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Knowing Ignorance: The Fragility of Technological Application

Abstract

This article examines the phenomena of »Technisches Nichtwissen« by investigating the shifting relation between technologies and wisdom in practical life. The Aristotelian virtues of *techné* and *phronesis* are taken as reflective of two types of hermeneutic »skills« related to practical application. These skills are often seen as highly distinct, due to the association of *phronesis* with morality and *self*-knowledge, and the association of *techné* with production and instrumental knowledge. However, drawing on Peter-Paul Verbeek's view of *technological mediation,* I will argue that these distinctions can be challenged. Highlighting the interaction of these two virtues, I argue that practical application is an inherently dynamic process that can be conceived in a positive way. Verbeek's approach highlights the productivity of the tension between knowing *how* (*techné*) and knowing *when* (practical wisdom/phronesis) by arguing that the multistabilities of technologies open up a space for a consideration of the link between the self, morality, agency, and practical artefacts/devices. On the other hand, the work of Paul Ricoeur and Hans-Georg Gadamer is also examined in order to focus more closely on the incommensurability between the two types of application. In hermeneutic philosophy, *phronesis* is also linked strongly to »tragic wisdom«, and therefore provides an insight into practice that allows us to recognize the inherent fragility of action in a way that Verbeek's phenomenology seems to obscure, or to at least remain unaware of.

Dieser Aufsatz untersucht das Phänomen des »Technischen Nichtwissens«, indem auf die wechselwirkende Beziehung zwischen Technologien und dem praktischen Wissen eingegangen wird. Die Aristotelischen Tugenden der *techné* und *phronesis* spiegeln zwei Arten hermeneutischer »Fähigkeiten« wider, die auf eine praktische Durchführung bezogen sind. Aufgrund der Assoziation der *phronesis* mit Moralität und Selbsterkenntnis und der Assoziation der *techné* mit der Herstellung erscheinen diese Tugenden oft als klar unterscheidbare Fähigkeiten. Jedoch werde ich mit Peter-Paul Verbeeks Ansatz der *technischen Mediation* diese Unterscheidung infrage stellen. Indem ich die wechselwirkende Beziehung zwischen den beiden Tugenden in den Vordergrund stelle, erkenne ich, dass der Praxis eine besondere Dynamik innewohnt, welche auf eine positive Weise hervorgehoben werden kann. Verbeeks Betrachtungsweise unterstreicht, wie die Spannung zwischen dem Wissen über das *wie (techné)* und das Wissen über das *wann* (Klugheit) fruchtbar gemacht werden kann. Er zeigt, dass die Multistabilitäten der Technologien einen Raum für die Berücksichtigung einer Verbindung zwischen der Selbsterkenntnis, der Moralität, der handelnden Personen und den praktischen Hilfsmitteln eröffnen. Ferner werden auch die Gedanken von Paul Ricoeur und Hans-Georg Gadamer untersucht, um die Inkommensurabilität zwischen den zwei Arten von Handlungen näher zu betrachten. In der hermeneutischen Philosophie steht *phronesis* im starken Zusammenhang mit Wissen über das Tragische in Handlungen und gibt uns Aufschluss über eine Praxis, welche es uns erlaubt, die dem Handeln innewohnende Brüchigkeit auf einer Weise zu erkunden, die Verbeeks Phänomenologie vergleichsweise im Dunkeln lässt oder einfach nicht bemerkt.

Every techné *poses an intrinsic limit: its knowledge is not a full uncovering of something because the work it knows how to produce is delivered into the uncertainty of a use over which it does not preside.*[1]

Introduction

This article aims to examine the question of ›technical ignorance‹ by focusing on the ways in which uncertainty and wisdom relate to each other in practical settings. The work of Aristotle, which never ceases to be a source of philosophical reflection and innovation (virtue ethics, virtue epistemology, etc.), will provide the background for this investigation. The fields of technology and postphenomenology lend themselves especially well to an Aristotelian understanding of ethics. In particular, the article will argue that the intellectual virtues of *techné* and *phronesis* as described by Aristotle feature prominently in Peter-Paul Verbeek's postphenomenological approach to technological mediation and morality. I will argue that Verbeek's work aids in collapsing distinctions between these virtues, with the result that our practical and ethical deliberations about technologies can be reconceived in a more productive way. However, I will also point to the limits of this approach by drawing on the work of Paul Ricoeur and Hans-Georg Gadamer, and the link they make between practical wisdom and tragic wisdom.

This article considers how to conceive of the deployment of technologies. Aristotle's distinction between the practice-based virtues of *techné* and *phronesis* suggests that in processes of application there are two types of ›skill‹ at work. On the one hand, there is the know-how associated with *techné,* knowledge relating to how technologies work or operate. On the other hand, there is the *wisdom* associated with application. It is not enough to simply understand the operations or design of technologies; we must also have a sense of the horizon or context in which these technologies may function. In this way, the two fields of application, designated in this article through the virtues of *techné* and *phronesis,* could be delineated by the skills associated with knowing *how* (techné) and knowing *when* (practical wisdom). Furthermore, whereas *techné* pertains to operations knowledge, *phronesis* is linked to orientations knowledge. The strength of Verbeek's work, I argue, lies in the way in which it draws out the interrelationship between these two types of skills and knowledge sets. For Verbeek, understanding what technological mediation *does,* in a practical sense, means understanding both how (moral) subjects are shaped by technologies, and also how technologies themselves work and are shaped in relation to interpreting and acting subjects. He brings to the foreground the productivity of the tension

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1 Hans Georg Gadamer: *Philosophical Hermeneutics,* transl. and ed. by David E. Linge, Berkeley CA 1977, p. 201.

associated with application, taken in its hermeneutic sense, and demonstrates how this tension can be put to work in relation to our moral self-understanding.

However, this differentiation between knowing *how* and knowing *when* also leads to a recognition of a fundamental incommensurability between the two types of skills. There is always a ›technical ignorance‹ that no amount of wisdom can overcome. Similarly, practical wisdom is challenged by shifting contexts and horizons due to new developments in technologies and technical knowledge. Because of the conflictual and often asymmetric nature of these two types of practical skills, there persists what Ricoeur calls the ›tragedy of action‹ in all practical life.

With these points in mind, the article is divided into two sections. The first (1) examines the ways in which wisdom and technologies complement and presuppose one another in practical settings, while the second (2) provides further reflections on this approach by drawing a link between *deinon* and *phronesis*. I argue that, although Verbeek's account of technological mediation succeeds in reconciling the types of skills associated with design and *techné* with the moral insight associated with practical wisdom, his approach does not go far enough. Against the backdrop of a postphenomenological understanding of technologies it is important also to recognise the inherent tension or *fault* at the heart of practical life and application, a fault which cannot be simply overcome through wisdom, but rather persists due to the incommensurability between wisdom and technologies.

(1) Designing with Conviction

For Gadamer, whose subject in *Truth and Method* is hermeneutical consciousness, both *techné* and *phronesis* appear at first sight as analogous in relation to the central hermeneutic problem of *application.* Gadamer notes the initial difficulty of distinguishing between *phronesis* and *techné* from an ontological perspective, »if, with Aristotle, we define the 'object' of this knowledge ontologically not as something general that always is as it is, but as something individual that can also be different.«[2] Both are categorised as types of knowledge, yet knowledge which cannot be dissociated from experience. Even in cases where one has a prior knowledge of a craft or moral system (for example), the task of application will remain as open in each new case. Therefore, increased ›instruction‹, or even increased levels of experience, will never fully ›solve‹ the problems of application.

However, although both intellectual virtues deal with variable subject matter and questions of application, Gadamer also identifies three primary tensions between the two concepts. Firstly, »We learn a techne and can also forget it. But we do not learn

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2   Hans Georg Gadamer: *Truth and Method,* transl. by Joel Weinsheimer and Donald G. Marshall, London and New York 2004, p. 314.

moral knowledge, nor can we forget it. We do not stand over against it, as if it were something that we can acquire or not, as we can choose to acquire an objective skill, a techne.«[3] So the problem of applying moral knowledge is more ambiguous, since application implies that the knowledge is somehow already possessed or learned before the application process. Whereas *techné* is largely concerned with *direct* application, practical wisdom arises due to the incommensurability between the general, ›perfect‹ system of rules or laws, and the singular practical situations which appear imperfect or *exceptional* in light of these laws.

Secondly, *phronesis* always includes a component of *self*-deliberation, and therefore it is a type of knowledge that is always bound to the experience of a moral subject. The ›seeing‹ associated with practical wisdom is not necessarily a seeing of what is right or wrong, but a seeing of oneself and the relevance of one's own life experience. The opposite of a wise or ›correct‹ judgement is not a false judgement or a judgement made in ›error,‹ but rather a *blind* judgement. In the case of *techné,* by contrast, a failed application can be put down to error or incomplete knowledge. When assigning responsibility or a cause to practical errors, we say that a poor judgement is the result of inexperience, a passionate disposition, blindness, and so on, whereas a poor product which results from a craft can either be the result of an inexperienced maker *or* a faulty or incomplete *method.* There is no analogous objective correlate in the case of practical wisdom: »It is pointless here to distinguish between knowledge and experience, as can be done in the case of a techné. For moral knowledge contains a kind of experience in itself... compared with which all other experience represents an alienation, not to say a denaturing.«[4]

The third key distinction Gadamer makes between *techné* and *phronesis* is in relation to the phenomena of terror and forgiveness/empathy. I will return to this distinction in the second section of the article on *deinon phronesis*. In this section, I challenge the first two divisions Gadamer makes between *techné* and *phronesis*, the directness of technical application and the type of moral self suggested by *phronesis,* with reference to Peter-Paul Verbeek's alternate understanding of technological mediation. There is a fundamental uncertainty associated with self-knowledge and interpretation, an uncertainty which seems to be in contrast with the types of knowledge associated with *techné,* which can be learned, transmitted, improved on, applied directly, and so on. However, a postphenomenological analysis of technologies aims to bring to the fore the *uncertainties* immanent in the act of producing and designing things. This uncertainty is drawn on in order to demonstrate the ways in which design and morality are intertwined.

Although Verbeek does not discuss *phronesis* thematically, there is arguably some overlap between his understanding of morality and the concept of practical wisdom

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3 Ibid*., * p. 315.
4 Gadamer: *Truth and Method,* loc. cit., p. 319.

as it has been used in recent literature (on the role of *phronesis* in the social sciences[5] and in professional practice.[6]) One of the clearest reference points for Verbeek's use of the term ›morality‹ is found in the later work of Michel Foucault, and from this we can see that Verbeek is relying on a very specific, practice-based, and critical understanding of morality. The central parallel between the Aristotelian concept of practical wisdom and Verbeek's attempt to conceive the relation between technology and morality is found in the rejection of *episteme* as the privileged form of knowledge for discerning ›truth,‹ especially moral truths. Foucault's work on *technologies of the self*[7] aims to demonstrate what could be termed the ›impersonal‹ or ›unconcerned‹ dimension of episteme. The imperative associated with the truth of episteme is summed up in the command *know thyself*, a command which Foucault argues was classically circumscribed by the imperative to *care for oneself,* a nesting of theoretical knowledge which has been forgotten with the modern dominance of the natural sciences and their corresponding methods.[8]

Following Foucault, Verbeek argues that what is called for in a moral consideration of technology, seen as a practical and inevitable form of mediating reality, is closer attention to the role of technology in practices, and to the way that it shapes or *forms* our everyday moral selves and contexts. He rejects approaches which advocate a distanced ethical evaluation of technology in-itself, for example in relation to its essence or to human nature. The model of morality under investigation is a form of *ascesis*,

> »Technological ascesis... consists in *using* technology, but in a deliberate and responsible way, such that the "self" that results from it – including its relations to other people – acquires a deliberate shape. Not the moral acceptability, then, is central in ethical reflection on technology use, but the quality of the *practices* that result from it, and the *subjects* that are constituted in it.«[9]

For the purposes of this article, I assume an affinity between the above understanding of technological ascesis and practical wisdom. This relation would need to be explored further, but the fruits of such a linking have already been demonstrated in Flyvbjerg's work on *phronesis* and the social sciences:

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5   Bent Flyvbjerg: *Making Social Science Matter: Why social inquiry fails and how it can succeed again,* transl. by Steven Sampson, Cambridge 2001; Bent Flyvberg, Todd Landman, and Sanford Schram (eds.): *Real Social Science: Applied Phronesis,* Cambridge UK 2012.
6   Elizabeth Anne Kinsella, and Allan Pitman (eds.): *Phronesis as Professional Knowledge: Practical Wisdom in the Professions,* Rotterdam 2012.
7   Michel Foucault, *The Hermeneutics of the Subject: Lectures at the College de France, 1981-82,* ed. by Frédéric Gros, transl. by Graham Burchell, New York 2005; Luther H. Martin, Huck Gutman, and Patrick H. Hutton (eds.): *Technologies of the Self: A Seminar with Michel Foucault,* Amherst MA 1988.
8   Ibid.*,* p. 4.
9   Peter-Paul Verbeek: »Obstetric Ultrasound and the Technological Mediation of Morality: A Postphenomenological Analysis«, in: *Human Studies* 31, no. 1 (2008), p. 23.

»Foucault is the genealogist of the variable *par excellence*; his works are elaborate exercises in making that which appears invariable variable... It would, perhaps, be an overstatement to say that Foucault's ethics *is phronesis*, but there is certainly more than a faint similarity between Aristotelian *phronesis* and Foucauldian ethics.«[10]

Appropriately, Verbeek chooses the practice of *design* to investigate the relation between technology and morality in practical settings. In contrast to a ›technician‹, a ›designer's‹ concern is not solely with functionality but rather with the overall experience produced through technologies. Designer-knowledge is in some ways closer to *techné* in the sense of an art, craft, or technique, rather than in the sense of a specialist type of knowledge relating to the functioning of technical systems. A designer must nevertheless engage with and be somewhat proficient in the types of technical knowledge associated with the practice they are trying to shape.

It is because of the plurality of contexts and settings in which technologies are deployed that a more complex picture of design has to be developed. This fundamental ambiguity of technical knowledge in relation to its applications is described well by Don Ihde's term *multistability*: »a technology can have several stabilities, depending on the way it is embedded in a use context.«[11] This description of technologies points to their *interpretive* aspects; their intended use, or ›intentionality‹, might at first appear univocal or deterministic in terms of the ways that they shape action, but within the history of technology we can see that there is also an openness in technological devices. Ihde uses the classic examples of the telephone and typewriter, which »were not developed as communication and writing technologies but as equipment for the blind and the hard of hearing to help those individuals hear and write. In their use contexts, they were interpreted quite differently, however.«[12]

This ambiguous or multistable aspect of technological design/intentionality means that the role of interpretation becomes more relevant in considering the practical use value of technology. Designers are responsible not only for considering the intended use of their products, but also the complexity and diversity of interpretive possibilities and stances adopted by the human agents engaging with technologies in practical settings. In a sense, designers must also possess a type of practical wisdom, a virtue which deals with deliberation about *human* action and its ends, and the things which *pertain to* those ends: »Technologies help to shape what counts as ›real‹. This hermeneutic role of things has important ethical consequences since it implies that technologies can actively contribute to the moral decisions human beings make.«[13]

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10 Flyvbjerg: *Making Social Science Matter,* loc. cit., p. 112.
11 Peter-Paul Verbeek: »Materializing Morality: Design Ethics and Technological Mediation«, in: *Science, Technology, & Human Values* 31, no. 3 (2006), p. 365.
12 Ibid., p. 365.
13 Ibid., p. 366.

46

The ethical task for designers does not consist in making their own devices or systems more robust or closed off to unintended uses through strengthening their technical knowledge. Rather their responsibility stems from broader concerns based on an insight that the interpretability of devices can become a positive factor in the shaping of the moral lives of the users. The ›moral‹ work of the designer is then to bridge the gap between design context and possible use contexts:

> »To cope with this complexity, designers should try to establish a connection between the context of design and the context of use. Designers could try to formulate product specifications not only on the basis of the desired functionality of the product but also on the basis of an informed prediction of its future mediating role and a moral assessment of this role.«[14]

Crucial here is the importance of developing an *informed prediction* of the device's future mediating role. Enriching the informed decision requires not only a development of the technical knowledge needed in the design context, but also a practical and imaginative understanding of how designs are deployed in the field of human action. There is a clear division between the technical task of striving for functionality and the moral assessment of the device as it may exist in various contexts. Verbeek provides an example of this broader understanding of design in the case of the Dutch industrial designers collective Eternally Yours. This company aims to address issues of sustainability, not only by considering the usual, calculative questions of »reducing pollution in production, consumption and waste,«[15] but also by considering a deeper problem of sustainability which is found in the relation between humans and artefacts:

> »the actual problem, Eternally Yours holds, is that most of our products are thrown away far before actually being worn out… For this reason, Eternally Yours focuses on developing ways to create product longevity. It does so by investigating how the coming about of attachment between products and their users could be stimulated and enhanced.«[16]

Most technologies are designed to need as little maintenance or attention as possible, and strive towards the production of what David Lewin calls ›utopias of functionality‹. This is especially clear in the design logic of interfaces, which Lewin discusses in relation to *phronesis:*

> »The whole point of the interface is to stabilize what discloses itself. We might say that it fixes and closes, and thereby opposes disclosure. By its attempt to conceal complex (that

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14 Ibid., p. 372.
15 Ibid., p. 373.
16 Ibid.

is, fragile or insecure) interaction and deliberation, the interface denigrates and excludes the human faculty of practical reason, named by Aristotle as *phronesis*.«[17]

For Verbeek, too, the aim of functionality in relation to technological design is not always the most practical. We are indeed ›disburdened‹ through these efficient designs: »Technologies, after all, are often designed to disburden people: a central heating system liberates us from the necessity to gather wood, chop it, fill the hearth, clean it, and so forth. We need only to switch a button and our house gets warm.«[18] But this disburdening also leads to carelessness in our attitude towards our practical environments. To counter this process, we do not necessarily need to minimize or even eradicate the presence of technologies in our practical lives, but rather we can re-imagine the role that technology can play, supplementing our technical capability to produce highly ›functional‹ systems with a practical wisdom which better understands and anticipates the more complex field of human action. For example, in relation to the problem of heating, we need not necessarily return to the valuable work of gathering wood, chopping it, and so on; instead we can simply pay more attention to the way we interact with technologies:

> »An interesting example in this direction is an engaging electric/ceramic heater that was designed by Sven Adolph… This artifact is not a purely functional heater that withdraws into pure functionality like common radiators, which are hidden under the windowsill and are only turned on and off. It is an engaging product that asks for attention and involvement in its functioning, much like a campfire. You cannot hide it under the windowsill but have to put it in the middle of the room. You cannot escape it if you need warmth: you have to sit around it. Its shells have to be arranged if you want it to function. Simply turning the heater on and off is not enough: you actually have to be involved in its functioning if you want it to work.«[19]

In this way, designers are able to free themselves from anxieties about ›technical ignorance‹, that is, uncertainty with regard to the functioning of devices in practical settings whose complexities cannot always be anticipated by a narrow ›technical‹ approach. By adopting the view that technologies help *mediate* our understanding of the world, designers learn better how to contribute to our practical self-understanding and our moral relations with others. Technical knowledge and practical wisdom combine in order to anticipate this mediating process more completely.

Verbeek's overall understanding of technology demonstrates how problems arising from ›technical ignorance‹ can be bridged, precisely by extending the types of questions that *techné* poses toward those which practical wisdom aims to address,

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17 David Lewin: »Ricoeur and the Capability of Modern Technology«, in: *From Ricoeur to Action: The Socio-Political Significance of Ricoeur's Thinking*, ed. by Todd S. Mei und David Lewin, London and New York 2012, p. 65.
18 Verbeek: »Materializing Morality«, in: *Science, Technology, & Human Values* 31, loc. cit., p. 374.
19 Ibid., p. 374.

48

namely, the ambiguity of application and the formation of the moral self. This approach intertwines agency and mediation in practical understanding. Moral decisions cannot be made solely based on the insight of an independent or distanced human mind. Instead, they must be deliberative, due to the variable nature of singular practical settings and the multistabilities of the devices that mediate our action in these settings. I have argued that the type of morality suggested by this description is similar to the virtue-based practical wisdom described by Aristotle.

However, in the next section, a caveat is added to this relatively smooth or frictionless picture of technological mediation and its associated practical moral philosophy. I argue that an understanding of practical wisdom which sees it as a way of enriching or complementing technical knowledge (understandings which aim to produce a more holistic or ›spiritual‹ description of practice[20]) neglects an important factor. The missing factor is the *tragedy* of action, an aspect of practical life which is incorporated into the hermeneutic philosophies of Ricoeur and Gadamer. It is notable that, in their most extensive discussions of *phronesis,* both Ricoeur and Gadamer make sure to include the important link between *phronesis* and *deinon* in their analysis.

(2) Deinon Phronesis

In the above account of technological mediation, the crucial aspect of the *ambiguity* of technologies was brought to the fore. On the one hand, this aspect is celebrated as allowing the design process to become a consideration of making the ›best‹ and most moral technologies *possible* within a given set of circumstances. The systems produced need not be perfect nor totally determined in advance, and allow for the preservation of the freedom of the users, on the condition that this freedom is understood as a relative freedom which is always mediated by social, political, and technological circumstances. The other side of this ambiguity is a recognition of the *fault* of technologies. Technologies will always ›under-perform‹, or perform in ways not immediately anticipated by designers. It seems, therefore, that we transition from faulty technical knowledge to a complementary wisdom which *completes* the action mediated by technologies and reorients them in a direction guided by moral insight.

However, this transition can also be conceived of in another way. Recognition of a fault or ambiguity does not always result in a correction of the fault; it can also lead to an acceptance of incompleteness and vulnerability. This latter approach to

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20 »We will call ›spirituality‹ then the set of these researches, practices, and experiences, which may be purifications, ascetic exercises, renunciations, conversions of looking, modifications of existence, etc., which are, not for knowledge but for the subject, for the subjects very being, for the price to be paid for access to the truth.« (Foucault: *Hermeneutics of the Subject,* loc. cit., p. 15).

49

ambiguity is central to one of the key paradoxes of hermeneutics. Hermeneutics is, on the one hand, concerned with bringing about understanding, but on the other hand, it views understanding as something which constantly escapes us and remains incomplete. Even if we accept Verbeek's postphenomenological analysis of technologies, we do not need to see the incompleteness of technical knowledge solely as a practical, pragmatic problem, demanding a solution or judgement which would bring a sense of unity or situatedness to technical knowledge. Instead, we can view the fault of technologies as a symbol which gives rise to reflection, but remains a problem that cannot be overcome:

> »*Phronesis,* often seen as the pragmatic virtue combining sight and insight enabling a moral agent to judge and act rightly in a given situation becomes, when touched by tragedy in all its senses, a *deinon phronesis. Deinon phronesis* sees situations demanding choice against the background of *fault* – a phenomenon capable of symbolisation and narration but resistant to understanding – aware that some situations embody *aporiai;* mutually exclusive principles or norms. An *aporia* is not resolved by action; it is lived through.«[21]

In Ricoeur's ethics found in *Oneself as Another*[22] the strategic role of his ›interlude‹, a reading of *Antigone,* is not to outline a practical moral philosophy founded on *phronesis,* but rather to demonstrate the necessity of *phronesis* in an approach that combines an ethical wish to live well and in accordance with one's desire with moral respect for others and their conflicting desires. *Phronesis* emerges against the background of tragic conflict as a mode of interpreting conflict justly. The wisdom *Antigone* provokes is a wisdom that has been exposed to the horrors of ethical conflict, conflict which emerges from the persistence of exceptions and singular situations in political life. Thus understood, wisdom is not a way of overcoming failures or faults of mediation, but of becoming aware of and experiencing the persistence of these faults in a humane way:

> »The fiction forged by the poet is one of conflicts which Steiner rightly considers intractable, nonnegotiable. Taken as such, tragedy produces an ethicopractical aporia... In this respect, one of the functions of tragedy in relation to ethics is to create a gap between tragic wisdom and practical wisdom. By refusing to contribute a "solution" to the conflicts made insoluble by fiction, tragedy, after having disoriented the gaze, condemns the person of praxis to reorient action, at his or her own risk, in the sense of a practical wisdom in situation that best *responds* to tragic wisdom.«[23]

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21 David Fisher: »Ricoeur's *Atemwende*: A Reading of ›Interlude: Tragic Action‹ in Oneself as Another«, in: *From Ricoeur to Action*, loc. cit., p. 195.
22 Paul Ricoeur: *Oneself as Another,* transl. by Kathleen Blamey, Chicago and London 1992, pp. 169–296.
23 Ricoeur, *Oneself as Another,* p. 247.

This view of practical wisdom suggests an alternate moral function to a view which may see wisdom as a deeper or more insightful way of perceiving a situation with the purpose of promoting flourishing and happiness in practical settings. Practical wisdom still exists at the ›limits‹ of technical knowledge and in relation to the aspects of life to which we remain technically ignorant, but when instructed by tragic wisdom, practical wisdom becomes more of a form of resignation or acceptance of fate than a ›seeing-beyond‹ immediate technical problems or questions towards better, more moral solutions.

Arguably, the strongest case for discerning an opposition between a practical morality founded on *phronesis* and a form of morality which places technological mediation and ascesis at its centre is in this way of conceiving tragedy. There are many examples where, through the use of technologies and problem-solving techniques, the persistence of the tragedy of action is seen as something surmountable rather than as a source of reflection and empathy. In professional settings there are ›checklists‹ and technocratic procedures which are intended to ensure fairness but often end up distorting interpersonal relations.[24] Insurance companies provide ›remedies‹ for tragic situations through institutional mediation, but the results of this process still remain questionable.[25] As David Lewin points out, the ›technical interface‹ is becoming more and more pervasive, to the extent that our complex interactions with others and with our technological devices become reduced to a series of easily negotiable buttons and icons.[26] Although all of these examples emerge as responses to tragedy and uncertainty, these responses tend to see tragedy or vulnerability as problems to be solved rather than as inescapable experiences. As David H. Fisher writes, it is in a world populated by interfaces, »all consuming images«, and technocratic solutions that »*deinon phronesis* can provide a way toward being grasped by the question of ethics.«[27]

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24 "[A]s the mechanisms of professionalisation have been put in place, so too have the levels of prescription increased, thereby circumscribing the capacity of members to act autonomously in situations that demand the exercise of judgement… This underlines the essential need to consider calls for phronesis in light of what Kemmis has called the extra-individual features of practice, including the social, cultural, material-economic, discursive, political, and policy dimensions." (Kinsella (ed.): *Phronesis as Professional Knowledge,* loc. cit., p. 8).

25 "Actuarial science employs a form of statistical modelling enabling insurance companies to consider their exposure to risks in order to calculate premiums providing coverage for such risks. For example, assessment of liability in auto insurance will consider, among other things, the age, gender, and credit rating of a driver. So while an insurance company provides a qualified guarantee to compensate individuals who have suffered a loss, the subsequent effect occurs as a sort of transvaluation via the social imagination—namely, risk and loss themselves have financial value." Todd Mei: »The Relevance of an Existential Conception of Nature«, in: *Cosmos and History: The Journal of Natural and Social Philosophy* 10, no. 2 (2014), p. 156.

26 Lewin: »Ricoeur and the Capability of Modern Technology«, in: *From Ricoeur to Action*, loc. cit., pp. 64–67.

27 David H. Fisher: »Is *Phronesis Deinon*? Ricoeur on Tragedy and Phronesis«, in: *Gadamer and Ricoeur: Critical Horizons for Contemporary Hermeneutics,* ed. by Francis J. Mootz III and George H. Taylor, London and New York 2001, p. 157.

Furthermore, doesn't technology itself, understood as a particular form of mediating reality, pose its own tragic or ›terrifying‹ dimension? Is it not this dimension that informs Verbeek's call to make the process of technological design more morally responsible? ›Technical ignorance‹ is arguably as terrifying as it is liberating. Technologies such as ultrasound scans open up new practical, ethical possibilities for living well, not because they show us how reality *is,* but because they de-stabilise and reorient sedimented practices and therefore possess a huge potential for helping shape human action in new ways. In this capacity to redirect and refigure action, technological designs contain their own normative stance and a type of conviction which allows for the possibility of conflict. For example, via the ultrasound scan, the father is brought into a new relation with the unborn child, a relation which may shape the way decisions will be made and convictions will be formed over the course of the pregnancy.[28]

At the practical level, technologies have an extraordinary power over our relation with our circumstances. However, it is important to also recognise the limits of this power in the case of tragic situations. Although we can better understand ourselves and the other through developing more responsible, more beautiful, and more functional technologies, the solicitude that stems from the voice of the other and the voice of conscience will ultimately always transcend mediation and call for a different ethical response. This response may be *phronetic,* but not necessarily practical in the sense of being in harmony with a given situation. The singularizing call from conscience, which leads to conviction in a stance, may often direct one towards a position of rejection or disharmony with one's own surroundings. Just as conviction can lead to tragedy, so too can wisdom, if that wisdom emerges in a setting, or *sittlichkeit* (ethics), dominated by *techné.*

Verbeek's response to this situation, which attempts to broaden our understanding of what technologies can do in practical environments, is a strong one, incorporating positive aspects of *phronesis* and hermeneutic understanding. However, by placing technological mediation at the heart of moral deliberation, we are also in danger of obscuring crucial aspects of *phronesis* that cannot be factored into a postphenomenological account of ethics, namely the human experiences of suffering and the corresponding feelings of empathy and forgiveness.

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28   Verbeek: »Obstetric Ultrasound and the Technological Mediation of Morality«, in: *Human Studies* 31, loc. cit., pp. 14–18.

Conclusion

The intellectual virtues of *techné* and *phronesis* are philosophically linked in their relation to practice and variable phenomena. Whereas a conventional understanding of how technologies work could lead us to conclude that practical wisdom and technical knowledge are in opposition to one another, the work of Verbeek challenges this assumption. *Practical* morality depends just as much on the tools or artefacts we use to mediate reality as on the reasoning capabilities of individuals. Gadamer's understanding of *techné* as presupposing *direct* application and as unrelated to knowledge of the self was called into question by Verbeek's postphenomenological account of the ambiguity of technological intentionality and technological ascesis. Technologies help to shape and define the contexts subjects find themselves in, and similarly, no technological design is ›complete‹ until it has in a sense been ›successfully‹ deployed in a setting. A technological design may be highly robust and functional, but may not find an appropriate horizon against which it can become a meaningful factor in human action. It is relevant to distinguish between these two types of ›skills‹ in practical application because our understanding both of technologies *and* practical wisdom can be revised. Both ›skills‹ – designing well (knowing *how*) and moral intuition and judgement in a situation (knowing *when*) – exist against a shared background of the *uncertainty* of application. Through Verbeek's work this uncertainty is refigured as something productive and liberating.

I have also suggested that if we over-emphasise the centrality of technological mediation, and in particular its power to refigure practical life, there is a danger of losing sight of the features of application which arguably are linked more strongly or asymmetrically to practical wisdom, namely the persistence of the tragic and the corresponding human capabilities for empathy, forgiveness, and the recognition of suffering. Although increased attention to the role of technologies in human action can guard against ›misfortune‹ and tragedy, we also need to think about ways a reflection on technology can lead to a reflection on the inevitability of conflict in ethical life. Verbeek's approach, which takes the fact of technological mediation as a *given,* is in danger of reconciling the tragedies of practice too quickly by focusing on the framework of ›technological mediation‹ and ›informed prediction‹. Practical wisdom, which I have argued a postphenomenological view presupposes, has itself a more open function in terms of application, and for this reason there will always be an incommensurability between technologies and wisdom. By developing a broader picture of the process of application, we can begin to design more meaningful technologies, while at the same time gaining a deeper understanding of the fragility of all human practice.