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Two Texts on Technology

The Ideal of Technology, Technology and the New Culture

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ORIGINAL TITLES: 「技術学の理念」(October 1941); 「技術と新文化」
(January 1942), first published in 『科学主義工業』 [Scientistic industry],
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technology] (1942). The essays are included in Miki's *Complete Works*
『三木清全集』 (Tokyo: Iwanami Shoten, 1966–1968), 7: 300–16; 7:
317–29.

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Translators' Introduction

One of the most prominent philosophers in prewar Japan, Miki Kiyoshi (1897–1945) left us with reflections on technology that are noteworthy for their philosophical and historical value. His *Philosophy of Technology* 『技術哲学』 first appeared in the collection *Ethics* 『倫理学』 published by Iwanami Shoten in October 1941. It was reprinted again as a book in September 1942, at which time Miki included the two short texts presented here, summarizing the main points of his theory succinctly. The following pages contain the first English translation of these texts:¹ “The Ideal of Technology” 「技術学の理念」(October 1941) and “Technology and the New Culture” 「技術と新文化」(January 1942). Both papers were originally contributions to *Scientistic Industry* 『科学主義工業』, a journal edited by Masatoshi Ōkochi (大河内正敏, 1878–1952), who had been the director of RIKEN,² the largest comprehensive research institution in modern Japan, during the prewar period. The social influence of Miki’s philosophy, which lies beyond the scope of this brief introduction, suggests that his philosophy was not simply directed at other philosophers but played an important role in the construction of the ideological technocracy of the interwar era as well as during wartime.³

1. Miki’s philosophy of technology has been largely overlooked outside of Japan. Exceptions are FEENBERG 2010, 120–3, STROMBACK 2021, HUI 2021 and the forthcoming essay of ARISAKA and FEENBERG. See also TOWNSEND 2009, 220–2.

2. RIKEN is an abbreviation for the 国立研究開発法人理化学研究所 or Institute of Physical and Chemical Research.

3. Analyzing the writings of Japanese technocrats and engineers in the 1930s and 1940s, some authors have pointed out the existence of a certain techno-fascism, in which technology co-exists with its irrational and anti-modernist side. Miki’s philosophy may also be regarded as more

Attracted by the figure of Nishida Kitarō, Miki studied at the University of Kyoto and graduated in 1920. Between 1922 and 1925, he studied in Germany and France. At this point, technology was not his main preoccupation, but it is worth noting that his references to technology were strongly influenced by German authors like Werner Sombart, Friedrich Dessauer, Max Eyth, Manfred Schröter, Franz Mataré, Eugen Diesel, and Eduard von Mayer. In 1930, he was briefly incarcerated for allegedly giving financial aid to the Communist Party. After this experience, he distanced himself from the terminology of materialism, although he continued to engage in political activities as a public commentator and journalist. He is best known for heading the Culture Committee of the Shōwa Research Association and his philosophy of technology was strongly connected with his role as an official ideologist (more about this below). After the dissolution of the Association, Miki served as a political advisor and journalist in the Philippines in 1942. These episodes make Miki a complex and polemical figure in the history of Japanese philosophy. Given to the many places where Miki criticizes fascism and authoritarianism, it is hard to understand other texts where he clearly supports military action in the Japanese colonies. The texts translated here will certainly serve to show the dark side of Miki's philosophy. In the end, despite having collaborated to some extent with the government, Miki was imprisoned for a second time and accused of protecting a communist activist. He died in prison in September 1945, just one month after Japan's surrender.

Also of note is the fact that Miki's interest in technology only surfaces during the final period of his philosophical career. In addition to with *A Philosophy of Technology* (1941), this subject is taken up explicitly in two other works: *The Logic of Imagination* (1937–1943) and *Introduction to Philosophy* (『哲学入門』, 1941, but based on lectures from 1938).⁴ The first three chapters of *The Logic of Imagination*—entitled “Myth,” “Institutions,” and “Technology”—offer a useful scheme for understanding the place of technology in Miki's thought. For example, rather than assume a clear discontinuity

or less falling within this scope. For the general context of this debate, see MOORE 2013. For an introduction to the philosophy of technology in Japan, see KOSAKA 1986, MURATA 2009, and INUTSUKA 2020.

4. See also TOWNSEND 2009, 221.

among these three subjects, Miki sees technology as a kind of extension of myth in the sense that myth and technology are already products of the imagination and, therefore, may be considered poetic. From another perspective, *Introduction to Philosophy*, a book directed at a general audience, attempts to rehabilitate the importance of common sense (常識) for philosophy, demonstrating how technology serves to incorporate science into the daily life of society. In this sense, technology may be said to function as a mediator between science and common sense.

The two essays translated here were not directed chiefly at philosophers and were written in an accessible tone. This does not mean that they are free of terminological and philosophical difficulties. The term for technology itself, 技術, presents us with the first problem.⁵ Since Miki was strongly inspired by German authors (and to some extent his writing style resembles that of German philosophical works), like many of his time, he uses the word in the sense of *Technik*. Depending on the context, the term can be translated either “technique” or “technology.” In the expression “new technology,” for example, *Technik* refers to some particular new device or method. Insofar as technology includes the Greek concept of *logos*, it may also refer to the knowledge that deals with the whole range of objects, processes, and skills that figure in technical relationships. Properly speaking, this would be what Miki terms 技術学—literally, the study of technique. Here, however, we have decided to render it as “technology,” since it is clear that Miki uses the term to refer to the totality of technical activities.

An other problematic aspect of these texts (particularly in the case of *Technology and the New Culture*) is their political overtones. As noted above, between 1938 and 1940 Miki was a member of the Shōwa Research Association, usually described as a group of intellectuals that joined forces to promote the official discourse and interests of Imperial Japan.⁶ Some of the ideas in these texts can be read as extensions of official government discourse. For example, while the West is characterized as prioritizing the material dimension of the world, Miki argues for the historical priority of

5. For the history of this term in Japan, see INUTSUKA 2020, 239.

6. HARRINGTON (2009, 68) and KIM (2007) are among those who highlight the tension between Miki’s philosophy and these political interventions. In this regard, STROMBACK defines Miki’s late philosophy as a quasi-idealism (2020, 133–8).

spirit over matter in the case of Japanese culture. Although he saw this as determinative in shaping Japan's singular national character, he went on to stress the importance of developing a machine technology, that is to say, heavy industry and high-level technology capable of competing with the West. The important thing was that such industry and technology be pursued in a manner consistent with the Japanese spirit. Miki also singles out land planning as an example of social technology in the sense that it represents a holistic form of technology that encompasses not only the production of material objects but also the administration of social resources. Set in the context of Japanese militarism and nationalism, this aspect of Miki's writing is clearly problematic. In the words of Aaron Moore:

Technology in war time Japan meant much more than simply advanced machinery and infrastructure; it included a subjective, ethical, and visionary dimension. As in Europe and elsewhere, from the early twentieth century, technology in Japan began to represent certain forms of creative thinking, acting, or being, as well as values of rationality, cooperation, and efficiency. Technology also lent itself easily to utopian visions of an egalitarian society without ethnic or class conflict. Particularly during the 1930s, as Japan was shifting from a light to a heavy industrial wartime economy, elites developed a more subjective view of technology as increasingly permeating and altering every aspect of life.⁷

Under these conditions, it is hard to separate Miki's philosophy of technology from its political context. Nevertheless, there are elements of his theory worth noting for their own merits.

The main theses underlying Miki's philosophy of technology may be set out as follows: (1) technology is simultaneously a means and an end, and therefore autotelic (自己目的的); (2) technology is subjective-objective, and therefore historical; (3) the Japanese worldview already implies a certain technical conception of the world that may be rehabilitated to create a new, organic technology designed to respond to the historical needs of society. Thinking of technology only as a set of instruments leads to an idea of the world as a place in which things stand opposed to the subject in order to serve as a means to an end. For this reason, technology needs to be understood not only as objective and external, as is the case with the tools and

7. MOORE 2013, 6.

machines we use in daily life. Likely inspired by the philosophy of his mentor Nishida Kitarō (in particular, through the notion of active-intuition, 行為的直観), Miki argued that the self is not abstractly opposed to things but co-exists and with them and interacts with them. From a more macroscopic perspective, technology is not an instrument of economic growth but an autonomous sphere of human agency. In other words, technology is an expression of human intentionality, not merely as a means but as a purpose purpose (or *telos*) constructed through interaction with the surrounding world. This is what Miki means by “subjective-objective” in the texts that follow.

In these texts, Miki also anticipates current debates regarding techno-diversity. According to Yuk Hui, the history of philosophy has been dominated by the assumption that technology is universal.⁸ In this sense, technology has functioned as one of the main criteria to measure the level of development of a given society. The problem with this way of thinking is that it focuses *de facto* on the Western concept of technology, reducing other techniques (such as traditional medicine) to inferior forms of rationality. Thus, for Hui, Miki’s call “to return to tradition is a call for appropriating modern technology into a new frame.”⁹ Miki also expressed an urgency for reincorporating the moral and spiritual dimensions into the discussion surrounding technology, but without disregarding the importance of investing more resources in the development of new technologies. Feenberg summarizes Miki’s position this way:

Technology must be imbued with the forms of the culture that created it. And in fact Miki argued that the technology Japan has received from the West is an expression of Western culture and must be reshaped to conform to the Japanese “spirit.” A new culture must be created that combines the best of both East and West. Like Nishida, Miki believed the solution to this problem to be of world-historical importance. The West had reached a dead end that Japan could surpass.¹⁰

Thus a critical awareness of the opposition between technology in the West and in the East—the one seeking seeks to dominate nature by objecti-

8. See HUI 2016.

9. See HUI 2021, 225.

10. FEENBERG 2010, 121.

fyng its environment and focusing on a materialistic understanding of the world, the aimed at unifying the moral and spiritual spheres with materiality—offers a fruitful starting point for an attempt at reconstructing the history of technology in Japan. In this sense, it is our hope that Miki's texts will bring a wider perspective to Japanese philosophy's inquiry into the role of technology and to draw attention to of other authors who have written on the matter, among them Nakai Masakazu, Tosaka Jun, Oka Kunio, and Saigusa Hiroto.

In the current translations, we have tried to remain as close to the original as possible. Miki's style is often repetitive and redundant, which tends to make the flow of his prose sound somewhat unnatural in translation. This was not entirely avoidable, but at certain points, we paraphrased his wording, broke up long sentences, and added words in brackets to make the text read more smoothly.

Miki Kiyoshi

The Ideal of Technology

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I

There are many today who preach about the need for technological development. But no matter how much the need is emphasized, it will not in fact be enough. The development of technology is an urgent issue for our country at present. Particularly in these days, the problem of technology is closely linked to the problem of worldview (世界観).¹¹ The new technologist's spirit (技術家精神)¹² will have to be based on a grasp of that problem

In the first place, the opposition to technology in general, which was once very popular, has been overshadowed today. Science and technology were not only disregarded but even rejected as [an aspect of] so-called "material civilization (物質文明)." This was not only the case in Japan; the anti-technological philosophy of Spengler, Jaspers, and others had become popular in Germany and other countries. Without the establishment of a new worldview to overcome these kinds of anti-technological philosophy, today's theories of technology would not have a stable foundation. It is not enough to say that the war going on at present requires the development of technology; there is a need [now] for the establishment of a new philosophy of technology.

Secondly, and especially in the current context, the [problem of] worldview is becoming the fundamental problem at this turning point in world history. There must be a new worldview to undergird the construc-

11. According to the text "The Theory of Worldview-Construction" (MKZ 5: 53–77), this term 世界観 (*Weltanschauung*) comes from Dilthey. However, Miki criticizes his usage. He argues that Dilthey's understanding of worldview is conditioned by his preference for German Romanticism and *Lebensphilosophie*. While Dilthey focuses relatively on the pathetic consciousness (パソトスの意識) of worldview, Miki argues for a "dialectical" relationship between the pathetic and logical consciousness.

12. 技術家 could also be translated as "technician." We opted for the less common expression of "technologist" to highlight that Miki is not only talking about those persons who work directly with technical devices.

tion of a New Order (新秩序) and the creation of a New Culture (新文化).¹³ If this is true, what significance does technology have in such a worldview? Today's technologists cannot afford to be indifferent to the problem of worldview. It may be said that the characteristic of our age is that every person is required to be aware of their own worldview (世界觀的自覺). The technologist must not remain a mere technologist but needs to be armed with a worldview. What, then, is the relationship between worldview and technology? It is here, for example, that the question of ethnic groups (民族)¹⁴ and technology appear.

Thirdly, and more specifically, the problem of a new worldview today is thought to be connected to the problem of tradition. Although we speak of a New Order or a New Culture, we are always referring to the Japanese Spirit (日本精神) or Eastern Culture. What, then, is the relationship between such [issues] and technology? This question is all the more important, given that many Japanists¹⁵ and Asianists have shown contempt towards or taken a dismissive attitude to science and technology—even if such views are not as common now as they once were. The connection between the Japanese Spirit and technology must not be seen as mere opportunism. Simple opportunism is not only harmful to technological development; it would end up harming the Japanese Spirit itself.

In this way, then, the problem of technology includes the problem of a worldview. The topics most actively discussed today have to do with technological policy, which has to be grounded on a correct grasp of the philosophical problems of technology.

13. At that time, in the 1930s and 40s, the words 新秩序 and 新文化 were two concepts closely related to the rhetoric of Japanese Imperialism.

14. Miki uses here the word 民族, a word that hard to translate in English due to its problematic connotations. One possible translation would be “race.” However, Miki was also aware of the concepts of race promoted by National Socialism in Germany. For this reason some authors render *minzoku* as *Volk*, avoiding softer alternatives such as “people” or “nation.” Nevertheless, for Miki, “ethnicity” (民族性) is not something biological or essentialist. For example, in a text from 1940 Miki wrote that “Of course, it is certain that each nation has its own ethnicity. But this ethnicity is by no means just natural, it is the result of longstanding politics” (MKZ 16, 473). That is, Miki understands *minzoku* as something not purely natural but also historical.

15. Japanism or 日本主義 was a form of Japanese nationalism particularly popular during the 1930's which stressed the figure of the emperor and its mythology.

II

There is also the issue of what technology is, given the various theories of technology. The answer may seem simple, but this is not necessarily the case. Rather, it is fair to say that we have not yet come to an agreement on the [subject]. Indeed, the very manner in which we examine the essence of technology is of fundamental importance for all [aspects] of a theory of technology.

Asked what technology is, it is generally spoken of as a means to an end. Those who try to be more precise would say that technology is the sum total or system of such means. The answer sounds altogether normal, but in fact it is incomplete. First of all, if technology were simply a means to an end, it would have to be said to lack uniqueness (独自性). Something that is unique cannot be simply a means [to an end] and that which is merely a means cannot be considered unique. As a result, technology has been considered nothing more than a means to an end, which is one of the reasons that the problem of technology has been ignored or dismissed in philosophy to date. In fact, if technology were simply a means, there would be no such thing as a philosophy of technology. To establish a philosophy of technology requires technology be seen as unique, and therefore as something that can be considered an end in itself.

Technology is [also] regarded as occupying a middle ground as it were between science and economics. If so, considering technology as merely a means to an end would, on the one hand, deny its uniqueness vis-à-vis science. In that case, technology would be seen as nothing more than the utilization or application of science. On the other hand, from such an approach, the view that seems to assert a close relationship between science and technology would set technology apart from science and have it simply serve the economy, which would lead scientists to be indifferent to technology. If [a scientist] were to ask to what purpose science is utilized as technology, the usual answer would be “for the economy,” or in other words, that such purpose would seem irrelevant to the scientist. It is unsurprising that those who fail to recognize the uniqueness of technology cannot truly esteem it. Such scientists would not be willing to cooperate fully in the advance of technology. At the same time, it is hardly desirable for the development of science itself that technology be considered nothing more than an application of

science. Scientific developments are often stimulated by technology, and this is inherently possible because technology is something unique. The generally accepted view that technology is influenced by science, and vice versa, is made possible, both logically and effectively, by the fact that both can be both unique and also interconnected. If technology is said to be an application of science, then one could also say that science is a transformation (変形) of technology. According to Scheler, scientific knowledge is “knowledge of work.”¹⁶ That is, it is technical in its essence, unlike religious or metaphysical (philosophical) knowledge. It may be said that science not only originated from some technical demand for working on nature and changing it, but that it is also technical in its methods. This is illustrated by the experimental method characteristic of modern science. To experiment is not to observe a given phenomenon as it is but to observe a phenomenon by generating it. In other words, knowing by creating is characteristic of the modern scientific method. We may think of an experiment as technology on a small scale, and of technology as an experiment on a large scale. It goes without saying that science and technology differ from each other. Indeed, science comes about only by rejecting its position as technology. Each is unique and yet they two are interconnected. Understanding this relationship must be the basis of any policy regarding science and technology.

Those who view technology as a means to an end would also see it as principally a means for the economy. But technology is not merely a means for the economy. If this were so, technology would be unequivocally subordinate to the economy and bound to it. Thus, as we have seen in the past, technology can be used simply for commercial purposes, just as there are [situations] in which its development has been limited or hindered by commercial use. It is true, on the one hand, that technology does play a role as a means for the economy. On the other hand, [technology] is not merely a means, but is also something unique, an end in itself. Therefore, it is not surprising that for technology to advance it must be emancipated from the economy. Emancipation from the economic [interests] of commercialism is necessary for technological development. By recognizing its uniqueness in this way, technology can advance and, in turn, the economy can also develop

16. This idea could be found, for example, in *Erkenntnis und Arbeit. Eine Studie über Wert und Grenzen des pragmatischen Motivs in der Erkenntnis der Welt* (1926).

as a result. Thinking of technology merely as a means for the economy and restricting its free development would become all the more disadvantageous for the economy as well. While technology and the economy are each unique, they stand in a close relationship to each other. The development of technology influences the mode of economy and vice versa. Although technology has a unique place in the economy, it is not simply an end in itself but rather a means for the economy.

For these reasons, we would have to say that technology is both a means, and also end unto itself. Grasping this relationship as a whole is important whenever we consider the question of technology. Moreover, whereas the common view until now has been biased toward considering technology merely as a means, what must be emphasized today is rather that [technology] contains something unique and self-teleological (自己目的的).

III

Therefore, it needs to be made clear from within that technology is not just something that should be seen as a means. Where this is the case, technology is always thought of as a tool or machine. A tool is indeed a means. Still, tools are not technology. Technology is the action of using tools to make things. Generally speaking, technology takes the form of action (行為の形). Because of this essential characteristic, the tool is included as an element of this action. Thus, if we define technology as a whole as a form of action, it becomes clear that it is not possible to view it as a mere means.

As an action that includes tools as one of its elements, technology distinguishes itself as something mediated (媒介的). First, to say that something is mediated means that it is not immediate (直接). Technology is always both processional and methodical. Secondly, mediation means that something mediates between a subject and its environment, that is, between a subject and an object. Technology mediates between the subject and its environment and enables an active adaptation to that subject's environment. As such, technology is simultaneously determined subjectively and objectively. Technology is originally subjective-objective (主観的・客観的). It contains both a subjective moment and an objective moment. Technology demands a synthesis between human will and objective natural laws. Yet [in this sense] the subjective-objective cannot be simply regarded as a means.

Anything viewed as a means is objective. For this reason, those who think about technology as a means are generally prejudiced by the objectivist view of technology. Although technology is a purely objective process, its end, the subjective, does not lie outside of it. Technology is originally a synthesis of the ends of human beings and objective natural laws; [therefore] the subjective dimension is included within technology. From the start, the synthesis that occurs in technology between the subjective and the objective is not something that happens only inside one's head, but rather something that actualizes itself in the realm of things through their transformation. Simply put, technology is making things. What we call production is the fundamental determination of technology. If so, can technology be thought of as a means for the end of production? The so-called means of production are tools and machines. Technology and tools are not the same. [Therefore,] tools are nothing but one element of technology. Aristotle did distinguish between *praxis* and *poiēsis*: for *praxis*, the end is not to be [found] in an external activity but in the activity itself, which works as the end, whereas in contrast, the end within *poiēsis* is not the activity itself but is regarded as work generated outside of it.

It should be noted, however, that practice as defined by Aristotle is actually contemplation rather than practice [as understood] today, and that contemplation was actually considered to be the highest [form of] practice. We would rather have to say that every action is poetic and therefore technical. If "thing" is understood in a broad sense, then all our actions have to do with producing things. What is made technically is not merely objective but subjective-objective. Within the sphere of technology, the subjective is objectified and the objective is subjectified. What is made technically as subjective-objective is also something independent. Thus, the technology that makes independent things cannot be viewed simply as a means.

Yet, it may be thought that technology is only subjective-objective when it comes to tool-based technology. We may also say that this is not the case with mechanical technology, which is distinct from tools. Tool-based technology is tied to human beings. In contrast, mechanical technology, which, as Sombart has said, is characterized by "being freed from the organic," works on its own, apart from human beings.¹⁷ Machines move towards autonomy.

17. This expression actually belongs to Marx's *Capital* (see MARX and ENGELS 1962,

Should this kind of activity of machines as a purely objective process be seen as a means? In that case, the first thing to consider is that even for machine activities, a corresponding subjective aspect to this [dimension to the objective process] is to be expected. Human intelligence or technical skill (技能) is technological. Or rather, it is sometimes called technology within the human [sphere]. The machine, so to speak, is the objective moment of technology; technical skill, so to speak, is its subjective moment, and both taken together determine as a whole what is called technology. Next, [we should also say that] since they are themselves technical products, machines are not themselves purely objective. This shows us that their end is not merely subjective and arbitrary but must possess some objectivity. Machines are also inventions, since they are a synthesis of subjective ends and objective laws of nature. Here we may distinguish between a technical end and a technical means. In this sense, inventions can relate to both. An invention can at the same time be an invention of a means and also of an end. A truly new invention is not just new in terms of the means but also in terms of the end. The technician cannot be thought of solely as an inventor of means. Invention also aims at the invention of new technical ends. In this regard, too, machines do not simply follow causal laws. Of course, from one side, [invention] inevitably follows the law of causality, [and for this reason] science is the basis of technology. However, at the same time, invention includes teleology. The machine, in both structure and application, is teleological. Its teleology, logically speaking, is comprised of an inner, organic relation between the whole and the parts. The machine expresses this relation. [Thus,] technology can be thought as the unification of causality and teleology. Also the “mechanism” (メカニズム) of machines is itself not merely causal but the unification of causality and teleology. Hence, in this sense, whatever contains teleology within itself cannot be considered a mere means. The synthesis of the subjective and the objective is given in the form that emerges from technology, and the unification of causality and teleology can be regarded as a morphology (形態論). In short, what has become clear by seeking an overall definition of technology is that technology should not be seen only as a means.

IV

From the outset, technology is not simply autotelic. It is in all respects a means. Yet, something that uses one technology as a means can only be another technology. Something that is actually capable of using one technology is in fact another technology. If [for example] technology functions as a means for the economy, and therefore the economy functions as the end of this technology, the economy must itself be a kind of technology. In this case, what we call technology is not the technology of natural sciences but, on the contrary, a [kind of] social technology. Just as there is a technology based on the natural sciences, so, too, there is another kind of technology based on the social sciences. Social technology also needs to stand on a scientific ground, a sociological ground. Technology is not limited to nature; there is also technology for society. Since these different forms of technology exist, we can conceive of a connection between them with regard to means and ends. Aristotle believed that harness-making technology served military technology, and military technology served politics.¹⁸ Politics itself is also a [kind of] technology. Thus it is possible to posit a hierarchical relationship among various technologies based on the means-end relationship. As a result, we can conceive of a technology that controls all technology in a comprehensive manner. For Aristotle, this is politics. In other words, for politics all technologies may be thought of as a means.

Normally, when speaking about technology, one thinks of material production and hence the natural sciences. But this is meaningless for the idea of technology. What is needed today is to expand that way of thinking. The confusion this is thought to cause comes from our way of considering various forms of technology in isolation from one another, without taking into consideration the connections among them in terms of the relationship of ends to means. Thus, to think of the individual forms of technology in isolation is the result of thinking of technology as merely a means. Even when technology is a means, that is only another form of technology. Obviously, the development of technology is necessary for natural science. But that is not the only problem; the development of social technologies is also extremely important. What is now referred to as technological regulation or

18. Miki refers to Aristotle's *Nicomachean Ethics*, 1094a.

planning implies the control of social technology, in particular, the politics of technology in natural science. That this is in fact the case is clearly important if we are to grasp the proper connection among the varieties of technology. The first thing to pay attention to here is that something capable of truly using one technology is itself another technology. In other words, a true technology enables politics to work effectively on other technologies. Furthermore, even if a means-end relationship is recognized between one technology and another, this does not mean that one technology is a one-sided means, but that every technology is at the same time both a means and independent. For this reason, we need to understand the fundamental determinations of the end [of that technology] in itself. Furthermore, as in the case with politics, we should not think of other technologies merely as a means. We must rather recognize at the same time their uniqueness and their autotelic nature (自己目的性). This will be important when considering the problem of technological regulation. If it is further understood that there are connections among technologies, it is also clear that no technologist should be indifferent to politics.

In addition, if we grant a relation between the end and the means in all things technological, what might we say is the ultimate end? To be ultimate, an end has to be its own end and a means for something else. When Kant discussed the teleology of nature—at the time, he thought that there was also technology in nature—he proposed that we take as the ultimate end in the teleological connections of nature the human being as a free subject, in other words, the human being as a moral subject rather than as a natural thing. That said, the moral action of a human must also be technological. To be free actually means to dominate things by technology. It may imply autonomy, but such autonomy should not be considered in the abstract sense. True autonomy lies in the fact that even if human beings are completely embedded in technology, they themselves are beyond technology and can use it as a means. Human beings are not purely autotelic. The human being itself is produced technically. Just as machines created by humans work independently on their own, humans who are made by society work independently in their technical creation of things. As independent and autonomous beings, human beings are autotelic. At the same time, they are only a means to the society that created them. Like other technological things, human beings are simultaneously autotelic and a means.

In our search for a general determination of technology, we have found it in the form of action. So to define technology is to define it in a subjective (主体的) manner, as opposed to the traditional objectivist tendency to consider technology merely as a means. Technology is not purely objective. It is subjective-objective, and in this sense, it is historical. In the world of history, only what is subjective-objective is truly objective. As an action that produces things, technology is historical. [And] all history is continually being produced technologically. Because humans are producing history technologically, the meaning of technology must be understood as historical action in this sense. Moreover, the authentic subject of history is not the individual but something that transcends the individual; it is society that uses individuals working technically as a means, not the individual. Technology is social and human beings are always tied socially through technology. This fundamental sociality of technology needs to be emphasized. The human, defined as a tool-making animal, must also be defined as a social animal.

Now if we regarded subjective technology as a form of action and society as the authentic subject of history, we may then understand the link between technology and ethnic groups. By nature, technology is the manner in which a subject works on its environment, but this subject and this environment are always historical. An ahistorical conception of technology is the result of a perspective that thinks of technology as the mere application of the natural sciences, the same kind of perspective that gives us the notion of abstract cosmopolitanism. The philosophy of technology must be grounded in the philosophy of history, and the philosophy of history must in turn be grounded in the philosophy of technology. In reflecting on of technology today, the most important thing is having a philosophical-historical perspective.

I would make one final observation. I believe that what functions as the basis of the Eastern view of nature (東洋の自然観) or society (社会観) is a kind of philosophy of technology, a technological worldview. Morality may also be thought of in a philosophical-technological manner. To separate the Japanese Spirit and technology from each other is to would miss the general characteristic of this Eastern worldview. To investigate the meaning of this technological worldview is not just interesting; it is also extremely important. However, we should add that the Eastern technological worldview is tool-technical, not mechanical-technical. A transition from the tool-techni-

cal to the mechanical-technical has been made possible by modern science. What is crucial for us today is to introduce this modern scientific perspective into the Eastern technological worldview.

Miki Kiyoshi

Technology and the New Culture

*Translated and annotated by
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I

Whatever we think of the creation of a New Culture that needs to accompany the construction of a New Order in East Asia, it is clear that technology must occupy a very important place in the process. At present, the Imperial Army is carrying out remarkable military achievements on all sides. Not be overlooked in our joy at this victory is Japan's technological development. Such success would not be possible without the development of technology. Given that technology comprises such a major element of this New Order War, it is clear that technology must also be of fundamental importance in the New Culture. What is needed above all to keep this war effort going is to develop and use the resources that have been secured. The final victory in this long conflict can only be achieved by actively benefiting from those resources. And for that, technology is clearly indispensable. The war must be both war and construction. Construction is, first and foremost technological. The aim of this war is the construction of a New Order in East Asia or the establishment of an East-Asian Co-Prosperity Sphere.¹⁹ One of the main roles that Japan has to play in making the East Asia Co-Prosperity Sphere a reality is to provide technological guidance in making use of the resources of East Asia. Merely to assert that we possess resources does not mean that we actually do. Fish are in the sea, but we cannot say we actually have fish until they are set on the table. To have them in nature does not yet mean to possess them economically. Natural resources become economically significant through their technological development and use. What

19. As other concepts that we find in these texts, the so-called Greater East Asia Co-Prosperity Sphere is a political concept coined around 1940 that expresses the hegemonic and imperialist intentions of Japan. This "sphere" included not only Japan, Manchukuo, and China, but also Southeast Asia, Eastern Siberia, and possibly the outer regions of Australia, India, and the Pacific Islands. While the concept promises an ideal of "co-prosperity," it was certainly built around the idea of strong Japanese leadership.

Japan has to do is to make use of the resources of East Asia. Only then we can establish an East Asia Co-Prosperity Sphere. The first requirement for its establishment is that we acquire advanced technology. Without it, there can be neither a New Order nor a New Culture.

In this sense, the importance of technology in the New Culture of East Asia is obvious. Those who despise technology can only be said not to have understood how a New Order, and therefore also a New Culture, can come about. At the same time, it is wrong to overemphasize technology as if it were the only important element. We also need to gain a much stronger and wider perspective. Technology is just one domain or element in culture. There are others, such as art, morals, religion, and philosophy. In this context, what is commonly referred to as technology—namely, the technology of material production—is directly related to the economy. Thus, to emphasize only technology leads us to an overemphasis on material culture, which runs the risk of falling into economism or materialism. Economism is a characteristic of modern culture, but the New Culture must go beyond modern culture. Its position cannot be a kind of “techno-centrism” (技術主義).²⁰ This is why the value of spiritual culture need to be emphasized in opposition to material, economic and technological culture. In particular, from a historical viewpoint, what we now today technology was developed in the West. A position of spiritual culture characteristic of Eastern tradition needs to emerge in contrast to the Western material culture. This position has its own reasons as well. The culture of the New Order that is to take shape in East Asia must be connected to the traditions of Eastern culture. Insofar as this is the case, the value of spiritual culture will be emphasized in the New Culture as a matter of course. Even the glorious military successes of the Imperial Army are not only due to the superiority of weapons and technology; they are fruits of the spirit. That said, it would be a mistake to respect the spirit to excess and fall into a “spiritualism” (精神主義) that would exclude or look down on technological culture. As already mentioned, there can be no doubt about the importance of technology. It is only common sense to think that the New Culture should be able to unite technology and spiritual culture without despising technology or holding it only partly in esteem. This is a crucial issue for the creation of the

20. Lit. “technologism.”

New Culture that is to accompany the construction of a New Order in East Asia. New Culture must, on the one hand, be connected to Eastern traditions with its own distinct features as a spiritual culture, and on the other hand, it must respect modern technology established in the West and based on modern science. The problem is how to combine and harmonize technology and spiritual culture.

It should be noted that this is not only a problem for East Asia but actually also for world history. It is not only Japanese or Eastern culture that are faced with the question, but it [confronts] Western culture as well. One remarkable feature of modern culture in the West—which in our country is referred to simply as “Western culture”—is the rapid development of technology. But the development of material culture brought about a crisis of spiritual culture, as [in the case of] morality. The development of machines has made us think of human beings as incomplete, which then brought about a sense of depersonalization (非人格化). It also left in its wake masses of people (大衆) without spiritual personality. The development of material culture made all human beings materialistic. As a result, a pessimism towards technology grew out of the critique of modern culture. As the problem of technology became important for our culture, a so-called “philosophy of technology” has emerged. The fact of the matter is, as long as technology is simply seen as technology [technique], no one doubts its utility. [Technology] becomes problematic when we view it in relation to other forms of culture, especially to spiritual culture. The protest against mechanical technology was not only raised by Gandhi in the East but can be found in many philosophies of technology in the West as well. To be sure, we can defend technology against such pessimism. The development of machines has alleviated the pain of physical labor for human workers. Without any foundation in material culture, spiritual culture would not be able to develop. At the same time, unconditional optimism towards technology is as one-sided as an opposing pessimism. The relationship between technology and humans cannot be viewed merely optimistically. The essence of modern technology lies in what Sombart has called liberation from the organic (有機的なものからの解放). In this sense, modern technology stands as opposed to humans as it is to organic life. Although machines are human products, they maintain an independence from humans and can actually come to restrict and oppress them. The risk here is that something that has

proved useful for the development of human culture can eventually promote its destruction. Technology, which develops autonomously by its own power, cannot be left unattended. This is where a “taming of technology” (技術の馴化), as Sombart puts it, becomes necessary.²¹ Modern culture, through the development of technology, has brought spiritual culture to the brink. To unite or harmonize technology with spiritual culture has become a fundamental problem for Western culture. An possible answer may lie in the attempt to tame it rather than simply exclude it. This is the task of the New Culture, and it is a world-historical task. The New Culture of East Asia would take on worldwide significance by solving this world-historical problem. That said, we must work towards a technology superior in all respects. The need for this is obvious. In addition, many of the negative cultural effects previously assumed to belong to the essence of technology are actually based on a technological immaturity that can be remedied by technological development. On this point in particular, we need to pay attention to our response to naive technophobes. Nevertheless, so long as there is a fundamental opposition between technology and spiritual culture, it we need to overcome it by developing a high-level spiritual culture across the board.

The problem with technology faced by the New Culture lies in how to re-organicize (有機化) technology [i.e., make technology organic]. The defining mark of modern technology is that it disentangles us from the organic. This, in turn, runs the risk of oppressing humans and acting destructively towards spiritual culture. Modern technology is a mechanical technology. In contrast, the technology of the past can be defined as tool-based technology. There is a fundamental difference here between machines and tools. While mechanical technology is indeed mechanical, tool-based technology is characterized by its organic nature. Contrary to machines, which have the autonomy to work independently of humans, tools are, so to speak, an extension of human hands. Insofar as tools are organically connected to humans, tool-based technology is humanized. The relationship between tool-based technology and human beings is organic. The two are connected organically. Thus, in the case of tools, there is no conflict between humans and technology, and such technology has never been a serious cultural and

21. Miki refers to the title of Werner Sombart's book *Die Zähmung der Technik* (1935).

spiritual problem. Modern technology made a breakthrough with the invention of machinery that work automatically and independently of humans. With time, the organic connection with humans came to be dissolved and machines began to oppress humans. This is where the serious cultural and spiritual problem of technology arises. Alarmed at the harm brought about by mechanical technology, attempts have been made to eliminate machines and return to the simple technology of an earlier time, but this is nothing more than a simple reflex reaction. The development of mechanical technology has [in fact] made an infinitely large contribution to human culture, and may be expected to make more and more contributions in the future.

The problem is how to bring this modern technology into an organic relationship with human life. Originally, technology was linked to humans in the form of tools. Later, in the form of mechanical technology, it came to stand into opposition to human beings. The challenge of the New Culture is to make this technology that has stood against us into something that is somehow once again organically related to human life. Let me add a brief word about the relation between the Japanese spirit and science, which is a matter of frequent discussion today. As long as science is recognized as the ground of tool-based technology (in all its forms, technology must be grounded on the objective laws of nature), it is possible to speak of science as belonging to the traditional Japanese spirit. But there is a dramatic difference between tool-based and mechanical technologies. The science of the present day, which has become the basis for the development of mechanical technology, is also something fundamentally novel. The relationship between the two is by no means a one of simple continuity. For science to develop and technology to advance in accord with the traditional spirit of Japan, there must be new breakthroughs in the Japanese spirit. In fact, as an ethnic group the Japanese have done just that from the end of the Edo period up until the present. This does not imply, however, that the Japanese spirit has a need to be westernized. There is simply no truth to the claim that it is impossible for one ethnic group to become something altogether different. As already explained, the problem for today's world-historical culture is how a technology that, historical speaking, arose in the West, can be harmonized and unified with spiritual culture, how it can be restored to an organic relationship with human life. Obviously, we cannot follow Western culture here, because Western culture has yet to solve the problem. On

the contrary, it has shown the tragic side of the problem. We need rather to rely on the creative forces characteristic of the Japanese spirit. The world historical problem facing us today is that, along with our ongoing adoption of so-called Western science and technology, we must go further to create a new and higher culture by solving the problems that Western culture has left unsolved. On this point, the deepening and refinement of the Japanese spirit becomes a necessity.

In this connection, we may ask how it is possible for present-day technology be enter into an organic relation with human beings. This [answer] is not to be found in the methods of tool-based technologies. It is wrong to think that such a thing [as an organic relation] is possible without taking into consideration the fundamental differences between tools and machines. A technology of the mind-heart (心の技術) is certainly necessary. What I mean by that is a technology that produce humanity or soul, and in particular the kind of technology has evolved considerably in the East. We need to restore this tradition. What matters here is the cultivation of the kind of human beings and souls that are capable of controlling technology rather than being controlled by it. Still and all, it is not possible to overcome the gigantic and powerful organization of today's technology with mere spirit. A more objective, scientific method is called for. This is in itself a technology—a kind of [subjective-objective] technology to control technology. We are not speaking of technology that controls nature but something we should call social technology (社会技術). Just as the technology that controls nature is based on natural science, so social technology must be based on social science. Such socially regulated technology will aid in the advance of technology by altering the social conditions that stand in its way.

What has hitherto been regarded as a harmful aspect of technology turns out not to be a sin of technology itself but to have arisen from the social system in which technology is embedded. We must rely on social technology [itself] to remove these harmful effects. For example, from the viewpoint of national defense, health, morality, and so forth, it has become necessary today to subdivide and disperse industries concentrated in modern cities, and this entails making technology once again organically related to human life. Or again, there is the problem of coordinating urban and rural areas. Here too, technology can take on an organic significance in its relationship to nature. The organicization of technology (技術の有機化) could be

applied to many of the general aims of social technology, such as National Land Planning (国土計画).²² Such technology is not directly organized for individual bodies the way a tool-based technologies are. In contrast, modern mechanical technology can only be organized for the “social body” (社会の身体).²³ In this regard, modern technology is social in the highest sense. That is to say, it becomes organic in a social way, in relation to the social body. From that perspective it is possible to understand the importance of National Land Planning. Furthermore, from the point of view of a technology organically related to the social body, it is also possible to rethink the question of technology and ethnic groups. By employing the ideal of the organization of technology in various social technologies, including national land planning, new cultural patterns can be created. Thus, it is not hard to understand why, in the name of constructing a New Culture, the advancement of not just the natural sciences but also of the social sciences has an important role to play. Just as notion of science extends beyond the natural sciences to include the social sciences, so, too, technology should not be limited to a technology based on natural science, but also need to take the form of a social technology based on the social sciences. For these reasons, we must expand the concept of technology as it has commonly been understood up until now. The task of constructing a new technological science (技術学) or philosophy of technology is to broaden the concept of technology and at the same time to clarify the topological relations among

22. The expression “national land planning” (国土計画) refers to a set of policies (in this case implemented specially during the 1930’s and 1940’s) inspired by other global examples such as the German *Raumordnung* (spatial order) that aimed to coordinate a comprehensive and efficient use of the land. This included not only measures against urban concentration, but also regarding flood control, hydroelectricity, and other infrastructural issues. These policies gained a new impulse with the re-election of Konoe Fumimaro, who was also supported by the Shōwa Kenkyūkai, which in September 1940 submitted a “statement of opinion on the promotion of national land planning.” Within this historical context, the concept of “national land planning” also included the administration of the colonial territories of the Japanese Empire (see also MOORE 2013, for example 122).

23. The concept of “social body” is recurrent in Miki, although he never offers a definition of it. Typically, it is used to designate the most concrete instance of historical subjectivity. It is the manifestation of the embodied dialectic between *pathos* and *logos*. In this sense, it may be thought as the subject of history (see for example MKZ 18: 153). It is also clearly reminiscent of Nishida’s concept of the “historical body” (歴史の身体).

technologies. I regard such a task as a matter of great significance for the ideal of a New Culture.

If we must expand the concept of technology, we must also deepen our understanding of the essence of technology. I cannot go into [this matter] here, but I should like to make one observation. Until the present day, the understanding of technology suffered from the one-sided bias of objectivism, which was also related to earlier views of technology as simply a means. As I explained earlier, all technology involves a sense of being simultaneously a means and an end. It is therefore possible to draw connections between ends and means among different technologies while also recognizing the uniqueness and autonomy of each. In acknowledging these connections, the inner relationship between “technology” and spiritual culture becomes clearer. Spiritual culture, for all its many meanings, is also technological. In Greek philosophy, for example, technology and art were expressed through the same word: *techné*. Art is, of course, technical, but so is morality when considered as a form of instrumental action. Scientific and philosophical thinking have something to do with technology as well. Obviously, when it comes to considering what is technical about spiritual culture, technology is not being understood simply as something objective. True, all technology must have an objective aspect. But it is not merely objective. [On the contrary] it is the unification of the objective and the subjective. The one-sided objective approach to technology may also be related to the idea of technology as something that has to do with only the natural sciences. Social technology cannot be treated as purely objective either. Here, too, technology include the element of human volition as a subjective element, which technology aims to synthesize with objective laws. From another angle, the same applies to natural scientific technology. It is not merely objective but always entails a human *telos*. Setting technology as a form of historical action performed by human beings in the historical world makes this easier to understand. All things are technical insofar as they are created in the historical world. The historical world [itself] comes to be technically. Conversely, the philosophy of history must include a philosophy of technology. Spiritual culture is also technological in the sense that it is a historical construct. Of course, [in the same way,] technology is not simply subjective. The subjective element within technology is not itself only subjective, but must rather be objective as well. Technology is historically objective. But to

be truly objective in the historical world does not mean to be only objective. On the contrary, it means to be subjective-objective. In the same way that a one-sided objectivism regarding technology needs to be corrected, so, too, does a one-sided subjectivism regarding spiritual culture. For example, while art was seen as a technology [*techné*] in ancient Greece, today it has come to be thought of as merely a product of subjective emotion or imagination. Nevertheless, given its similarity to technology, art cannot ever be seen as only subjective. As Valéry and Alain²⁴ have remarked, since art is also a technology [*techné*] that works on concrete material, the artist must be a kind of artisan. The idea (イデア) of art is not something inside the head of the artist: a piece of art is born from the manipulation of matter, like language or marble or what have you. Generally speaking, making is a subjective-objective action. Ideas are also, at bottom, historically objective—that is to say, subjective-objective. It is not only spiritual culture that can be called ideal (イデア的); what is commonly referred to as technology can also be seen as expressing a particular idea. For this reason, we may say that the ideal of a New Culture must be located in a technical-artistic worldview. As explained above, the organization of technology may also be thought of as the artification (芸術化) of technology.

24. Miki refers to the pseudonym of the philosopher Émile-Auguste Chartier (1868–1951), who taught Simone Weil, Georges Canguilhem, and André Maurois, among others.

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