The Question Concerning Technology (Die Frage nach der Technik)

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(excerpts)

According to ancient doctrine, the essence of a thing is considered to be what the thing is. We ask the question concerning technology when we ask what it is. Everyone knows the two statements that answer our question. One says: Technology is a means to an end. The other says: Technology is a human activity. The two definitions of technology belong together. For to posit ends and procure and utilize the means to them is a human activity. The manufacture and utilization of equipment, tools, and machines, the manufactured and used things themselves, and the needs and ends that they serve, all belong to what technology is. The whole complex of these contrivances is technology. Technology itself is a contrivance—in Latin, an *instrumentum*.

The current conception of technology, according to which it is a means and a human activity, can therefore be called the instrumental and anthropological definition of technology.

Who would ever deny that it is correct? It is in obvious conformity with what we are envisaging when we talk about technology. The instrumental definition of technology is indeed so uncannily correct that it even holds for modern technology, of which, in other respects, we maintain with some justification that it is, in contrast to the older handicraft technology, something completely different and therefore new. Even the power plant with its turbines and generators is a man-made means to an end established by man. Even the jet aircraft and the high-frequency apparatus are means to ends. A radar station is of course less simple than a weather vane….

But this much remains correct: Modern technology too is a means to an end. This is why the instrumental conception of technology conditions every attempt to bring man into the right relation to technology. Everything depends on our manipulating technology in the proper manner as a means. We will, as we say, "get" technology "intelligently in hand." We will master it. The will to mastery becomes all the more urgent the more technology threatens to slip from human control.

But suppose now that technology were no mere means: how would it stand with the will to master it?....

We must ask: What is the instrumental itself? Within what do such things as means and end belong? A means is that whereby something is effected and thus attained. Whatever has an effect as its consequence is called a cause. But not only that by means of which something else is effected is a cause. The end that determines the kind of means to be used may also be considered a cause. Wherever ends are pursued and means are employed, wherever instrumentality reigns, there reigns causality.
For centuries philosophy has taught that there are four causes:

1. the *causa materialis*, the material, the matter out of which, for example, a silver chalice is made;
2. the *causa formulis*, the form, the shape into which the material enters;
3. the *causa finalis*, the end, for example, the sacrificial rite in relation to which the required chalice is determined as to its form and matter;
4. the *causa efficiens*, which brings about the effect that is the finished, actual chalice, in this instance, the silversmith. What technology is, when represented as a means, discloses itself when we trace instrumentality back to fourfold causality.

But suppose that causality, for its part, is veiled in darkness with respect to what it is? Certainly for centuries we have acted as though the doctrine of the four causes had fallen from heaven as a truth as clear as daylight. But it might be that the time has come to ask: Why are there only four causes? In relation to the aforementioned four, what does "cause" really mean? From whence does it come that the causal character of the four causes is so unifiedly determined that they belong together?....

Silver is that out of which the silver chalice is made. As this matter (*hyle*), it is co-responsible for the chalice. The chalice is indebted to, i.e., owes thanks to, the silver for that of which it consists. But the sacrificial vessel is indebted not only to the silver. As a chalice, that which is indebted to the silver appears in the form of a chalice, and not in that of a brooch or a ring. Thus the sacred vessel is at the same time indebted to the form (*eidos*) of chaliceness.... But there remains yet a third something that is above all responsible for the sacrificial vessel. It is that which in advance confines the chalice within the realm of consecration and bestowal. Through this the chalice is circumscribed as sacrificial vessel.....

The three previously mentioned ways of being responsible owe thanks to the pondering of the silversmith for the "that" and the "how" of their coming into appearance and into play for the production of the sacrificial vessel. Thus four ways of owing hold sway in the sacrificial vessel that lies ready before us....

The four ways of being responsible bring something into appearance. They let it come forth into presence-ing [*Anwesen*].... Plato tells us what this bringing is in a sentence from the Symposium (205b):... "Every occasion for whatever passes beyond the nonpresent and goes forward into presence-ing is *poiesis*, bringing-forth [*Her-vorbringen*]."....

Not only handicraft manufacture, not only artistic and poetical bringing into appearance and concrete imagery, is a bringing-forth, *poiesis. Physis*, also, the arising of something from out of itself, is a bringing-forth, *poiesis. Physis* is indeed *poiesis* in the highest sense....

The modes of occasioning, the four causes, are at play, then, within bringing-forth. Through bringing-forth the growing things of nature as well as whatever is completed...
through the crafts and the arts come at any given time to their appearance.

But how does bringing-forth happen, be it in nature or in handicraft and art? Bringing-forth propagates only insofar as something concealed comes into unconcealment. This coming rests and moves freely within what we call revealing [das Entbergen]. The Greeks have the word *aletheia* for revealing. The Romans translate this with *veritas*. We say "truth" and usually understand it as correctness of representation.

But where have we strayed to? We are questioning concerning technology, and we have arrived now at *aletheia*, at revealing. What has the essence of technology to do with revealing? The answer: everything. For every bringing-forth is grounded in revealing. Bringing-forth, indeed, gathers within itself the four modes of occasioning—causality—and rules them throughout. Within its domain belong end and means as well as instrumentality. Instrumentality is considered to be the fundamental characteristic of technology. If we inquire step by step into what technology, represented as means, actually is, then we shall arrive at revealing. The possibility of all productive manufacturing lies in revealing.

Technology is therefore no mere means. **Technology is a way of revealing.** If we give heed to this, then another whole realm for the essence of technology will open itself up to us. It is the realm of revealing, i.e., of truth.

This prospect strikes us as strange. Indeed, it should do so, as persistently as possible and with so much urgency that we will finally take seriously the simple question of what the name "technology" means. The word stems from the Greek. *Technikon* means that which belongs to *techne*. We must observe two things with respect to the meaning of this word. One is that *techne* is the name not only for the activities and skills of the craftsman but also for the arts of the mind and the fine arts. *Techne* belongs to bringing-forth, to *poiesis*; it is something poetic.

The other thing that we should observe with regard to *techne* is even more important. From earliest times until Plato the word *techne* is linked with the word *episteme*. Both words are terms for knowing in the widest sense. They mean to be entirely at home in something, to understand and be expert in it. Such knowing provides an opening up. As an opening up it is a revealing. Aristotle, in a discussion of special importance (*Nicomachean Ethics*, Bk. VI, chaps. 3 and 4), distinguishes between *episteme* and *techne* and indeed with respect to what and how they reveal. *Techne* is a mode of *aletheuein*. It reveals whatever does not bring itself forth and does not yet lie here before us, whatever can look and turn out now one way and now another. Whoever builds a house or a ship or forges a sacrificial chalice reveals what is to be brought forth, according to the terms of the four modes of occasioning. This revealing gathers together in advance the form and the matter of ship or house, with a view to the finished thing envisaged as completed, and from this gathering determines the manner of its construction. Thus what is decisive in *techne* does not at all lie in making and manipulating, nor in the using of means, but rather in the revealing mentioned before. It is as revealing, and not as manufacturing, that *techne* is a bringing-forth....
In opposition to this definition of the essential domain of technology, one can object that it indeed holds for Greek thought and that at best it might apply to the techniques of the handicraftsman, but that it simply does not fit modern machine-powered technology. And it is precisely the latter and it alone that is the disturbing thing, that moves us to ask the question concerning technology per se. It is said that modern technology is something incomparably different from all earlier technologies because it is based on modern physics as an exact science. Meanwhile, we have come to understand more clearly that the reverse holds true as well: modern physics, as experimental, is dependent upon technical apparatus and upon progress in the building of apparatus. The establishing of this mutual relationship between technology and physics is correct. But it remains a merely historiologically establishing of facts and says nothing about that in which this mutual relationship is grounded. The decisive question still remains: Of what essence is modern technology that it thinks of putting exact science to use?

What is modern technology? It too is a revealing. Only when we allow our attention to rest on this fundamental characteristic does that which is new in modern technology show itself to us.

And yet, the revealing that holds sway throughout modern technology does not unfold into a bringing-forth in the sense of poiesis. The revealing that rules in modern technology is a challenging [Herausfordern], which puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such. But does this not hold true for the old windmill as well? No. Its sails do indeed turn in the wind; they are left entirely to the wind's blowing. But the windmill does not unlock energy from the air currents in order to store it.

In contrast, a tract of land is challenged in the hauling out of coal and ore. The earth now reveals itself as a coal-mining district, the soil as a mineral deposit. The field that the peasant formerly cultivated and set in order appears differently than it did when to set in order still meant to take care of and maintain. The work of the peasant does not challenge the soil of the field. In sowing grain it places seed in the keeping of the forces of growth and watches over its increase. But meanwhile even the cultivation of the field has come under the grip of another kind of setting-in-order, which sets upon nature. It sets upon it in the sense of challenging it. Agriculture is now the mechanized food industry. Air is now set upon to yield nitrogen, the earth to yield ore, ore to yield uranium, for example; uranium is set up to yield atomic energy, which can be unleashed either for destructive or for peaceful purposes….

The hydroelectric plant is set into the current of the Rhine. It sets the Rhine to supplying its hydraulic pressure, which then sets the turbines turning. This turning sets those machines in motion whose thrust sets going the electric current for which the long-distance power station and its network of cables are set up to dispatch electricity. In the context of the interlocking processes pertaining to the orderly disposition of electrical energy, even the Rhine itself appears to be something at our command. The hydroelectric
plant is not built into the Rhine River as was the old wooden bridge that joined bank with bank for hundreds of years. Rather, the river is dammed up into the power plant. What the river is now, namely, a water-power supplier, derives from the essence of the power station….

In the academic language of philosophy 'essence' means what something is; in Latin, *quid*, whatness, provides the answer to the question concerning essence. For example, what pertains to all kinds of trees—oaks, beeches, birches, firs—is the same 'treeness'. Under this inclusive genus—the 'universal'—fall all actual and possible trees….

Socrates and Plato already think the essence of something as what it is that unfolds essentially, in the sense of what endures. But they think what endures is what remains permanently (*aeion*). And they find what endures permanently in what persists throughout all that happens, in what remains. That which remains they discover, in turn, in the aspect (*eidos*, idea), for example, the Idea "house." The Idea "house" displays what anything is that is fashioned as a house. Particular, real, and possible houses, in contrast, are changing and transitory derivatives of the Idea and thus belong to what does not endure.

But it can never in any way be established that enduring is based solely on what Plato thinks as idea… All unfolding endures. But is enduring only permanent enduring? Does the essence of technology endure in the sense of the permanent enduring of an Idea that hovers over everything technological, thus making it seem that by technology we mean some mythological abstraction?....

There was a time when it was not technology alone that bore the name *techne*. Once the revealing that brings forth truth into the splendor of radiant appearance was also called *techne*. There was a time when the bringing-forth of the true into the beautiful was called *techne*. The *poiesis* of the fine arts was also called *techne*.

At the outset of the destining of the West, in Greece, the arts soared to the supreme height of the revealing granted them. They illuminated the presence [*Gegenwart*] of the gods and the dialogue of divine and human destinings. And art was called simply *techne*. It was a single, manifold revealing….

The arts were not derived from the artistic. Artworks were not enjoyed aesthetically. Art was not a sector of cultural activity.

What was art—perhaps only for that brief but magnificent age? Why did art bear the modest name *techne*? Because it was a revealing that brought forth and made present, and therefore belonged within *poiesis*....