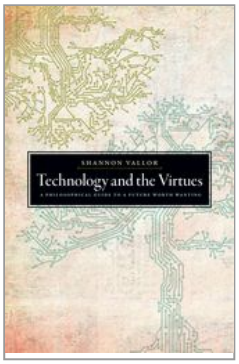

Technology and the Virtues: A Philosophical Guide to a Future Worth Wanting
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Print publication date: 2016
Print ISBN-13: 9780190498511
Published to Oxford Scholarship Online: September 2016
DOI: 10.1093/acprof:oso/9780190498511.001.0001

Virtue Ethics, Technology, and Human Flourishing

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DOI:10.1093/acprof:oso/9780190498511.003.0002

Abstract and Keywords

Starting with an overview of virtue ethics in the philosophical tradition of the West, beginning with Aristotle, I discuss the contemporary revival of virtue ethics in the West (and its critics). In reviewing virtue ethics' advantages over other traditional ethical approaches, especially consequentialism (such as utilitarianism) and deontology (such as Kantian ethics), I note that virtue ethics is ideally suited for managing complex, novel, and unpredictable moral landscapes, just the kind of landscape that today's emerging technologies present. Yet I also note that an exclusively Western approach to virtue would be inadequate and provincial; moreover, emerging technologies present global problems requiring collective action across cultural and political lines. Finally, I review the various ways in which contemporary philosophers of technology have addressed the ethical dimensions of technology, the limits of those previous approaches, and the potential of a *global technosocial virtue ethic* to go beyond them.

Keywords: virtue ethics, Aristotle, philosophy of technology, Immanuel Kant, utilitarianism, deontology, emerging technologies

TO SOME, THE title of this chapter may seem faintly anachronistic. In popular moral discourse, the term 'virtue' often retains lingering connotations of Victorian sexual mores, or other historical associations with religious conceptions of morality that focus narrowly on ideals of piety, obedience, and chastity. Outside of the moral context, contemporary use of the term 'virtue' expresses something roughly synonymous with 'advantage' (e.g., "the virtue of

this engineering approach is that it more effectively limits cost overruns"). Neither use captures the special meaning of 'virtue' in the context of philosophical ethics. So what does virtue mean in this context? How does it relate to cultivating moral character? And why should virtue, a concept rooted in philosophical theories of the good life dating back to the 5th century BCE, occupy the central place in a book about how 21st century humans can seek to live well with emerging technologies?

The term 'virtue' has its etymological roots in the Latin *virtus,* itself linked to the ancient Greek term *arête,* meaning 'excellence.' In its broadest sense, the Greek concept of virtue refers to any stable trait that allows its possessor to excel in fulfilling its distinctive function: for example, a primary virtue of a knife would be the sharpness that enables it to cut well. Yet philosophical discussions of ethics by Plato and Aristotle in the 5th and 4th centuries BCE reveal a growing theoretical concern with distinctly human forms of *arête,* and here the concept acquires an explicitly *moral* sense entailing excellence of character.[1] A distinct but related term *de* (德) appears in classical Chinese ethics from approximately the same period. *De* originally meant a characteristic 'power' or influence, but in Confucian thought it acquired the sense of a distinctly *ethical* power of the exemplary person, one that fosters 'uprightness' or 'right-seeing.'[2] Buddhist ethics makes use of a comparable concept, *śīla,* implying character that coordinates and **(p.18)** upholds right conduct.[3] The perfection of moral character (*śīla pāramitā*) in Buddhism expresses a sense of cultivated personal excellence akin to other ethical conceptions of virtue. Thus the concept of 'virtue' as a descriptor of moral excellence has for millennia occupied a central place in various *normative* theories of human action—that is, theories that aim to prescribe certain kinds of human action as right or good.

In the Western philosophical tradition, the most influential account of virtue is Aristotle's, articulated most fully in his *Nicomachean Ethics* (~350 BCE). Other notable accounts of virtue in the West include those of the Stoics, St. Thomas Aquinas, David Hume, Francis Hutcheson, and Friedrich Nietzsche. Yet Aristotle remains the dominant influence on the conceptual profile of virtue most commonly engaged by contemporary ethicists, and this profile will be our starting point. While cultural and philosophical limitations of the Aristotelian model will lead us to extend and modify this profile in subsequent chapters, its basic practical commitments will remain largely intact.

Moral virtues are understood by Aristotle to be states of a person's *character*: stable dispositions such as honesty, courage, moderation, and patience that promote their possessor's reliable performance of right or excellent actions. Such actions, when the result of genuine virtue, are not only praiseworthy in themselves but imply the praiseworthiness of the person performing them. In human beings, genuine virtues of character are not gifts of birth or passive circumstance, nor can they be taught in any simple sense. They are states that

the person must cultivate in herself, and that once cultivated, lead to deliberate, effective, and reasoned choices of the good.[4] The virtuous state emerges gradually from habitual and committed practice and study of right actions. Thus one builds the virtue of courage only by repeatedly performing courageous acts; first by patterning one's behavior after exemplary social models of human courage, and later by activating one's acquired ability to see for oneself what courage calls for in a given situation. Virtue implies an alignment of the agent's feelings, beliefs, desires, and perceptions in ways that are appropriate to the varied practical arenas and circumstances in which the person is called to act.[5] Moral virtues are conceived as personal excellences in their own right; their value is therefore not exhausted in the good actions or consequences they promote. When properly integrated, individual virtues contribute to a person's character *writ large*; that is, they motivate us to describe such a person as *virtuous,* rather than merely noting their embodiment of a particular virtue such as courage, honesty, or justice. States of character contrary to virtue are *vices*, and a person whose character is dominated by these traits is therefore *vicious*—broadly incapable of living well.

Most understandings of virtue ethics make room for something like what Aristotle called *phronēsis,* variously translated as prudence, prudential reason, **(p.19)** or practical wisdom.[6] This virtue directs, modulates, and integrates the enactment of a person's individual moral virtues, adjusting their habitual expression to the unique moral demands of each situation. A fully virtuous person, then, is never blindly or reactively courageous or benevolent—rather, her virtues are expressed *intelligently,* in a manner that is both harmonious with her overall character and appropriate to the concrete situation with which she is confronted.[7] Virtues enable their possessor to strike the mean between an excessive and a deficient response, which varies by circumstance. The honest person is not the one who mindlessly spills everyone's secrets, but the one who knows *how much* truth it is right to tell, and *when* and *where* to tell it, to *whom*, and in what *manner*.[8] Reasoning is therefore central to virtue ethics. Yet unlike theories of morality that hinge on rationality alone, such as Kant's, here reason must work *with* rather than against or independently of the agent's habits, emotions, and desires. The virtuous person not only tends to *think* and *act* rightly, but also to *feel* and *want* rightly.[9]

A virtuous person is not merely conceived *as* good, they are also understood to be moving toward the accomplishment of a good *life*; that is, they are *living well*. In most cases, they enjoy a life of the sort that others recognize as admirable, desirable, and worthy of being chosen. Of course not every life that *appears* desirable or admirable is, in fact, so. Conversely, a virtuous person with the misfortune to live among the vicious is unlikely to be widely admired, although this does nothing to diminish the fact of their living well. The active flourishing of the virtuous person is not a subjective appearance; virtue just *is* the activity of living well. This means that while virtue ethics can allow for many different

types of flourishing lives, it is incompatible with moral relativism. There are certain biological, psychological, and social facts about human persons that constrain what it can mean for us to flourish, just as a nutrient-starved, drought-parched lawn fails to flourish whether or not anyone notices its poor condition. While the cultivation of virtue is not egoistic, since it does not aim at securing the agent's own good *independently* of the good of others, a virtuous character is conceptually inseparable from the possibility of a good life for the agent.[10] This is why Aristotle describes the virtuous person as objectively *happy*; even in misfortune they will retain more of their happiness than the vicious would.[11] Although it is widely recognized that the Greek term *eudaimonia*, which we translate as 'happiness,' is far richer than the modern, psychological sense of that term (an issue to which we will return later in this book), it will serve our preliminary analysis well to note that the classical virtue ethical tradition regards virtue as a *necessary,* if not sufficient, condition for living well and happily.[12]

If thinkers in this tradition are correct, then *just as in every previous human era, living well in the 21st century will demand the successful cultivation of moral* **(p.20)** *virtue*. Yet given what was noted at the beginning of this chapter—namely, that the popular understanding of virtue is largely divorced from the philosophical teachings of virtue traditions—we have to ask: how can we possibly reconnect popular ideas about living well with technology to a robust discourse about the moral virtues actually needed to achieve that end? While a satisfactory answer to this question cannot be given until later in this book, it may be helpful to briefly examine the circumstances that have led to the revival of contemporary *philosophical* discourse about the moral virtues and their role in the good life.

1.1 The Contemporary Renewal of Virtue Ethics

Ethical theories in which the concept of virtue plays an essential and central role are collectively known as theories of *virtue ethics*. Such theories treat virtue and character as more fundamental to ethics than moral rules or principles. Advocates of other types of ethical theory generally see virtues as playing a lesser and more derivative role in morality; these include the two approaches that previously dominated philosophical ethics in the modern West: *consequentialist* ethics (for example, Jeremy Bentham and John Stuart Mill's utilitarianism) and *deontological* or rule-based ethics (such as Immanuel Kant's categorical imperative).[13]

Compared with these alternatives, virtue ethics stood in general disfavor in the West for much of the 19th and 20th centuries. Reasons for the relative neglect of virtue ethics in this period include its historical roots in tightly knit, premodern societies, which appeared to make the approach incompatible with Enlightenment ideals of modern cosmopolitanism. Thanks to the medieval philosopher St. Thomas Aquinas's use of Aristotelian ideas throughout his

writings, virtue ethics had also acquired strong associations with the Thomistic moral theology of the Catholic Church. This made it an even less obvious candidate for a universal and secular ethic. Virtue ethics was seen as incompatible with evolutionary science, which denied what Aristotle and many other virtue ethicists had assumed—that human lives are naturally guided toward a *telos*, a single fixed goal or final purpose. Virtue ethics' emphasis on habit and emotion was also seen as undermining rationality and moral objectivity; its focus on moral persons rather than moral acts was often conflated with egoism. Finally, virtue ethics' eschewing of universal and fixed moral rules was thought by some to render it incapable of issuing reliable moral guidance.[14]

The contemporary reversal of the fortunes of virtue ethics began with the publication of G.E.M. Anscombe's 1958 essay "Modern Moral Philosophy," in which she sharply criticized modern deontological and utilitarian frameworks for their narrow preoccupations with law, duty, obligation, and right to the exclusion **(p.21)** of considerations of character, human flourishing, and the *good*. Anscombe also claimed that modern moral theories of right and wrong, having detached themselves from their conceptual origins in religious law, were now crippled by vacuity or incoherence, supplying poor foundations for secular ethics. Her proposal that moral philosophers abandon such theories and revisit the conceptual foundations of virtue was the guiding inspiration for a new generation of thinkers, whose diverse works have restored the philosophical reputation of virtue ethics as a serious competitor to Kantianism, utilitarianism, and other rule- or principle-based theories of morality.[15] Among Western philosophers, scholarly interest in virtue ethics continues to grow today thanks to the prominent work of neo-Aristotelian thinkers such as Alasdair MacIntyre, John McDowell, Martha Nussbaum, Rosalind Hursthouse, and Julia Annas, to name just a few.

Yet Anscombe was clear that Aristotelian virtue theory was not a satisfactory modern ethic. Even contemporary virtue ethicists who identify as neo-Aristotelian typically disavow one or more of Aristotle's theoretical commitments, such as his view of human nature as having a natural *telos* or purpose, or his claims about the biological and moral inferiority of women and non-Greeks. No contemporary virtue ethicist can deny that there are significant problems, ambiguities and lacunae in Aristotle's account; whether these can be amended, clarified, and filled in without destroying the integrity or contemporary value of his framework is a matter of ongoing discussion. As a consequence, contemporary Western virtue ethics represents not a single theoretical framework but a diverse range of approaches. Many remain neo-Aristotelian, while others are Thomistic, Stoic, Nietzschean, or Humean in inspiration, and some offer radically new theoretical foundations for moral virtue.[16]

In addition to internal disagreements, the contemporary renewal of virtue ethics has met with external resistance from critics who challenge the moral psychology of character upon which virtue theories rely. Using evidence from familiar studies such as the Milgram and Stanford prison experiments, along with more recent variations, these critics argue that moral behavior is determined not by stable character traits of individuals, but by the concrete situations in which moral agents find themselves.[17] Fortunately, virtue ethicists have been able to respond to this 'situationist' challenge. First, the impact of unconscious situational influences, blind spots, and cognitive biases on moral behavior is entirely compatible with virtue ethics, which already regards human moral judgments as imperfect and contextually variable. Moreover, unconscious biases can, once discovered, be mitigated by a range of compensating moral and social techniques.[18] Perhaps the most powerful response to the situationists is that robust moral virtue is by definition exemplary rather than typical; indeed, the experiments most often used as evidence *against* the existence of virtue consistently **(p.22)** reveal substantial minorities of subjects who respond with exemplary moral resistance to situational pressure—*exactly* what virtue ethics predicts.[19] Thus despite its critics, the contemporary renewal of virtue ethics as a compelling alternative to principle- and rule-based ethics shows no sign of losing steam; if anything, intensified critical scrutiny is a healthy indicator of virtue ethics' returning philosophical strength.

While a survey of contemporary virtue ethics in the West might stop here, it would be dangerously provincial and chauvinistic to ignore the equally rich virtue ethical traditions of East and Southeast Asia, especially Confucian and Buddhist virtue ethics. While there is important contemporary work being done in this area, relatively few Anglo-American virtue ethicists have acknowledged or attempted to engage this work.[20] This is a substantial loss. To ignore the content of active and longstanding virtue traditions with related, but very distinct, conceptions of human flourishing is to forgo an opportunity to gain a deeper critical perspective on the admittedly narrow preoccupations of Aristotelian virtue theory.[21]

As we move beyond the realm of theory and into the domain of *applied* virtue ethics, Western provincialism becomes entirely unsustainable; for applied ethics —which tackles real-world moral problems through the lens of philosophy—is increasingly confronted with problems of global and collective action. Environmental ethics offers the starkest selection of practical problems demanding global cooperation and coordinated human responses that reach across national, philosophical, and ethnic lines, but this is hardly an isolated case. The expansion of global markets for new technologies is having profound and systemic moral impacts on the entire human community—primarily by strengthening the shared economic, cultural, and physical networks upon which our existence and flourishing increasingly depend. If we look at the spread of global information and communications systems, unmanned weapons systems,

consumer robotics, or genetic engineering, we see that emerging technologies and their effects do not respect the cultural and philosophical boundaries that separate capitalists from socialists, Buddhists from Christians, or neo-Confucians from neo-Aristotelians.

It may be, for example, that liberal Europeans value personal privacy in a manner that is, on theoretical grounds, quite distinct from the way in which privacy values are framed in traditional Chinese society, where boundaries between self and community are far less sharp.[22] Yet if Google aims to connect us all, and we want Google to act ethically with respect to our privacy concerns, then it cannot *in practical terms* be true that these distinct privacy values have nothing to do with one another—as illustrated by the cultural complexities of the dispute over the European Court of Justice's 2014 decision that EU citizens have a fundamental human "right to be forgotten" by search engines. Likewise, applied ethicists **(p.23)** must increasingly attend to cultural differences between Japanese, South Korean, and American attitudes toward robots precisely because of emerging market incentives to develop robotic solutions to various demographic and military challenges these nations share.[23] And if international tribunals of justice and human rights are to have any continuing legitimacy, they will have to find ways of successfully framing the ethical stakes of technologies such as autonomous weapons that effect significant change upon *global* habits of military and political practice. In the midst of such developments, ethical discourse that speaks only to the concerns of a particular moral or philosophical 'tribe' will be helpless to confront the ethical impact of the technosocial realities that increasingly address humans *collectively*—realities which demand the effective cultivation and application of some measure of cooperative human wisdom.

1.2 Virtue Ethics and Philosophy of Technology

In the Introduction, we identified the emerging conditions of acute technosocial opacity: rapid technological, sociopolitical, and environmental change accompanied by existential risks that make the ethical pursuit of the good life in the 21st century extraordinarily challenging and fraught with uncertainty. I suggested that our current patterns of thinking about ethics and the good life may well prove ineffective, deleterious, or even catastrophic if we do not adapt them to these new technosocial realities. I also claimed that new moral resources for meeting this challenge with grace and wisdom can be found in the philosophical tradition of *virtue ethics*. Having now outlined the general significance of the term 'virtue ethics' in classical and contemporary philosophy, and the cultural scope of our interest in virtue ethical frameworks, let us turn to the important task of explaining more fully why this type of ethical approach, more so than the obvious alternatives, offers a uniquely helpful scaffold for a new technosocial ethics.

Let me begin by explaining further why we should be dissatisfied with the primary alternatives. Each is vulnerable to several well-known objections. Religious laws and norms speak only to their believers, and thus are poor candidates for a global technosocial ethic. Utilitarianism, which employs a universal moral calculus designed to maximize the greatest good for all concerned, is often criticized for decoupling the moral worth of acts from the moral worth of persons, and for legitimizing choices in which the lives or well-being of a minority may be deliberately sacrificed for a greater overall yield of happiness. Kantian deontology, which supplies a single *categorical imperative* mandating universal rational consistency in moral action, is criticized for treating the rational consistency of the agent as more important to morality than natural human bonds of care and concern.[24] **(p.24)** Kantian and utilitarian ethics have also been thought to be overly demanding, for example, in asking agents to be impartial in weighing the competing interests of strangers and loved ones. Such considerations lead many to conclude that these accounts stray too far from common moral intuitions.[25] Still, the above criticisms can be difficult to prosecute without begging the question in favor of a virtue- or character-based account. Fortunately, there is a more fundamental and compelling reason to prefer virtue ethics, one made increasingly relevant by the conditions of growing technosocial opacity to which 21st century humans are subject.

A well-known weakness of virtue ethics' competitors is their adherence to rules or fixed principles as the final arbiters of sound moral judgment. Consider Kant's categorical imperative and its famous blanket injunction against lying, even to the "inquiring murderer" at our door who wishes to know if we are sheltering the innocent person he wishes to kill. Or recall the equally familiar challenge to utilitarian morality in which it is noted that the principle of greatest happiness can seemingly be used to justify the brutal execution of a randomly chosen scapegoat. When such apparent counterexamples cannot be explained away, defenders of rule or principle-based ethics are generally left with two options: admit limited exceptions to the moral principle, or accept and try to defend these morally counterintuitive implications. By rendering the theory unpalatable or offensive to many if not most reasonable people, the latter strategy preserves the integrity of the theory at the expense of its motivating force. The former strategy, however, tends to produce *ad hoc* and apparently arbitrary exceptions, undermining confidence in the principle upon which the whole theory rests.

Virtue ethicists, on the other hand, avoid this dilemma by denying that right action is ever captured by fixed principles or rules, and claiming instead that moral principles simply codify, in very general and defeasible ways, patterns of reasoning typically exhibited by virtuous persons. On this view, moral expertise does not come from fixed moral principles, but is *reflected* in them; and imperfectly at that. Consider an adult who can easily understand and follow rules, but is wholly lacking in practical wisdom—a cultivated ability of her own

to recognize and independently solve moral problems. There is no moral rule or set of rules that one could hand such a person that would, from then on, steer her reliably and safely to the destination of a life lived well. If the rules are well chosen, she *might* do morally better in life with them than she would without them, but inevitably she will fail to recognize situations to which the rules are supposed to apply, and be caught short by moral situations for which the rules do not seem to fit or where their proper application is not obvious. It is not simply that virtue—that is, excellence in practical reasoning—is needed to correctly apply abstract moral principles such as those of Kantian or utilitarian ethics.[26] For the virtue of practical wisdom or *phronēsis* encompasses considerations of universal rationality *as well* **(p.25)** *as* considerations of an irreducibly contextual, embodied, relational, and emotional nature—considerations that Kant and others have erroneously regarded as irrelevant to morality. From the totality of these considerations the virtuous person must make moral sense of each concrete situation encountered, and give an appropriate response. A successful moral response is distinguishable from a failed or inappropriate response *in practice,* and the reasons behind the success of that response can always be articulated after the fact. But the difference between moral success and moral failure can rarely, if ever, be deduced in advance from *a priori* principles.

Who, for example, could have deduced *in advance* from universal moral principles that on December 20, 1943, in the midst of the ferocity and desperation of a World War II battle over Bremen, Lt. Franz Stigler, a Luftwaffe ace fighter pilot, should choose to spare the life of Charles Brown, the American pilot of a crippled B-17, and his helpless, injured crew, by escorting them safely out of German airspace?[27] Other morally salient considerations and principles that spoke against such an act of mercy, such as loyalty and duty, might have bound Stigler, and did at many other moments in the war. This unexpected act, the virtue of which is nevertheless easy to explain in hindsight, expressed the total and singular moral sense he was able to make of the complex demands of *that* worldly moment confronting him.

Not all moral acts appear so singular or unexpected in their general form; yet virtue is expressed even in the distinctive *way* one moral person chooses to do things that every moral person must: deliver a painful but necessary truth, express one's deep gratitude, or forgive a petty slight. To fully appreciate this, we need a deeper explanation of the virtue called *practical wisdom*. Practical wisdom is the kind of excellence we find in moral experts, persons whose moral lives are guided by appropriate feeling and intelligence, rather than mindless habit or rote compulsion to follow fixed moral scripts provided by religious, political, or cultural institutions. As noted by the moral philosopher Kongzi (commonly known by his Latinized name, Confucius), the acts of a virtuous person are made noble not simply by their correct content—though that content *will* typically respect important moral conventions—but by the singular and

authentic moral *style* in which that person chooses to express their virtue. It is this aesthetic mode of personally expressing a moral convention, rule, or script that embodies and presents one's virtue. The person who enacts fixed moral rules 'correctly' but rigidly—without style, feeling, thought, or flexibility—is, on this view, a shallow parody of virtue, what the Confucian tradition refers to derisively as the "village honest man."[28]

Even reliably pro-social habits such as following laws and telling the truth fail to guarantee virtue. For while the virtuous person will certainly have such habits, **(p.26)** moral intelligence is required to ensure that these habits do not produce acts that violate the moral sense of the situation—for example, mindless obedience to a lawful but profoundly immoral and indefensible order. Actions issuing from the moral habits of a virtuous person—that is, a person with practical wisdom—are properly attuned to the unique and changing demands of each concrete moral situation. In contrast, a person who is prone to thoughtless and unmodulated action is likely to go wrong as often as not. Thus moral virtue presupposes knowledge or understanding. Yet unlike theoretical knowledge, the kind of knowledge required for moral virtue is not satisfied by a grasp of universal principles, but requires recognition of the relevant and operative practical conditions.

Moral expertise thus entails a kind of knowledge extending well beyond a cognitive grasp of rules and principles to include emotional and social intelligence: keen awareness of the motivations, feelings, beliefs, and desires of others; a sensitivity to the morally salient features of particular situations; and a creative knack for devising appropriate practical responses to those situations, especially where they involve novel or dynamically unstable circumstances. For example, the famous 'doctrine of the mean' embedded in classical virtue theories entails that the morally wise agent has a quasi-perceptual ability to *see* how an emergent moral situation requires a spontaneous and often unprecedented realignment of conventional moral behaviors.[29] Even if it is, as a rule, morally wrong to touch naked strangers without their consent, I had better not hesitate to give CPR to my neighbor's naked, unconscious body—if the situation calls for it, which depends on many factors, such as whether I have adequate training. Nor can the full content of all such tacit and embodied moral knowledge ever be captured in explicit and fixed decision procedures.[30] As Aristotle took pains to note, matters of practical ethics by nature "exhibit much variety and fluctuation," requiring a distinctive kind of reasoning that displays an understanding of changing particulars as well as fixed universals.[31] On Aristotle's view, while it is true that rational principles are part of ethics, it is the virtue of practical wisdom that *establishes* the correct moral principle for a given case, rather than wisdom being defined *by* its correspondence with a prior principle.[32]

Now we are in a position to understand why, if our aim is to learn how to live well with emerging technologies, a virtue ethics approach will generally be more useful than one that relies upon consequentialist or deontological principles. If the practical conditions of ethical life in the 4th century BCE already displayed too much variety and flux for us to rely upon a principle-based ethics, requiring instead an account that articulates the specific virtues of persons who judge wisely and well under dynamic conditions, then the practical uncertainties and cultural instabilities produced by emerging technologies of the 21st century would seem to make the contemporary case for virtue ethics that much stronger.[33]

(p.27) A key phenomenon accelerating the acute technosocial opacity that defines our age is that of *technological convergence*: discrete technologies merging synergistically in ways that greatly magnify their scope and power to alter lives and institutions, while also amplifying the complexity and unpredictability of technosocial change. The technologies most commonly identified as convergent are the fields of applied technoscience referred to as 'NBIC' technologies: nanotechnology, biotechnology, information technology and cognitive science.[34] The specific ethical challenges and opportunities presented by many of these technologies are discussed in Part III of this book. Yet consider just briefly the impact of their convergence on the emerging markets for brain implants, cybernetic prosthetics, replacement organs, lab-grown meat, 'smart' drugs, 'lie-detecting' or 'mind-reading' brain scanners, and artificially intelligent robots—*and* the panoply of new ethical dilemmas already being generated by these innovations. Now ask which practical strategy is more likely to serve humans best in dealing with these unprecedented moral questions: a stronger commitment to adhere strictly to fixed rules and moral principles (whether Kantian or utilitarian)? ~~Or stronger and more widely cultivated habits of moral virtue, guided by excellence in practical and context-adaptive moral reasoning~~? I hope I have given the reader cause to entertain the latter conclusion, which should become increasingly plausible as this book continues.

We can already enhance the plausibility of this claim by noticing an emerging asymmetry between the moral dilemmas presented by today's converging technologies and the topics that still dominate most applied ethics courses and their textbooks. These textbooks have sections devoted to weighing the ethics of abortion, capital punishment, torture, eating meat, and so on. In each case, it seems reasonable to frame the relevant moral question as, "Is *x* (where *x* is an act or practice from the above list) right or wrong?" Of course, these questions may or may not have definitive answers, and to get an answer one may need to specify the conditions under which the act is being considered—for example, whether alternative sources of nutrition are available to the meat eater. Still, such questions make sense, and we can see how applying various moral principles might lead a person to concrete answers. Compare this with the

following question: “Is Twitter right or wrong?” Or: “Are social robots right or wrong?” There is something plainly ill-formed about such questions.

At this point, the reader will likely object that we are asking about the rightness or wrongness of technologies rather than of acts, and that this is the primary source of our confusion. But notice that it does not actually help things to reform our questions in action-terms such as, “Is *tweeting* wrong?” or “Is it wrong to *develop* a social robot?” The asymmetry is of a different nature. It is not even that one set of problems involves technology and another does not; after all, technology **(p.28)** is heavily implicated in modern practices of abortion and capital punishment. ~~The problem is that *emerging* technologies like social networking software, social robotics, global surveillance networks, and biomedical human enhancement are not yet sufficiently developed to be assignable to specific practices with clear consequences for definite stakeholders. They present open developmental *possibilities* for human culture as a whole, rather than fixed options from which to choose.~~ The kind of ~~deliberation they require, then, is entirely different from the kind of deliberation involved in the former set of problems.~~

Of course, the line is not a bright one, as emerging technologies also impact long-standing practices where fixed moral principles retain considerable normative force, such as data privacy and copyright protection. Yet it remains the case that very often, the answers for which questions about emerging technology beg are simply *not* of the ‘yes/no’ or ‘right/wrong’ sort. Instead, they are questions of this sort: ‘How might interacting with social robots help, hurt, or change us?’; ‘What can tweeting do to, or for, our capacities to enjoy and benefit from information and discourse?’; ‘What would count as a ‘better,’ ‘enhanced’ human being?’ It should be clear to the reader by now that these questions invite answers that address the nature of human flourishing, character, and excellence—*precisely the subject matter of virtue ethics.*

That said, philosophical recognition of virtue ethics as an appropriate, even ideal framework for thinking about ethics and technology has emerged only recently.[35] While reflections on technology and the good life are found in Plato, Aristotle, Sir Francis Bacon, J.J. Rousseau, G.W. Hegel, Karl Marx, John Dewey, and José Ortega y Gasset, to name just a few, the ‘philosophy of technology’ came into focus only with the post-World War II writings of thinkers such as Martin Heidegger, Jacques Ellul, Herbert Marcuse, and Lewis Mumford.[36] Whether fairly or not, the latter group’s works are often described as pessimistic, even fatalistic philosophies in which technology is a monolithic force that invariably undermines human freedom, condemning us to narrow lives of consumption, exploitation, and mindless efficiency.[37] Once we surrender to this thesis of ‘technological determinism,’ there would seem to be little left to say

with regard to ethics, a study that presupposes our human freedom to choose a good life.

Yet by the end of the 20th century a second wave of philosophers, while still strongly influenced by the first, had found sufficient reason to hope for a robust ethics of technology. Foremost among them is Hans Jonas, who in the 1970s and 1980s developed the first explicit call for a new technosocial ethics. Though continuing to portray technology as a monolithic "colossus" whose advance threatens to bring about the "obsolescence of man," Jonas claimed that if we can somehow manage to survive the species-level threats to our existence posed by technology, **(p.29)** we will need a new ethics of technology to confront the profound challenges that these emerging innovations pose to the human image, and to our conceptions of the good life.[38] Yet he reminds us that "we need wisdom most when we believe in it least"—in an era when the foundations of all moral theories have been challenged, when ethical relativism is a default stance for many, and when religious principles are no longer widely accepted as starting points for ethics, where are we to start looking for the technosocial wisdom we so desperately need?[39] This is why Jonas famously remarks that philosophy is "sadly unprepared for this, its first cosmic task."[40]

~~Jonas recognized that traditional moral systems and principles would offer little help—primarily because such systems were historically designed to resolve moral dilemmas that confront an *individual*, w~~here the ethically relevant consequences of his or her action unfold within a foreseeable present shared by all other moral stakeholders.[41] ~~On the contrary, as we have already indicated, emerging technologies 1) present new problems of *collective* moral action~~; 2) are ~~likely to impact *future* persons, groups and systems as much or more so than present stakeholders;~~ and 3) have ~~unpredictable consequences that unfold on an open-ended time horizon.~~ The general happiness problem becomes incalculable for the utilitarian, and the Kantian imperative fails to capture the ethical stakes that lie beyond the "abstract compatibility" of my private choice with my rational will.[42] Though Jonas seems more favorably disposed to virtue ethics, speaking often of virtues like wisdom and humility, he claims that the traditional Aristotelian view falls short of what we need. This is for two reasons; first, because Aristotle's notion of what is good for a human life rests on "presumed invariables of man's nature and condition" (such as basic human biology) which, thanks to biomedical technologies like germline engineering, are no longer invariable. Second, Aristotle's account of practical wisdom involves a person's ability to perceive and respond to the morally salient features of his *own* local context—yet as Jonas knew, and as we have said, the choices made by 21st century humans will impact the flourishing of the entire species (and not *only* our species), up to and including future generations of life on this planet.[43] It is clear to Jonas, then, that what is needed is a genuinely *new* ethics.[44]

Unfortunately, Jonas's constructive proposal for a new ethics still remained closely wedded to the pessimistic tone and metaphysical essentialism of first-wave philosophers of technology. Like Heidegger and those who followed in his footsteps, Jonas framed technology as a monolithic threat to the 'essence of Man.'[45] Jonas's proposal limits us to thinking of a new technosocial ethic as a way to head off largely dystopian scenarios, using what Jonas calls the "heuristics of fear."[46] Those who see emerging technologies as presenting not only grave threats but also many constructive opportunities for humanity, and who think that a **(p.30)** blanket fear of technology breeds more problems than it solves, will find Jonas's account deeply inhospitable to their view.[47]

Albert Borgmann is another second-wave philosopher of technology who touches on the question of a new technosocial ethics and the potential contributions of Aristotelian thought to this enterprise. Unlike Jonas, Borgmann's writings on technology do not directly address the problem of finding an appropriate theoretical scaffold upon which to hang a technosocial ethics. Instead, Borgmann's reflections on modern technology and the good life merge a broader interest in virtue and practical wisdom with a concern for human freedom in the face of technological compulsion.[48] Borgmann takes the 'pursuit of excellence'—understood as the cultivation of social, physical, and intellectual capacities or virtues—as a revealing measure of our connection to the good life.

Yet Borgmann retains a largely, though not entirely, pessimistic view of the relation between human morality and emerging technologies; by his account, the dominant thrust of modern technological life is to *subvert* the cultivation of moral excellence in favor of a life of mindless consumption—what he calls the 'device paradigm.'[49] He notes that we are not wholly powerless to resist this paradigm—nor must we abandon technology in order to do so. Instead, his proposal for effective reform of technological society asks us to recognize that the ultimate end for humans is a life of *engagement,* facilitated by any of a great number of practices, such as running or gourmet cooking, which not only cultivate personal excellences but can be used to honor "focal things" that center family and community life and give it meaning. Using this definition of the good life, which he takes to be Aristotelian in inspiration, Borgmann calls us to reconfigure our technologies so that they facilitate rather than impede a life of engagement.

While the general concept of an engaged life sounds promising as a candidate for 'a life lived well,' Borgmann's account is ambiguous and incomplete. How are we to determine what counts as facilitating engagement and what counts as its subversion? What *specific* excellences are most worth developing in focal practices? Are some forms of personal excellence, or some focal things and practices, more important to protect from technological subversion than others? More importantly for our purposes, how can a narrow focus on reform help us with those emerging technologies whose impact on our practices is not yet

manifest? Furthermore, Borgmann's proposal for reform falls short of resolving the problems of collective moral action with which emerging technologies confront us. He does address the need for public discourse about the good life, as a means of politically negotiating and enacting meaningful technosocial reforms.[50] But within his account, such discourse seems to aim primarily at preserving opportunities for the *private* pursuit of engaged living, rather than the collective and long-term flourishing of the global human family. And while he notes that **(p.31)** technosocial reform presupposes "shared and public" affirmations of certain types of civic behavior needed to facilitate public discourse, he is vague about the content of such affirmations, mentioning only briefly the value of social expectations of "politeness, sociability, or civility."[51] We need, at the very least, a more complete and explicit account of the specific virtues that will facilitate improved public discourse about technology and the good life. Ideally, we should also form an idea of how to encourage the global cultivation of these virtues, as a precondition for the emergence of collective, rather than strictly personal and private, technosocial wisdom.

While the most influential 20th century philosophers of technology each had a unique way of conceptualizing the ethical issues concerning technology, they *all* tended to describe an ethics of technology as a response to a singular problem or phenomenon, whether conceived as the human 'enframing' of reality as a resource to be manipulated (Martin Heidegger); the oppressive mandate of technological efficiency (Jacques Ellul); the spread of 'one-dimensional thought' enslaved to technopolitical interests (Herbert Marcuse); the relentless technological cycle of manufactured needs and desires (Jonas); or the suffocating rule of the 'device paradigm'(Borgmann). Notice also that each presents humans as somewhat passive subjects of the singular technological 'problem,' who must somehow reclaim their freedom with respect to technology. In contrast, the early 21st century has seen a fundamental shift in how philosophers approach the ethics of technology. A new generation of thinkers has consciously moved away from essentialist conceptions of technology *versus* humanity, and toward the analysis of individual technolog*ies* as features of specific human contexts; away from globalizing characterizations of the 'problem with technology' to more neutral and localized descriptions of a diverse multitude of ethical issues raised by particular technologies and their uses; and finally, away from metaphysical concerns about human freedom and essence and toward more empirically-grounded accounts of human-technology relations.[52]

This shift, commonly referred to as "the empirical turn," has done much to revitalize the philosophy of technology and to expand the scope of inquiry into technology's ethical implications. Articles in scholarly journals such as *Ethics and Information Technology* now employ a variety of empirical and philosophical approaches to explore a wide range of localized technosocial phenomena, without adhering to any one metanarrative about technology and its relation to the good life. Largely thanks to the critical force of the empirical turn, the study

of ethics and technology has at last developed a range of theoretical perspectives and commitments sufficiently diverse to constitute a genuinely philosophical *field*. Yet this turn, as productive and welcome as it has been, has its price. The idea that contemporary technosocial life might require a new ethical framework **(p.32)** has not been wholly abandoned; but it is increasingly challenged by the sheer diversity and dynamics of the technosocial phenomena being uncovered.[53] This difficulty is further magnified by the lingering critical reaction against totalizing, essentialist narratives, with which the call for a new ethics of technology remains associated. Yet unless we are willing to confront the broader significance of contemporary technosocial relations, the ethics of technology risks being reduced to an endless catalogue of seemingly unrelated phenomena.[54]

Once again, this dilemma reinforces the viability of virtue ethics as a framework for a new ethics of technology. For as we have noted, it is the only theoretical structure designed for maximum flexibility to accommodate the diverse and changing particulars of ethical life. On many points we must concede to the critics of traditional ethical theories, including Aristotelian virtue ethics, yet this does not exclude virtue ethics as a suitable framework. Rather, our new ethical horizon of collective human action in the face of growing technosocial opacity invites us to consider the possibility of the global cultivation of virtues newly adapted to our present need. Aristotelian, Confucian, and Buddhist virtue ethics each articulated qualities of individuals embodying moral wisdom in their own times, regions, or cultures. Does it not then follow that a contemporary virtue ethic could describe characteristic qualities of those who live wisely and well in the globally networked environment of the 21st century? Granted, this cohort is of a size and diversity unprecedented in the history of moral communities. Yet it is a group that shares a need to make collective and morally wise technosocial decisions, even if attuned to more open-ended and culturally complex horizons than the sages of the classical world could have envisioned. But perhaps the reader thinks it implausible that such persons or qualities exist. *Are* there habits of character ideally suited to our new technosocial circumstances?

Certainly it seems there are people who are especially *ill*-equipped to flourish in such circumstances. Consider the person who: 1) is characteristically incapable of empathizing with or giving moral consideration to others beyond their local circle; 2) is unable to communicate or deliberate well with others, especially with those holding different metaphysical and value commitments; 3) reasons unusually poorly in circumstances involving great uncertainty and risk; and 4) has concerns for the good life that rarely if ever extend beyond maximizing gains in the present and immediately foreseeable future. If we can recognize such a character profile in people we know (and I think most readers will), then it seems plausible to say that a person who fits this description would, in the context of any new *technosocial* ethics, be describable as generally vicious.[55] If we can identify technosocial vice, then it seems entirely plausible that with some

effort we can identify and further articulate the nature of technosocial *virtue*. This is the effort that culminates in chapter 6 of this book.

(p.33) Virtue ethics is a uniquely attractive candidate for framing many of the broader normative implications of emerging technologies in a way that can motivate constructive proposals for improving technosocial systems and human participation in them. It also allows us to avoid the perils of essentialism, overgeneralization, and abstraction that weakened first- and second-wave attempts to frame an ethics of technology. ~~Virtue ethics is ideally suited for adaptation to the open-ended and varied encounters with particular technologies that will shape the human condition in this and coming centuries~~. Virtue ethical traditions privilege the spontaneity and flexibility of practical wisdom over rigid adherence to fixed rules of conduct—a great advantage for those confronting complex, novel, and constantly evolving moral challenges such as those generated by the disruptive effects of new technologies. Moreover, a turn to virtue ethics doesn't mean that we need to abandon the fruits of the 'empirical turn' in philosophy of technology; in fact, the empirical turn can *feed* practical wisdom by opening up ever more avenues for gathering vital contextual information about new and emerging technosocial realities.

~~Furthermore, as we will explore in chapter 2, virtue ethics treats persons not as atomistic individuals confronting narrowly circumscribed choices, but as beings whose actions are always informed by a particular social context of concrete roles, relationships, and responsibilities to others. This approach allows us to expand traditional understandings of the ways in which our moral choices and obligations bind and connect us to one another, as the networks of relationships upon which we depend for our personal and collective flourishing continue to grow in scale and complexity.~~ Finally, while visions of the good life and of right action vary considerably across virtue traditions, we will see in Part II that the basic structure and tools of moral self-cultivation they employ manifest a great deal of cross-cultural similarity and conceptual overlap. A technosocial virtue ethic thus has the potential to resonate widely with a culturally diverse and global network of persons confronting the need for collective moral wisdom in dealing with the uncertainties, risks, and opportunities generated by new technologies.

Similar considerations have already guided virtue theory's adoption as a promising model for other areas of applied ethics, including environmental ethics, bioethics, media ethics, and business ethics.[56] It is time to add technosocial ethics to this growing list. Yet to consider our project here as simply outlining one more region of applied virtue ethics would be too modest. As we have seen, emerging science and technology now condition virtually *every* aspect of life. Every area of applied ethics, from bioethics to media ethics to business ethics to environmental ethics, now operates within a technosocial context of global scope. This context reaches with ever more intimacy and

pervasiveness into our homes, cars, schools, **(p.34)** cafes, sports fields, parks, and libraries. Arguably, a technosocial virtue ethic is an applied ethic of contemporary life *writ large*.

Yet before such an ethic can be developed and used, we must establish the theoretical foundations upon which it will stand. This foundation will become clear in Part II, where we see how core concepts and practices of classical virtue ethics can be remolded into a powerful framework for living well in the 21st century and beyond. Yet even before this, we must verify that the project of framing a *global technosocial virtue ethic* is philosophically coherent and practically sound. To do this, it is important to establish that the framework we aim to build can withstand the significant tensions that arise from its historically and culturally diverse origins. This task is our focus in chapter 2.

Notes:

(1.) For an excellent analysis of the historical trajectory of this concept in classical ethical discourse, see Annas (1993). I have chosen to bypass the debate about whether classical ethics engages the specifically *moral* domain of modern ethics (see Anscombe 1958 and Williams 1985). However, I share Annas' view (1993, 120–131) that it does.

(2.) See Boodberg (1953).

(3.) Keown (1992), 49.

(4.) Aristotle (1984), *Nicomachean Ethics* (hereafter *NE*), 1103a20-35. This, of course, allows us to distinguish human *virtues of character* from the type of virtue described earlier as possessed by an excellent knife. Furthermore, as noted by Foot (1978), virtue of character entails an agent's habitual *willing* of the good in a sense that involves moral discernment and is not narrowly instrumental. Hence physical health is not a virtue of character even though it can to a significant degree be deliberately cultivated as a rationally chosen state of human excellence.

(5.) See Aristotle, *NE* 1103a15-35; 1106b15-25; 1144b25. The integration of cognitive, affective, and desiderative states in virtuous dispositions is discussed extensively by McDowell (1998).

(6.) See Aristotle, *NE* Book VI for his account of practical wisdom and its role in ethics.

(7.) See McDowell (1998), 39. Complete or 'full' virtue is an aspirational ideal rather than a minimum standard for ethical behavior; thus we may properly refer to *degrees* of virtue, and to its gradual *cultivation* rather than its achievement.

(8.) *NE* 1106b20.

(9.) There are ongoing debates among ethicists about the extent to which the virtues can be successfully integrated; how attainable virtue is for the ordinary person; to what extent the cultivation of virtue requires external goods or luck; whether and under what circumstances a person's virtue can coexist with vice; and how to distinguish clearly *moral* virtues such as justice from apparently nonmoral virtues such as cleverness, creativity, and perseverance. For an overview of these debates, see Crisp (1996); Crisp and Slote (1997); French et al. (1988); and Statman (1997). Some of these debates will be directly engaged in this book, while others fall outside the scope of our inquiry. Despite the open questions, most virtue ethicists agree upon the *general* conceptual profile of the term 'virtue' presented above.

(10.) Cafaro (1997) rebuts the charge that virtue ethics is narrowly agent-focused. Regarding the conceptual linkage between virtue and happiness/flourishing, some virtue theorists deny this *eudaimonist* implication—for example, Michael Slote (1992). Such theorists explicitly acknowledge, however, that in doing so they depart from a core principle of the classical virtue ethical tradition.

(11.) Aristotle, *NE* 1098b30. Controversies over the translation of *eudaimonia* as 'happiness' have resulted in the term 'human flourishing' being preferred by some; I will use both terms depending on context. On the distinct advantages of each, see Hursthouse (1999), 9–10.

(12.) Insufficient because, as Aristotle notes at *NE* 1101a, humans are vulnerable to devastating misfortunes from which not even great virtue can provide complete protection, although virtuous persons will bear such misfortunes better and preserve more of their happiness than will the vicious.

(13.) Nussbaum (1999) rejects this standard description of virtue ethics as a distinct "third approach" in ethics; while she is right to note the rich diversity of contemporary views that fall under this label, her assertion that the use of rule or decision principles in virtue ethics is indistinguishable from that of other approaches is unconvincing.

(14.) See Louden (1984) and Schneewind (1990). The canonical form of the latter objection appears in Henry Sidgwick's influential *The Methods of Ethics* (1884), in which he claims that at best, Aristotle's ethics "only indicates the *whereabouts* of Virtue. It does not give us a method for finding it" (375).

(15.) For a careful survey of the first wave of philosophical responses to Anscombe's call, see Pence (1984); also French et al. (1988).

(16.) MacIntyre (1984); McDowell (1998); Hursthouse (1999); and Annas (2011) are examples of prominent neo-Aristotelian accounts. Baier (1985); Becker (1998); and Swanton (2003) offer accounts of the second sort, while Slote (1992) and Driver (2001) are among the best-known adherents of the third strategy.

(17.) Hursthouse (1999) provides an overview of and response to such criticisms; see Harman (2000) and Doris (2002) for the situationist critique of the empirical validity of character traits; excellent responses to the situationist challenge are made by Kupperman (2001); Kamtekar (2004); and Annas (2005).

(18.) See Miller (2014) for a helpful discussion of this point.

(19.) Badhwar (2014a).

(20.) For a review of contemporary developments in Confucian virtue ethics, see Tiwald (2010). For examples of these developments, see Yearley (1990); Ivanhoe (2002a); Van Norden (2007); Yu (2007); and Angle (2009). For examples of contemporary work on Buddhist virtue ethics, see Keown (1992); Whitehill (2000); Harvey (2000); Cooper and James (2005); and Bommarito (2014).

(21.) See Tiwald (2010), 57–58 on the opportunities presented by comparative virtue ethics.

(22.) Wong (2013).

(23.) See Wallach and Allen (2009); Lin, Abney, and Bekey (2012).

(24.) See Annas (1993) and Hursthouse (1999).

(25.) Ibid.

(26.) Such claims are made by O’Neill (1990) and Sherman (1997), and applied to computer ethics by Grodzinsky (1999); yet ineliminable differences remain that I will argue constrain Kantian deontology’s application to emerging technological practices.

(27.) The story is recounted in Makos (2012).

(28.) Yearley (2002), 256.

(29.) See *NE* Book II Chapters 8–9, see also chapter 5, section 6 in this volume.

(30.) Nussbaum (1990), 73–74.

(31.) *NE* 1094b16.

(32.) See *NE* Book VI, Chapter 13, especially 1144b20-30. See also MacIntyre (1984), 150–152. This commitment to the dependent status of rational principles of ethics distinguishes Aristotle’s view from those who grant the virtues an

essential place in ethics, but regard their practical content as derivable from fixed ethical principles; see for example O'Neill (1996).

(33.) Indeed, in their book *The Techno-Human Condition*, Braden Allenby and Daniel Sarewitz (2011) argue that consequentialist and deontological ethics are crippled by the unprecedented and irremediable ignorance of the future that marks this condition—what I have termed *acute technosocial opacity*. Despite their correct diagnosis, Allenby and Sarewitz fail to explicitly acknowledge that the solution they call for is, in fact, not a "reinvented Enlightenment" ethic (187) but a technosocial *virtue* ethic heavily indebted to classical conceptions of practical wisdom.

(34.) See Bainbridge and Roco (2006), also Khushf (2007), and Nordmann (2004).

(35.) See Ess (2010a); Vallor (2010; 2012); Volkman (2010); Wong (2012); and Couldry (2013a and 2013b).

(36.) See anthologies by Scharff and Dusek (2003); Kaplan (2004); and Hanks (2010) for an overview. See also Mitcham (1994).

(37.) For critical perspectives on first-wave philosophy of technology, and the thesis of technological determinism in particular, see Feenberg (1999); Achterhuis (2001); and Verbeek (2005).

(38.) Jonas (1979), 28.

(39.) Jonas (1984), 21.

(40.) Jonas (1979), 28.

(41.) Jonas (1984).

(42.) Ibid., 12.

(43.) Ibid., 6.

(44.) Jonas's account is not beyond criticism—for example, he vastly underestimates the extent to which Aristotle saw virtue as a matter of political (and hence collective) concern rather than private interest, and the extent to which management of novel and unpredictable circumstances is an essential component of *phronēsis*. Still Jonas is correct that Aristotle's whole account *as given* is not adequate to our contemporary situation.

(45.) Jonas (1984), chapter 1.

(46.) Ibid., 26.

(47.) Ibid., 203.

(48.) Borgmann (1984).

(49.) Ibid., especially chapters 9 and 18.

(50.) Ibid., chapter 25.

(51.) Ibid., 233.

(52.) See Feenberg (1999); Achterhuis (2001); Ihde (2004); and Verbeek (2005).

(53.) See Brey (2004); Tavani (2005); and Moor (2008). Luciano Floridi's *The Ethics of Information* (2013) is perhaps the best-known candidate for a new technosocial ethic, although as a principle-based and universalist framework it is vulnerable to many of the same objections as other deontological systems, as detailed by Volkman (2010). For a more enthusiastic take on the relationship between information ethics and an Aristotelian ethic of flourishing, see Bynum (2006).

(54.) See the debate between Ihde (2010) and Scharff (2012) about whether philosophy of technology needs strong normativity.

(55.) Such a person would *also* probably be recognized as vicious in other historical and cultural settings; hence a new framework for technosocial virtues will not be wholly discontinuous with traditional conceptions of virtue, differing mainly in its prioritization and interpretation of the virtues. This is also why such a framework can resonate even with those who remain culturally wedded to, say, traditional Confucian or Buddhist values.

(56.) See Oakley and Cocking (2001); Sandler and Cafaro (2005); Cooper and James (2005); Walker and Ivanhoe (2007); and Couldry (2013b).