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Aristotle on μετὰ λόγου capacities and voluntary animal locomotion. Part two: freedom, scientific knowledge and voluntary locomotion

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Abstract: According to the dominant interpretation of the distinction between capacities that are "without-λόγος" (ἄλογοι) and capacities that are "with-λόγος" (μετὰ λόγου, *Metaph*. 9.2 1046a34-b2), the latter would be unique to human beings. We can find four arguments in defense of that thesis in the secondary bibliography. In a previous

paper I dealt with two of these arguments, which I called the psychic arguments. This article deals with the other two and presents a positive argument for the alternative reading that tries to make it seem plausible - although not unassailable - in light of its own merits. According to this alternative reading, it is with the framework provided by Aristotle to explain the functioning of bidirectional capacities that we must explain the functioning of the capacity responsible for producing voluntary locomotion in all animals.

Keywords: Aristotle, Voluntary, Locomotion, Capacities.

I. Introduction

This article is divided in five sections. In section II, I analyze the argument according to which bidirectional capacities are "free capacities", and Aristotle did not believe that non-human animals had any capacity of this type. In section III, I analyze the argument according to which bidirectional capacities are forms of scientific or technical knowledge, and non-human animals are incapable of scientific and technical knowledge. In section IV I present the argument for the thesis I'll defend, according to which it is with the framework provided by Aristotle to explain the functioning of bidirectional capacities that we must explain the functioning of the capacity responsible for producing voluntary locomotion in *all* animals. Section V closes with a brief summary of the argument.

II. On the so-called "free capacities"

According to this argument, animals could not have bidirectional capacities because these capacities are "free capacities" (Suárez, 1960, p. 333). By free capacities, of course, it is meant the capacities whose exercise supposes what part of today's literature has called the Principle of Alternate Possibilities.

As we know, one popular version of this principle states that we can only be responsible for our actions if we are free to do them, and we are only free to do them if we could have done otherwise. According to some, Aristotle would have affirmed this principle in his theory of the voluntary act (Sharples, 1976, p. 69; Kane, 2005, p. 6), in which he maintains that an act will be voluntary only if the agent who did it was able to do it or not do it at the time it was done (*EN*. 3.1 1110a15-17, 1111a20-22), and that it will only be subject to any form of praise or blame if it was voluntary (*EN*. 3.1 1109a30-33).

Aristotle, of course, never claimed either that such acts are always free nor that only such acts are free. In fact, the two Greek words usually translated as "freedom" – ἐλευθερία and ἐξουσία – are totally absent from his investigation of the voluntary act. Besides, many scholars today agree that freedom requires more than just alternate possibilities. Nevertheless, the idea of what is up to us (ἐφ᾽ ἡμῖν) has a prominent place in the analysis of the voluntary act undertaken by him both in *EE* and *NE*[1] and Aristotle does say that in the case of unidirectional capacities when the agent and the patient meet it is necessary that both capacities are exercised and movement ensues, whereas in the case of bidirectional capacities this is not necessary, being possible for the agent to both exercise and not exercise his capacity depending on his desire (*Metaph.* 9.5 1048a1-24).

All of this strongly suggests that he thinks that there is a straight connection between being able to act voluntarily and the possession of bidirectional capacities. For the purposes of this paper, I would submit that the connection is the following: every ascription of imputability must be justified in terms of the activation or the non-activation of a bidirectional capacity. To say this, however, is to say

[1] Cf. *EE*. 2.6 1223a2-9; 2.9 1225b7-11; *NE.* 3.1 1110a14-20; 3.5 1113a6-8. The meaning of these passages is still a source of enormous controversy for experts, and it would be impossible to try to summarize here all the relevant bibliography that has been produced on the subject. Some of most recent contributions to the current debate about them can be found in (Bobzien 2014b), (Meyer 2014), (Frede 2014), and (Echeñique 2014).

that non-human animals who activate them act voluntarily and this is still a matter of some controversy among interpreters.

As has already been pointed out by Carron (2019, p. 5-6), recent scholarly opinion on this subject can be divided in three groups - dismissal accounts, compromise accounts and hardline accounts. Dismissal accounts dismiss Aristotle's claim that the voluntary actions that children and animals perform are morally praised and blamed, and they do so either by arguing that the discussion of the voluntary in *NE* is an example of Aristotle's *endoxic* method, and that Aristotle is only citing a common opinion with which he does not agree when he says children and animals are aptly praised and blamed (Bobzien, 2014a, p. 85), or by positing that the voluntary and προαίρεσις are two different accounts of causation or responsibility and denying that voluntariness is an account of *moral* responsibility which, on this account, would be restricted to mature human beings (Irwin, 1980, p. 132). Compromise accounts claim that both voluntary actions and actions that have been deliberate chosen are rightly praised and blamed in young children, but not in animals, because proper praise and blame of the child's voluntary—but not deliberate—actions will play a vital role in shaping the child's cognitive, desiderative, and deliberative capacities (Nussbaum, 1986, p. 285-286). Hardline accounts claim that according to Aristotle children and animals are capable of the voluntary an liable to praise or blame in the same way as mature human beings (Sorabji, 1993, p. 112; Carron 2019).

Curiously enough, Carron claims that the most common interpretation of the relationship between voluntariness and responsibility is the dismissal account (2019, p. 5), even though he mentions only one defender of this interpretation. The compromise account, on the other hand, gets to have two of its defenders mentioned, one for each of its forms. The hardline account also gets to have two of its defenders mentioned, even though it has only one form, and Carron presents himself as a third defender of this account (Carron, 2019, p. 6-7). Given that we can also mention Zingano (2008, p. 158-159), who was not mentioned by Carron, as a fourth

defender of the hardline account, I think I'm justified in saying that the dominant interpretation of Aristotle's theory of the voluntary actually does admit that children and animals act voluntarily.

In what concerns the worries that might be raised by the arguments of the dismissal and compromise accounts, it is worth remarking, first, that, although in *EE* Aristotle does say that animals do not act voluntarily (2.6 1222a18-20; and 2.7 1224a28-30) and that opinion is repeated in book 7 of the *NE* (2 1139a20), which is one of the common books, in book 3 the *NE*, which is widely considered as being Aristotle's later and more mature work, he first implies and then explicitly states that that animals, as well as children, do act voluntarily in two passages.

In the first passage, he recapitulates his theory of the voluntary act (*EN*. 3.1 111a22-24) before considering a contrary opinion, according to which actions done because of spirit or appetite are involuntary (*EN*. 3.1 111a24-25), and presenting five arguments against this opinion (*EN*. 3.1 111a25-1111b3). According to his first argument, we should reject that view because it would result in the affirmation that neither children nor non-human animals will act voluntarily (*EN*. 3.1 111a25-26). Now, commentators unanimously agree that Aristotle is taking this as an unwelcome consequence for his adversaries and, therefore, as a position that he does not endorse (see f. ex. Asp. *in EN* 66 3-13; Aquinas, 1999, p. 141; Grant, 1885, p. 14; Irwin, 1980, p. 124; 1999, p. 204; Taylor, 2006, p. 150; Zingano, 2008, p. 158-159; and Brown, 2009, p. 219), but some of them, it seems, would very much like to take this as a mere *ad hominem* argument which was not to be relied upon on at all. Hence the argument that uses the endoxic method to disqualify it.

According to Taylor, for example, Aristotle assumes (a) that animals and children are motivated by either appetite or spirit and by nothing else and (b) that both animals and children act voluntarily, but both assumptions, says Taylor, are questionable (Taylor, 2006, p. 150). Brown is equally laconic in her commentary, stating only that "the opponent may not find convincing the argument about children and animals, since it assumes both act voluntarily" (Brown, 2009, p.

219). However, we may feel about this passage, the truth of the matter is that in *NE*. 3.2 1111b6-10 Aristotle will state once again that animals do act voluntarily in a context that is not clearly endoxic, when he is establishing that deliberate action is a kind of voluntary action. Therefore, this seem to be one of the cases where the dominant interpretation is backed by the textual evidence. Once we accept this, both the aforementioned excerpt from *Metaph.* IX 5 and its parallels with the idea of what is up to us actually begin to count in favor of the attribution of bidirectional capacities to non-human animals, and not against it.

As we can see, this argument, if accepted, is indeed enough for us to reject the interpretation according to which bidirectional capacities would be present only in the thinking part of the soul. For, if that was the case, then animals would not have them and, therefore, would not be able to act voluntarily. And, as we shall see shortly, this will also be an important point for the evaluation of the next argument against the attribution of these capacities no non-human animals.

III. Bidirectional capacities as the capacities for knowledge

According to this argument, bidirectional capacities produce opposites because they are forms of scientific or technical knowledge (Alex.Aphr. *in Metaph.* 569 14-19; Witt, 2003, p. 63; Makin, 2006, p. 47; and Beere 2009, p. 78). On a first reading, this seems to be a very strong argument because right after Aristotle states that in the case of bidirectional capacities the very same capacity is a capacity for opposites, he says that this is due to the fact that the λόγος involved in them is ἐπιστήμη, and, therefore, the same λόγος clarifies both the thing and its privation (*Metaph.* 9.2 1046b4-8).

This is why some commentators, going as far back as Alexander, take bidirectional capacities to be kinds of knowledge – whether

scientific, as Alexander did,[2] or at least technical, as Witt,[3] Makin[4] and Beere[5] did.[6] But the problems raised by such an interpretation have not escaped the two most recent commentators. Both Makin (2006, p. 47-50) and Beere (2009, p. 88, n.29, p. 146-147) have remarked that, if this is so, then Aristotle's theory of unidirectional capacities seems vulnerable to counter-examples. The counterexamples mentioned by them, however, already show some difference in the way they understand what the problem really is.

For Makin, the problematic counter-examples are examples such as a tree's capacity to absorb oxygen from the air under certain conditions and release oxygen into the air under contrary conditions, or an embryo for which sex differentiation would be fixed by some random occurrence within certain cells and which, therefore, could in principle be considered to have a bidirectional capacity to become both male and female (Makin, 2006, p. 47-48). It is no wonder, then, that he does not see his interpretation of the text as too problematic.

Beere, on the other hand, accused Aristotle of having ignored "the non-rational powers of animate creatures" because, since he spoke as if all powers were either animate and rational or inanimate and non-rational, he would have left out of his two-category scheme

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[2] "(...) ἡ μετὰ λόγου δύναμις ἐπιστημονική τις γνῶσίς ἐστιν (...)". (Alex.Aphr. *in Metaph.* 569 16-17).

[3] "In the case of rational powers, which are the causal powers underlying the productive arts, (…)" (Witt, 2003, p. 63).

[4] "A rational capacity to produce φ is a capacity to bring about φ which is grounded in possessing an account of what φ is (1046b2–3: crafts are bodies of knowledge; 1046b16–17, 20–21: knowledge involves possessing and internalizing an account; 1046b17, 21: such knowledge is a capacity to produce effects because the soul can originate changes)" (Makin, 2006, p. 47).

[5] "Rational powers are arts. They consist in the systematic rational comprehension of some object or property. This systematic understanding is itself an account (λόγος) of what the art brings about, and this account constitutes a single power to bring about either of two results" (Beere 2009, p. 78).

[6] Aristotle can be read to take τέχναι either as kinds of ποιητικαὶ ἐπιστῆμαι or as different kinds of δυνάμεις in *Metaph*. 9.2 1046a36-b4. For the first interpretation, see also Ross (1924, p. 242) and Coope (2021, p. 109). Either way, it is clear that for him τέχναι are δυνάμεις and that they are bidirectional.

all the powers of non-rational animals such as pushing, pulling, clawing, digging, snatching, biting, killing, etc. (Beere, 2009, p. 146).

Now, if we accept that voluntary actions result from the activation of bidirectional capacities then we can build an even stronger argument against the idea that bidirectional capacities produce opposites because they are forms of scientific or technical knowledge. For this would imply that even humans could not act voluntarily without having an account based either on scientific or technical knowledge of what they were trying to do.

Now, it is true that in his theory of the voluntary act Aristotle may be taken as saying that *knowledge* of the particular circumstances involved in an action is necessary for an act to be voluntary.[7] Since these circumstances include both the act itself and its result, one could indeed take this reading as supporting the idea that humans could not act voluntarily without having an account based either on scientific or technical knowledge of what they were trying to do. But, once again, the problems raised by this interpretation have not escaped even its defenders.

Heinaman (1986), who explicitly saddles Aristotle with such a theory, has aptly shown both that there is no good reason to suppose that true opinion about the particular circumstances involved in an action would not be enough for an act to be voluntary and that such a reading would be incompatible with Aristotle's statement according to what Aristotle tells us in *EN.* 3.1 1112b1-7. According to what is said there, the acts that are done by deliberate choice are always voluntary and we do not deliberate about things about which we have *knowledge* but only about things whose results are uncertain. Since there is no good reason to suppose that he thought that the process of deliberation would lead one to such knowledge, it seems he did not take it to be necessary for a deliberate choice to be made and carried out.

[7] We do find this affirmation in some commentaries such as Gauthier and Jolif (2002, p. 189), Heinaman (1986, p. 131), Ross (2005, p. 206) and Zingano (2008, p. 18).

Besides, one could also argue that the negligence clause posited by Aristotle in his investigation of the voluntary is problematic for such a view. For Aristotle assumes that even the acts that are done because of ignorance of the particular circumstances are to be punished, and, therefore, that they are considered voluntary, if this ignorance is caused by the agent's negligence (*EN*. 3.1 1113b30-1114a4).[8]

All things considered, then, it does seem implausible to hold that scientific or technical knowledge would be necessary for voluntary action and, therefore, for the activation of bidirectional capacities. But if that is the case, how should we take Aristotle's explanation of why such capacities are capacities for opposites in *Metaph*. 9.2?

My suggestion is that we take it as an explanation that applies only to some paradigmatic cases of bidirectional capacities, namely, the cases where such an account is presupposed. I believe this reading squares well enough with the Greek text by supposing that when Aristotle says αἴτιον δὲ ὅτι λόγος ἐστὶν ἡ ἐπιστήμη he is explaining only what he said in the previous sentence, namely, that, as opposed to fire, which can only heat, medicine can produce both sickness and health (ἡ δὲ ἰατρικὴ νόσου καὶ ὑγιείας). On this reading, then, the explanation would apply only to capacities such as medicine, and not to all bidirectional capacities.

IV. The positive argument

It is now time to begin delineating my positive argument for the thesis I'm defending. The argument developed in this session will begin by defining what I'm understanding as voluntary locomotion and then it will try to establish two different points: (1) both an animal's capacity for voluntary locomotion and bidirectional capacities have desire among the conditions for their activation and (2) Aristotle describes both an animal capacity for voluntary locomotion and bidirectional capacities as capacities for contraries

[8] A reading I have defended in (Nascimento, 2017a).

and the contraries in the direction of which both these capacities are activated is determined by the desire that was responsible for their activation. Since Aristotle never mentions either (1) or (2) in connection with unidirectional capacities, this should weigh in favor of the conclusion that bidirectional capacities are actually the ones whose activation generate an animal's voluntary locomotions.

According to Aristotle, there are three types of change (μεταβολή), namely, movement (κίνησις), perishing (φθορά) and generation (γένεσις, *Ph*. 5.1 224b35-225b5), and three types of movement (225b5-9), namely, in relation to quality (τοῦ ποιοῦ), quantity (τοῦ ποσοῦ) and place (κατὰ τόπον). According to him, the only movement that animals are able to initiate on their own is movement κατὰ τόπον (*Ph.* 8.2 253a09-21) and he presents his theory of animal movement in *de An*. as an explanation of movement κατὰ τόπον (*de An*. 3.9 432b8-14; III 10, 433a10-20). This type of movement – which is called by Aristotle φορά, a term that is usually translated as locomotion – will be the subject of a new tripartition in *MA*. 11 703b3-704b2. In this chapter, we are told that animal movements can be of three types - voluntary, involuntary and non-voluntary -, that the theory outlined in the previous chapters concerns only voluntary movements, and we're given different explanations to account for these two other types of animal locomotion.[9]

According to what we are told in *MA*, movements such as the movements from the heart and from our sexual organs are involuntary, and movements such as sleep, awakening and breathing are non-voluntary. Although the idea that these movements should be explained differently seems entirely plausible to us, the idea of classifying any of these movements as locomotive movements can raise some questions not only for those who are not experts in the work of Aristotle, but also to those who are not familiar with two of the lesser known parts of Aristotle's thought, namely, the idea of movement κατὰ μέρη (*Ph.* 5.1 224a21-224b 35) and the theory about

[9] It is worth remembering, following not only Zingano (2009, p. 14-16), but also several other authors, that the tripartition outlined in chapter 11 of *MA* differs significantly from the one we find in the *EN*.

what is the place (τόπος) of something, a theory that is developed throughout book IV of the *Physics*.

Indeed, the term used by Aristotle throughout *MA.* is κίνησις and not φορά and, therefore, one might think that he is referring not to locomotion in particular, but to movement in general. However, if we keep in mind Aristotle's concept of place and the idea of alteration κατὰ μέρη we immediately see that the movements of the heart, sex and breathing are, according to Aristotle, locomotion.

According to what we are told in *Ph.* we must say that y is the place of x if and only if y surrounds (περιέχειν) x so that the extremities of y and x coincide (*Ph.* IV 4, 211b6-9; Morison 2002, p. 79, p. 133-174). If we adopt this definition, we can conclude that with each beat the heart changes place, that the movements of expansion and contraction of the sexual organs are locomotions and that with each breath the lungs change place and everything else that is displaced in its expansion and contraction also does change place, because in all these movements the space occupied by the parts changes, as they expand and contract, which means that their extremities change places, and this, in turn, that the parts themselves change places. Now, if the definition of locomotion is movement κατὰ τόπον, that is, a change in relation to place, then we must affirm that whenever there is a change of place there is locomotion and that the aforementioned movements are cases of locomotion.

Furthermore, I believe I am not saying anything that is not consensual in stating not only that the theory that is offered to us between Chapters 9 and 11 of *de An.* is presented as a theory of animal locomotion, but also that the theory that is offered to us up until chapter 10 of *MA.* has the same object. In fact, no movement of the types mentioned above in chapter 11 of *MA.* is even considered in the previous chapters or in *de An.*, and it seems undeniable that the explanations of animal movement offered by Aristotle in *de An.* (3 6-10) and *MA* (6-10) are very similar, if not identical, so that it seems implausible to postulate that they would be aimed at explaining different kinds of movement.

According to what we are told in *de An.* and *MA.*, every voluntary movement of animal locomotion has an end or a limit, and that end or limit is that in view of which the movement is carried out (*MA*, 6, 700b13-17); the end pursued in these movements is the "practical good"; the desire is itself "set in motion" for the practical good; this practical good is the principle of practical intellect and the end that the movement aims to achieve; and, by combining desire with cognition of the object of desire, the animal is led to carry out any voluntary local movement (*de An*. 3.10 433b13-21).

So much for the definition of what I take to be voluntary locomotion. It is now time to argue why exactly do I think that bidirectional capacities are the capacities whose activation generates voluntary locomotion. As I've said before, the rest of this session will be devoted to establishing two points: (1) both an animal's capacity for voluntary locomotion and bidirectional capacities have desire among the conditions for their activation and (2) Aristotle describes both an animal capacity for voluntary locomotion and bidirectional capacities as capacities for contraries and the contraries in the direction of which both these capacities are activated is determined by the desire that was responsible for their activation.

In *Metaph.* 9.5, after opening comments about the acquisition of capacities (1047b31–5), Aristotle states the following about the conditions for the activation of unidirectional and bidirectional capacities:

> (...) with the non-rational capacities, whenever what is capable of acting and what is capable of being affected meet up in the way appropriate to the capacity in question, it is necessary for the one to act and for the other to be affected, but with the rational capacities it is not necessary. For all these non-rational capacities are such that one is productive of one thing, whereas the rational capacities are productive of contrary ones, so that [if they produced them in the way the non-rational ones do] they would produce contraries at the same time. But this |1048a10| is impossible. There must, then, be something else that is the controlling factor. I mean by this desire or deliberate choice. For whichever of two alternatives an agent desires in a

> controlling way, this it will do, whenever it is such as to be capable and meets up with what is capable of being affected. (*Metaph.* 9.5 1048a5-13)

As we know, Aristotle's theory of capacities that initiate movement is made to *sufficiently* explain movement. In this passage, he says that in the case of *all* unidirectional capacities, whether they exist in inanimate things or in animated things, their activation and the movement that results from it are sufficiently explained by the "meeting up" of what is capable of acting and what is capable of being affected in the way appropriate to the capacity in question. In the case of bidirectional capacities, on the other hand, in order for their activation and the movement that results from to be sufficiently explained we need the "meeting up" of what has the active capacity and what has the corresponding passive capacity in the way appropriate to the capacity in question *and* an occurring desire of the subject that possesses the active capacity.

This difference, or so I argue, counts very much in favor of the thesis according to which voluntary locomotion is the result of the activation of a bidirectional capacity. For, according to this passage, desire plays no (necessary) role in the explanation of the activation of unidirectional capacities and of the movement that results from them. Since desire plays a necessary role in the explanation of the activation of bidirectional capacities and of the movement that results from them and in the explanation of the capacity for voluntary locomotion, it seems like voluntary locomotion is indeed the result of the activation of a bidirectional capacity.

Besides, once we recognize the decisive factor that desire plays in the activation of these capacities, it seems only reasonable to also recognize that it is not necessary for an agent who possesses a given bidirectional capacity to desire any of its two contraries and, therefore, that a bidirectional capacity may not get activated at all even when its possessor is near something that possesses the corresponding passive capacity, e.g. a doctor may abstain from healing someone *and* from making them sick if he has no desire for any of those things. This is a point that Aristotle makes several times

when he is speaking about voluntary locomotion, i.e., that animals are capable of moving (themselves) but also of staying at rest (*Ph.* 8.2 252b7-27, 253a7-21; 8.6. 259b1-10; *MA.* 7 701a7-8; and *de An.* 2.2 413b20-25). According to Aristotle's theory an animal will not necessarily pursue an object of desire just because it is close to it - i.e., it will not necessarily drink when it is close to water nor necessarily eat when it is close to food. Unless the animal is actually thirsty or actually hungry, it will remain indifferent to both food and water and, therefore, it will not actualize its capacity for voluntary movement in anyway.

It is important to note that saying that desire is the controlling factor in the activation of bidirectional capacities is not to say that these capacities are free in any meaningful sense. Indeed, in Metaph. 9.5 Aristotle will also state the following:

> And so whenever anything that is capable in accord with reason desires what it has a capacity for, in the way in which it has the capacity, it is necessary for it to do this. And it has the capacity for that thing in that way whenever the thing affected is present and in the relevant condition, |1048a15| and if not, it will not be capable of acting. (For it is not further necessary to add to the definition "provided nothing external prevents it". For it has the capacity as a capacity to act, not in all circumstances, but under certain conditions, among which will be the exclusion of external things preventing it, since these are precluded by some of the things present in the definition.) (*Metaph.* 9.5 1048a13-21)

As we can see, for Aristotle the difference between unidirectional capacities and bidirectional capacities is not that desire presides over one and necessity presides over the other, but that these capacities have different conditions of activation, i.e. conditions which trigger their necessary effect.[10] Therefore, there is no need to postulate their being free in any meaningful sense.

[10] This is, or so I take it, a point on which the interpretation proposes here diverges from the one proposed by Labarrière, who seems to stick to the idea that bidirectional capacities would be, in some sense, "free capacities", when he states

Now, one could try to circumvent this supposed difference between unidirectional and bidirectional capacities by claiming that an animal is only capable of eating when it is hungry, but this seems to be exactly the kind of argument that Aristotle discards in *Metaph.* 9.3. As we know, *Metaph.* 9.3 starts with a critique of the Megarian position according to which there are never any unexercised capacities (1046b29– 1047a29). After presenting the Megaric argument according to which something has the capacity to do X only when it is doing X (1046b29-33), Aristotle develops four objections against it (1046b33-1047a17) and establishes the distinction between what is possible and what is actual (1047a17-24).

Regardless of how we explain the Megarian position and the main intuition behind it,[11] it is commonly agreed that Aristotle rejects it in favor of a position according to which there are unexercised capacities and, in what concerns bidirectional capacities, it is also worth noticing that in *de An*. 2.5 417a21-b2 Aristotle, using contemplation as an example, explicitly states that we say of someone that he is capable of contemplating if he can do it whenever he wishes and if nothing external impedes it, i.e. if he is able to do it if and when the conditions for the activation of the capacity are Metaph. Therefore, there is no good reason for us to believe that he would have taken a contrary position in what regards bidirectional capacities or the capacity for locomotion.

If we accept what was said above, we should now ask ourselves: if the capacity for voluntary locomotion is indeed a capacity for contraries, then what are the contraries that it is a capacity for? As far as I can tell, the best answer that is available to us would be "pursuit

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that: "On reconnaitra là l'argument d'Aristote destinée à différencier la puissance naturelle d'acquérir la vertu de la puissance naturelle de voir, mais il se trouve ici imbriqué dans une argumentation destinée à distinguer ce qui préside à l'actualisation des puissances irrationnelles (la nécessité) de ce qui préside à celles des puissances rationnelles (le désir ou la décision préférentielle)" (Labarrière, 2004, p. 143).

[11] For two recent formulations, see Makin (1996, p. 254; 2006, p. 61-80) and Beere (2009, p. 91-119).

and avoidance".[12] Now, it is clear that Aristotle takes the impulse to pursuit an object of desire as the result of the activation of an animal's desiderative capacity, but in *de An*. 3.7 431a8-13 Aristotle states that what is capable of desiring (τὸ ὀρεκτικὸν) and what is capable of avoiding (τὸ φευκτικόν) are not different - a point he makes again in *EN*. 6.2 1139a21-22.

If that is so, then it seems that he thinks pursuit and avoidance are both movements that are due to the same capacity, namely, the desiderative capacity, which means that this capacity itself is, in some sense, a capacity for contraries. This should not surprise us, given the emphasis that has recently been given in the secondary bibliography to the fact that desire is, for Aristotle, a complex kind of embodied cognition (Pearson, 2012, 2; and Corcilius, 2020, p. 201), and, therefore, something that can very plausible be construed as "having λόγος". But desire itself cannot be explained as a bidirectional capacity just like the ones described in *Metaph.* 9. Since those capacities are explained as having desire as one of their conditions for activation, we would generate an infinite regress if we posited desire as having desire as a condition for its activation. Alas, that is

[12] This is another point in which the interpretation defended here diverges from the one defended by Labarrière. Indeed, Labarrière does not mention any two contraries as candidates for the contraries that animals' bidirectional capacities can produce when activated, although he stresses that can either move or not move (Labarrière, 2004, 144, p. 165). According to the interpretation defended here, this fact is indeed important because it points to the idea that this capacity can either be activated or not, either in the presence or the absence of the objects of desire, but the pair of contraries it can produce are not movement or rest, but pursuit and avoidance. I believe this interpretation is better because, if Aristotle thought that to be bidirectional capacity was merely to be a capacity that could be either activated or not, he could have said that medicine was bidirectional because a doctor could heal or not heal. But, although he does stress that, he also stresses that, when the capacity is activated, it can produce either of two contraries, and Labarrière's interpretation has nothing to say about that would these contraries be in the case of voluntary locomotion.

not what Aristotle does, for he explains desire as being generated by whatever generates pleasure and pain in an animal.[13]

Since desire figures heavily into Aristotle's explanation of voluntary locomotion precisely because it is desire that sets the goal for voluntary locomotion, it should also come as no surprise that in *de An*. 3.10 432b28-29 he characterizes the kind of movement that voluntary locomotion is as "always one of avoiding or pursuing something" and that in *MA*. 8 701b33 he again uses the vocabulary of pursuit and avoidance when characterizing an animal's capacity for locomotion, although this time he speaks of a thing to be pursued or avoided - the perception which is, in most cases, what generates the corresponding desire according to my interpretation of his theory.[14]

Last but not least, if we really accept that voluntary locomotion should be counted as a bidirectional capacity, we could also ask what exactly is the kind of knowledge it involves and how exactly do the animals come upon it. For clearly in the case of medicine and of the arts Aristotle thinks that there is a specific form of knowledge or technical skill that is acquired and which makes its possessor capable of eventually performing the two contraries that are characteristic of it.

Now, we should begin by noting that it just might be the case that the capacity of voluntary locomotion is unlike the technical and theoretical capacities in the sense that it presupposes no such acquisition of knowledge. As has been remarked before, Aristotle's division of capacities in two great kinds is bound to group together under one kind capacities that are significantly different from one another. Besides, Aristotle himself remarks in *Metaph.* 9.2 that some

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[13] As I've argued in (Nascimento, 2017b), that could happen either as a result of the perception of a given object, as described in Corcilius and Gregoric (2013), or as a result of the cyclical process that generate the feelings of hunger and thirst.

[14] See n. 49. Although there are at least two different views on this point, I will not elaborate on it any further since it is of no consequence for my argument here. For my views on this subject, see (Nascimento, 2017b).

capacities are innate and everything indicates that he does believe that the capacity for voluntary locomotion is innate.

Nevertheless, his description of parental care in *HA.* 8 and 9 also indicates that he was well aware that for a lot of animals there is a process, whose duration may vary significantly from species to species, during which the young learn from their parents how to perform the activities that will characterize their different ways of life, and this could very well be construed as the acquisition of the kind of know-how that will eventually enable them to pursue and avoid in accordance with their desire - hunting and foraging for food, avoiding dangers, looking for a mate in order to reproduce, etc. But, even if we don't accept this suggestion, I believe that, if we accept what was said above, we have good reasons to stick to the classification of the capacity for voluntary locomotion among bidirectional capacities since, if we group it among the unidirectional capacities, it will be even more at odds with the others.

Indeed, what are we to say of the role of desire in the activation of the capacity for voluntary locomotion? Is it not true that this capacity can either be activated or not, and that proximity between an animal and a possible object of desire is not enough for it to pursue it? Isn't this same capacity responsible for both pursuit and avoidance? Can we really say that the capacity for voluntary locomotion is more akin to fire's capacity to burn than to a doctor's capacity for healing? All things considered, or so I argue, we should conclude that in this case the alternative reading is at least as plausible, if not actually superior, to the one that is still the dominant interpretation of Aristotle's thought.

V. Conclusion

This is the second of two articles dedicated to Aristotle's theory about the role of μετὰ λόγου capacities in an animal's capacity to initiate a certain type of change, namely, voluntary locomotion. According to the dominant interpretation of the distinction between capacities that are "without-λόγος" (ἄλογοι), or unidirectional, and

capacities that are "with-λόγος" (μετὰ λόγου, *Metaph.* 9.2 1046a34-b2), or bidirectional, the latter would be unique to human beings. We can find four arguments in defense of that thesis in the secondary bibliography. In a previous paper I dealt with two of these arguments, which I called the psychic arguments. According to these arguments, bidirectional capacities are only possessed by humans because only humans have reason and bidirectional capacities are present only in the part of the soul that has λόγος, and non-human animals simply lack that part.

In that previous article, I argued that there are passages of Aristotle's works which could lead us to qualify his denial of reason to non-human animals and to question whether or not this denial should be enough for us to conclude that he did not think they had bidirectional capacities. In these passages, Aristotle does take several non-human animals to be capable of performing activities that are very much akin to activities that are performed by reason in human beings and this has led many to recognize at least that they would have a capacity that would be at least analogous to reason.

Then I argued that Aristotle himself discards the division of the soul into a part that has λόγος and one that doesn't, that one of his reasons for that was that, according to his own conception of the soul, it was hard to determine whether the perceptive part of the soul - which is a part all animals possess - should be said to have λόγος. Aristotle's point, or so I take it, is that this capacity cannot be said to be simply without λόγος. I then proceeded to a quick review of our current understanding of Aristotle's theory of perception in order to show that one could say that, for Aristotle, our perceptive faculty organizes the content of what is perceived into something like affirmation or negation.

In this article, I've argued that it is with the framework provided by Aristotle to explain the functioning of bidirectional capacities that we must explain the functioning of the capacity responsible for producing voluntary locomotion in *all* animals. The argument left it open whether voluntary locomotion in all animals is to be explained with reference *to the same kind* of bidirectional capacities or if we

ought to say instead that the bidirectional capacities present in other animals are analogous to the bidirectional capacities present in human beings.

In sections II and III, I dealt with the two other arguments in favor of the thesis I wanted to question - namely, that bidirectional capacities are the capacities responsible for voluntary actions, which are supposedly unique to human beings, and that bidirectional capacities are forms of scientific or technical knowledge. In section II, I showed that the connection between bidirectional capacities and voluntary action was actually an argument for their attribution to non-human animals, and not against it, because Aristotle clearly states that non-human animals are capable of voluntary actions. In section III I argued that the argument according to which bidirectional capacities are forms of scientific or technical knowledge should be rejected because it would unduly restrict voluntary behavior even amongst humans since neither scientific nor technical knowledge are required for voluntary action.

In section IV, I delineated my positive argument for the thesis according to which it is with the framework provided by Aristotle to explain the functioning of bidirectional capacities that we must explain the functioning of the capacity responsible for producing voluntary locomotion in *all* animals. According to what was said there: (1) both an animal's capacity for voluntary locomotion and bidirectional capacities have desire among the conditions for their activation; (2) Aristotle describes both an animal capacity for voluntary locomotion and bidirectional capacities as capacities for contraries; and (3) the contraries in the direction of which both capacities are activated is determined by the desire that was responsible for their activation. Since Aristotle never mentions (1), (2) or (3) in connection with unidirectional capacities, this should weigh in favor of the conclusion that bidirectional capacities are actually the ones whose activation generate an animal's voluntary locomotion.

Last but not least, I argued that even though there are certainly differences between the capacity for voluntary locomotion and

capacities such as medicine, which is the example discussed by Aristotle in Metaph. IX 2, there are even more differences between the capacity for voluntary locomotion and the kind unidirectional capacities he mentions there, which means that we are better off classifying it as a bidirectional capacity.[15]

Data availability

Not applicable.

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