology, but he places more emphasis on its dehumanizing effects and its connections with nihilism. Although the technological applications of modern scientific discoveries afford us considerable control over the world, these discoveries also drain it of any human meaning, thereby rendering our mastery somewhat hollow. Nishitani's discussions point up the extent to which we employ the fruits of modern technology to avoid confronting the radical impermanence of existence and our own frail finitude.

Both Heidegger and Nishitani acknowledge the necessary role that technology plays in our lives, but they also urge to take far greater care in appraising the kinds of technologies we choose to develop and employ.

## 摘要

我們目前所處的環境困局——廣泛的污染、逐漸喪失生物多樣性、全球暖化——與人類過度使用各種現代技術，而對自然環境造成破壞有關。我們仰賴自然環境而得以生存，因此這些破壞也開始危及人類的福祉，然而我們似乎無力阻止或遏制這些破壞。由於環境問題的範圍目前已涉及全球，來自歐洲和東亞的雙方觀點或有助於闡釋某些背景原因和因素，尤其是海德格（1889-1976）和西谷啟治（1900-1990），他們對技術的反思仍舊適用於我們目前的處境。道家哲人莊子（對海德格和西谷啟治皆產生影響）建議我們應對技術心存疑慮，因其對使用者心智的不良影響甚於其對自然環境造成破壞的潛在可能，此說為相關討論提供了適切的理論背景。海德格討論技術，因為他相信：我們被它「拴住」，而且我們可以經由採納新的思維方式解除這個束縛。我們在使用技術上缺乏自主權根源於我們誤以為可以控制它，然而事實顯示，我們所發展的技術正在控制著我們。

西谷啟治會同意海德格認為我們無法控制技術的觀點，但他更加強調技術剝奪人性的效應及它和虛無主義的關連。雖然現代科學的發現經由技術的應用賦與我們大幅掌控世界的的能力，這些發現卻也令此中人的意義消耗殆盡，從而使我們的支配變得有些空洞。西谷啟治的討論指出我們為了避免面臨存在與生俱來的無常和我們本身脆弱的有限，而採用現代技術的成果所達的程度。

海德格和西谷啟治二人都承認技術在我們的生命中所扮演的必要角色，但是他們也力促我們應在對那些我們所選擇發展和使用的技術種類所進行的評估上，投注遠大於目前的關切。

The environmental predicament in which we currently find ourselves—widespread pollution of the earth, air and water, rapidly increasing annihilation of other species, global warming that threatens the very viability of life on earth— involves harm to the natural world through the over-use of modern technologies. Since we depend on natural resources for our survival, this harm is also jeopardizing human well-being, and yet we seem powerless to stop or restrain it. This circumstance derives from a failure to acknowledge our dependence on nature, together with an unwarranted faith in our ability to control the world through technology. Since the environmental predicament is now global in scope, it may help to adopt a bilateral perspective from Europe and East Asia, and consider what the philosophers Martin Heidegger (1889-1976) and Nishitani Keiji 西谷啓治 (1900-1990) have to say about these topics, since it continues to be relevant to problems that confront us today.<sup>1</sup> But let's begin with some ideas from the Chinese tradition which were an influence on both Heidegger and Nishitani.<sup>2</sup> (Heidegger begins his 1954 essay on technology by emphasizing that genuine questioning works at building "a way," *ein Weg*, a path of thinking, and often uses the word *Weg* during this period, sometimes even writing "Tao" in parentheses after it.)

## 1. Daoist Adumbrations

There is a way of living advocated and practised in ancient China, one that follows *dao* (道), the way the world's transformations unfold, and which manages a sane use of technology in the context of salutary interaction with the world of nature. A major tenet of Daoist philosophy is that human beings tend to flourish

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1 An excellent engagement with the problem of technology from a Buddhist perspective is Peter Herschok's *Reinventing the Wheel* (Albany, N.Y.: State University of New York Press, 1999), though he doesn't discuss either Nishitani or Heidegger.

2 For more details, see Graham Parkes, "Lao-Zhuang and Heidegger on Nature and Technology," *Journal of Chinese Philosophy*, Vol. 39, Issue Supplement S1 (Dec., 2012), pp. 112-133. DOI: 10.1111/1540-6253.12005.

when they emulate the ways of heaven and earth.<sup>3</sup> There is also, especially in the *Daodejing* (道德經) of Laozi 老子, a utopian and "primitivist" tendency that is wary of using tools and contraptions: one chapter begins by saying, "Let the country be small and the people few. [...] Though they might have boats and carriages, no one will use them."<sup>4</sup> Throughout the text the highest praise is accorded to naturalness and simplicity.

There is a memorable story concerning technology in the second great classic of Daoist philosophy, the *Zhuangzi*, which tells of an old man who is watering his vegetable garden when a young man offers him a contraption called a well-sweep that would make his task easier.<sup>5</sup> The old man rejects the offer contemptuously, saying that he already knows those contraptions but would be ashamed to build or use one of them. His objection is less to the contraption as such, or its effect on the natural environment, than to the calculative "mind-set" needed for inventing such devices, and the harm done to the soul of anyone who relies on them. The earliest German translation of this text puts the point in a vivid image that anticipates Heidegger's ideas about the limitations and dangers of what he calls "calculative thinking": "If one has a machine-heart [*Maschinenherz*] in one's breast, one loses pure simplicity."<sup>6</sup>

A contemporary concern about the way dealing with technology can lead to a machine-heart mind-set is voiced by the protagonist of John M. Coetzee's autobiographical novel *Youth*, who is working as a computer programmer in the

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3 Laozi, *Daodejing*, chapter 25.

4 *Ibid.*, chapter 80.

5 Zhuangzi, *The Complete Works of Chuang Tzu*, trans. by Burton Watson (New York: Columbia University Press, 1968), p. 134. The Chinese term *jixin* (機心) could also be translated as "contraption heart" or "contrivance heart." Henrik Jäger has pointed out that, while the *ji* originally had the positive senses of "inventive, ingenious, calculating, planning," another important Daoist text, the *Huainanzi* (淮南子) (second century BCE), uses the term with a similar negative connotation (See Henrik Jäger, *Mit den passenden Schuhen vergißt man die Füße: Ein Zhuangzi-Lesebuch* [Zürich: Ammann Verlag & Co, 2009], p. 150).

6 von Richard Wilhelm, *Dschuang Dsi: das wahre Buch vom südlichen Blütenland* (Jena: E. Diederichs, [first published 1912], 1969), p. 136.

1960s (when computers were too huge and expensive for private individuals to own).

There are many alternative logics, he is convinced (but how many?), each just as good as the logic of *either/or*. The threat of the toy by which he earns his living, the threat that makes it more than just a toy, is that it will burn *either/or* paths in the brains of its users and thus lock them irreversibly into its binary logic.<sup>7</sup>

We now have a generation of young people subjected to this threat by mediating most of their interactions with others through the screens of digital devices: reality is screened for—and *from*—them not only by television and computer screens but also by mobile phones and PDAs: all zeroes and ones, on or off, one or the other, *either/or*, pixels pitched momentarily against the flow of existence. Their constant need to feel connected, as evidenced by the continual downward glance to the screen of their mobile phone, is satisfied (if that's the word) by the medium of the text message, which drastically reduces the communicative possibilities of conversation to a restricted vocabulary that would make your average cave-dweller blush. Through the constant distraction of their attention away from their actual surroundings, people become not only alienated from those around them but also physically cut off from the natural world and its potentially healing and health-promoting effects, not to mention distanced from the wonders and beauty of nature. The natural world isn't all beautiful, but when not interfered with by humans, it's remarkable that healthy ecosystems almost invariably look and sound pleasing—and they usually smell good, too.

Another chapter of the *Zhuangzi*, which calls into question the value of too much knowledge, focuses particularly on the tendency for knowledge to turn into

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7 John M. Coetzee, *Youth* (New York: Viking, 2002), p. 160.

the kind of cleverness that develops technologies which disrupt the dynamics of natural systems.

Much cleverness in the use of crossbows and arrows, traps and nets, plots and schemes, throws the birds of the sky into disorder. Much cleverness in the use of hooks, bait, nets, poles, and lures throws the fish of the water into disorder. Much cleverness in the use of traps, snares, and lattices throws the beasts of the woodlands into disorder. Then cleverness turns into cunning, like a kind of gradual poisoning, [...] and ends up casting the people into a muddle of disputation.<sup>8</sup>

As in the story about the well-sweep, the main objection to the use of tricky technology concerns the effect it has on the mind-set of the user. But this passage, whose context echoes the "primitivist" themes of the *Laozi* (老子), also suggests that as early as Zhuangzi's time (fourth to third century BCE) technological innovations in hunting and fishing were beginning to disrupt ecosystems. Nowadays, armed with high-tech hunting and fishing equipment, humans are able to clear entire regions of animals, birds, and fish.

And yet, overall, the *Zhuangzi* is not simply opposed to technology, but rather advocates a balance between what comes from humans and what comes from nature. Chapter 6 begins by suggesting that the most important thing is "to understand what is done by Heaven [nature] and what is to be done by the human." A sure sign of the human, however, is egocentric desire or craving: "Wherever desires and cravings are deep, the impulse from Heaven is shallow." It's not a matter, for Zhuangzi, of annihilating what comes from the human, but rather of keeping it in dynamic balance with what comes from nature: "Someone in whom neither Heaven nor the human wins out over the other: this is what is

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<sup>8</sup> Zhuangzi, *Zhuangzi: The Essential Writings with Selections from Traditional Commentaries*, trans. by Brook Ziporyn (Indianapolis: Hackett Publishing, 2009), chapter 10, 65.

meant by the True Human." In these terms our current predicament derives from a preponderant favouring of the human over the natural.

## 2. Heidegger on Exposing Technology

Before considering what Heidegger writes about the relations between nature and technology, let's begin with an early sketch in *Being and Time*. Taking a phenomenological approach by asking what it is that we most closely encounter in the course of our everyday lives, Heidegger says the ancient Greeks were right to call them *pragmata*, whatever we deal with in the course of *praxis*.<sup>9</sup> These happen to be things of technology: Heidegger classes them as *Zeug*, or equipment, and gives as examples "writing implements, sewing kit, tools, vehicles, measuring instruments." The crucial feature of equipment in this sense is that there can never be only *one* of it: it's always integrally related to other items of equipment and depends on the total context without which it can't be useful or used. Heidegger mentions "writing implements, pen, ink, paper, underlay, table, lamp, furniture, window, door, room." The interconnected nature of equipment means that any particular item always "refers" to others—as a pen refers to (insofar as it's useless without something like) paper. Equipment, as itself something that's usually made by using equipment, also refers to what it's made *of*, to the materials, and the natural sources of those materials. In this way the use of basic everyday technologies discovers "nature in the form of natural products." But what is most important about Heidegger's analysis here is that *relations* and *context* are primary: as he puts it in the writing implements example, "What is first encountered is the room [...] as equipment for living in [...] as an equipmental whole."<sup>10</sup> Buddhist philosophy likewise emphasizes the

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9 Martin Heidegger, *Sein und Zeit* (Tübingen: M. Niemeyer, 1967), p. 68. Given the difficulties of Heidegger's language in the context of our topics, all translations of his works are my own.

10 *Ibid.*, pp. 70, 68-69.

importance of context and relations for understanding any particular phenomenon, of maintaining a sense of the ground against which any figure appears.

As far as natural phenomena are concerned, Heidegger acknowledges that dealing with things as *pragmata* (as *zuhanden*, or "to-hand") is only one way of treating them. We can also regard them as *vorhanden*, or "neutrally present," as when a scientist studies them objectively.<sup>11</sup> But there's a third way, often overlooked, through which we encounter the "power of nature." Firstly, we can treat trees as potential lumber, the mountainside as a quarry, the river as hydropower, or the wind as a force that fills the sails. But then,

One can look away from nature as something to-hand, and discover and determine it simply in its neutral presence. But to this way of discovering nature too, nature as that which "weaves and strives," overwhelms us, or entrances us as landscape, remains concealed. The plants of the botanist are not the flowers in the hedgerow, the geographically determined "source" of a river is not the "spring in the ground."<sup>12</sup>

Imagine that a botanist who specializes in trees spends the winter holidays in a log cabin, and so has to gather and chop wood for fuel. Neither his professional engagement with trees as neutrally present nor his practical engagement with them as being to-hand as sources of fuel and shelter need preclude an aesthetic appreciation of them in the course of hikes through the forest. Later in *Being and Time* Heidegger writes (with the usual plethora of quote marks):

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<sup>11</sup> *Ibid.*, p. 25.

<sup>12</sup> *Ibid.*, p. 70. The phrase translated by "weaves and strives" (*webt und strebt*) occurs in Christoph Martin Wieland's *Euthanasia: Drei Gespräche über das Leben nach dem Tode* (Dying Well: Three Conversations about Life after Death) in the course of a discussion of the thought of death, where one of the interlocutors speaks of "the warm feeling of life wherein the human being weaves and strives as if in his own element." See Christoph M. Wieland, *C. M. Wielands Sämmtliche Werke* (Leipzig: Georg Joachim Göschen, 1794), p. 216.

The "nature" that "surrounds" us is certainly something in the world, but it doesn't display in its "nature-thingness" the way of being of either what is to-hand or what is neutrally present.<sup>13</sup>

He thus explicitly allows for a third way of encountering things, when they are things of nature, though he doesn't name it or develop the idea anywhere in *Being and Time*.

The relationship between what is to-hand as a product of technology and the natural world is made clear in the text's only other discussion of natural phenomena, where Heidegger talks about the way "the social world," insofar as it's filled with human-made products, grants access to the "natural environment" (*die Umweltnatur*).

In roads, streets, bridges and buildings, nature is discovered in a particular perspective thanks to human concerns. A covered platform takes account of bad weather, while street lighting takes account of darkness, of the specific alternation between the presence and absence of daylight, of the "position of the sun."<sup>14</sup>

This "particular perspective" through which we encounter natural phenomena is to a large extent conditioned by the products of technology, and it's significant that Heidegger's examples are of human constructions that insulate us from the forces of nature or mitigate their impact on our activities: the covered platform keeps the rain off, and street lighting banishes the darkness.

Moving now to Heidegger's essay "Questioning Technology" (1954), we encounter first the idea that the ordinary, common-sense understanding of technology as "a means to an end [...] and a human activity" is "correct"—but

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13 Martin Heidegger, *Sein und Zeit*, p. 211.

14 *Ibid.*, p. 71.

dangerously superficial.<sup>15</sup> By contrast Heidegger argues that technology is essentially (he uses the phrase no fewer than seven times) "a way of exposing [*Entbergen*]," a process of "opening-up" or "unsecuring" that originates from beyond the human, through the process of what he calls *das Ge-stell*—a term meaning "apparatus," or also, he adds, "skeleton." There's a strong sense that this "set-up," as we might call it, which comes from beyond the human, is Heidegger's Being itself, in its "eerie," death-like aspect.<sup>16</sup> Nevertheless, the purpose of the essay is emancipatory: Heidegger wants to prepare a "free relationship" to technology, since at present we are "unfreely chained" to it. Our lack of freedom stems from our misunderstanding of technology as something we have control over, from the delusion that we are in control of the technical means we employ. The common response to failure in this regard is unhelpful: "The will to mastery becomes all the more urgent the more technology threatens to slip from human control."<sup>17</sup>

An important step in Heidegger's argument is his claim that technology is continuous with nature, insofar as both are forms of *poiēsis*, "producing" or "creating" or (in his translation) "bringing-forth" (*Hervor-bringung*). Heidegger invokes the characterization of *poiēsis* in Plato's *Symposium* as that which induces "the passage from nonbeing to being," or "absence to presence." *Poiēsis* isn't to be understood only as human making, whether by the craftsman or the artist: in fact the higher form of *poiēsis* comes from *phusis*, from nature itself as

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15 Heidegger, "The Question concerning Technology," in *The Question Concerning Technology, and Other Essays* (New York: Harper & Row, 1977), p. 4; "Die Frage nach der Technik," in *Vorträge und Aufsätze*, in *Gesamtausgabe*, GA I, 7 (Frankfurt am Main: Vittorio Klostermann, 2000), p. 7.

16 *Ibid.*, p. 12 passim, 20 ff; *Ibid.*, p. 13 passim, 20 ff. Samuel Weber, in his brilliant essay "Upsetting the Set-Up: Remarks on Heidegger's 'Questing after Technics,'" in Samuel Weber, *Mass Mediauras: Form, Technics, Media* (Stanford, Calif.: Stanford University Press, 1996), pp. 55-75, translates *Entbergen* as "unsecuring," to catch the connotation of "salvaging" (and "sheltering" and "rescuing") inherent in the basic root, *Bergung*. "Unsecuring" surely works better than the customary translation of *Entbergen* as "revealing," but "exposing" or "opening-up" better convey the continuity with the process of *phusis*, while retaining the sense of "revealing" that attaches to Heidegger's strange neologism.

17 Heidegger, "The Question concerning Technology," in *The Question Concerning Technology, and Other Essays*, p. 2-4; "Die Frage nach der Technik," in *Vorträge und Aufsätze*, p. 7.

the process of arising out-of-itself or self-unfolding, as when a bud blossoms into a flower (Heidegger's own example). Since *phusis* is *poiēsis* "in the highest sense," human producing or creating is to be understood as an extension of what is already going on in nature, which is a constant passing from hiddenness (*Verborgenheit*) to unhiddenness (*Unverborgenheit*). And this is where Heidegger introduces the key verb *Entbergen*: nature is a constant process of opening-up, exposing and being exposed; and human making—whether artistic or pragmatic in the form of technology—is an extension of this basic process of exposure.<sup>18</sup>

Although Heidegger doesn't mention Heraclitus (540-480 BCE) in this context, we might well think here of his characterization of *phusis* as that which "loves to hide" (*Phusis kruptesthai philei*).<sup>19</sup> Even though *phusis* may be a process of unfolding out into unhiddenness, the true nature (*phusis*) of every phenomenon still tends to hide itself. However, as Pierre Hadot (1922-2010) has remarked, the verb *kruptein* in its active form can also mean "to bury," and has connotations of veiling in the context of death. (The root of *Verborgenheit*, the verb *verbergen*, can also mean "to bury.") So the dictum of Heraclitus may also be translated as, "What causes birth also tends to cause disappearance," or "That which results from the process of birth tends to disappear."<sup>20</sup> This translation highlights the closeness of Heraclitus's philosophy of constant flux (*Panta rhei*) to the central Buddhist idea of impermanence, the arising and perishing of all phenomena at every moment. After all, an integral phase of *phusis* as the highest form of *poiēsis*, as continuous self-creation, is self-destruction: dissolution, perishing, death. The opening-up of a bud into a flower is invariably a harbinger of fading, wilting and decay.

18 Heidegger, "The Question concerning Technology," in *The Question Concerning Technology, and Other Essays*, pp. 10-11; "Die Frage nach der Technik," in *Vorträge und Aufsätze*, pp. 12-13.

19 Heraclitus, fragment X, in Charles H. Kahn, *The Art and Thought of Heraclitus: An Edition of the Fragments with Translation and Commentary* (Cambridge, Eng.: Cambridge University Press, 1979) (corresponds to Hermann Diels, Fragment 123—*Fragmente der Vorsokratiker* [Berlin: Weidmannsche Buchhandlung, 1903]).

20 Pierre Hadot, *The Veil of Isis: An Essay on the History of the Idea of Nature*, trans. by Michael Chase (Cambridge, Mass.: Belknap Press of Harvard University Press, 2006), pp. 8-9.

Here is a contemporaneous remark by Heidegger (very much in the spirit of the *Laozi*) on the way technology works against the "law of the earth" by striving willfully to break through the limitations it imposes.

The inconspicuous law of the earth preserves it in the sufficiency of the arising and perishing of all things within the allotted sphere of the possible, a law that each thing follows yet none is aware of. The birch tree never oversteps what is possible for it. The bee colony dwells in what for it is possible. Only the will that installs itself ubiquitously in technology devours the earth in the exhaustion and consumption and alteration of what is artificial. Technology forces the earth beyond the evolved sphere of what is possible for it into what is no more the possible and is thus the impossible.<sup>21</sup>

Such forcing and devouring of the earth not only reduces physical richness and diversity but also impoverishes our imagination and thereby our experience when it presumes to reject evolution as what comes and goes naturally.

In a text from 1942, Heidegger gives a hypothetical and highly prescient example of the technological drive to break through natural limits and increase human control over life. He envisages the prospect of "factories for the artificial generation of human material" on the basis of contemporary research aiming at "the possibility of directing the generation of male and female organisms according to plan and need."<sup>22</sup> In response to an announcement by a Nobel Prize-winning chemist to the effect that scientists would soon be able to "synthesize, split and change living substance at will," Heidegger wrote: "We are not aware that technology is here preparing an attack on the life and nature of the

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21 Heidegger, "Overcoming Metaphysics," in *The End of Philosophy*, trans. by Joan Stambaugh (New York: Harper & Row, 1973), p. 109; "Überwindung der Metaphysik," in *Vorträge und Aufsätze*, p. 96.

22 *Ibid.*, p. 106; *Ibid.*, p. 93.

human being by comparison with which the explosion of the hydrogen bomb is of little significance." Now that biotechnology is in full swing, we do well to consider why Heidegger found the prospect so disturbing: it's because "the human being is not prepared for such a change in the world [...] we are unable to think it over properly."<sup>23</sup>

In "Questioning Technology" Heidegger argues that modern technology is, like its predecessor, a kind of exposing, but differs in not being "a bringing forth" in the sense of *poiēsis*. In modernity the exposure is "a provocative challenging [*Herausfordern*] that asks nature to deliver energy that can *as such* be extracted and stored up."<sup>24</sup> This is different from the case of traditional technologies such as the windmill, where the turning of the sails isn't directed toward a storing of the energy for later use, but is "entirely dependent on the wind's blowing." In pre- or non-industrial agriculture the farmer takes good care of the soil in which he "commits the seed to the forces of growth and watches over its flourishing." The idea is that premodern technologies worked *with* natural forces, while acknowledging human dependence on them. Of course human beings have always also had to protect themselves from the forces of nature—from wild animals to dangerous weather—by fashioning contrivances of various kinds. But they also used to pay attention to the patterning of natural forces (especially the succession of the seasons and the consequent variations in flows of water and air and in the growth of vegetation) so as to organize their lives according to them. Now we dismiss such careful attention in favour of controlling the environment by means of technology—which in turn intensifies the drive to control.

In the course of his fulminations against the hydroelectric plants that desecrate the Rhine by turning the river into "a water-power supplier," Heidegger

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23 Heidegger, *Discourse on Thinking: A Translation of Gelassenheit* (New York: Harper & Row, 1966), p. 52; *Gelassenheit* (Pfullingen: Neske, 1959), p. 20.

24 Heidegger, "The Question concerning Technology," in *The Question Concerning Technology, and Other Essays*, p. 14; "Die Frage nach der Technik," in *Vorträge und Aufsätze*, p. 15.

describes the complex ramifications that constitute this "provocation" of the natural world.

The energy hidden within nature is unlocked, what has thereby been made accessible is transformed, what has been transformed is then stored, what has been stored is distributed, and what has been distributed is switched around once again. Unlocking, transforming, storing, distributing and switching around are all ways of exposing. [...] Exposing opens up for itself its own manifoldly interlocking paths by keeping them regulated. Regulating must itself be at all points secured. Regulating and securing [*Steuerung und Sicherung*] even become the primary features of exposing in the form of challenging.<sup>25</sup>

There is an inherent tendency, then, for the exposure pursued by modern technology to lead to further exposure, and a turn back on itself that opens up its own operations in order to regulate them. Such exposure, insofar as it challenges and provokes a greater need for security—think of the billions spent on airline security and internet security—as its network of interlocking functions expands (*Entbergen* as "unsecuring"). In this expansion the complex network of interrelations generally remains hidden from the "end-user," who at the same time becomes ever more distanced from the natural source (if it is natural) of the product.

Premodern technologies tend to expose in a relatively direct manner features of the natural elements they engage: axes reveal the relative hardnesses and pliabilitys of stone, metal, and wood; water-wheels and windmills harness and make visible the power of their respective elements—while sailboats demonstrate features of both; ovens, kilns and furnaces enhance and extend the transformative properties of fire. Modern technologies by contrast work far less directly: electric

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25 Ibid., p. 16; Ibid., p. 17.

appliances, for example, exhibit little trace of the fire that powers the station where the electricity originates—let alone of the energy from the sun which arrived on the surface of the earth during the Carboniferous Period, some 300 million years ago.

If Heidegger considered the power stations on the Rhine and the surrounding hydroelectric grids in the early 1950s "monstrous,"<sup>26</sup> he would hardly find words for the Keystone XL oil pipeline, which is designed to convey, when completed, vast amounts of unusually dirty crude oil from the tar sands of Alberta thousands of miles, through at least six states in the U.S., all the way to the Gulf coast of Texas (site of one of the world's most destructive oil spills).

However, for Heidegger the real danger of the proliferation of modern technologies lies less in any destructive effect on the natural environment than (as with Zhuangzi) in their effects on our experience and thinking. What he calls "the danger" has two aspects. The first derives from the way modern technology presents everything as resources to be exploited by humans—as *Bestand*, or "standing-stock."<sup>27</sup> This leads in turn to a situation where not only natural phenomena and things made by humans but even human beings themselves are regarded as resources to be used. (The prevalence of departments of "human resources," now even in universities, attests to this danger.) The second aspect is that all other ways of experiencing nature and the human—other than seeing everything as "standing-stock"—may be closed off. Eventually, Heidegger writes, we arrive at "one final deceptive semblance" that is as dangerous for the natural environment as it is tedious for human beings: "It seems as though the human being now everywhere encounters only itself."<sup>28</sup>

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26 *Ibid.*, p. 16; *Ibid.*, p. 16.

27 *Ibid.*, p. 17; *Ibid.*, p. 17.

28 *Ibid.*, pp. 26-27; *Ibid.*, p. 27-28.

### 3. Nishitani and the Role of Nihilty

Nishitani's reflections on technology and nature in his 1954 essay "Nihilty and Emptiness" are contemporaneous with Heidegger's "Questioning Technology."<sup>29</sup> Consonant with Heidegger's ideas, they complement them well and in a sense take the discussion to a deeper level. Technology is also an "exposing" for Nishitani, especially in the context of the laws of nature.

The laws of nature manifest themselves most simply in the realm of the so-called inanimate, in the behavior of rock, water, wind, and so forth. On the level of animal life, these laws are lived and enacted as "instinct," which naturally develops a purposive or teleological character. The advent of tool-using and human technology introduces intellect into the means-ends schema, such that an explicit understanding of the laws of nature comes to be incorporated into the development of gadgets and machines—giving us "technology" as the *logos* of the *technē*. Thus, for Nishitani, the workings of the laws of nature are most clearly revealed in "machines and mechanical technology [as] man's ultimate appropriation of the laws of nature." At the same time the development of machinery is precisely what grants human beings in turn a measure of "freedom from the bondage of the laws of nature."<sup>30</sup>

However, at this high point, Nishitani warns, there's a process of "inversion" whereby "the controller becomes the controlled," since by this stage "human life and work as a whole have become progressively mechanized and impersonalized." (In Heidegger's terms, we have lost our "free relationship" to technology and become "unfreely chained" to it.) This freedom from the laws of nature that mechanized technology grants us, and the concomitant feeling of distance or separation from the natural world, lead human beings to "behave as if they stood entirely outside the laws of nature." Such a profound transformation in

29 This text was eventually published as the third chapter of *Religion and Nothingness* (Berkeley: University of California Press, 1982), with the title "Nihilty and Śūnyatā."

30 *Ibid.*, pp. 80, 82-83.

the sense of our place in the natural world, on which human beings used to acknowledge their dependence and model (at least some of) their behaviour, results in a mode of being "at whose ground nihility opens up" and a human subject dedicated to pursuing "a life of raw and impetuous desire."<sup>31</sup> So the human becomes not only mechanized but also, ironically, animalized at the same time: employing high technology can make us feel like gods but behave like animals.

Already with the rise of the natural sciences after the Renaissance, "the world had come to appear [...] altogether indifferent to human interests;" but now with the total domination of the natural world by modern technology, the traditional ideal of "a life in keeping with the law or order of nature [...] is completely broken through." These developments induce a sense of nihilism, insofar as they drain the world of all meaning; and when the power of mechanized technology allows the human being "to behave as if it stood entirely outside of the laws of nature," this in turn encourages a disregard of all laws and norms. The combination of these tendencies unleashes "a life of raw and impetuous desire, of naked vitality"—a phenomenon far more evident now than when Nishitani was writing. There is ultimately "an intertwining of the mechanization of man and his transformation into a subject in pursuit of its desires, at the ground of which nihility has opened up as a sense of the meaninglessness of the whole business."<sup>32</sup> Nishitani's account of the effects of technology provides a helpful background for understanding the nihilism that pervades so much of the developed world in the early twenty-first century. It's also consonant with Heidegger's treatment, though nihilism plays a greater role.

Since Nishitani doesn't offer examples of the mechanization of human beings by their use of technology, we might turn briefly to the (now neglected) classic from forty years ago by Ernst Friedrich Schumacher (1911-1977), *Small*

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31 Ibid., pp. 84-86.

32 Ibid., pp. 85-89.

*is Beautiful: Economics as if People Mattered*, which from a Buddhist perspective shows the deleterious effects of mechanized technology on *work* as a source of human dignity.

The Buddhist point of view takes the function of work to be at least threefold: to give man a chance to utilise and develop his faculties; to enable him to overcome his egocentredness by joining with other people in a common task; and to bring forth the goods and services needed for a becoming existence.<sup>33</sup>

Though Schumacher doesn't mention figures like William Morris (1834-1896) and John Ruskin (1819-1900), they developed a similar understanding in nineteenth-century England in reaction to the effects of industrial technology. They too make a distinction that Schumacher ascribes (quite appropriately) to Buddhism between two types of technology: "one that enhances a man's skill and power, and one that turns the work of man over to a mechanical slave, leaving man in a position of having to serve the slave." In this context Schumacher cites Ananda Coomaraswamy's (1877-1947) distinction between the machine and the tool:

The carpet loom is a tool, a contrivance for holding warp threads at a stretch for the pile to be woven around them by the craftsman's fingers; but the power loom is a machine, and its significance as a destroyer of culture lies in the fact that it does the essentially human part of the work.<sup>34</sup>

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33 Ernst Friedrich Schumacher, *Small is Beautiful: Economics as if People Mattered* (New York: Harper & Row, 1973), p. 39. This is from a chapter titled "Buddhist Economics."

34 *Ibid.*, p. 40.

From the perspectives of Heidegger and Nishitani (not to mention Marx), the power loom and so forth would destroy culture insofar as they sever the users' relations with other human beings (the makers or users of the product) and with the natural materials that such products were made of in former times. Again it's technology's effect on the user that counts.

Schumacher approaches the dehumanization of work by asking whether we can develop a "technology with a human face." He points out that "the type of work which modern technology is most successful in reducing or even eliminating is skillful, productive work of human hands, in touch with real materials of one kind or another." Again following (though without specifically mentioning) the Middle Way, Schumacher calls for the development of "intermediate technology," which is "vastly superior to the primitive technology of bygone ages but at the same time much simpler, cheaper, and freer than the super-technology of the rich."<sup>35</sup> It's informed by a simplicity that's difficult to attain for "people who have allowed themselves to become alienated from real, productive work and from the self-balancing system of nature." That would be us, in the developed world, right now. In accordance with the Buddhist emphasis on being aware of sufficiency, Schumacher ends his discussion of technology with a human face by invoking the title of his book:

It is possible to give a new direction to technological development, a direction that leads it back to the real needs of man, and that also means: *to the actual size of man*. Man is small, and, therefore, small is beautiful. To go for giantism is to go for self-destruction.<sup>36</sup>

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35 This corresponds to what Ivan Illich (1926-2002) calls "tools for conviviality."

36 Ernst Friedrich Schumacher, *Small is Beautiful: Economics as if People Mattered*, pp. 121-131.

In the decades since he wrote these words, developments in technology have caused giantism to burgeon rather than diminish in almost every realm of human activity.

Nor is the development of nanotechnology (where small is functional) any compensation, since it's another of those fields where the technology forges recklessly ahead, paying no attention to possible long-term dangers to human and environmental health. At the other end of the spectrum, larger and more sophisticated telescopes have revealed to us just how small human beings are in the context of the cosmos—a situation that Nishitani contemplates to revelatory effect in an essay from 1960 titled "Science and Zen," which helps us better understand the role of nihilism in our relations to nature and technology.<sup>37</sup>

He proceeds from the premise that the most profound effect of the rise of the natural sciences in recent centuries has been the destruction of "the teleological worldview," which holds that the world has some purpose to it and is heading toward some end that grants meaning to human existence. The "big picture" presented by the modern scientific worldview is by contrast rather bleak:

[This view] sees matter, in its usual state, as subject to conditions that could never serve as an environment for living beings (for example, in conditions of extremely high or extremely low temperatures). The range of the possibility of existence for living beings is like a single dot surrounded by a vast realm of impossibility: one step out of that range and life would immediately perish. Thus, to this way of thinking, the universe in its usual state constitutes a world of death for living beings.<sup>38</sup>

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37 Nishitani Keiji, "Science and Zen," in Frederick Franck (ed.), *The Buddha Eye: An Anthology of the Kyoto School* (New York: Crossroad Publishing Company, 1982), pp. 112-137.

38 *Ibid.*, p. 113.

As Nietzsche, whom Nishitani greatly admired, once wrote: "Let us beware of saying that death is opposed to life. The living is only a species of the dead, and a very rare species at that."<sup>39</sup>

Since Nishitani wrote these words, science has discovered just how narrow the range of conditions necessary to support life is: "Habitable environments must provide extended regions of liquid water, conditions favorable for the assembly of complex organic molecules, and energy sources to sustain metabolism."<sup>40</sup> On earth temperatures can't be lower than 0° Celsius, and no life-forms have been discovered in conditions above 120°C.<sup>41</sup> This means that the temperature range even within our solar system is extremely narrow—and conditions elsewhere in the universe are for the most part far less hospitable. This narrow range is worth keeping in mind as we continue to heat up the atmosphere by pumping carbon dioxide and other greenhouse gases into it: a variety of positive feedback loops could well lead to a tipping point that would produce "runaway global warming," as apparently happened on the planet Venus—where the atmosphere is now 97% carbon dioxide and the surface temperature a lead-melting 450°C.<sup>42</sup>

Nishitani then turns, characteristically, to the existential counterpart to the natural scientific account of our situation, which he describes by opening up Heidegger's language in *Being and Time* into a cosmic context:

Directly beneath the field of man's being-in-the-world, and the field of the very possibility of that being, the field of the impossibility of that

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39 Friedrich Nietzsche, *The Gay Science*, Bernard Williams (ed.) (New York: Cambridge University Press, 2011), aphorism 109, p. 110.

40 NASA, Astrobiology Roadmap, Sep., 2003, <http://astrobiology.arc.nasa.gov/roadmap/g1.html>.

41 Kazem Kashefi and Derek R. Lovley, "Extending the Upper Temperature Limit for Life," *Science*, 301, 5635 (Aug., 2003), p. 934. DOI: 10.1126/science.1086823.

42 See James E. Hansen, *Storms of My Grandchildren: The Truth about the Coming Climate Catastrophe and Our Last Chance to Save Humanity* (New York: Bloomsbury Publishing USA, 2009), chapter 10, "The Venus Syndrome," pp. 223-236.

being has opened up. The field where man has his being is his teleological dwelling place; it is the place where he has his life with a conscious purpose as a rational being. And yet this is disclosed as a field merely floating for a brief moment within a boundless, endless, and meaningless world governed by mechanical laws (in the broad sense of the term) and devoid of any telos. Our human life is established on the base of an abyss of death.<sup>43</sup>

This is the precarious situation of the life component of *phusis*, as "the arising and perishing of all things"—what the Buddhists call "impermanence." The "field of the impossibility of [our] being-in-the-world" is the field of "nihility" from Nishitani's earlier essay.

He goes on to invoke the eschatological myth of the cosmic conflagration, found in many cultures, remarking that the Buddhists transformed it from a cosmological doctrine into "an existential problem":

Seen from this standpoint, this world as it is—with the sun, the moon, and the numerous stars, with mountains, rivers, trees, and flowers—is, as such, the world ablaze in an all-consuming cosmic conflagration. The end of the world is an actuality here and now; it is a fact and a destiny at work directly underfoot.<sup>44</sup>

In Heidegger's language, transferred from the individual to the cosmic dimension, the "possibility of the absolute impossibility of all possibilities" isn't something in the future that we need to wait for: it is rather "the nearest" to us, since death is "possible at any moment."<sup>45</sup> Nishitani allows that the myth of the

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43 Nishitani Keiji, "Science and Zen," in Frederick Franck (ed.), *The Buddha Eye: An Anthology of the Kyoto School*, p. 113.

44 *Ibid.*, p. 120.

45 Heidegger, *Sein und Zeit*, pp. 50-53.

cosmic conflagration "can also be interpreted in a scientific way," saying that "it is at least scientifically possible that the planet on which we live [...] and the whole cosmos itself might be turned into a gigantic ball of fire."<sup>46</sup> Fifty years later we *know* that this is what's happening to the earth: as the sun proceeds toward its Red Giant phase it will boil off the earth's atmosphere, before expanding beyond the earth's current orbit to engulf it in a fiery conflagration.<sup>47</sup>

Taken together, Nishitani's two essays suggest that our obsession with technology is at the same time a symptom of and a means to avoid facing the nihilism of our existence. As mentioned earlier, human beings naturally employ technology to protect themselves against life-threatening dangers—but this self-preservation is never more than a temporary measure. We prefer to forget this, and modern technology helps to reinforce this obliviousness. This becomes clear when we consider the relevant mythological background, against which the mania for developing ever more sophisticated technology to preserve and prolong life appears as possession by the spirit of Prometheus.<sup>48</sup>

In the Prometheus myth the rebellious Titan not only steals fire from Zeus in order to give it to humans, but he also gives us the arts (*technai*) of survival. According to Aeschylus (c.525-c.456 BCE) in *Prometheus Bound*, the protagonist taught humans the techniques of house-building and woodworking, agriculture and animal husbandry, astronomy and arithmetic, ship-building, the mining of "bronze, iron, silver and gold," and the arts of medicine, augury and divination.<sup>49</sup> Prometheus claims to have "stopped mortals from foreseeing their doom," and when asked by the Chorus how he did this, he replies: "I sowed in

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46 Nishitani Keiji, "Science and Zen," in Frederick Franck (ed.), *The Buddha Eye: An Anthology of the Kyoto School*, p. 121.

47 Klaus-Peter Schröder and Robert C. Smith, "Distant future of the Sun and Earth revisited," *Monthly Notices of the Royal Astronomical Society*, 386, 1 (Jan., 2008), pp. 155-163. DOI: 10.1111/j.1365-2966.2008.13022.x

48 For a more detailed treatment, see Graham Parkes, "Nuclear Power after Fukushima 2011: Promethean and Buddhist Perspectives," *Buddhist-Christian Studies*, 32, 1 (Nov., 2012), pp. 89-108. DOI: 10.1353/bcs.2012.0002.

49 Aeschylus, *Prometheus Bound*, lines 450-505.

them blind hopes."<sup>50</sup> So, along with the technical means to sustain and preserve life, Prometheus conferred on human beings the obliviousness to their mortality which makes life more comfortable. Possession by the Promethean spirit is evidenced in our obsession with biotechnologies that prolong life—preferably indefinitely. As modern technology produces ever more gadgets to protect us from unpleasant heat and cold, it thereby cuts us off from the natural world, which makes it easier to deny that most natural aspect of being human, which is to be mortal.

Nishitani has written about a Japanese art that brings us closer to the natural world by cutting off natural life: *ikebana*, or flower arranging. Although the artistry begins by cutting the flowers, bringing about their death, the word *ikebana* literally means "making flowers live"—which suggests that the art somehow exposes their true nature. "The essential beauty" of the cut flowers, Nishitani writes, "lies precisely in its being transitory and temporal."<sup>51</sup> Plants, insofar as they're rooted in the earth and lack the power of locomotion, tend to give the impression—misleading, from the Buddhist point of view—of being thoroughly "at home" in the world. By cutting flowers and setting them in a vase in an alcove, the art of *ikebana* dispels their deceptive appearance of being rooted in the earth.

From the perspective of their fundamental nature, all things in the world are rootless blades of grass. Such grass, however, having put roots down into the ground, itself hides its fundamental rootlessness. [...] Through

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50 Ibid., lines 250-253. There is a reference to Prometheus's depriving men of knowledge of their death in Plato, *Gorgias*, 523d-e.

51 Nishitani Keiji, "Ikebana," trans. by Jeff Shore, in James Heisig et al. (eds.), *Japanese Philosophy: A Sourcebook* (Honolulu: University of Hawai'i Press, 2011), pp. 1197-1200, 1198 (translation modified).

having been cut from their roots, the flowers are made, for the first time, to thoroughly manifest their fundamental nature—their rootlessness.<sup>52</sup>

For Nishitani, we humans differ from other beings through the possibility of our becoming aware of our own finitude in the state of what he calls "nihility" (*kyomu*), a kind of "hollow emptiness" that is the antechamber, as it were, to the creative emptiness (*śūnyatā, kū*) that is central to the Zen Buddhist worldview. When flowers appear suspended in emptiness, hovering—as we humans also do—over the abyss, this makes possible a more genuine encounter with them.

And yet the basic condition of rootlessness we share with all other beings doesn't preclude sustenance in our suspension. Even though the earth won't survive the fiery expansion of the Red Giant sun, and the abyss of nihility is always underfoot every step of the way, soil may nevertheless provide sustenance before we shuffle off this mortal coil. In an essay on "The Experience of Having Eaten Rice" Nishitani invokes the Buddhist notion of "the nonduality of soil and body."<sup>53</sup> He talks of the joy of eating Japanese rice again after being in Europe for several years, and this prompts reflections on the way the components of the soil pass into the rice and then the body. He also notes the archaic dimension: the process has been going on for millennia, such that the body one inherits from one's ancestors is already composed of certain elements configured from soil. This doesn't mean one can't move to a different country and establish a relation with the soil through the region's food: but it does explain the special relationship people feel to land on which their forbears have lived for ages. Heidegger called attention to the dangers of "industrial agriculture" in the 1950s: it alienates us from the ground on which we live and obscures our dependence on the health of that soil. Sixty years later the "world food production system" has enabled the

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52 Ibid., p. 1199.

53 Nishitani Keiji, *Nishitani Keiji Chosakushū* 西谷啟治著作集, Volume 20 (Tokyo: Soubunsha 創文社, 1990), p. 202.

grotesque culmination of these ills: while the poorest third of the world's population is hungry, the richest third suffers from eating disorders and obesity.<sup>54</sup>

#### 4. Questioning Contemporary Technologies

By way of conclusion, let's consider the normative aspect of Heidegger's and Nishitani's thoughts on technology: how do they recommend we deal with our inability to keep technology under control?

At the end of "Questioning Technology" Heidegger suggests that what might save us from danger is to be found in the second branch from the root of the Greek *technē*: namely, the fine arts as alternative modes of exposure.<sup>55</sup> Whereas the prevalence of technology encourages experience of everything, nature and our fellow humans included, as "standing-stock" (*Bestand*), the opening-up that's characteristic of the poetical arts would reveal things as things in their own right. (As *ikebana* does with flowers.) Heidegger doesn't elaborate this point, but he had already treated it in earlier discussions of works of art (such as "The Origin of the Work of Art" and the essay from 1946 celebrating Rilke's poetry, "What are Poets for?"<sup>56</sup>).

He returned to the topic of how to deal with technology in a text from the year after the "Questioning Technology" essay, where he distinguishes between two different kinds of thinking: "calculative thinking" and "contemplative" or "meditative thinking."<sup>57</sup> He laments the way people are losing their connection

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54 See Raj Patel, *Stuffed and Starved: The Hidden Battle for the World Food System* (London: Portobello Books Ltd., 2007).

55 Heidegger, "The Question concerning Technology," in *The Question Concerning Technology, and Other Essays*, p. 35; "Die Frage nach der Technik," in *Vorträge und Aufsätze*, p. 36.

56 Heidegger, *Poetry, Language, Thought* (New York: Harper & Row, 1971); *Gelassenheit* (Pfullingen: Neske, 1959).

57 Heidegger, *Discourse on Thinking: A Translation of Gelassenheit*, p. 46; *Gelassenheit*, p. 15. The distinction is between "das rechnende Denken" and "das besinnliche Nachdenken."

with the earth by being "glued to the television for hours and days at a time," and how modern communications technologies distance us from the fields, the sky, and the alternation between day and night. He questions the widely accepted belief that modern science will lead to "happier human lives"—especially now that we live in a world where "nature is becoming a gigantic petrol station, a source of energy for technology and industry." He warns that "in all areas of existence humans are becoming ever more tightly bound by the forces of technological apparatuses and machines," by powers that we are unable to control. He acknowledges the benefits of technology and its role in "challenging us to ever higher advancements," while pointing out that "without realising it, we are so firmly shackled to technological devices that we become enslaved by them."<sup>58</sup>

But how can we make use of technology without becoming dependent on it, without letting it "affect our innermost and intrinsic core"? Heidegger's answer is: by saying "yes" and "no" to it at the same time, which one can learn to do through the practice of meditative, reflective "contemplation" (*Nachdenken*).<sup>59</sup> Presumably this kind of contemplation loosens the hold of the "forces of technical apparatuses." To practice this kind of thinking in the twenty-first century would involve spending less time on the internet, watching television, or with ears or hands on mobile phones and similar devices, since these activities obstruct our direct, embodied relations with the natural world (not to mention our fellow human beings). So, when Heidegger writes that the traditional farmer would "entrust the seed to the forces of growth and tend its flourishing,"<sup>60</sup> this would be a model for using the products of technology with full attention, in a way that's responsive to the powers of nature.

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58 *Ibid.*, pp. 49-54; *Ibid.*, pp. 18-24.

59 *Ibid.*, pp. 54-56; *Ibid.*, pp. 24-27.

60 Heidegger, "The Question concerning Technology," in *The Question Concerning Technology, and Other Essays*, p. 15; "Die Frage nach der Technik," in *Vorträge und Aufsätze*, p. 18.

Nishitani's approach is parallel to Heidegger's, but because it's informed by Zen Buddhist thought we can say a bit more about what it involves. Our ordinary everyday experience takes place on what Nishitani calls "the field of consciousness," where the world is present through representations to a subject whose mental categories structure them in advance into coherent form, and principles of reason prevail. But beneath this level lies another field, the abyssal "field of nihility," where none of this obtains, subjects included, and absolute meaninglessness holds sway. This in turn rests upon the deeper "field of emptiness," which encompasses everything and where things can be encountered "on their home ground," according to Zen, as they are in themselves. Most western philosophy has taken place on the field of consciousness and reason, though existentialist thinkers like Kierkegaard, Nietzsche and Heidegger have ventured engagements with the place of nihility. There is reason to suppose that they also got down to something like the field of emptiness where one learns from the things themselves how they are.<sup>61</sup> As the Zen poet Bashō advised his fellow artists: "About the pine learn from the pine, about bamboo from the bamboo." For Nishitani this means:

to enter the mode of being where the pine tree is the pine tree itself, and the bamboo is the bamboo itself, and from there to look at the pine tree and the bamboo. [...] to attune ourselves to the selfness of the pine tree and the selfness of the bamboo. [...] It is on the field of *sūnyatā* that this becomes possible.<sup>62</sup>

He acknowledges that talk about what happens on the field of emptiness is bound to sound paradoxical when heard from the level of consciousness.

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61 Compare Kierkegaard, Nietzsche and Heidegger on the "moment" (*Øjeblik, Augenblick*).

62 As recounted and discussed in Nishitani Keiji, *Religion and Nothingness*, p. 128.

The task is then to come to terms with the ineluctable impermanence of human existence by letting oneself down into the nihility that lies underfoot every step of the path of life—then waiting for the "turn" down into the field of emptiness that is in turn always below that nihility.<sup>63</sup> In the "Science and Zen" essay, this comes about through contemplating one's life in the context of the life-unfriendly universe and the prospect of the cosmic conflagration. This would be part of a broader practice, zazen meditation, which Nishitani doesn't mention explicitly (since he writes as a philosopher rather than as a Zen practitioner) even though it underlies much of his thought. Indeed Heidegger's notion of contemplative thinking was apparently influenced in part by his contact with Nishitani during the late 1930s.<sup>64</sup> Whereas the mind-set encouraged by modern technology keeps us locked in to experiencing objects represented to human subjects on "the field of consciousness," on the field of emptiness we become able to experience things as they are in themselves, on *their* home ground.<sup>65</sup>

Let us conclude by asking what these ideas mean concretely for our current situation. For Heidegger the task is to use the products of technology while "keeping ourselves free of them, so that we at all times let go of them." In this way:

We can let these devices rest as something that doesn't affect us in our innermost and authentic being. We can say "yes" to the unavoidable use of technical devices, and we can at the same time say "no," insofar as we

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63 This "turn" is a central theme of Nishitani's book *The Self-overcoming of Nihilism* (Albany: State University of New York Press, 1990).

64 As mentioned in Graham Parkes's *Heidegger and Asian Thought* (Honolulu: University of Hawaii Press, 1987) when Nishitani was living in Freiburg and working with Heidegger, the latter would often invite him to his home in order to talk about Zen Buddhist thought. Nishitani reports that he "explained quite a lot about the standpoint of Zen to Heidegger," and that "Heidegger would himself repeat these ideas in his lectures, only without mentioning Zen!" (see Bret W. Davis, *Heidegger and The Will: On the Way to Gelassenheit* [Evanston, Ill.: Northwestern University Press, 2007], p. 308.) Davis offers several discussions of Heidegger's ideas about technology in this comprehensive study, and also mentions parallels between Heidegger's thinking about *Gelassenheit* and ideas from Zen.

65 Nishitani Keiji, *Religion and Nothingness*, chapter 4, "The Standpoint of Śūnyatā," pp. 119-167.

refuse to let them dominate us and thereby warp, confuse and, ultimately, lay waste our nature.<sup>66</sup>

Heidegger's "yes and no" to technology can also mean (though he doesn't discuss this alternative) that we gratefully embrace its harmless products while declining to employ its more dangerous ones. This would involve developing what Ivan Illich has called "tools for conviviality"—the title of a book he published the same year as Schumacher's *Small is Beautiful*. Though Illich doesn't mention Buddhism, his ideas about technology are consonant with Buddhist ideas, as evidenced in his characterization of "conviviality."

I choose the term "conviviality" to designate the opposite of industrial productivity [and] to mean autonomous and creative intercourse among persons, and the intercourse of persons with their environment [...] individual freedom realized in personal interdependence.<sup>67</sup>

The most important outcome of conviviality, as Illich understands it, is justice and fairness: "In an age of scientific technology, the convivial structure of tools is a necessity for survival in full justice which is both distributive and participatory." He defines "convivial tools" as "those which give each person who uses them the greatest opportunity to enrich the environment with the fruits of his or her vision," and contrasts them with "manipulative" tools, which are generally employed by institutions rather than individuals. Convivial tools will include many kinds of hand tools, complex systems such as the postal service, and technological gadgets like the telephone (at least as it was in the early 1970s). The internet, at least as a medium for email, would presumably also qualify,

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66 Heidegger, *Discourse on Thinking: A Translation of Gelassenheit*, p. 54; *Gelassenheit*, pp. 24-25.

67 Ivan Illich, *Tools for Conviviality* (New York: Harper & Row, 1973), p. 11. Peter Hershock has shown how compatible Illich's ideas are with Buddhism (See Peter Hershock, *Reinventing the Wheel*).

though interaction through electronic social media may not be vital enough to count as truly "convivial" in Illich's sense. "Destructive tools" such as "networks of multi-lane highways and strip mines" are those that "increase regimentation, dependence, exploitation, or impotence."<sup>68</sup> Illich's recommendations are prescient, very radical, and too numerous to go into here, but they are remarkably consonant with Heidegger's ideas as well as Nishitani's, quite pragmatic in terms of their social implications, and eminently pertinent to our contemporary situation.

What Heidegger and Nishitani are suggesting, and Schumacher and Illich recommending, is that we need to *think through* our reliance on technology thoroughly, since its apparently unstoppable dominion is threatening the natural world on which we depend, and also our very nature as human beings. (This threat doesn't faze enthusiasts of the post-human, the trans-human, virtual reality and cyborgs—but they will have given up reading this essay long ago, if they ever started.) We need to think through what lies behind, and what issues from, contemporary communications technologies, the global industrial food system, bio- and nanotechnologies, and the forces driving rampant consumerism and burgeoning energy consumption, and consider how all these may be making our lives longer and more comfortable—without lending them much meaning or conducing to human flourishing.♦

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68 Ivan Illich, *Tools for Conviviality*, pp. 13-26.

♦ Responsible editor: Chung-lin Wu (吳忠霖)

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