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VIRTUES OF THE EXTENDED MIND Technological Augmentation and Human Practice³⁶

In the course of the development of virtue ethics, significant effort has been devoted to recognise the influence of social and cultural factors on the capabilities and habits of agents. It has not been accompanied by a similar acknowledgment of the role of technological setting, however, even though it has attained significant attention in contemporary philosophy. Yet, an adequate practice-focused analysis requires acknowledging that, at least in some cases, the relation of the agent to an artefact is defining social and moral identity of the agents as well as the possibilities of their agency and meaning of their actions.

In what follows, I shall address the Aristotelian virtue-theoretical stance on technology and map the possible ways of further analysis. In Section 1, I discuss the Aristotelian account of virtue with reference to certain recent developments in philosophy of mind. In Section 2, I turn to technology as a growing factor shaping the realities of agency as seen from the virtue-theoretical perspective. In Section 3, I argue for extending the bounds of Neo-Aristotelian analysis by incorporating elements of the Extended Mind Hypothesis (EM). This leads to the thesis that to grasp adequately the current demands of moral life, the Neo-Aristotelian framework needs to include not only interpersonal and institutional forms of organisation, but also some broader cognitive and moral ecologies furnished with material (and digital) objects, which shape the form of human reasoning and acting.

1. *Virtue and the Body*

According to Aristotle, to act virtuously, the agent needs to have a certain knowledge, choose to act in a certain way, and their actions must

36 I thank Omowumi Ogunyemi for her comments on the earlier draft of this chapter.



‘proceed from a firm and unchangeable character’.³⁷ Thus, these three characteristics—the cognitive, the emotional, and the characterological—are intertwined. For to act morally is, firstly, to recognise the kind of situation the agent is in, that is, to acknowledge in which virtue’s field they find themselves.³⁸ This sets the range of possible reactions to a stimulus, as well as the range of goods which might be obtained thanks to virtuous acting in this situation. Secondly, to make this kind of acting possible, certain level of self-control needs to be available to the agent. For without the possibility of stepping aside their immediate reaction, they would be doomed to act with limited autonomy and on the basis of routine, limited behavioural patterns which might be unsuitable to changing environment. This is what makes the virtue of temperance the key virtue, which not only enables one to control their emotional reactions, but also to deal with them in a way which makes the agent satisfied with just choices and deeds.³⁹ Temperance is thus the basis for justice, which, according to Aristotle, equals with moral excellence, as it enables the agent to judge both themselves and the others by a common measure.⁴⁰ Seen along such lines, self-control depends on cognitive mechanism which enables the agent to recognise possibilities of a certain situation. This furnishes the Aristotelian concept of virtue with two important characteristics. On the one hand, it is not directly concerned with individual acts of choosing, but rather with the features of the agents extended in time, thus the agent can express their virtuousness only in an individual act, the relationship between these two is not reflexive, and an individual act does not necessarily prove their virtuousness. What follows is the second feature of the concept of virtue: It might be possessed only by an individual of a certain identity. For just as a general desire might be individualised into motivating emotion by being focused on an object, what kind of human being might the agent become relays on the way in which they shape their character. Hence, whatever influences the development of the agent’s character and shapes the environment in which the agent acts, is of moral importance.

Virtue is an agent-centred concept, as the mean way between two flanking vices, which consists in the excellence in navigating through possible

37 Aristotle, *Nicomachean Ethics* II 4 1105a32-34, trans. by William D. Ross, in *The Basic Works of Aristotle*, ed. by Richard McKeon (New York: Modern Library, 2001).

38 Robert Audi, ‘Acting From Virtue’, *Mind*, 104 (1995), pp. 449-471.

39 Alasdair MacIntyre, ‘“Sōphrosunē”: How a Virtue Can Become Socially Disruptive’, *Midwest Studies in Philosophy*, 13 (1988), p. 5.

40 Aristotle, *Nicomachean Ethics* V 1 1129b.

actions in accordance with the rational choice concerning the good and the best, is relative to the agent⁴¹ and deals with the regulation of experiences⁴² of emotion accompanying the agent's actions. The agent, thus, cannot act morally (virtuously) if they lack some self-knowledge, which is nested in certain network of social roles and practices, obligations, and norms as well as desires, recognised goods, and emotional relations, but also the bodily consciousness of spatial location, integrity, and enactive setting. As Daniel C. Russell points out, this kind of embeddedness consists of three elements: the body schema, which provides the basic form of the agent's place in the physical order; the body image — the agent's sense of their presence in the world and practical possibilities it offers; and the crucial importance of individual recognition of the possibilities of action in the physical world for the sense of identity, of what part of the world the agent is and what can they do with their life.⁴³

Virtue, usually discussed with reference to its emotional and cognitive aspects, is a disposition of a self defined by its potentialities, but also by the very fact of being part of and situated in the physical world with all its resources and distractors. As Russell highlights, it is the physicality of human beings, not only their intellectual capacity, that frames the set of basic goods acting for the sake of which makes development of virtues possible.⁴⁴ This brings to the discussion both the question of disability and, what is more important from the point of view developed here, resources limited by the very fact that the agent is a physical being, first of all, the resources of time and attention. These are key resources of moral character, conscious distribution of which is the way in which the agent controls their own acting and gets involved with their technological and social environments.

This, along with the broadly recognised importance of social influence on agent's development, highlights the relational nature of virtues. As virtue is not the end, but the way in which a human being becomes an independent agent aiming at their final good, the relationship between the agent's state of mind and the objects towards which they are intentionally directed is constitutive of their way of living. As for the former, it is worth noting that the main focus in virtue ethics has typically been on defining kinds of situations and accompanying emotions rather than with kinds of

41 Aristotle, *Nicomachean Ethics* II 6 1107a1.

42 Aristotle, *Nicomachean Ethics* II 3 1104b13-15.

43 Daniel C. Russell, *Happiness for Humans* (Oxford: Oxford University Press, 2012), p. 207-213.

44 *Ibid.*, p. 213.

objects to which the virtue would be an appropriate reaction. Only recently was the role played by ‘evocative objects’ recognised.⁴⁵

2. Technology and Technomoral Virtues

By focusing on the importance of the agent’s relationship with his environment and fellow beings, the virtue-ethical framework seems well prepared to address the moral issues raised by the growing pressure of technology. It is important to notice, however, that technicisation is not a single, homogenous process and its heterogeneity requires to address both the technological phenomena themselves and the changes they introduce into moral lives of human beings. For there are two, to a degree independent, trends in technicisation and its moral outcomes. On the one hand, the rise of the importance of technical complexity of tools and *modi operandi* has been for centuries closely tied to a handful of highly professionalised and elite practices (construction, military, medicine, science). This made the growth of the importance of technology ineffective for everyday lives of even those who dealt with it on a daily basis as professionals. Furthermore, the philosophical debate on technicisation focused on capital and power accumulation within some of these professionalised practices, and it was only secondarily aimed at addressing the tensions emerging from the plain persons’ involvement not only in various social standards, but also in different technological regimes. On the other hand, technologisation of everyday life has been a relatively new phenomenon, which revolutionised the experiences and routines of a tremendous amount of people in the last generations, rapidly changing their lifeworlds, breaking the intergenerational relations, and undermining long-established social institutions.

Thus, two similarly disconnected areas call for scrutiny. Firstly, a detailed examination of the changes emerging from the technology-induced evolution of key practices offers a range of issues of moral importance that define the ethical framework of today’s life. The humane core of work and its character-developing significance are being discussed not only in terms of possible decline of the labour demand, but also, and primarily, of deskilling and submission of human craft and skills to the needs and way of acting of the machine.⁴⁶

45 Sherry Turkle, *Evocative Objects. Things We Think With* (Cambridge, Mass., London: MIT Press, 2007).

46 Angus Robson, ‘Intelligent Machines, Care Work and the Nature of Practical Reasoning’, *Nursing Ethics*, 26 (2019), pp. 1906–1916; Shannon Vallor, ‘Moral

Secondly, a general phronetic analysis becomes needed to address both the agent's participation in incommensurable technological realms, organised by different physical and temporal regimes and complex moral topographies, as well as their dependency on technology in developing their potentialities and moral excellences in organising their lifeworlds. Here, again, two strategies are shaping philosophical reflections. One is interventional and consists in setting limits and agendas for existing and future technologies,⁴⁷ the other is hermeneutical and traces the pervasive influence and long-lasting coevolution of tools and humans, and followingly it accustoms members of the technological society to inevitability of technology.⁴⁸

From the virtue-ethical perspective, three questions demand answering here. First, what good technology is or how may it benefit to obtaining human good? Second, what does the virtuous agency in a technology-pervaded environment consist in? The third question—one of the possible answers to which I shall outline in the last section—is theory-focused: Does the pervasiveness of technology demand the virtue-ethical analysis to be reshaped?

The answers to the first question typically consist of listing a number of areas in which technology broadens and strengthens human agency: information gathering and processing, controlling daily routine, or keeping in contact with distant significant others. However, a range of important doubts emerge. As research shows, some of the new technologies, such as social media platforms, might be addictive, partially because they are built to this effect⁴⁹ and their effect on sustaining face-to-face human relations remains unclear,⁵⁰ and the long-established forms of human acting and ~~economy of attention~~ are undermined, so that the very basic capabilities

Deskilling and Upskilling in a New Machine Age: Reflections on the Ambiguous Future of Character', *Philosophy of Technology*, 28 (2015), pp. 107–124.

47 Luciano Floridi, Josh Cowls, Thomas C. King, and Mariarosaria Tadde, 'How to Design AI for Social Good: Seven Essential Factors', *Science and Engineering Ethics*, 26 (2020), pp. 1771–1796.

48 Shannon Vallor, *Technology and the Virtues. A Philosophical Guide to a Future Worth Wanting* (New York: Oxford University Press, 2016).

49 Vikram R. Bhargava, Manuel Velasquez, 'Ethics of the Attention Economy: The Problem of Social Media Addiction', *Business Ethics Quarterly*, 31 (2021), pp. 321–359.

50 Shannon Vallor, 'Flourishing on Facebook: Virtue Friendship & New Social Media', *Ethics and Information Technology*, 14 (2012), pp. 185–199.

of reflective self-control become endangered;⁵¹ all these give rise to questions of the future of agency which might become to an important degree deprived of skilled performance, and, followingly, of the kind of environment in which human relations could become obsolete,⁵² and hence to the necessity of including in ethical analysis the artificial substitutes of relations and partners.⁵³

This makes the development of a virtue perspective in the ethics of technology primarily interventional and focused on expressing the new situations and the needs of the agent in a moral framework that comes from a very different technological reality. The key benefit of this strategy is that it makes the language of virtues part of the intellectual repertoire of dealing with raising concerns of technology. However, what seems to be neglected—yet crucial part of an attempt to bringing virtue ethics into the ethics of technology—is not the way in which the old concepts could be *adjusted* to the changing environment, but rather that such an analysis should start with addressing the agent dependent on technological extensions in their acting as virtuous. For it is no longer a matter of analysing a virtuous-agent-plus-their-changing-environment in the way it could be done with the agent living in different social setting, but rather of analysing a technologically-transformed-virtuous-agent.

3. Lessons from the Extended Mind Hypothesis

Addressing such an agent's acting may focus on two issues. The first is to what extent the agent is reflective in choosing technology to supplement their agency. Historically this has not been given the attention it requires. Using a knife, a bow, or a microscope broadens human agency, but does not inhibit the development of the appropriate ability, while, recalling Clark's and Chalmers' example, entrusting the essential elements of one's memory to external storage results in less emphasis on learning techniques of memorisation. However, this might be balanced by developing new skills, it may also make the new complex agency vulnerable to distortions of the non-human part of the assemblage.

51 Éilish Dukea, Christian Montag, 'Smartphone Addiction, Daily Interruptions and Self-Reported Productivity', *Addictive Behaviors Reports*, 6 (2017), pp. 90-95.

52 John Danaher, 'Technological Change and Human Obsolescence. An Axiological Analysis', *Techné: Research in Philosophy and Technology*, forthcoming.

53 Anco Peeters, Pim Haselager, 'Designing Virtuous Sex Robots', *International Journal of Social Robotics*, 13 (2021), pp. 55-66.

Hence, secondly, the updated virtue-ethical way of addressing human agency should take into account the unavoidable heterogeneity of human acting, as their agency is a matter of both individual decisions, desires, and social relations, and of relations with certain key objects. Therefore, just as there cannot be a flourishing agent without a well-rounded community, its flourishing can also be restricted by the deficiencies of the agent's technological environment, ranging from the quality of information they work with to the affordances that technological supplementation brings, and the possibilities of their integration into a coherent moral unit that allows them to flourish.

Aristotle's three conditions of virtuous agency need thus to be updated as both the knowledge on the basis on which the agents act and emotions which are the fabric of their choice, may be, to an important degree, independent of the human part of the human-technological assemblage. For aside of the extended memory, the growing extent to which contemporary agents depend on technological extensions in their everyday life—from keeping up with the medical requirement and emotional control, to the algorithms supporting partner-choosing—calls for recognition. The language and conceptual resources that could be useful here are those of EM.

According to EM, some objects can play active role in cognitive processes.⁵⁴ To be so, the connection of human agent and the external part needs to be reverse, so that they act as a single unit. This reaches beyond the access to resources, for to act as an extended cognitive system, its parts need to be coupled causally, so that all of them are active and the lack of one of them would turn the entire system ineffective. What is of key importance here is the functional efficiency of the assemblage and its causal connection with other cognitive processes so that it works as a part of a system setting individual cognitive capacities, not its localisation, highlighting the importance of which may be misleading.⁵⁵ EM requires this kind of system to be portable (as the brain and body are) and reliable, so that information obtained in this way would be treated as 'naturally' obtained and would not be put in question; it should also be easily accessible.⁵⁶

54 Andy Clark, David Chalmers, 'The Extended Mind', *Analysis*, 58 (1998), pp. 7-19.

55 Richard Menary, 'Introduction: The Extended Mind in Focus', in *The Extended Mind*, ed. by Richard Menary (Cambridge, Mass., London: The MIT Press, 2010), p. 5.

56 Andy Clark, 'Memento's Revenge: The Extended Mind, Extended', in *The Extended Mind*, ed. by Richard Menary (Cambridge, Mass., London: The MIT Press, 2010), p. 46.

Notice that in discussing the applicability of EM to ethics, the moral status of technological extensions might be, at least to a point, omitted. For what is of pivotal significance for seeing virtues as extended is not whether the extensions themselves have moral intentions or dispositions, but rather whether they may become part of a system (coupling) which could be described as virtuous, or whether they constitutively enable a virtuous act. The kind of agency that could be ascribed to them, then, consists not in the capacity to act independently of the human part of the coupling, but rather in being effective in changing the agent's attitude towards a certain situation or task.

In the classic view, what defines the scope of virtue is the kind of situation in which the agent is either habituated to behave in a certain way, or in their acting they aim at certain good. Thus, in some cases, to express virtue is to justly react to a situation defined by a relation to a group of people or objects which set the moral demand of the situation by finding the mean way, in the sense pointed out above, between two flanking faults and thus building up the prolonged disposition of dealing with this type of situation (people, objects) in a certain way. This may happen, to borrow Malafouris' expression, 'through, with, and about things, bodies, and others'⁵⁷ in at least two ways. Firstly, for some of the virtues, it is impossible to develop and express them except for a close relation with a particular kind of object. Both in every-day life—with long-established regimes of clocks, watches, and calendars being the first step to, and cultural base for the growing demand for emotions- and relations-controlling apps—and in distinctive social practices, what we do and how we behave is organised by the items cooperating with us in goal-achieving, with the nudges from the items to which the agent outsources their self-control and by assimilating them into daily routine. Hence, for instance, a patient might outsource their dietary decisions to a glucometer.⁵⁸ or their medication routine to an app in their smartphone, which amounts to outsourcing part of their temperance and act according to the temperate impulses from the extended self. Secondly, emotions are experienced, and thus might become subjected to refinement by the virtue, as reactions to the external world, and as such they are not only reactions to the environment, but also ways in which the agent

57 Lambros Malafouris, *How Things Shape the Mind. A Theory of Material Engagement* (Cambridge, Mass.: London: The MIT Press, 2013), p. 77.

58 Joseph Cevetello, 'The Elite Glucometer', in Turkle, *Evocative Objects*, pp. 62-69.

integrates with a community and shares their experiences and agency with others.⁵⁹

These amount to a moral ecology. In fact, every practice, seen along MacIntyrean lines, should be taken as both cognitive and moral niche,⁶⁰ and as local ecology consisting of human agents, social relations and institutions, as well as tools, tokens, and infrastructure. As practices are 'socially established', that is, they answer certain social needs and bring certain types of goods, putting them in the centre of moral reasoning makes the entire view activity-centred,⁶¹ for what is the focal point of moral acting is the good being achieved so that human potentialities can be actualised and moral character developed. The focus on well-rounded community as a prerequisite of virtuous character of developing agents and on key goods being common goods is thus only a narrowing of a much broader problem of moral surrounding, which material and technical components' activity call for scrutiny.

This might be doubtful, as Aristotelian virtue ethics is paradigmatically agent-centred, and virtue might only be ascribed to a developing sentient and intellectual being. Hence, an object might be a tool, but it does not take part in a virtuous activity as a (partial) agent. Two arguments could be pointed out against such a view. Firstly, the discussed kind of agency is not that of autonomous, self-sufficient actors, but that of complex, multilevel ones. The human agent is in fact a node in a vast network of their desires, potentialities, and dispositions, as well as significant others and goods they share with and collectively aims at with, institutions, tools, resources, and infrastructure. To highlight the active role of this extensions of their natural activity is not to deny its human character. It is rather to stress the complexity of moral ecology.

Secondly, this view does contain an important normative clause of agent's acknowledgment of their dependency on technology. The action-centredness is not governed by a set of rules, but rather it is organised around human agents who actively decide on the range of extensions involved. The point to which their decisions are conscious depends both on their own abilities of independent reasoning and acting and on the environment they inhabit. Hence, the structure of such an ecology may be either a matter of

59 Jan Slaby, 'Emotions and the Extended Mind', in *Collective Emotions: Perspectives from Psychology, Philosophy, and Sociology*, ed. by Christian von Scheve, Mikko Salmela (Oxford: Oxford University Press, 2014), pp. 32-46.

60 Piotr Machura, 'Practices, Virtues, and Embedded Moral Cognition', *Filozofia*, 74 (2019), pp. 194-208.

61 Malafouris, *How Things Shape the Mind*, p. 149.

social and economic forces mediated by life-style discourse, or the effect of sound and independent reasoning. Here, virtues, and especially the virtue of practical wisdom, are keys to keeping this ecology human.

4. Conclusion

Since its renewal, the Neo-Aristotelian virtue ethics has won its position as a reliable ethical stance with direct implications for professional and organisational practice. However, rapid growth of technicisation of daily life did not get adequate response. With the limited resources provided by its classical form, virtue ethics needs to look for new ways of addressing those issues. EM offers conceptual tools which enable to support the language of technomoral virtues with some more substantial vision of the virtuous agent.