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Potentiality in Aristotle's Psychology and Ethics

Frans A. J. de Haas

The previous chapters have dealt in considerable detail with Aristotle's notion of potentiality in the context of his metaphysics, and his physics and biology, respectively. Examples from the themes of *De anima* have already figured prominently in previous chapters, which itself suggests that psychological observations may have served as a source of inspiration for the notion in the first place. Early occurrences of *dunamis* in the Aristotelian corpus, e.g. in the *Protrepticus* and in the *Eudemian Ethics*, indeed show that in Aristotle's mind the notion of potentiality is closely linked to ethics, and thereby to the road of the fulfillment of human life.¹ Hence, while this chapter focuses on the notion of potentiality as it is *applied* in specific situations in Aristotle's psychology and ethics we shall have to keep in mind that we are dealing with the context of *origin* of the notion, and, most likely, with one of the original purposes of Aristotle's elaboration of the distinction between *dunamis* and *energeia*. Furthermore, part of Aristotle's attack on the Megarian collapse of *dunamis* into actuality in *Metaph.* Θ 3 turned precisely on the need to retain the possibility to talk sensibly about human intellectual development [see Witt (1995, esp. 251–4), (2003)]. After a survey of this area we shall be ready to assess the innovations in the notion of *dunamis* that Aristotle develops in his *De anima* and related works, and see how they are made to fit into the framework of his philosophy.

¹Cf. *EE* 1218b38–1219a1: “Let this then be assumed, and also that virtue is the best state (diathesis) or condition (*hexis*) or faculty (*dunamis*) of all things that have a certain use or work (*kh̄r̄sis ē ergon*).”

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1 Plato and Early Aristotle

Aristotle's use of *dunamis* in the realm of psychology and ethics derives to a large extent from distinctions in Plato. In the *Protrepticus*, *Topics*, *Magna Moralia* and *Eudemian Ethics* Aristotle does not seem to develop a notion of *dunamis* that goes beyond Plato's at all, although he is showing an increasing preference for *energeia* instead of Plato's *khresis* to designate the use or exercise of a power, as opposed to merely possessing it.²

From the start, nearly all discussions of potentiality in this area are located in the context of human progress towards a virtuous and (thereby) happy life. Since human beings are rational, the highest virtue required for a happy life is the product (ἔργον) of the activity of their most valuable part, i.e. the activity of thinking (φρονεῖν, θεωρεῖν) that is the virtue of the rational soul or mind (νοῦς).

It comes as no surprise, then, that knowledge (ἐπιστήμη) plays a central role in many examples of potentiality and actuality. Aristotle often points out that the use (χρήσις) or exercise (ἐνέργεια) of virtue or knowledge constitutes happiness rather than the mere possession of it. In the language of the famous analogy of sleeping versus waking: a life spent 'asleep' is like a plant's life, while only a life spent 'awake' is the happy human life that Aristotle strives for.³ This relation of priority is also mirrored in language and definition:

Whenever each of two different things is called some one and the same thing, and one of these is so-called either through acting (ποεῖν), or through undergoing action (πάσχειν),⁴ we shall define the former as expressing the stricter sense of the word; e.g. we shall use the word 'know' rather (ἐπίστασθαι μᾶλλον) of him who is using (τὸν χρώμενον) than of him who merely possesses knowledge, and 'see' rather of him who is looking at something than of him who merely can do so (τοῦ δυναμένου). (*Protr.* B81 Düring)

In other words, knowing in the sense of possessing knowledge is knowing in a derivative sense, whereas knowing in the sense of using knowledge is knowing properly speaking. The notion of a *dunamis* is used here to identify the state of possession of the powers—of both sense perception and knowledge. From *Protrepticus* B65 it is clear that Aristotle conceives of a human being as not merely a mind, whose proper function would be to grasp the truth, but as a being with several powers. If so, a more refined argument is needed to identify the proper function of a human being which leads to happiness. Only the best and most

²See Menn (1994, 78ff) for the claim that in his *Protrepticus* (ed. Düring 1961) Aristotle does not go beyond Plato's use of *dunamis*, but differs in his growing preference for ἐνέργεια for Plato's χρήσις. Cf. Plato *Euth.* 277e–278a, 280b5–282a6. This section is indebted to Menn's study, although I do not share all of his conclusions about Aristotle's development.

³Cf. *Protr.* B80 Düring, *MM* 1185a10, *EE* 1095b32, 1216a3, 1219b16–20, *Metaph.* Α 1072b14–17. Cf. *Top.* V.2 129b33–34: 'To perceive' means several things, one to possess perception, the other the use of perception (τὸ αἰσθάνεσθαι πλείω σημαίνει, ἐν μὲν τὸ αἰσθησιν ἔχειν, ἐν δὲ τὸ αἰσθήσει χρήσθαι).

⁴Here both infinitives mark the exercise (*pace* Düring's translation ad loc.).

desirable function of that complex being, or of its best part, the soul, will be the function of its best power. Aristotle of course identifies thinking (διάνοια, φρόνησις) as the best human power. The exercise of that function in the attainment of truth is what wisdom and happiness consist in.⁵

It is important to keep in mind that the order of the stages of knowledge is not so much a matter of *degrees* of knowledge of the same kind, but of *logical priority* between definite and different stages in the process of knowledge acquisition. Potentiality and actuality describe the relation between such stages:

For we say 'more' (μᾶλλον) about things for which there is only one word, not only in the sense of 'to a greater degree' (καθ' ὑπεροχήν), but also in the sense of [logically] prior and posterior; e.g. we say that health is 'more good' than wholesome things, and similarly that which is by its own nature worthy of choice [is more good] in relation to that which is productive of this; yet we observe that the same word ['good'] is predicated of both, though not in its absolute sense (ὡς οὐχ ἢ ἔσται); for both of useful things and of excellence we say that they are 'good'. (*Protr.* B82 Düring)⁶

At the same time Aristotle draws attention to different aspects of the state of possession. Again picking up on some of Plato's terminology,⁷ Aristotle considers a state of possession as a more or less firm disposition that characterizes the soul,⁸ but also as the state of having acquired something (κτῆσις, κέκτησθαι). To have acquired, e.g., knowledge clearly points to a preceding activity or change that led to the possession of knowledge, i.e. the acquisition of knowledge by learning. This principle gets a wider application in the following text, where, again, disambiguation of terms is the mode of analysis:

The word 'to live' (τὸ ζῆν) seems to be used in two senses, one according to capacity (κατὰ δύναμιν), the other according to actuality (καθ' ἐνέργειαν). For we describe as 'seeing' both those animals which have sight and are born capable of seeing (δυνατὰ πέφυκεν ἰδεῖν), even if they happen to have their eyes shut, and those which are using this capacity and looking at something. Similarly with knowing (ἐπίστασθαι) and cognizing (γινώσκειν). We sometimes mean by it using (χρησθαι) and contemplating (θεωρεῖν), sometimes having acquired (κεκτήσθαι) the capacity and possessing (ἔχειν) the knowledge (ἐπιστήμη). (*Protr.* B79 Düring)⁹

⁵See also *Protr.* B67, B91 Düring; cf. *EN* 1177a19–27, 1100b18–1101a8. Of course the exercise of a naturally good disposition need not be beneficial, see e.g. *EE* 1248b29–37, and below p. 87.

⁶Famously, the examples of 'good' and 'wholesome' figure prominently in Aristotle's introduction of homonymy or 'focal meaning' to deal with things in an ordered series of things prior and posterior. Cf. *EE* I.8 with Woods (1982, ad loc) ~ *EN* I.6. See further Shields (1999, Chap. 8).

⁷Plato in *Theaetetus* represents pieces of knowledge as birds in an aviary; he denies that knowing is a ἔξις ἐπιστήμης, but admits that this κέκτησθαι is in a sense ἔχειν (to have caught the birds and keep them in the aviary) and in a sense not (i.e. in the sense in which true mastery consists in catching the right bird when needed).

⁸Cf. *Cat.* 8b27–9a13 which emphasizes that ἔξις is a more permanent quality that a διάθεσις. See further below pp. 85–86.

⁹*Protr.* B79–87 Düring develops this distinction at some length. See Düring *o.c.* 245–249 for parallels in the corpus. For the homonymy of 'to live' see Shields (1999, Chap. 7).

In *Phys.* VIII.4 255a30–b13 Aristotle once more distinguishes the twofold meaning of ‘knowing potentially’ (ἐπιστήμων δυνάμει): it applies both to a learner who does not possess knowledge, and to a knower who possesses knowledge but does not exercise (ἐνεργεῖν) it. But in *Phys.* VIII.4 this psychological distinction serves as the analogy by which Aristotle explains a feature of his physics. Things can be ‘potentially heavy’ in two ways as well: a light object from which something heavy is produced is potentially heavy, but so are heavy objects that are being prevented from actually moving downwards towards their natural place.¹⁰ This is interesting, because it shows that in this context the psychological distinction is considered to be more familiar than the physical one.

So far, we have seen that powers of the soul are to be conceived as covering an ordered series, from not-yet-having-but-capable-of-acquiring to having-acquired, and from possessing-but-not-using to using. Everything that falls short of the full exercise at the end of the series deserves the terms of e.g. ‘to see’ or ‘to think’ only derivatively, not in the proper sense of the terms. The ordered series itself is originally suggested, or so I submit, by the context of progress towards happiness, of which the acquisition and use of knowledge are important aspects. Such an ordered series requires a vocabulary to designate the different stages in relation to one another. Aristotle takes up Platonic precedents, and develops the vocabulary according to his own preferences. It is now time to see what the more detailed discussions of potentiality in *De anima* have to offer in this regard.

2 Potentiality in *De anima*

In this section I shall discuss two sections in *De anima* which are crucial to Aristotle’s psychology and for which the notion of potentiality is of primary importance: the definitions of the soul in *DA* II.1, and the famous chapter *DA* II.5 which contains an elaborate discussion of potentiality (and actuality) in perception.¹¹

Following his usual method Aristotle devotes the first book of *DA* to an aporetic account of his predecessors’ views of the soul. Right at the start he lays down that one of the questions he wishes to answer is “whether [the soul] is one of the things that are in capacity (τῶν ἐν δυνάμει ὄντων) or rather a fulfilment (ἐντελέχεια τίς), for it makes no little difference.” (*DA* I.1, 402a25–b1). In *DA* I.3 407b13–26 he complains that his predecessors combined soul with body too easily: they did not set out what causes this combination, or what state the body should be into receive a

¹⁰See p. 85 below for further applications in the context of Aristotle’s ethics.

¹¹Within the confines of this handbook I cannot begin to do justice to the wealth of secondary literature on these topics. My main sources of inspiration, and sparring partners, in this section are Ackrill (1972–1973), Bowin (2011), Burnyeat (2002), Caston (2002, 2004, 2005, 2006), Everson (1997), Heinaman (2007), Johansen (1997, 2012a, b), Menn (2002), Polansky (2007), Sorabji (1992, 2001), Sisko (1996, 1998, 2004).

particular kind of soul, so that according to the Pythagoreans any soul could end up in any body. As we shall see, Aristotle will address both the problem of causation, and the problem of the unity of soul and body in terms of potentiality.

3 Definitions of Soul and Body

At the start of the second book of *DA*, Aristotle sets out to give a most general description of the soul. A general description is the only possibility, because the souls of plants, animals, and humans differ as members of an ordered series, not as species of a genus, which renders a definition by genus and differentia inadequate. Aristotle immediately introduces distinctions of which he supposes we are familiar from his *Physics* and *Metaphysics*.

We say that substance is one kind of what is, and that in several senses: in the sense of matter or that which in itself is not a this, and in the sense of form or essence, which is that precisely in virtue of which a thing is called a this, and thirdly in the sense of that which is compounded of both. Now matter is potentiality (δύναμις), form is fulfilment (ἐντελέχεια); and actuality is of two kinds, one as e.g. knowledge (ἐπιστήμη), the other as e.g. contemplating (θεωρεῖν). (*DA* II.1, 412a6–412a11, tr. *RevOT* modified)

Aristotle quickly surmises that in the compound of a body that possesses (ἔχει) life, the soul cannot be a body, given the assumption that a body more naturally functions as substrate and matter. He then swiftly produces three general descriptions of soul as form of the body, and concludes rather cryptically that the question of the unity of soul and body has now become superfluous.

- [1] Hence the soul must be a substance in the sense of the form (οὐσία ὡς εἶδος) of a natural body having life potentially (δυνάμει ζωὴν ἔχοντος).

But substance is actuality, and thus soul is the actuality of a body as above characterized. Now there are two kinds of actuality corresponding to knowledge and to contemplating. It is obvious that the soul is an actuality like knowledge; for both sleeping and waking presuppose the existence of soul, and of these waking corresponds to contemplating, sleeping to knowledge possessed but not employed, and knowledge of something is temporally prior.

- [2] That is why the soul is a fulfilment of the first kind (ἐντελέχεια ἢ πρώτη) of a natural body having life potentially (δυνάμει ζωὴν ἔχοντος).

The body so described is a body which is instrumental. The parts of plants in spite of their extreme simplicity are instruments; e.g. the leaf serves to shelter the pericarp, the pericarp to shelter the fruit, while the roots of plants are analogous to the mouth of animals, both serving for the absorption of food.

[3] If, then, we have to give a general formula applicable to all kinds of soul, we must describe it as an actuality of the first kind (ἐντελέχεια ἡ πρώτη) of a natural instrumental body.

That is why we can dismiss as unnecessary the question whether the soul and the body are one: it is as though we were to ask whether the wax and its shape are one, or generally the matter of a thing and that of which it is the matter. Unity has many senses (as many as ‘is’ has), but the proper one is that of actuality. (DA II.1 412a19–b9; tr. *RevOT* modified)

Armed with the distinctions we surveyed so far, and marshalling our general background in Aristotle’s physics (see Makin’s contribution in this volume), the first definition [1] should be reasonably clear. If a living being consists of soul and body, and body is matter, then soul must be form. What does this mean? Soul as substance is fulfilment (ἐντελέχεια), and fulfilment has two senses, the same two senses that Aristotle elsewhere ascribed to actuality (ἐνέργεια): either as in ‘knowledge’ or as in ‘contemplating’, which are equivalent to ‘sleep’ and ‘waking’. Since to have soul, i.e. to live, includes both sleep and waking, the second definition follows as a paraphrase of the first. For, in order to be alive, a living being need not be awake; also when it is asleep we call it alive. Hence soul is fulfillment of the first kind, i.e. the kind that corresponds to the first member of the analogy, viz. knowledge as mere possession,¹² or life as mere possession, viz. sleep.¹³

This is one of the very few passages in Aristotle in which he actually adds a number to a type of actuality. Later ancient commentators elaborated on this passage by attaching this ‘first actuality’ to a preceding ‘first potentiality’, while seeking to recognize in this first actuality a ‘second potentiality’, followed by its own ‘second actuality’.¹⁴ After all, did not Aristotle say that a human being is a potential knower in virtue of her genus, i.e. qua human being, as a first potentiality granted by birth? Does not this first potentiality turn into first actuality when she has actually acquired knowledge? And is not this acquired knowledge itself equivalent to a further, second, potentiality of using the acquired knowledge, with the actual use as second actuality? This may be a tempting enumeration of Aristotle’s distinctions, but it is a kind of systematization that Aristotle did not himself formulate. Aristotle may have had his reasons to avoid such enumeration: what if the process is more complex: can we just add a third or fourth potentiality to the series, or is each of the two still tied to the original possession/use distinction (see p. 72)? And how does this translate into the soul/body relationship?¹⁵

While the second definition has shed some light on the type of actuality soul is, we are still in the dark as to what kind of potentiality is involved in ‘a natural body having life potentially’? For if this natural body is the body of which the soul is the

¹²It is helpful that Aristotle can write about a natural body *possessing* life, thus invoking the earlier associations of ἔχειν and ἔξει.

¹³Cf. *Phys.* VIII.4 quoted above.

¹⁴For the subsequent history of these distinctions in late antiquity see De Haas (1999, 2000).

¹⁵See Bowin (2011) for a careful distinction and partial overlap of kinds of potentiality and actuality.

fulfilment, it is alive already, not merely potentially. And a body that is not alive can be called a body only homonymously, as Aristotle insists on numerous occasions.¹⁶

The explanation that follows the second definition focuses on the meaning of 'a natural body having life potentially'. Such a body is capable of serving as an instrument for the soul and its capacities, in the same way parts of plants serve the life of the plant, i.e. its procreation and nutrition.

An analogy with an axe follows in order to deepen the notion of instrumentality. If a man uses an axe to chop wood, is he related to the axe as soul to body? No. Soul is to body as the essence of an axe to the material axe. The latter is called 'axe' only because it has this essence, the fitness to be used for chopping; the same applies to the living body. The soul is not the essence of an homonymous body, but of a particular kind of natural body that has life potentially. This natural body is a body that already has a principle of motion and rest within itself, and this is ... the soul! Hence, not only do the three descriptions of soul, as we saw, mention the instrumental body it needs to exist in; also the definition of the natural body that potentially has life, i.e. the natural instrumental body, refers to the soul as its causal principle. They are so closely related that neither can be defined without mentioning the other.¹⁷

A parallel analogy between a living being and one of its parts, sc. an eye, underlines the same point. Suppose the eye represents the living being as a whole; then the soul is like the power of sight ($\delta\psi\iota\zeta$) which is the essence of the eye. The physical eye is the matter of the power of sight. Without the power of sight the eye is an eye merely homonymously, no different from an eye made of stone or drawn in a painting. So the eye that is the matter of the power of sight, is the eye in which the power of sight is present. In short:

We must not understand by that which is potentially so that it lives, what has lost the soul it had, but only what still retains it; but seeds and fruits are bodies which are potentially of that sort. Consequently, while waking is fulfilment in a sense corresponding to the cutting [sc. of the axe] and the seeing, the soul is fulfilment in the sense corresponding to sight and the capacity of the tool; the body corresponds to what is in potentiality; as the pupil *plus* the power of sight constitutes the eye, so the soul *plus* the body constitutes the animal. From this it is clear that the soul is inseparable from its body, or at any rate that certain parts of it are (if it has parts)—for the fulfilment of some of them is the actuality of the parts themselves. Yet some may be separable because they are not the fulfilments of any body at all.¹⁸ (DA II.1, 412b25–413a8)

¹⁶See e.g. *Meteor.* 389b31–390a2, *DA* 412b11–22, *GA* 734b24–27, 735a6–11 (see also p. 85), *Pol.* 1253a20–25.

¹⁷The priority of actuality over potentiality itself implies that a potentiality can only be conceived with reference to the corresponding actuality.

¹⁸The last sentence is one of the notorious references to the possibility that the mind ($\nu\omicron\upsilon\zeta$) might not be tied to the body because the brain was not known to be the organ of the mind as the senses were of sensation; cf. Caston (2000).

Seeds and fruits are identified as good examples of things that have life potentially. In fact they stretch the notion of potentiality: neither seeds nor fruits can exhibit life without additional changes and appropriate conditions, and in this they are unlike the possession of knowledge.¹⁹ Nevertheless, they are more than arbitrary matter, since they grow in or on living things as the product of a living being's power of procreation. Therefore it makes sense to say they have life potentially, in a way that stones and fire do not.

On this strong account of the relation between soul and body as the relation between form and matter, and as the relation between a power and the instrument in which it resides, it is indeed superfluous to demand an account of the unity of soul and body. If so, this relation between soul and body renders transmigration among species impossible. This inference is drawn in the concluding sentences of *DA II.1*:

For this reason those suppose correctly who think that the soul neither is without body nor is some body. For it is not body but something of body, and for this reason it exists in body, and in body of a certain sort, and not in the way our predecessors fitted the soul into a body without specifying in which body and in what sort of body, even though it is clear that not any old thing will receive any other thing. But it happens also in this way according to reason: for the fulfilment of each thing comes by nature to be in what exists in potentiality and in the appropriate matter. It is clear from these considerations that there is some fulfilment and account of something that has the potentiality of being such. (*DA II.2*, 414a19–28, tr. Johansen 2012b, 15–6)

We are now ready to grasp potentiality in terms of the four modes of physical explanation that Aristotle developed in his *Physics*: formal, material, efficient, and final [Cf. *DA II.4*, 415b8–23; cf. Lennox (1995)]. We have seen that the body is cast in the role of *dunamis* and matter, and soul in the role of substance and form. For a living being, 'to be' means 'to live', and the soul is responsible for living as the formal principle of the living being. But we have also seen that soul is the principle of motion and rest in the living being (at least in those that can change place, plants and anemones excluded). The natural body also potentially has life as the complement of that principle of motion. Last but not least, the notion of instrumentality brings final causality into play. Natural bodies exist for the sake of the soul, what they *are* is what they are *for*, as the axe is for cutting. Their purpose makes it possible to identify the characteristics that make them what they are. The rich notion of causation that Aristotle introduces in this part of the *DA* shows that the potentiality of the living body is not merely associated with material causation as the counterpart of formal causation, but also with being the co-relative and beneficiary of the efficient and final causation of the soul. Each of these causal relations between soul and body confirms and strengthens their union in the fulfillment that is called living (ζῆν).²⁰

In sum: in the first chapters of the *De anima* Aristotle has worked hard to show that the stages of progress towards happiness that we encountered in the earlier

¹⁹See p. 84 for a similar role of appropriate conditions in the context of ethics.

²⁰For the use of way of life (βίος) as a unifying principle of method in Aristotle's biology see Lennox (2010).

work sit squarely within the much wider genus of biological developments. In a living being, the formal, efficient and final causation of the soul always has its necessary complement in the body that has life potentially, and vice versa. Potentiality here receives a rich content as it answers to the specific needs of each form that is the soul of a particular species of living being.

4 Potentiality and Actuality in Perception

So far we have seen that the stages in the acquisition of knowledge (to continue the focus on Aristotle's dearest example) are an ordered series towards fulfilment (*ἐνέργεια* or more often *ἐντελέχεια*). Everything that falls short of complete fulfilment is potentially of this nature in one way or another. We have also seen how Aristotle takes care to specify, e.g. by means of notions of causality, what the precise markers of a given potentiality are. In these contexts Aristotle thus avoids a situation in which potentiality becomes a mere spectrum of possibilities. Each form demands its own characteristic potentiality with which it constitutes a functional unity.

In *DA* II.5, which Aristotle announces as a treatment of sense perception in general (416b32–3), the focus is on the process that gives rise to perception in the sense of seeing a colour, or hearing a sound. Sense perception is identified as a motion and a kind of action and passion between qualities as analysed in the *Physics* and in more detail in *Generation and Corruption* I.7–9.²¹ From these discussions Aristotle can invoke the following distinctions as familiar (*DA* II.5, 416b33–417a20):

1. the power of sensation (*τὸ αἰσθητικόν*) is potentially such as long as there is no matching object around, or when the living being is asleep; hence no sensation occurs of its own account. In contrary conditions the power of sensation is actually such; in this sense perceiving (*αἰσθάνεσθαι*) and perception (*αἰσθησις*) are said in the two familiar ways;
2. the object of perception (*τὸ αἰσθητόν*) is potentially such as long as its perceptible features do not act upon a sense organ;
3. when the necessary conditions are met, the object acts upon the sense, which is initially unlike the object, so as to render it like itself (in other words, the sense receives the relevant form). This is an incomplete motion of the kind described in the physical works. It is also a non-rational motion in the sense that when the circumstances are right, the interaction between agent and patient will occur necessarily.

²¹For more details see Makin's contribution in this volume.

At this point (417a21) Aristotle inserts a further division of potentiality (δύναμις) and actuality (ἐνέργεια), which, he now claims, he had so far spoken of generally (ἀπλῶς). In what follows Aristotle introduces the following insights:

1. the analysis of ‘knowing’ now clearly features three distinct stages:
 - (a) someone is ‘knowing’ (ἐπιστήμων) in the sense that she belongs to the genus of human beings that have the capacity to know and have knowledge;
 - (b) someone is ‘knowing’ in the sense that she possesses, e.g., knowledge of grammar in such a way that she is capable (δυνατός) of exercising that knowledge when she so wishes, provided nothing interferes;
 - (c) someone is ‘knowing’ in the sense of contemplating and fully knowing, e.g., this particular alpha;
2. Aristotle points to the difference between process P1 which leads from (a) to (b), and process P2 which leads from (b) to (c). Although he initially approaches both processes as plain cases of qualitative action and passion, it is clear that the case of knowledge calls for several distinctions.²²
3. At stage (b) someone has experienced qualitative change through learning, and has often changed from the opposite disposition; someone who changes from possessing, but not using, the knowledge of arithmetic or grammar, to using it, suffers a different kind of change.
4. The passion involved in each of these transitions is different: P1 is a kind of corruption by the contrary state; P2 is a kind of preservation of what is potentially (possessing knowledge) by what is in fulfilment (contemplating). However, P1 is not ordinary qualitative change, because the repetitive changes involved in learning do not seem to imply corruption of the contrary state at each instance. P2 is not ordinary qualitative change because it is no qualitative change at all, but rather an increase towards itself, or towards fulfilment.

In Aristotle’s words:

Hence it is wrong to speak of a wise man as being ‘altered’ when he uses his wisdom, just as it would be absurd to speak of a builder as being altered when he is using his skill in building a house. What in the case of thinking or understanding leads from potentiality to fulfilment ought not to be called teaching but something else. That which starting with the power to know learns or acquires knowledge through the agency of one who actually knows and has the power of teaching (ὕπὸ τοῦ ἐντελεχέια ὄντος καὶ διδασκαλικοῦ) either ought not to be said ‘to be acted upon’ at all—or else we must recognize two senses of alteration, viz. the change to conditions of privation, and the change to a thing’s dispositions and to its nature (τὴν ἐπὶ τὰς ἕξεις καὶ τὴν φύσιν). (DA II.5, 417b8–16, tr. RevOT)

²²The distinctions are subtle and hotly debated in the secondary literature. The survey provided here states my current understanding of the chapter, which is indebted esp. to the discussion between Burnyeat and Sorabji with corrections by Heinaman, Sisko, and Bowin. My interpretation coincides with neither in every respect—The need for further refinements is clear from e.g. *EE* 1218b35–6: Of things in the soul some are dispositions or powers, others actualities and motions (τῶν δὲ ἐν ψυχῇ τὰ μὲν ἕξεις ἢ δυνάμεις εἰσὶ, τὰ δ’ ἐνέργεια καὶ κινήσεις).

This passage makes clear that *neither* P1 *nor* P2 are ordinary cases of qualitative action and passion because neither are changes to conditions of privation. *Both* P1 and P2 are changes to a thing's dispositions and to its nature. This matches the general description of soul we discussed above. The power of thought, as one of the powers of the soul, is the fulfilment of the potentiality of a human body. Such powers, and such potentiality, did not and could not come up for discussion in the study of inanimate nature. Hence the changes from potentiality to actuality involved here are different in kind from those. It would be best to invent new words for P1 and P2, but Aristotle eventually settles for the old words of 'passion' and 'qualitative change', with a caveat.²³

One would almost forget that this entire section on potentiality and actuality of knowledge is part of a chapter on sense perception. Again, Aristotle has developed new distinctions in the case of knowledge as an analogue for the elucidation of a different topic, this time perception.

In the case of what is to possess sense, the first transition (μεταβολή) is due to the action of the male parent and takes place before birth so that at birth the living thing is, in respect of sensation, at the stage which corresponds to the possession of knowledge. Actual sensation corresponds to the stage of the exercise of knowledge. But between the two cases compared there is a difference; the objects that excite the sensory powers to activity, the seen, the heard, &c., are outside. The ground of this difference is that what actual sensation apprehends is individuals, while what knowledge apprehends is universals, and these are in a sense within the soul itself. That is why a man can think when he wants to but his sensation does not depend upon himself—a sensible object must be there. A similar statement must be made about our knowledge of what is sensible—on the same ground, viz. that the sensible objects are individual and external. (DA II.5, 417b16–28, tr. RevOT)

The first sentence makes clear that at the moment of procreation the male parent (who contributes the form) renders the living thing potentially sentient in the sense of possession. Animals do not have to acquire the power of sensation, they are born with it. Once alive, animals have souls, and thereby sense perception, and bodies with fully developed sense organs to match. At no stage do finished bodies have to wait for their souls: from inception onwards their development is a sign of its presence. Of course, the objects of knowledge (universals in the soul) are different from the objects of sensation (individuals outside) which explains why the changes involved in sensation do not depend on the seer or the hearer, as they do in the case of the knower who can exercise her knowledge at will.

In this key chapter of the *De anima* Aristotle introduces new kinds of transition between the three stages of a development for which the power and acquisition of knowledge serve as the key analogy. To be potentially a knower moves from lack of knowledge, through acquisition by learning, to full exercise. The development is natural, since the human being is a soul/body unity that has a tendency for such

²³See DA II.5, 417b29–418a6. Here the same points are repeated with the example of the (still nameless) difference between the way a boy is capable of leading an army (τὸν παῖδα δύνασθαι στρατηγεῖν), and the way the same boy is when he has grown into a young man. The latter stage is the stage that compares to the power of perception (τὸ αἰσθητικόν).

fulfilment as its final goal. In that sense, the transitions from potentiality to actuality involved in the process are all transitions towards the human being itself, towards her own natural dispositions. Nothing is lost on the way, every transition (in the right direction) is gain. Once knowledge has been acquired, it is continuously available for use, at will, unless amnesia or old age interfere.

The case of sensation corresponds to the same model, with some obvious adaptations. To be potentially a perceiver moves through the stages of inception, with lack of full-grown organs, through birth at which the power of sensation has an instrumental body to match, to acts of seeing particular sensible objects, when encountered under the right conditions. Many of Aristotle's chapters on the individual powers of sensation—vision, hearing, smell, taste, and touch (*DA* II.7–11)—follow the same patterns. Aristotle goes to great lengths to specify exactly what the potentiality of the natural instrumental body consists in (e.g. the anatomy of the sense organs), and under which conditions the transition to full sensation will occur (e.g. the role of a suitable medium to transport the relevant forms to the sense organs).

Only in *De anima* III.4 does Aristotle discuss the rational power of the soul. Now the analogy works in the other direction. Like the power of sensation, the mind, too, is potentially like its objects, the forms, to which it relates in a similar way (429a16–18, 27–29; b30–31), even though mind can think what it knows whenever it wishes. However, objects of thought are not enmattered, and exist in material things only potentially.

Mind (νοῦς) is itself thinkable (νοητόν) in exactly the same way as its objects (νοητά) are. For in the case of objects which involve no matter, what thinks (τὸ νοοῦν) and what is thought (τὸ νοούμενον) are identical; for speculative knowledge (ἡ ἐπιστήμη ἡ θεωρητική) and its object are identical. (Why mind is not always thinking we must consider later.) In the case of those which contain matter each of the objects of thought is only potentially present. It follows that while they will not have mind in them (for mind is a potentiality of them only in so far as they are capable of being disengaged from matter) it belongs to mind to be thinkable. (*DA* III.4, 430a1–9, *RevOT* modified)

Although these lines have spawned a long tradition of interpretation, they contain little that is unexpected after the earlier chapters of the *De anima*. A problem that remains after these lines is how the objects of thought that exist potentially in material objects are disengaged from matter. Perhaps sense perception, that receives forms, does part of the work. Perhaps, too, the notorious chapter *DA* III.5 that follows is meant to provide, among other things, a solution of this problem. In *DA* III.5 Aristotle supposes that the difference between matter which is everything potentially, and an active cause is present within mind itself, not just in the relationship between soul and body that we have seen. This supposition yields the distinction between a kind of mind that becomes everything, and one that makes everything, and can be regarded as a disposition, such as light. For light—which Aristotle considers to be the transparency of the medium of vision (air or water)—renders potentially visible colours actually visible.

Mind (νοῦς) in this sense of it [sc. as disposition] is separable, impassible, unmixed, since it is in its essential nature activity (for always the active is superior to the passive factor, the principle (ἀρχή) to the matter). Actual knowledge is identical with its object: in the individual, potential knowledge is in time prior to actual knowledge, but absolutely it is not prior even in time. It does not sometimes think and sometimes not think. When separated it is alone just what it is, and this above all is immortal and eternal (we do not remember because, while this is impassible, passive mind (ὁ παθητικὸς νοῦς) is perishable); and without this nothing thinks. (*DA* III.5, 430a17–25, *RevOT*)

The transmission of the Greek text is full of problems, and commentators have struggled with these lines for centuries.²⁴ I limit my comments here to what seems relevant in the framework of this chapter on potentiality. Mind, too, like perception and life in general, exhibits the distinction between potentiality and actuality. Mind potentially is like a writing tablet without anything written on it. As soon as it is provided with its objects it gains all characterization it has as it becomes identical with its objects. Mind in actuality is essential, perfect, and therefore eternal, pure actuality which is not liable to any interaction in terms of action and passion. At least in that sense it is separate, nothing but a 'place of forms'.²⁵

If we try to apply the analogies employed so far in *De anima*, mind in the sense of a disposition and mind in potentiality will have to form a natural functional unity. From this perspective it would be surprising, though not impossible, if this little chapter, in its original form, would have contained the claim that rational soul is immortal as a separately existing entity after human life has ended. It would seem even less plausible that this passage in *De anima*, a work on animal soul, would here identify a single divine mind that, on its own, somehow causes all human minds to think—as later commentators would have it. But to argue for any more definite interpretation along the lines of the preceding analysis would demand a long article of its own.

5 Potentiality in Ethics

The elaboration of types of potentiality that we found in Aristotle's psychology also received application in his ethics. In his ethical works Aristotle makes a point of criticizing Socrates and Plato for focussing on the definitions of the virtues rather than on how and by what sources virtue arises, even though his own answer to these questions is also arrived at by an investigation into what virtue is (Cf. *EE* 1216b10–22, with Woods p. 56). His point against Socratic intellectualism is the following:

If something is fine, understanding it is fine also; but still, in the case of virtue, the most valuable thing is not to have knowledge of it, but to know from what sources (ἐκ τίνων) it arises. For what we wish is to *be* courageous, not to *know* what courage is; to *be* just, not to

²⁴See for recent attempts at an integral interpretation e.g. Frede (1996), Caston (1999).

²⁵*DA* 429a27–29: "It was a good idea to call the soul 'the place of forms', though this description holds only of the rational soul, and even this is the forms only potentially, not actually."

know what justice is; in the same way as <we wish> to *be* healthy rather than to *know* what being healthy is, and to *be* in a good state, rather than to *know* what it is to be in a good state. (*EE* I.5, 1216b19–25 tr. Woods, my emphasis)²⁶

In *EN* I.8 Aristotle formulates the same point in by now familiar terms:

It makes, perhaps, no small difference whether we place the chief good in possession or in use (ἐν κτήσει ἢ χρήσει), in state or in activity (ἐν ἔξει ἢ ἐνεργείᾳ). For the state may exist without producing (ἀποτελεῖν) any good result, as in a man who is asleep or in some other way quite inactive, but the activity cannot; for one who has the activity will of necessity be acting, and acting well. And as in the Olympic Games it is not the most beautiful and the strongest that are crowned but those who compete (for it is some of these that are victorious), so those who act rightly win the noble and good things in life. (*EN* I.8, 1098b31–1099a10 tr. *RevOT*)

We may surmise that Aristotle's virtues correspond to realized human capacities (first actuality, *ktêsis* or *hexis*), which as such represent potentialities for virtuous action (second actuality, *khêsis* or *energeia*). A virtuous, happy person leads a life in which she fully realizes such second potentialities by committing virtuous acts, and continues to do so her entire life (Cf. *EN* I.11, esp. 1100b12–17). Aristotle specifies that virtuous acts differ from products of art that have a value in themselves (Cf. *EN* I.3, 1105a26–b7). Virtuous acts, while being good themselves, are virtuous only when the agent is in a specific condition when acting:

The agent also must be in a certain condition when he does them; in the first place he must have knowledge, secondly he must choose the acts, and choose them for their own sakes, and thirdly his action must proceed from a firm and unchangeable character. These are not reckoned in as conditions of the possession of the arts, except the bare knowledge; but as a condition of the possession of the virtues, knowledge has little or no weight, while the other conditions count not for a little but for everything, i.e. the very conditions which result from often doing just and temperate acts. (*EN* 1105a28–b5, *RevOT* modified)

This passage establishes a close connection between virtuous actions on the one hand, and both choice and character on the other: without choice for its own sake, or without a firm and unchangeable character of the agent, actions are not truly virtuous. In a striking criticism of Socratic intellectualism Aristotle states that knowledge 'has little or no weight' as a condition of the possession of the virtues. His famous study of *akrasia*, or lack of self-control, may serve as the prime example of the meaning of this statement. We shall find not only a reappearance of the application of potentiality in psychology, but a further enhancement of the notion of a potentiality that is fully present, but cannot be actualized because it is impeded by internal or external causes.

Aristotle investigates the phenomenon of *akrasia* in *EN* VII.1–11: an akratic is a person who possesses knowledge of the good, but does not act accordingly.²⁷ After

²⁶Cf. *EN* 1103b26–31, 1105b12–18.

²⁷The literature on the topic is extensive. For a useful entry into *akrasia* in ancient philosophy at large see Bobonich-Destrée (2007), esp. the contributions by Destrée (who has inspired much of my discussion here), Zingano and Charles on Aristotle; see also Gosling (1993), Moss (2009), Charles (2009a, 2011a, b)

rehearsing the common opinions on the subject (VII.2), he begins the examination of the problems involved with the question: “What kind of right belief is possessed by the man who behaves without self-control?” (*EN* VII.2, 1045b21–22) Aristotle considers Socrates’ downright rejection of *akrasia* a view that “contradicts the plain phenomena” (*EN* VII.2, 1145b27–28), but he goes on to investigate what kind of ignorance might be involved all the same.²⁸ First Aristotle applies the familiar distinction: someone might *possess* knowledge but fail to *use* it (1146b31–35). But why does this happen? For our discussion here the sheer number of occasions in which the possession of knowledge does *not* lead to virtuous action is most relevant as a remarkable illustration of Aristotle’s point that knowledge is of little or no weight when it comes to the possession of virtues—which, after all, come to be from repeated virtuous actions. In these chapters a whole spectrum of possible obstacles unfolds: physiological causes might be in play, as in the case of sleep, madness, and drunkenness, for which only natural scientists know the cure.²⁹ The akratic is like the drunk or the actor in saying the right words, but without having the desire that corresponds with the words, and desire is needed to give consequence to the words by causing action.³⁰ Passion or desire may cause a failure to apply a universal rule in a particular case (*EN* VII.5, 1146b35–1147a10, 1147a24–b5), or cause one to act in haste so that one does not even take time to think at all. In short, the akratic has knowledge potentially in the sense that she could use it if not prevented from doing so. Such potential knowledge is not only completely inactive, but even incapable of being activated due to the state the agent is in (see esp. *Phys.* VII.3, 247b13–248a6 in n. 40 above). As Aristotle summarizes elsewhere:

But a thing existing potentially may be nearer or further from its realization in actuality, just as a sleeping geometer is further away than one awake and the latter than one actually studying. (*GA* II.1, 735a9–11)

Let us now return to the conditions of virtuous action in the text quoted above (p. 84) to draw out a last point. In the final sentence of the quoted passage Aristotle suggests that the conditions of choice and a firm character result from often doing just and temperate acts. Aristotle is here concerned with a puzzle that he mentioned at the start of *EN* II.3: How can we become virtuous by repeatedly committing virtuous acts if acts are only virtuous when they are committed by a person who is

²⁸See Destrée and Zingano *oo.cc.* for an analysis of Aristotle’s dialectical method here.

²⁹*EN* VII.5, 1147b6–9, cf. *Phys.* VII.3, 247b13–248a6: people who recover from drunkenness, sleep, or disease do not change to the opposite state, and we do not say they have become knowing all over again—even though the person concerned was previously unable to use her knowledge (b13–16 ὥσπερ ὅταν ἐκ τοῦ μεθύειν ἢ καθεύδειν ἢ νοσεῖν εἰς τάναντία μεταστῆ τις, οὐ φαμεν ἐπιστήμονα γεγονέναι πάλιν (καίτοι ἀδύνατος ἦν τῇ ἐπιστήμῃ χρῆσθαι πρότερον); *MM* 2.6.17.3–11: drunk people have not lost their knowledge but their knowledge was overpowered by the drunkenness; in the same way the overruling passion has brought the akratic’s reasoning to a standstill. When she recovers she will be herself again. (ἐπικρατήσαν γὰρ τὸ πάθος ἡρεμεῖν ἐποίησε τὸν λογισμὸν ὅταν δ’ ἀπαλλαγῇ τὸ πάθος ὥσπερ ἡ μέθη, πάλιν ὁ αὐτὸς ἐστίν).

³⁰*EN* VII.5, 1147a35–b1, b9–12. For desire as the motive force in action see *De anima* III.7–11; cf. Charles (2009b), several contributions to Pakaluk-Pearson (2011).

already virtuous? Here we see the background for Aristotle's discussion with the Megarians on the meaning of *dunamis*. The Megarians, who denied the existence of potentiality, thereby denied the possibility of acquiring virtue by learning and exercise in precisely the sense Aristotle needs here. We have seen that Aristotle ran into the same problem in the psychology of learning: new knowledge is acquired from learning and observation by often going over the same material. In the same way a state of virtue is made firm and unchangeable by repeatedly committing virtuous acts, guided by e.g. instruction and punishment at the hands of educators, the example of practically wise men, and the laws.

At this point we do well to recall Aristotle's distinction between kinds of virtue. Aristotle distinguishes virtues of character (*ἀρετὴ ἠθικὴ*), such as justice, bravery, and temperance, from intellectual virtues (*ἀρετὴ διανοητικὴ*), such as wisdom (*σοφία*), and practical wisdom (*φρονήσις*).³¹ Aristotle makes it clear that virtues of character are states of the non-rational parts of the soul, acquired by habituation (*ἔθος*), whereas intellectual virtues are states of the rational part of the soul, acquired by learning and observation.³² We receive praise or blame with respect to such states, not because of our passions or our proneness to suffer from them.³³ What is more, anger and fear have nothing to do with that other condition of virtuous action, choice, whereas acquired states (whether good or bad) play an important role in choice making.³⁴

Virtues of character are acquired by training and exercise, i.e. training in feeling pleasure and pain—which define the natural tendencies of all animals—at appropriate occasions.³⁵ Intellectual virtues are acquired by teaching and education in accordance with the analysis of knowing discussed above (see pp. 72–74, 80).

Let us return to the question of how 'a firm and unchangeable character' can be established. Does it come to be from prior potentialities, as the parallels noted

³¹In *EN VI* Aristotle carefully relates these two to three further candidates for intellectual virtues: insight (*nous*), understanding (*epistēmē*), and art (*tekhnē*).

³²*EN II.1*, 1103a14–18. Aristotle emphasizes that all of these states are *acquired* to avoid association with innate knowledge of the Platonic kind. Hence the need to investigate how this acquisition takes place.

³³In *EN II.5*, 1105b16–1106a2 Aristotle argues that virtues of character are neither passions (*pathē*) like anger, fear, and joy; nor capacities (*dunameis*), viz. 'things in virtue of which we are said to be capable of feeling these (*pathētikoi*)'; but rather states (*hexeis*), 'the things in virtue of which we stand well or badly with reference to the passions, e.g. with reference to anger we stand badly if we feel it violently or too weakly, and well if we feel it moderately; and similarly with reference to the other passions'.

³⁴It remains unclear how exactly Aristotle believes virtuous states determine action. Here I cannot go into the notorious problem that a 'firm and unchangeable character' seems to rule out voluntary choice if one necessarily acts in accordance with it. Against this position, Aristotle holds firmly that we remain responsible for the formation (or correction) of our character, even if at a particular point in time we cannot act but badly on account of it, see esp. *EN III.1*, *III.5* and *III*.

³⁵*EN II.2*, 1104a27–b24; *II.4*. The desires that prohibit the akratic to exercise her knowledge may well derive from bad habits that make it all too easy for her to give into the wrong representations (*φαντασία αἰσθητικὴ* instead of *φαντασία λογιστικὴ*, cf. *DA III.11*, 433b27–30); cf. Destrée *o. c.*, and Kosman (1999), Leighton (2011).

above suggest? Aristotle's answer to this question links his biological with his ethical and political works by means of the notion of *natural virtue*. Natural virtue is a (first) disposition which animals and human children possess from birth, in some degree or other; only adult human beings can bring it to complete fulfillment, due to the presence of practical reason, and provided circumstances are favourable.³⁶

We must therefore consider virtue also once more; for virtue too is similarly related as practical wisdom (*phronêsis*) is to cleverness (*deinotês*)—not the same, but like it—so is natural virtue (*phusikê aretê*) to virtue in the strict sense (*kuria aretê*).

For all men think that each type of character belongs to its possessors in some sense by nature; for from the very moment of birth we are just or fitted for self-control or brave or have the other moral qualities; but yet we seek something else as that which is good in the strict sense—we seek for the presence of such qualities in another way.

For both children and brutes have natural dispositions (*phusikai hexeis*) to these qualities, but without thought these are evidently hurtful. Only we seem to see this much, that, while one may be led astray by them, as a powerful body which moves without sight may well take a 'powerful' fall because of its lack of sight, still, if a man once acquires thought that makes a difference in action; and his state, while still like what it was, will then be excellence in the strict sense.

Therefore, as in the part of us which forms opinions there are two types, cleverness and practical wisdom, so too in the moral part there are two types, natural virtue and virtue in the strict sense, and of these the latter does not arise without practical wisdom. (*EN VI.13*, 1144b1–17, *RevOT* modified, cf. Lennox)

This section establishes an intriguing analogy: natural virtue is *like* virtue in the strict sense, in the same way as cleverness is *like* practical wisdom. Earlier in the chapter cleverness was defined as a capacity (*dunamis*) to act in ways that achieve any assumed goal (*EN VI.13*, 1144a24–26). Practical wisdom, in contrast, is not a capacity but cannot exist without the capacity of cleverness (1144a28–29). What does this mean? As the quote above explains, cleverness belongs to us from birth, and so do natural virtues of character (justice, bravery, self-control). What is more, such good qualities belong to children and brutes alike.³⁷ Thus it is clear that humans do not have to develop their virtues from scratch. However, children and brutes have in common that they lack practical wisdom, and without the guidance of practical wisdom even good qualities may cause harm.³⁸ It turns out that for all natural virtues of character, the presence of practical wisdom is necessary for the acquisition of true virtues of character. Aristotle defines their relation as follows: virtue makes the goal correct, and practical intelligence makes that which promotes the goal correct (1144a7–9). Although the sequel of this passage provides a much

³⁶For natural virtue and its development see e.g. Burnyeat (1980), Sherman (1996) 151–164, Lennox (1999), Lawrence (2011), Leunissen (2012).

³⁷Cf. *EN III.2* 1111b6–10: children and animals share in what is voluntary (the wider category), but not in choice. Cf. *HA VIII.1*, 588a18–b3. For the extent of animal *phronêsis* see Labarrière (2005). On brutes and human beings see Lorenz (2006).

³⁸Rational capacities are open to opposite results, cf. *Metaph.* 1046b1ff, 1048a8–12.

more nuanced picture, in this way practical intelligence relies on the prior capacity of cleverness, but cleverness does not represent genuine virtue without the guidance of practical wisdom. As long as children have not yet developed their own practical wisdom, their actions may be as harmful as they may be beneficial. During that time educators and lawgivers are its substitutes (see e.g. *EN* II.1, 1103b2–6); they provide examples of proper action, and create the conditions necessary for the training of the growing child in making the right decisions according to reasoned choice, rather than according to unreasoned natural virtue.

The rise of practical wisdom in a maturing human being eventually gives humans an edge over animals: hence only humans can develop true virtue. Despite the many similarities Aristotle notes between human virtues and animal qualities, he remains careful in his wording: the analogous character traits in animals are never called ‘virtues’ in any straightforward way. In the context of ethics, then, we have a similar situation that we found in psychology. Human beings possess an innate disposition (natural virtue) that is the capacity for good action, open to a natural development of the living being towards the good. However, this capacity needs practical wisdom to be successful in life.

In Aristotle’s biological works character is one of the four biological differentiae by which animals are said to differ from one another, in addition to their ways of life, actions, and parts (Cf. *HA* IX.3, 610b20–22, IX.44, 629b5–8). They apply to animals and humans alike.³⁹ Character is defined as a natural capacity (*phusikê dunamis*) of the soul that predisposes the emotions, actions, and cognitive acts related to survival and procreation (*HA* 588a29–b10). It depends primarily on the living being’s material nature, viz. the particular elemental blend of its body, and the kinds and amounts of food it can digest [see Leunissen (2012)]. Differences in material nature may thus lead to differences of degree in natural character, and hence, in differences of degree regarding the success of development of virtue proper among human beings. Hence the lawgiver of Aristotle’s *Politics* can be advised to select citizens that are ‘most easily led to virtue’.⁴⁰ In this respect, of course, Aristotle considers the Greeks as living in the best part of the inhabited world, whereas North-Europeans and Asians come with less favourable dispositions.

By way of conclusion we may point out that this chapter has shown how Aristotle’s belief in the *scala naturae*, the hierarchical continuity of animals and humans,⁴¹ relies on the notions of potentiality and actuality as applied in the continuum of psychology, biology, ethics, and politics. Without disregarding the boundaries that separate the species, the notions of potentiality and actuality lead us from primitive

³⁹*HA* VIII.1, 588a18–29. For discussion where comparison as to degree stops and analogy starts see Leunissen (2012).

⁴⁰*Pol.* VII.7, 1325b39–1326a5, 1327b18–38, p. 37–38. Cf. *PA* II.2, 648a2–11 on the relation between different qualities of blood and profitable conditions for courage and practical wisdom. See further Leunissen (2012).

⁴¹Cf. *DA* II.3; *PA* II.10, 656a1–13; IV.5, 681a10–15; the *scala* also pertains to their character traits, see *HA* VIII.1, 588b4–12.

animals to the full actualization of human happiness, from innate capacities to further dispositions rich with new capacities that serve animal life, in particular the good life of human beings.

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