

The Technophobic Impediments to the *Phronesis* Revival

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I. Introduction

This paper argues that the 20th century revival of *phronesis*, the rediscovery by Heidegger, Arendt and Gadamer of a mode of thinking central to Greek thought but repressed in a modernity dominated by rationalism and mass society, was animated out of concerns that ultimately undermined the revival itself. These thinkers developed a method of phenomenological hermeneutics that sought to account for everyday thinking in its facticity in a way that modern philosophy could not, and that in turn rediscovered the premodern concept of *phronesis*, as the stance one takes towards one's facticity, that had been discarded by modern thinkers. However, by totalizing mass society and its predominant everyday concern, *techne*, as rationalist, phenomenological hermeneutics never came close to uncovering everyday thinking despite its claims to the contrary.

The revival of *phronesis* in contemporary thought has thus been impeded by a technophobia that projects a scientific interpretation of technical rationality across the Western tradition, from Aristotle to contemporary technology. In Aristotle the *phronesis* revivalists project a hard distinction between *techne* and *phronesis*, in which *techne* is the instrumental application of *eidos*, of formal science. In contemporary technology they project a similarly scientific understanding of *techne* onto contemporary concepts (*Technik, technology*). The effect has been to cede a determinism to technology that only extends its influence over everyday life, continues to conceal much of everyday life from philosophical analysis and narrows the factual grounds for a revival of *phronesis* to vague opportunities for action and dialogue explored by Heidegger, Arendt and Gadamer.

After examining the challenges faced by Heidegger, Arendt and Gadamer in grounding their accounts of *phronesis*, this paper provides an interpretation of the Western tradition of *techne* that is far less dominated by formal science than Heidegger feared. First, this paper provides an interpretation of Aristotle that uncovers a much closer structural relation between *techne* and *phronesis*, one with striking parallels to that found in *Being and Time* between circumspection and conscience. Rather than interpreting *phronesis* in hard distinction from *techne* (Heidegger's Aristotle) or as governing *techne* from the outside (conventional Aristotelianism), Aristotle and the Heidegger of *Being and Time* interpret *phronesis* as a constant possibility from within *techne*. In both cases, *techne* has dual tendencies towards *phronesis* and towards exact science or *episteme*. Second, this paper provides an overview of historical research in technology that has conclusively debunked the ideology that equates modern technology with applied science.

II. Technophobia Within the *Phronesis* Revival

The attempted rehabilitation of *phronesis* by Arendt and Gadamer is now largely acknowledged to have as its source Heidegger's commentaries in the 1920s on Book VI of the

*Nicomachean Ethics*¹ which have as one of their chief concerns Aristotle's interpretation of *phronesis*.²

What one finds in common between these commentaries and the work of Arendt and Gadamer is a rediscovery of a mode of thinking – *phronesis* – that had been repressed by modern philosophy and mass society, as well as a hard distinction between this mode of thinking and *techne*. For Heidegger in his Aristotle commentaries and for Arendt and Gadamer, *phronesis* is oriented by the self-knowledge of the acting person discovered through interpretation of one's factual world. All three thinkers sought to return philosophy from the abstractions of metaphysical conceptuality to this concern for everyday factual existence. *Techne* was viewed by all three thinkers as derivative of such abstractions, as it is oriented, in contrast to *phronesis*, entirely by formal ideas of one's finished product and is limited to narrow deliberation about the instrumental means to bring formal ideas into being.

Heidegger's 1920s commentaries on *NE 6*, in addition to influencing Arendt and Gadamer, also anticipate the major themes in *Being and Time*, which is surprising at first as *Being and Time* makes no mention of *phronesis* or of the other intellectual states discussed in *NE 6*. *NE 6* examines the intellectual virtues, a discussion that follows an examination of the ethical virtues. In the context of the Aristotle lectures, *Being and Time* is revealed to be largely a phenomenological account of *phronesis*, *techne* and *episteme*.

According to Aristotle, there are two parts of the rational soul, the scientific and the deliberative, with the deliberative part being concerned with what admits of being otherwise. *Episteme* (science) and *sophia* (understanding) are the two states of the scientific part of the rational soul, while *techne* and *phronesis* are the two states of the deliberative part of the rational soul, distinguished according to the activities with which they are concerned – *poiesis* (production) and *praxis* (action).³

Once these commentaries are read as working through the same issues as *Being and Time*, what is most striking, as Bernasconi argues, is the hard distinction between *techne* and *phronesis* in the Aristotle commentaries, as it is not only suspect as a fair reading of *NE 6*, but is also in tension with the more continuous relationship between *techne* (translated as circumspection in everyday life) and *phronesis* (translated as conscience) found in *Being and Time*.

¹ This paper will heretofore refer to Book VI of the *Nicomachean Ethics* as *NE 6*.

² Heidegger deals with *NE6* in 3 published works and lectures:

- A 1922 text, "Phenomenological Interpretations with Respect to Aristotle"
- A talk given in 1923/1924, "Being-There and Being-True According to Aristotle"
- The lectures of the winter 1924/1925 semester at Marburg on *Plato's Sophist*

³ "For production has its end in something other than itself, but action does not, since its end is acting well itself". All quotes from *Nicomachean Ethics* (NE) are from the translation of Terence Irwin. Aristotle, *Nicomachean Ethics*, (Hackett Publishing, 1999), NE VI, 5, Sec 4, 1140b7. This recalls the same distinction made at the opening of NE, "the ends appear to differ; some are activities, and others are products apart from the activities". NE I, 1, Sec 2, 1094a4

Is *techne* largely continuous with *phronesis*, such that both share many structural elements (circumspection, for-the-sake-of-which) and *phronesis* (as conscience) is the radicalization of circumspection, as is developed in *Being and Time*? Or is *techne* a deepening of the falling tendency of circumspection, and thus the site of the concealment of Greco-Christian conceptual thought, as is argued in Heidegger's 1924-1925 lectures on *NE 6*, and subsequently argued by Arendt and Gadamer?

Upon reading Heidegger's commentaries on *NE 6*, Division One of *Being and Time* reveals itself fairly clearly to be a phenomenological account of circumspective caring for and falling into a world, a circumspection that falls more deeply in Western *techne*, and Division Two a phenomenological account of *phronesis*. Thus, in *Being and Time*, *phronesis* is a constant possibility of authentic existence within everyday circumspection, while in *NE6*, *techne*, as the mode of circumspection found in the Western tradition, completely conceals such possibilities.

Being and Time The central concepts of *Being and Time*, reviewed here, are nearly all central concerns of Heidegger's Aristotle commentaries. What is notable, in the context of these commentaries, is the relation of conscience to circumspection, as the radicalization of circumspection.

Division One of *Being and Time* interprets Dasein's Being as "Being-in-the-world" and supports this interpretation with a description of the everyday experience of Dasein. This experience is one of involvement in a world – not a "World" of present-at-hand (*Vorhandenheit*) entities, but a world of ready-to-hand (*Zuhandenheit*) entities in which Dasein always already finds itself involved. These ready-to-hand entities, or, equipment, are not understood primarily by observation, but by a kind of sight or circumspection (*Umsicht*) involved in using things.

Circumspection isn't directed to a specific piece of equipment, such as a hammer, but to "a totality of equipment" that has an "in-order-to" which refers to work, or a "towards-which", which itself refers to a "for-the-sake-of-which" which is "a possibility of Dasein's Being". These series of references constitute an environment (*Umwelt*), and circumspection understands its environment prior to any ready-to-hand entity that is within the environment and is freed by and acquires meaning within its environment. Dasein always already finds itself involved with a world, an involvement which can be described as care (*Sorge*) – care for entities, what Heidegger calls concern, and for people, what Heidegger calls solicitude, that is already oriented by care for a "for-the-sake-of-which". Heidegger's notion of care for one's world is a broadening of Husserl's intentionality of consciousness to include one's entire existential involvement one's world.

While one's involvement in a world is always "for-the-sake-of-which" that refers back to *Dasein*, one for the most part doesn't own up to one's existence, and instead exists inauthentically as the "they" (*das Man*). The "they" is constituted by social expectations and interpretations that make up one's cultural history, and which are essential to Being-in-the-

world as the facticity of human existence. This “falling” into the world constituted by the “they” is not an unnatural tendency to be eliminated, but instead is a natural part of Dasein as being-in-the-world.

However, the inauthenticity and alienation of this falling stirs up moods of anxiety out of which one has an opportunity to exist as an authentic self, a hermeneutic position from which one works within one’s culture to work out for oneself who one is. Authentic existence is not a rejection of one’s culture, of the ‘they’, as such a rejection of a constitutive element of one’s Being would make no sense. Rather, “authentic Being-one’s-Self [is] an existentiell modification of the ‘they’”⁴. Authenticity thus appears as a possibility always available within inauthentic existence. Man usually turns away from this opportunity to own up to oneself, seeking shelter in falling into the familiar world of the “they”.

Division Two revisits the structural elements of “Being-in-the-world” examined in Division One from the perspective of time – the past, present and future that constitute existence – thus ontologically grounding *Dasein* in time. When the totality of our existence – both the guilt of one’s past and profound responsibility for one’s future - grips one, one owns up to one’s responsibility to resolutely choose who one is. This call of conscience, as Heidegger describes it, is a transformation of circumspection that sees through the ‘they’ to one’s own (*eigen*) possibilities for existence. Whereas inauthentic existence is forgetful of the dominant role of one’s past, and simply awaits a future while consumed with the present, authentic existence is seized by a moment of vision (*Augenblick*) to constantly anticipate one’s future death by retrieving one’s past as one’s own.

Heidegger’s Aristotle Commentaries This relation central to factual existence between falling and conscience – in which perpetual falling into a world alien to one’s own self stirs moods of anxiety out of which conscience calls one to appropriate one’s factual existence as one’s own – is central to Heidegger’s commentaries on Aristotle. What these commentaries add is an interpretation of the particular type of falling, of circumspection, that has concealed Western man from himself – *techne*.

In this interpretation, *techne*, as the mode of being specific to production, is a particular form of falling within which the Greek notion of being was conceived. “Being means being-produced”. Production, conceived as movement towards the visual form or Platonic *eidos* of a finished product, was projected as the fore-conception for interpreting being. The effect was to conceal man from himself by elevating *sophia*, as the pure understanding of eternal forms, over *phronesis*, understood as insight into oneself, and by reducing everyday circumspective concern to *techne*, understood as production, whose perfection was thus found in *sophia*.

⁴ Martin Heidegger, *Being and Time*, translated by John Macquarrie and Edward Robinson, (Harpers and Row: New York, 1962), p. 312.

Heidegger's commentaries on *NE 6*, as first discovered by scholars Bernasconi, Volpi and Taminiaux,⁵ thus translate and transform *episteme*, *sophia*, *techne* and *phronesis* in terms foreshadowing the primary themes of *Being and Time*. Heidegger's first known commentary on Aristotle, from 1922, opens with a phenomenological exploration of the relation between factual existence and interpretation that reemerges as the relation between circumspection and conscience, and between *techne* (as the Western mode of circumspection) and *phronesis*.

Self-knowledge, Heidegger begins his 1922 Aristotle commentary, does not emerge organically out of one's factual, everyday existence, but from an existential questioning of one's present, motivated by anxiety over one's existence, that directs one to appropriate one's past for the sake of the present.⁶ "Whenever factual life worries about its existence, it finds itself *on the path of a detour*."⁷ This basic relation between factual everyday existence and self-knowledge is the central relationship in Heidegger's fundamental ontology and the one that concerned Arendt and Gadamer as leaving self-knowledge ungrounded and unaccountable to the discursive community that constitutes factual life.

The "movement of concern" and "circumspection" which is the "movement of factual life", "displays many different modes", such as "production of, ...preparing for, ...safekeeping of, ...utilizing for". Circumspection as "production of" became central for Western understanding of being since the Greeks, for whom "the domain of objects supplying the primordial sense of being was the domain of objects *produced* and put to use in dealings".⁸

Thus, *techne* is defined in Heidegger's commentary as "procedures in which one is directed to certain tasks and products". *Techne* in the Western tradition thus actualizes a particular

⁵ Robert Bernasconi, "Heidegger's Destruction of Phronesis," *The Southern Journal of Philosophy* (1989) Vol 28; Jacques Taminiaux, "Phenomenology and the Problem of Action", *Philosophy and Social Criticism* 11, 1986, pp. 207-219; "Poiesis and Praxis in Fundamental Ontology", *Research in Phenomenology* 17, 1987, pp. 137-169; Franco Volpi, "Dasein as Praxis: The Heideggerian Assimilation and the Radicalisation of the Practical Philosophy of Aristotle," in Christopher Macann (ed.) *Critical Heidegger*, pp. 27-66. London and New York: Routledge. (1994). Volpi, "Being and Time: A Translation of the Nichomachean Ethics?", in Theodore Kisiel and John Van Buren (eds.), *Reading Heidegger from the Start: Essays in his Earlier Thought*, pp. 195-211. New York, New York University Press (1992).

⁶ "The situation of interpretation, i.e., of the appropriation and understanding of the past, is always the living situation of the present." What is this situation? Factual life, according to Heidegger, "finds itself hard to bear", and thus seeks "metaphysical tranquilizers" to "make itself easy for itself", as happens "when one takes over from the past certain theorems, propositions, basic concepts, and principles and updates them in one way or another". Thus, a shallow understanding of the present, of oneself, will be the hermeneutical situation for a shallow interpretation of one's past. By contrast, "the only duty philosophical research can be required to fulfill" is "gaining access to it [to life] and truly safekeeping it" by making life "hard for itself", by forcing "the present back upon itself in order to intensify its questionability". By questioning the present, one is directed towards one's factual existence that constitutes the present, and one thus repeats "in an original manner what is understood in the past in terms of and for the sake of one's very own situation". Martin Heidegger, *Phenomenological Interpretations in Connection with Aristotle*, in *Supplements*, ed. John van Buren (SUNY Press: Albany, NY, 2002), p. 112

⁷ *Supplements*, p. 120

⁸ *Supplements*, p. 120

mode of circumspection, one particularly fallen into the world and concealing of self-knowledge. *Phronesis* is also circumspection, but “circumspection in the authentic sense”⁹.

Whereas “life is there for itself” in circumspective caring to be taken up and appropriated under the call of conscience, of *phronesis*, the world of references of concern to circumspection are concealed by the formal ends which orient all motion for Greeks, both the motion of *techne* and the motion of eternal beings which are always what they are.

It is in Heidegger’s 1924-25 course on *Plato’s Sophist*, which opens with an extended introduction to *NE6*, in which Heidegger most emphatically casts *techne* in distinction from *phronesis* as a deficient form of unconcealing of beings. In these lectures, Heidegger translates *phronesis* as both circumspection and as conscience. Heidegger initially and primarily speaks of *phronesis* as “circumspection regarding oneself” and “insight into oneself”, that, as a mode of *alethia* or unconcealing, “must again and again be wrested away by man”.

He then proceeds to contrast this with *episteme* which, as an inferential mode of *alethia* that only presumes the Being of things that it itself cannot demonstrate, is “deficient”.¹⁰ Whereas *episteme* is characterized by “fallenness” and “forgetting”, as what was disclosed sinks back into concealment, *phronesis* “is in each case new” such that “there is no possibility of falling into forgetting”. Here Aristotle has come across “the phenomenon of conscience”, as “conscience cannot be forgotten”.¹¹

While *techne* is concerned with *ergon*, translated by Heidegger as “finished product”, *phronesis* is concerned with *Dasein* as the *hou heneka*, typically translated as the final cause and translated by Heidegger as the “for-the-sake-of-which” (*worumwillen*).¹² *Phronesis* is deliberation whose “for-the-sake-of-which” is *Dasein* itself. All deliberation, for Heidegger, is concerned with a world of things – “the world is disclosed only in the immediate circle of the surrounding world, insofar as natural needs require”. In the case of *techne*, we are oriented “toward a ‘for which’ and an ‘in order to’” as beings “that will come to be”, whereas in *phronesis* we are oriented towards ourselves.

⁹ Supplements, p. 135. “In circumspection, life is there for itself in the concrete how of the with-which of going about its dealings. However, and this is decisive, in Aristotle it is not on the basis of this phenomenon and not in a positive manner that the being of the with-which of dealings is ontologically defined. Rather, it is defined simply in a formal manner as capable of being otherwise than it is and thus not necessarily and always what it is. This ontological definition gets actualized through a negative comparison with another kind of being that is considered to be being in the authentic sense. In accord with its basic characteristics, this kind of being is for its part not arrived at through an explication of the being a human life as such....It is the motion of production that is taken into forehaving as exemplary for these kinds of beings and for the possibility of bringing into relief their structural sense. Being is being-finished-and-ready, i.e., a kind of being in which motion has arrived at its end.” Supplements, p. 136

¹⁰ Martin Heidegger, *Plato’s Sophist*, translated by Richard Rojcewicz and Andre Schuwer, (Indiana Univ Press: Bloomington, Indiana, 2003), p. 26.

¹¹ *Plato’s Sophist*, p. 39.

¹² *Plato’s Sophist*, p. 35.

One expects, having read *Being and Time* prior to these lectures, to find Heidegger interpreting *phronesis* as a constant possibility in *techne*. In fact, Heidegger emphatically asserts the contrary point – interpreting Aristotle to say that, while *sophia* is the perfection of *episteme*, *phronesis* is not the perfection of *techne* – rather *sophia* is the perfection of *techne* as well.

Heidegger compares the four modes of knowing in terms of the principle (*arche*) which governs the disclosure of beings. Whereas the *arche* of *phronesis* is the *hou heneka*, Heidegger interprets Aristotle to say that the *arche* of *techne* is the *eidos* in the soul of the producer. In Heidegger's hierarchy of Aristotelian modes of *alethia*, he thus distances *phronesis*, as the highest mode, from Aristotle's other modes which are deficient owing to their Platonic influence. "Therefore", Heidegger asserts, "*phronesis* is out of the question as the *arete* of *episteme* or of *techne*" because *phronesis* "is not a mode of *aletheuein* which one could call theoretical knowledge".¹³ He claims to find textual support for this distancing of *phronesis* from *techne*, but the support, as noted by Bernasconi, "is extremely suspect".¹⁴

The passage cited – "We ascribe wisdom in crafts to the people who have the most exact expertise in the crafts. For instance, we call Pheidias a wise stoneworker and Polycleitus a wise bronze worker; and by wisdom we signify precisely virtue in a craft." – is held by many commentators to report common Greek opinion on craft knowledge rather than Aristotle's own opinion. Furthermore, Heidegger does not cite in his lecture Book III, Ch. 3, in which Aristotle clearly writes in his own name that deliberation in many crafts is not perfected through exactness.

There is no deliberation about the sciences (*episteme*) that are exact and self-sufficient, as, for instance, about letters, since we are in no doubt about how to write them. Rather, we deliberate about what results through our agency, but in different ways on different occasions – about, for instance, medicine and money making. We deliberate about navigation more than about gymnastics, to the extent that it is less exactly worked out, and similarly with other [crafts].¹⁵

These two passages are reconciled more thoroughly in the next section, but for now the question we are left with is that of Bernasconi: "And why, if in *Being and Time* Heidegger retrieves the way *phronesis* governs *techne* in Aristotle, is he so intent in the 1924-25 lectures

¹³ Heidegger continues as follows. (Plato's Sophist, p. 39.)

What is most striking now is that Aristotle designates *sophia* as the *arete* of *techne* (Nic. Etc. VI, 7, 1141a12). The highest mode of *aletheuein*, philosophical reflection, which according to Aristotle is the highest mode of human existence, is at the same time the *arete* of *techne*. This must seem all the more remarkable in view of the fact that *techne* has as its theme beings which can also be otherwise, whereas the theme of *sophia* is in a preeminent sense what always is.

¹⁴ "Heidegger's Destruction of Phronesis", p. 136

¹⁵ NE III, 3, Sec 8, 1112b1-7

to run counter to the whole current of Aristotelian scholarship to claim that the excellence of *techne* is not *phronesis* but *sophia*?"¹⁶

The answer, as we have seen, is that *techne* is not intended by Heidegger to be identical to the circumspection explored in *Being and Time*, despite some commentaries that interpret Division One of *Being and Time* as a phenomenological account of *techne*.¹⁷ For Heidegger, *techne* is a mode, a particularly deficient and concealing mode, of circumspection unique to the Greco-Christian past which constitutes our factual present, and he reads this into Aristotle's interpretation of *techne*.¹⁸

Heidegger's reading of a scientific account of *techne* into Aristotle is also evident in his translation of *kairos* (the opportune moment of action) as *Augenblick* - the moment of insight central to his temporal foundation of conscience - in his commentary on *phronesis* in NE. Heidegger neglects to mention that *kairos* is associated with both *techne* and *phronesis* in NE.

Heidegger's understanding and questioning of Western technical rationality as scientific, and his corresponding strained reading of *techne* in NE6 as perfected by *sophia*, are more understandable in the context of the disputed meanings of *Technik* in 19th century Germany, as will be seen below.

Arendt and Gadamer

Phronesis as rediscovered by Heidegger, while emerging out of factual existence, emerges through a "detour" of existential anxiety and self-knowledge from which one appropriates one's own understanding of one's past. This detour raises concerns about Heidegger's *phronesis*, specifically the lack of grounding in and accountability to discourse with others, concerns that are validated by Heidegger's disastrous political activities.

Arendt and Gadamer reject the existential self-knowledge required for transcendence and redirect the focus of philosophical hermeneutics towards the finitude of factual existence itself and the discursive engagement required to transcend one's factual situation.

Arendt's work can be described as a series of attempts to ground *praxis* and hold it accountable to a communal realm with others. These attempts at grounding, which span the course of her work, each provide a grounding for the previous grounding, leaving both a rich

¹⁶ "Heidegger's Destruction of *Phronesis*", p. 139

¹⁷ Taminiaux 1986, Taminiaux 1987

¹⁸ Bernasconi answers differently, appealing to Heidegger's "desire to establish the special character of *phronesis* in relation to the analysis of *Dasein*" as the authentic mode of unconcealing of Being, (Bernasconi 1989, p. 140), and responds with his own interpretation of Aristotle, following the conventional line of Aristotle scholarship, that "Aristotle is saying that the for-the-sake-of, which governs *praxis* and belongs to it, is also the principle of *poiesis*....Only insofar as *poiesis* subordinates itself to the realm of *praxis* does it cease to be pointless or futile [to halt the infinite regress]" (Bernasconi 1989, p. 137). This interpretation of *phronesis* governing *techne* from the outside is addressed in the subsequent section of this paper.

analysis of factual existence and its transcendence through discourse, as well as a pessimistic sense as to the broad availability of discursive transcendence, a sense that provoked charges of elitism like those levelled at Heidegger. This pessimism results from her Heideggerian stance towards *techne*.

Arendt made the distinction between action, on the one hand, and work and labor, on the other, the foundation of her political philosophy. *The Human Condition*, from 1958, defines action as only possible in a *polis* of free men who have conquered necessity in their private realms, while work is reduced in Heideggerian terms to a mechanistic, instrumental application of models.¹⁹ “Man, in so far as he is *homo faber*, instrumentalizes, and his instrumentalization implies a degradation of all things into means”.²⁰ Like Heidegger’s Aristotle, Arendt does not view *phronesis*, as the intellectual faculty for *praxis*, as the excellence of *techne*.²¹

While work is a mere utility that submerges the distinctness of the agent, action is grounded in the “basic condition” of “human plurality”, that is, the irreducible distinctness of every person.²² Work, as merely “a means to produce an object” does nothing to disclose a person in his essential uniqueness. Action and speech are oriented towards others, as the disclosure of one’s distinctness is dependent upon the reception of other people.

Arendt appeals to Aristotle for this strong distinction between work and action, referencing Aristotle’s use of the pejorative *banausos* common in ancient Greece to refer to manual laborers.²³ However, the cited passage (*Politics*, 1337b5) states, “And any occupation, art, or science, which makes the body or soul or mind of the freeman less fit for the practice or exercise of excellence, is mechanical [*banausia*, also translated vulgar]”. Not only is this hardly a reduction of all work to mere utility, but elsewhere in the *Politics* Aristotle appears to distinguish between arts that are most truly arts, and arts in which there is the most need of excellence.

“Those occupations are most truly arts in which there is the least element of chance; they are the meanest in which the body is most deteriorated, the most servile in which there is the greatest use of the body, and the most illiberal in which there is the least need of excellence.”²⁴

¹⁹ “Fabrication, the work of *homo faber*, consists in reification....The actual work of fabrication is performed under the guidance of a model in accordance with which the object is constructed....To have a definite beginning and a definite, predictable end is the mark of fabrication, which through this characteristic alone distinguishes itself from all other human activities.” Hannah Arendt, *The Human Condition*, (Univ of Chicago Press: Chicago, IL, 1998), pp. 139-144

²⁰ *The Human Condition*, p. 156

²¹ “Excellence itself, *arete* as the Greeks, *virtus* as the Romans would have called it, has always been assigned to the public realm where one could excel, could distinguish oneself from all the others”. *The Human Condition*, p. 49

²² *Human Condition*, p. 175

²³ *Human Condition*, p. 12, n.4

²⁴ *Politics* 1282a3-8

With this strong distinction in place, Arendt develops her account of action conditioned on plurality and the human need to disclose one's uniqueness. "Without the disclosure of the agent in the act", Arendt argues, "action loses its specific character and becomes ...no less a means to an end than making is a means to produce an object."²⁵ Action is thus essential to being human. "A life without speech and without action...is literally dead to the world, it has ceased to be a human life because it is no longer lived among men".²⁶

The effect of Arendt's hard distinction between a totalizing assessment of utilitarian work and aesthetic action is an unaccountable elitism around action that deprives it of any grounding in or accountability to the everyday existence of the vast majority of society largely engaged in work.²⁷ Providing a fuller account of action would preoccupy the remainder of her work.

A deeper grounding of the impetus to act is found in Arendt's subsequent work on judgment, most comprehensively in her 1961 "Crisis in Culture".²⁸ Actions, like works of art, are judged as beautiful not based on arbitrary, subjective standards, but based on a common world of appearances which man cares for and cultivates through judgment that appeals to the common sense of beauty.

Here Arendt appeals to Heidegger's expansion of Husserlian intentionality of consciousness to a broader care and concern for a world, but for Arendt *phronesis* is not a detour but is rooted in care for a world of appearances. What art and action have in common is that they are judged by "a mind so trained and cultivated that it can be trusted to tend and take care of a world of appearances whose criterion is beauty".²⁹ As a result, judgment, like taste, is an appeal to and cultivation of common sense. "The Greeks called this ability *phronesis*, or insight", an ability that "has its roots in what we usually call common sense".³⁰

Arendt's grounding of *phronesis* in cultivation of the common world of appearances, while accountable to common sense, also leaves one with the same pessimistic outlook for a revival of *phronesis*. In her works on judgment, Arendt again totalizes her harsh account of *techne* as "philistine", with the same incomplete account of Greek attitudes towards work as found in *The Human Condition* – "to be a philistine, a man of *banausic* spirit, indicated, then [for the Greeks]

²⁵ Human Condition, p. 180

²⁶ Human Condition, p. 176

²⁷ "Unlike the *animal laborans*, whose social life is worldless and herdlike and who therefore is incapable of building or inhabiting a public, worldly realm, *homo faber* is fully capable of having a public realm of his own, even though it may not be a political realm, properly speaking. His public realm is the exchange market, where he can show the products of his hand and receive the esteem which is due him." The Human Condition, p. 160.

²⁸ "In her earlier writings (for example, in "Freedom and Politics," "The Crisis in Culture," and "Truth and Politics") Arendt had introduced the notion of judgment to give further grounding to her conception of political action as a plurality of actors acting in concert in a public space." Ronald Beiner, "Interpretive Essay" in Hannah Arendt's Lectures on Kant's Political Philosophy, edit. Ronald Beiner, (Univ of Chicago Press: Chicago, IL, 1992), p. 93.

²⁹ Hannah Arendt, *Between Past and Future*, (Penguin Books: NY, NY, 2006), p. 215

³⁰ *Between Past and Future*, p. 218

as today, an exclusively utilitarian mentality, an inability to think and to judge a thing apart from its function or utility".³¹

Beginning in 1971, Arendt further developed her account of judgment, anchoring it in thinking. Judgment, the apprehension of universals out of particulars, is inhibited by the tendency to subsume particulars under universals. People tend to apprehend with "bannisters", perceiving unique particulars in terms of universals. Thinking, according to Arendt, the critical movement of thought whose best example was Socrates, "has a liberating effect" on judgment.³²

What we are left with, then, is a rich account of *phronesis* grounded in everyday thinking, as opposed to Heidegger's existential detour, but this grounding is narrowed by its strict exclusion of the predominant mode of everyday thinking – *techne*.

Gadamer, like Arendt, sees the contemporary challenge as the defense of *phronesis* against the expansion of instrumental reasoning, of *techne*. And like Arendt, Gadamer seeks to correct a solipsism in Heidegger by emphasizing *phronesis* in community with others. Whereas Arendt seeks to describe and defend *praxis* within an elusive political realm, Gadamer's focus is hermeneutics, and the articulation of the dialogic basis for all understanding.

Gadamer's concern, like that of Arendt, is with factual existence itself, with "the assimilation of what is past and of tradition"³³, and the development of phronetic insight within facticity. Gadamer embraces prejudice, the limitations of knowing owing to one's facticity, as the condition for knowledge.

Prejudice projects the horizon of one's knowledge, a horizon that isn't closed in upon itself but that opens one to the world. For a text that one reads also involves the horizon of the author, and though apparently separate, in reality these horizons form a single horizon as a text contributes to the tradition factically constituting one's own horizon. The hermeneutic phenomenon, then, is the experience of entering into the hermeneutic circle of interpretation through which one opens oneself to another horizon that thus discloses a single shared fusion of horizons.

³¹ Between Past and Future, p. 212

³² "The faculty of judging particulars (as Kant discovered it), the ability to say, 'this is wrong,' 'this is beautiful,' etc., is not the same as the faculty of thinking....But the two are interrelated in a way similar to the way consciousness and conscience are interconnected. If thinking, the two-in-one of the soundless dialogue, actualizes the difference within our identity as given in consciousness and thereby results in conscience as its by-product, then judging, the by-product of the liberating effect of thinking, realizing thinking, makes it manifest in the world of appearances, where I am never alone and never too busy to be able to think. The manifestation of the wind of thought is no knowledge; it is the ability to tell right from wrong, beautiful from ugly. And this indeed may prevent catastrophes, at least for myself, in the rare moments when the chips are down."

³³ Hans-Georg Gadamer, Truth and Method, (Continuum Intl Publishing Group: NY, NY, 1989), p. xxxvii. "Like many of my critics, Heidegger too would probably feel a lack of ultimate radicality in the conclusions I draw." Ibid.

Gadamer provides, in his exploration of the hermeneutic phenomenon that discloses this fusion of horizons and the self-knowledge that follows, a phenomenological account of *phronesis* grounded in factual existence. Like Heidegger, however, his exploration of factual existence, while insisting on the universality of the hermeneutic phenomenon, closes itself off from technical hermeneutics. Technical rationality, for Gadamer, is an example of “method”, the scientific reasoning which inspires Gadamer’s concern to explore factual existence in the first place.

Gadamer considers, in his discussion of Aristotle’s *phronesis* in *Truth and Method*, that “at first sight the tasks [applying technical knowledge and self-knowledge specific to *phronesis*] seem wholly analogous”.³⁴ He then proceeds to make a number of hard distinctions between *techne* and *phronesis* which “one can derive...from Aristotle’s analysis of *phronesis*”.³⁵

Gadamer, like Arendt, follows Heidegger in the Aristotle lectures in reading Aristotle as advancing a conception of *techne* as being guided exclusively by the design in the mind of the craftsman. “With the design of the object and the rules for executing it, the craftsman proceeds to carry it out.”³⁶ As a result, technical knowledge can be taught, remembered and forgotten, “but we do not learn moral knowledge, nor can we forget it”.³⁷

The expansion of instrumental reasoning from the time of the Greeks to the present is thus the central concern animating the disclosure of factual existence by Heidegger, Arendt and Gadamer. But if *techne*, producing and using artifacts, constitutes the vast majority of lived experience, one is left with a pessimistic outlook for a revival of *phronesis* as the self-insightful stance one takes towards one’s facticity.

The scientific understanding of *techne* in the Western tradition by these thinkers, however, is not supported upon closer examination. Rather, *techne* has tendencies towards epistemic certainty *and* towards phronetic deliberation.

The technophobic interpretation of *techne* begins with Aristotle and ends with modern technology as applied science. The following section challenges both ends of this history of *techne*.

III. Western *Techne* as Disclosive and Deliberative

III.a. *Techne* and Circumspection in Aristotle

Heidegger’s interpretation of a hard distinction between *techne* and *phronesis* in *NE 6*, in which *phronesis* is not a virtue of *techne*, is difficult to square with the textual sources within Aristotle as was demonstrated above. What, then, do we find if we attempt an interpretation

³⁴ Truth and Method, p. 316

³⁵ Truth and Method, p. 317

³⁶ Truth and Method, p. 318

³⁷ Truth and Method, p. 317

of *NE 6* without the technophobic bias that would paint all of Western thought as the tyranny of the theoretical?

The conventional interpretation of *NE 6* is that *phronesis* governs *techne*. But a closer reading reveals a structural binding of *techne*, *phronesis* and *episteme* in *NE 6* that strikingly parallels that found in *Being and Time* between circumspection, conscience and falling in two key respects. First, both Heidegger in *Being and Time* and Aristotle in *NE 6* bind circumspection (*techne*, for Aristotle), *episteme* and *phronesis* into a unitary structure within which circumspection is not simply instrumental reasoning governed from the outside by *phronesis* but is deliberative reasoning that exhibits the features of *phronesis* in nascent form from the inside. The internal nature of this binding is critical, for when *phronesis* is conceived as governing *techne* from the outside, it bestows a determinism and legitimacy to means-end reasoning in *techne* that relegates *phronesis* to a mere constraint on *techne*, as described previously. Second, in both structures, again the parallel is striking, circumspection (*techne*, for Aristotle) is drawn in two directions, either in the direction of *phronesis* or of *episteme*, with the former being prioritized over the latter.

These two structural relations between circumspection, science and conscience are evident in the account of *Being and Time* summarized above. First, the internal relationship between circumspection and conscience, in which conscience is a constant possibility from within circumspection is indicated initially in Heidegger's 1924-25 lectures in which he translates *phronesis* as both circumspection and conscience. Circumspection in *Being and Time*, as the type of seeing specific to everyday reasoning which is concerned with using ready-to-hand entities, is clearly concerned with *poesis*. Conscience doesn't impose direction on circumspection from the outside. Circumspection, like conscience, is oriented towards the "for-the-sake-of-which" which refers to Dasein itself. The call of conscience is a transformation of circumspection that sees through the 'they-self', Dasein's everyday inauthentic understanding of itself, to one's own (*eigen*) possibilities for existence.

Second, circumspective concern for the world is drawn in two directions, either in the direction of conscience (*phronesis*) or of science (*episteme*), in *Being and Time*. Like the first relationship, this is initially indicated in Heidegger's 1924-25 lectures, in which *episteme* and *phronesis* are compared directly. Whereas *episteme* is characterized by "fallenness" and "forgetting", as what was disclosed sinks back into concealment, *phronesis* "is in each case new" such that "there is no possibility of falling into forgetting". Thus, the everyday circumspection of active involvement in the world can be "woken up" by the call of conscience, by *phronesis*, or alternatively can be reflected upon, in a secondary mode, by *episteme*, in terms of the outward properties of its tools conceived no longer as essentially tools but as present-at-hand entities.

Analogy as Structural Binding of Intellectual States in Aristotle

These same two internal relations between *techne*, *phronesis* and *episteme* are revealed in *NE 6* as well, when interpreted without Heidegger's technophobic bias towards Western

thought. Whereas Heidegger grounds this structural unity in Dasein as being-in-the-world, Aristotle grounds it in analogy.

There is no doubt, of course, that Aristotle stresses a distinction between *techne* and *phronesis*. In fact, Aristotle appears to devote all of NE VI 4 to repeating this distinction, adding for clarification, “Nor is one included in the other”.

However, there are several features of *phronesis* in which *techne* has a share. The use of the phrase, ‘has a share’, is intentional here, as the relationship between *techne* and *phronesis* is clearly one of *techne* participating in certain perfections but to a lesser extent than does *phronesis*. These perfections, such as the good, are thus analogical terms whose meaning is both the same and different according to the various practical sciences that participate in them.

Analogy, and the participationist metaphysics underlying it, provides the structural unity to *phronesis*, *techne* and *episteme* that parallels similar structural relationships found in *Being and Time* but there grounded in a different metaphysics of time as the primordial basis of Dasein.

The central perfection that guides the *Nicomachean Ethics* is the good, and it is only through studying activities that seek some good that the essential features of the good become clearer. “[F]or we must use evident cases as witnesses to things that are not evident”.³⁸ This is the manner in which all analogical concepts are better understood, whether they be truth, justice, beauty, and so on, and is the manner of argument that we observe throughout the *Ethics*.

We learn in this manner from the *Ethics* that all activities seek some good, but that the goods that they seek are not homonymous. They are analogous, which means that the goods that various activities seek all participate in the same perfection of the good, though in different and limited ways. We also learn through analogy with *techne* that the good depends on the function of an activity³⁹ and completing that function well,⁴⁰ that acting well (with

³⁸ NE I, 2, Sec 6 1104a14-15

³⁹ “For just as the good, i.e., [doing] well, for a flautist, a sculptor, and every craftsman, and, in general, for whatever has a function and [characteristic] action, seems to depend on its function, the same seems to be true for a human being, if a human being has some function”. NE I, 1, Sec 10 1097b25-29.

⁴⁰ “Now we say that the function of a [kind of thing] – of a harpist, for instance – is the same in kind as the function of an excellent individual of the kind – of an excellent harpist, for instance....Moreover, we take the human function to be a certain kind of life, and take this life to be activity and actions of the soul that involve reason; hence the function of the excellent man is to do this well and finely”. NE I, 1, Sec 14 1098a8-15

virtue) results from habit,⁴¹ and that acting well also results from aiming at a *kairos*, a mean relative to us.⁴²

As was said before, though, *technai* participate in these perfections to a more limited extent than does *phronesis*. Whereas the good is something self-sufficient, the goods that are sought by the *technai* are more limited, being usually subordinate to higher goods for the sake of which they are pursued. The goods pursued by *phronesis*, as virtues of character, are not separate from the actor and are thus self-sufficient.

Similarly, many *technai* aim at an inexact *kairos*, that is, at an opportune moment with an opportune measure of activity. *Phronesis* too aims at an inexact *kairos*, though not in terms of a material mean but a mean between an excess and deficiency of feelings.

Two *technes* The varying extent to which *technai* share in these features of the good accounts for the apparent equivocation in the meaning of *techne* throughout the *Ethics*, an equivocation that allows commentators such as Heidegger to provide a one-sided account of Aristotle's treatment of the relation between *techne* and *phronesis*. For there appears to be two types of *technai* in Aristotle, one that is indeed very different from *phronesis* and one that shares a lot with *phronesis*.

The first type of *techne*, which we may refer to as exact *techne*, overcomes chance (*tuche*) with exact knowledge. It participates the least in these features of the good and thus contrasts most sharply with *phronesis*, due in particular to its requirement of exactness (*akribes*) and elimination of chance.

Lettering and stoneworking are *technai* identified by Aristotle as capable of this exactness, and for which aiming at an opportune time and measure is unnecessary. Aristotle identifies exact crafts as most truly crafts.⁴³ This appears to appeal to another perfection, in terms of which *techne* had been defined by Aristotle's predecessors, that of epistemic science. It is here that Heidegger finds his textual source for his interpretation of *techne*.

⁴¹ "Virtues, by contrast, we acquire, just as we acquire crafts, by having first activated them. For we learn a craft by producing the same product that we must produce when we have learned it; we become builders, for instance, by building, and we become harpists by playing the harp. Similarly, then, we become just by doing just actions, temperate by doing temperate actions, brave by doing brave actions". NE II, 1, Sec 4 1103a32-1103b2

⁴² "Good craftsmen also, we say, focus on what is intermediate when they produce their product. And since virtue, like nature, is better and more exact than any craft, it will also aim at what is intermediate". NE II, 6, Sec 9 1106b14-16

⁴³ Aristotle asserts that "We ascribe wisdom in crafts to the people who have the most exact expertise in the crafts" (NE VI, 7, Sec 1, 1141a10) and that "Those occupations are most truly arts in which there is the least element of chance" Politics 1258b35-36 *The Complete Works of Aristotle*, ed. Jonathan Barnes (Princeton: Princeton University Press, 1984).

The second type of *techne*, which we may refer to as deliberative *techne*, sets itself apart from exactness and participates more fully in the features of the good that we see most perfected in *phronesis*. This is found in NE 3 III, which was quoted above.⁴⁴

Aristotle does define *techne*, but only according to its essential components such that both the exact and deliberative *technai* encountered above are included.

Aristotle defines *techne* as “the state involving reason and concerned with production”⁴⁵ and both deliberation and exact epistemic thought are types of discursive reasoning (“good deliberation requires reason (*logos*); hence...it belongs to thought (*dianoia*)”⁴⁶). And there is no indication that a *technai* must be exact in order to be *technai*, as Aristotle maintains that “we would not seek the same degree of exactness...in the products of different crafts”.⁴⁷ Thus, both of the forms of *techne* introduced in the *Ethics*, exact and deliberative *techne*, appear to be included in Aristotle’s definition of *techne*.

In fact, maintaining two Aristotelian notions of *techne* is the only way to make sense of his claim that certain activities “fall under no craft or profession; the agents themselves must consider in each case what the opportune action is, as doctors and navigators do”.⁴⁸ To say that a *techne*, such as medicine or navigation, falls under no *techne* clearly appeals to two distinct modes of *techne*.

Inexact techne in Aristotle and his predecessors

Heidegger interprets Aristotle as under the eidetic influence of Plato in much of the *Ethics*, in particular in Aristotle’s account of *techne*, with few actual specifics.⁴⁹ A closer reading of the debates over the nature of *techne* in Aristotle’s time reveals a different, more complex influence and dialogue at play. Aristotle’s tolerance for a high degree of inexactness in *techne* is in fact historically significant, given the debates over exactness and the crafts in ancient Greece (debates that are natural given the dual tendencies of *techne*, and that thus arise across history, as will be seen in the discussion of latter 19th- century Germany below and is seen in the contemporary challenge of instrumental reasoning by *phronesis* revivalists).

⁴⁴ “There is no deliberation about the sciences (*episteme*) that are exact and self-sufficient, as, for instance, about letters, since we are in no doubt about how to write them. Rather, we deliberate about what results through our agency, but in different ways on different occasions – about, for instance, medicine and money making. We deliberate about navigation more than about gymnastics, to the extent that it is less exactly worked out, and similarly with other [crafts].” NE III, 3, Sec 8, 1112b1-7

⁴⁵ NE VI, 4, Sec 2, 1140a4-5

⁴⁶ NE VI, 9, Sec 3, 1142b12-13

⁴⁷ NE I, 3, Sec 1, 1094b13

⁴⁸ NE II, 2, Sec 4, 1104a6-7

⁴⁹ Thus, Heidegger comments upon Aristotle’s statement, “Architecture is the *eidos* of the house” (Met. VII, 7, 1032b13f) that “We have here an echo of the Platonic way of speaking and seeing; for an *eidos* is nothing else than an Idea.” Plato’s *Sophist*, p. 31.

Pre-Socratic *techne* The only ancient treatise devoted to *techne*, the Hippocratic text *On techne*, is written specifically to address the attack on many forms of *techne*, including medicine, that they are too vulnerable to chance and are thus not truly *techne*.⁵⁰

The response of *On techne* is not to find a place for chance or inexactness within medicine done well, but to affirm the critique's ideal of a *techne* devoid of chance. The author maintains that neither illness nor health is ever the result of chance "for everything that occurs will be found to do so through something". Just because the causes of illness are "obscure does not mean they are our masters".⁵¹

The author of *On techne* thus defines *techne* as having an "exact measure (*orthos horos*), for "where correctness and incorrectness each have an exact measure, surely there must be an art".⁵²

Another pre-Socratic text, *On Ancient Medicine*, forgoes the standard of *orthos horos* in favor of rules of thumb accumulated through inductive generalization over long periods of time. Lack of exactness is thus acceptable to the author of *On Ancient Medicine*, as well as to other ancient advocates of an empirical approach to skills.

Polus, who was Socrates' adversary in the *Gorgias*, argued in a book⁵³ that skills are just rules of thumb based on experience. "There are many skills among mankind, experimentally devised by experience, for experience guides our life with skill, but inexperience guides our life with luck".⁵⁴

Platonic *techne* Plato enters this debate firmly on the side of *techne* as a paradigm of exact knowledge. Plato's Socrates equates *techne* and *episteme* repeatedly,⁵⁵ and allows no role for *tuche* in *techne*.⁵⁶ However, Plato deepens the basis for epistemic knowledge in a *techne* with his consistent appeal to *techne* as knowledge of causes or accounts.

In the *Laws*, the Athenian contrasts "those doctors who are innocent of theory and practice medicine by rule of thumb" with the "gentleman doctor" who acts "almost like a

⁵⁰ "because not all are healed, the art is blamed, and those who malign it...assert that those who escape do so through luck, and not through the art". All quotes from *On Techne* are from the translation of W.H.S. Jones, Hippocrates, *Hippocrates*, (London: Heinemann, 1923), IV 4-8.

⁵¹ *On Techne*, XI 4-5

⁵² *On Techne*, V 30-32

⁵³ *Gorgias*, 462b10-c3

⁵⁴ *Gorgias*, 448c4-7

⁵⁵ Theaetetus 146d-e, where Socrates describes cobbling as "just knowledge (*episteme*) of the making of shoes" and carpentry as "simply the knowledge (*episteme*) of making wooden furniture".

⁵⁶ "experience...causes our times to march along the way of *techne*, whereas inexperience causes it to march along the way of *tuche*". *Gorgias* 448c

philosopher, engaging in a discussion that ranged over the source of the disease and pushed the inquiry back into the whole nature of the body”.⁵⁷

Hutchinson remarks that Plato was clearly “taking sides in a fourth-century debate...about the nature of the skills of medicine, rhetoric, divination and others whose practitioners had an obviously imperfect rate of success”.⁵⁸ In fact, we see the same debate between Plato and his interlocutors about rhetoric as about medicine.

The sophist Isocrates argues in his *Against the Sophists* that one finds “the ability to make speeches and all other practical skills in those who are well endowed by nature and who are trained by experience”.⁵⁹ Isocrates argues elsewhere that “it is much better to have sound opinions about useful things than to have exact knowledge about useless things”.⁶⁰

In the *Gorgias*, Socrates replies to Isocrates that the rhetoric taught by Isocrates “seems to be a craft, but in my account of it it isn’t a craft but a knack and a routine”.⁶¹ The rhetoric of the sophists, like the medicine of the empiricists, is not a *techné* for Plato because it is not an exact *episteme*.

Plato affirms the standard of exactness for all skills in the *Philebus*. After distinguishing the “disciplines to do with knowledge” into “productive” part and the part “concerned with education”, Socrates inquires “whether within the manual arts there is one side more closely related to knowledge itself”.⁶²

If someone were to take away all counting, measuring, and weighing from the arts and crafts, the rest might be said to be worthless....All we would have left would be conjecture and the training of our senses through experience and routine.⁶³

Socrates identifies “building” as having a corresponding “superior level of craftsmanship over other disciplines”, such as “medicine, agriculture, navigation and strategy”.⁶⁴

Aristotle’s reply And so it is into this context that Aristotle affirms throughout his *Nicomachean Ethics* that we should not demand the same level of exactness from all *technai*.

⁵⁷ Laws IX, 857c5-d3 Elsewhere the Athenian describes slave doctors who “pick up the skill empirically, by watching and obeying their masters; they’ve no systematic knowledge” and “never give any account of the particular illness”, “he simply prescribes what he thinks best in the light of experience...with the self-confidence of a dictator”. Laws IV, 720b2-c7

⁵⁸ “Doctrines of the Mean and the Debate Concerning Skills in Fourth-Century Medicine, Rhetoric and Ethics”, D.S. Hutchinson, p. 26

⁵⁹ *Against the Sophists*, 14

⁶⁰ *Helen*, 5

⁶¹ *Gorgias*, 463b3-4

⁶² *Philebus*, 55d1-7

⁶³ *Philebus*, 55e1-6

⁶⁴ *Philebus*, 56b1-4

But this may still leave the possibility that, for Aristotle, while not all *technai* can achieve the same level of exactness, the highest or most exalted *technai* are those that are exact. This would be more continuous with the Hippocratic and Platonic teachings on *techne* as mastering chance through exact knowledge and Plato's explicit hierarchy of the crafts in the *Philebus*.

But in fact Aristotle appears to hold the inverse to be true. In Aristotle's hierarchy the highest *technai* are those that are more deliberative.⁶⁵

Aristotle maintains a distinction between technicians (*cheirotechnoi*) and master technicians (*architektones*) in the *Metaphysics*, with the former more engaged in manual labor and the latter more engaged in thought about a craft. The example Aristotle provides of an "exact" craft in the *Nicomachean Ethics*, stoneworking and bronzeworking, are all manual crafts.⁶⁶

Similarly, Aristotle identifies lettering as a craft that is "exact" and thus requires "no deliberation" and navigation as a craft, a presumably higher craft, that requires deliberation. Prometheus had identified lettering as a *techne* on the same plane with navigation as both provide power over *tuche*.⁶⁷

Aristotle thus joins the sophists and the medical empiricists in tolerating a high degree of chance and inexactness in a true *techne*.

III.b. Modern Technology as Craft Knowledge

The dual tendencies of *techne* give rise to debates on the nature of technical work and rationality across history. The meaning of *Technik*, the primary German descendent of the Greek *techne*, as applied science arose only in the latter 19th century through a contentious discourse on the nature and status of *Technik*. This struggle on the meaning of *Technik* was driven by social forces unleashed in the Industrial Revolution.

The understanding of *Technik* as applied science is thus relatively recent and would have been incomprehensible prior to the latter 19th century. Nonetheless, *Technik*, and *technology* in English, have been conventionally interpreted as applied science since the early

⁶⁵ Aristotle appears to distinguish between arts that are most truly arts, and arts in which there is the most need of excellence.

"Those occupations are most truly arts in which there is the least element of chance; they are the meanest in which the body is most deteriorated, the most servile in which there is the greatest use of the body, and the most illiberal in which there is the least need of excellence."
Politics 1282a3-8

⁶⁶ NE VI, 7, Sec 1, 1141a11-12

⁶⁷ Prometheus Bound, 460-461

20th century. One historian of technology describes it as “a term whose powerful present-day meanings hang like dead weight on our understanding of the past”.⁶⁸

Nowhere in the West did industrial transformation arrive as rapidly or intensely as in Germany. The second industrial revolution, based on the electrical and chemical industries, was given birth in Germany just as the first industrial revolution based on steam was overhauling established industries.

Technik traditionally referred to the skills of the practical arts and had no association with science.⁶⁹ However, with the rise of the industrial class of engineers and managers, *Technik* acquired a separate meaning in terms of industrial processes and machinery.⁷⁰ This new, contested meaning of *Technik* was driven by “the self-understanding of the rising German engineering profession” which “fought for more status within the German social hierarchy” by associating *Technik* as the applied science of industry.⁷¹

However, as a generation of historians of the Industrial Revolution have shown, the rise of modern industry relied not upon the replacement of artisan skills with science, but on the appropriation of artisan skills as formal processes that appealed to science for authority. What in the United States took the form of scientific management under the advocacy of Taylor was known in Germany as rationalization.⁷² The consensus amongst historians of science⁷³, as well as historians of labor process⁷⁴, is that industrial technology is based upon craft knowledge of workers and then formalized as applied science.

⁶⁸ Eric Schatzberg, “*Technik* Comes to America: Changing Meanings of *Technology* before 1930”, *Technology and Culture*, 47 (July 2006): 488, n5

⁶⁹ Guido Frison, “Some German and Austrian Ideas on *Technologie* and *Technik* between the End of the Eighteenth Century and the Beginning of the Twentieth,” *History of Economic Ideas* 6 (1998): 114

⁷⁰ Wilfried Seibicke, *Technik: Versuch einer Geschichte der Wortfamilie um “techne” in Deutschland vom 16. Jahrhundert bis etwa 1830* (Dusseldorf, 1968), 212-216, 226-227, 276

⁷¹ “*Technik* Comes to America: Changing Meanings of *Technology* before 1930”, p. 494-495

⁷² Lyndall Urwick, *The Meaning of Rationalisation* (London, 1929), p. 13-16. “When, after 1929, the rationalisation fever was slackening and the high hopes of social benefits from the rationalisation movement had ended in disappointment, the big firms were frequently criticised for not having had due regard for the practical limits of technical expansion....The enthusiasm for rationalisation was followed by sharp criticism of what was now called “over-rationalisation.” Now again, after a long interval, certain doubts were voiced as to the organising ability of cartel and trust directorates, and some writers at least were found to praise individual efficiency and to point out the dangers of over-organised bodies of directors not always in touch with the actual life of the industries in question.” *Industrial Germany*, Hermann Levy (Batoche Books, 2001), pp. 13-14.

⁷³ Steven Shapin, “The Invisible Technician,” *American Scientist*, 1989, 77: 554-563; Pamela H. Smith, “Art, Science, and Visual Culture in Early Modern Europe,” *Isis*, 2006, 97:83-100; Charles F. Sabel and Jonathan Zeitlin, eds., *World of Possibilities: Flexibility and Mass Production in Western Industrialization* (Cambridge: Cambridge Univ. Press, 1997); Maxine Berg, *The Machinery Question and the Making of Political Economy* (Cambridge: Cambridge Univ. Press, 1980), pp. 154,250; and Berg, “The Genesis of ‘Useful Knowledge’” *History of Science*, 2007, 45: 123-133

⁷⁴ Braverman, Harry, *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century*, (Monthly Review Press: New York, New York, 1998); Noble, David F, *America by Design*, (Oxford University Press: Oxford, England, 1977)

The evolution of the meanings of *Technik* in 19th century German and of technology in 20th century English has thus been subject to a struggle over the role of human agency in work. The result was a relatively rapid transformation of the meaning of *Technik* from craft knowledge unrelated to science, to an applied science whose rightful place was the university along other sciences.

The 19th century contested discourse over *Technik* had a significant influence on German social theory from Weber to Simmel that has been widely recognized, but the influence of this discourse on German phenomenological hermeneutics that was premised on a critique of modern technology rooted in a totalizing account of Western *techne* has not received the same recognition. This 19th century transformation of the meaning of *Technik* into applied science and backlash against its advocates in the debate over the relationship between *Technik* and *Kultur*, however, appears to be the likely explanation for the reading into Aristotle by Heidegger, Arendt and Gadamer of an instrumentalist account of *techne* that runs against the grain of the tradition of Aristotle scholarship.

IV. Conclusion

Heidegger, Arendt and Gadamer thus left a rich phenomenology of factual life, but one limited, with the exception of *Being and Time*, to a consideration of the subset of everyday life concerned with non-technical matters. An indication of the structure of technical facticity appears to be given in both *NE 6* and *Being and Time* – the dual tendencies of *techne* towards self-knowledge and towards exact science. However, no text thus far has thematized and developed a phenomenological hermeneutics of *techne*.⁷⁵

A revival of *phronesis* would appear to depend on a more solid grounding than has been provided by past revivalists who have rejected technical facticity and have thus left the majority of factual existence unexplored. While technology is conventionally interpreted as applied science, the overwhelming consensus of historians of technology that this is an ideology that conceals the reliance of industrial technology upon artisan skills of engineers who are not simply applying formal science suggests vast empirical evidence for this dual tendencies structure of technical rationality.⁷⁶ However, such research has been constrained by a

⁷⁵ The only partial exception known to this author is the work of Andrew Feenberg, who criticizes the tradition of philosophy of technology for vacillating between technophobia and technooptimism, both of which share an underlying technological determinism. Feenberg provides a critical analysis of technical rationality that uncovers the power relations animating technical decisions and is premised on the dual tendencies of technology from the inside towards either automation from above or empowerment from below. Feenberg explores these dual tendencies from a Marcusean perspective of power relations and makes few references to *phronesis*. Feenberg, Andrew, *Transforming Technology* (Oxford University Press, 2002), pp. 15, 76-80, 93-96

⁷⁶ The only example known to the author of such research is that of Donald Schon. For Schon, the idea that practitioners of any practice simply apply science is a myth grounded in anxiety of the status of practical knowledge. Schon demonstrates that practitioners enter into “a reflective conversation with a unique and uncertain situation” through experiments that he classifies as exploratory experiments, move-testing experiments and hypothesis tests. This reflection is reason required by practice, or, practical reason. Through these reflective experiments, one applies incomplete knowledge of a practice to an uncertain situation, and through the action

technophobia that unknowingly advances this ideology and thus further conceals self-knowledge from modern man.

itself and its consequences one adds to one's practical knowledge. Schon's model of reflective practice has been called a hermeneutic account of Aristotle's deliberation. Schon, Donald, *The Reflective Practitioner* (Basic Books, 1983), p. 130