

Aristotle's (Non-)Denial of Self-motion in *Physics* VIII

There is an obscurity about animals in *Physics* VIII. While arguing for the prime mover, Aristotle says twice that animals are not really self-movers (253a10-11; 259b7-8). This is at odds with his often repeated claim that animals are self-movers. Has he changed his mind?

David Furley suggests that Aristotle is focusing on intentionality (intentional-view).¹ The idea is that an animal goes somewhere because of the intention to pursue an external object. In this sense, self-motion depends on something apart from the animal. By contrast, Ben Morison contends that Aristotle recalls the division between agent and patient of *Physics* VIII.5 (parthood-view).² Animals are not really self-movers because it is only one part of them, the agent, which is a mover; the other part, the patient, is merely moved thereby.

Both these readings are problematic, however. The intentional-view does not clarify why Aristotle explains his claim with examples of involuntary motions. The parthood-view, on the other hand, considers them as a further and unrelated point, thereby breaking in two what seems a single piece of explanation. This essay suggests a third way out. In *Physics* VIII, Aristotle suggests that animals cannot self-move because life-keeping processes triggered by the environment, like sleep, are necessary in order to enhance the exercise of self-motion. Self-movers depend on the environment in order to survive and, therefore, locomove.

Section I raises questions about Aristotle's treatment of self-motion in *Physics* VIII. Sections II-III assess the intentional-view and the parthood-view. Section IV puts forward my own view.

1 Furley:1978.

2 Morison:2004.

I Aristotle's Two Puzzling Answers

Passage 1 (P1), 253a9-21. In *Physics* VIII.2 Aristotle argues that there has always been and there will always be change of some sort. Animals, however, appear to move themselves when they wish to do so. It is then open to argue that the universe might have started moving itself at some point, like animals do. P1 aims at dismissing this analogy. Aristotle seems to contend that i) it is false that “nothing from outside”³ moves the animal (259a11), that ii) self-motion is only locomotion (14), and that iii) some externally-caused changes move thought (*dianoia*) and desire (*orexis*), which in turn move the animal (16-17). His remarks look puzzling, however. As to (i), it is not clear why externally-caused changes in the animal should prevent them, and so the universe, from moving themselves *ex novo*. As to (ii), this restricts self-motion to one kind of change – change of place.⁴ One is not sure what this claim is there for. Moreover, with (iii) Aristotle makes it hard to see why animals are self-movers. He seems to consider their movements as the effect of external causes. P1 enigmatically ends with the example of sleep (19-20), a case of involuntary change.

Passage 2 (P2), 259b2-22. Aristotle seems to continue P1's point in *Physics* VIII.6. He has by now established that change in the universe is everlasting, and he argues for the conclusion that the first cause of this continuous motion is the prime mover. Self-motion offers an objection to this picture. By moving themselves, animals can put in motion what is around them. So we may

3 Translations are mine, unless otherwise stated.

4 cf. *Physics* III.1.

not need a prime mover. As a reply, Aristotle states that (i) animals do not self-move *kuriôs* (259b8), and he seems to suggest that (ii) the environment-changes affecting animals cause self-motion (10-13). Unfortunately, (i) and (ii) do not sound more helpful than their P1's counterparts. Why should the fact that the environment affects the animal imply that the animal does not self-move *kuriôs*? P2's examples look equally untelling. They are all involuntary changes, such as growth (9) and sleep (13). Nor does Aristotle feel the need to say more. He jumps to the conclusion that self-movers cannot cause continuous motion (14-16, 20-22).

II The Intentional View

Furley interprets P1 and P2 as making a point about intentionality.⁵ On his reading, Aristotle contends that self-motion is directed towards an external object of desire. The intentional-view can thus explain why self-motion is not strictly speaking self-motion:

An animal is correctly described as a self-mover, because when it moves, its soul moves its body, and the external cause of its motion (the *orexton*) is a cause of motion only because it is "seen" as such by a faculty of the soul. There must be an external object, however, and hence the movement of an animal does not provide an example of a totally autonomous beginning of motion (*ibid.*, p.13).

The dependence on external goals, Furley suggests, should be a reason for qualifying self-motion.

Despite solving the tension between P1, P2 and the view that animals are self-movers, this

⁵ Furley:1978.

reading remains problematic. Aristotle does not seem to focus on intentionality in either passage. Consider his examples. In P1, we have sleep. In P2, we are told that the food enters the body, hence the animal sleeps, hence it wakes up and moves (259b13-14). Aristotle emphasizes the mechanistic interaction between the environment and the animal, giving us no cases of intentional changes.⁶ There is a second problem. The environment-changes mentioned in P1 and P2 do not seem to imply that self-motion is always directed towards external objects. I might walk for the sake of walking, without any precise object to reach. Noticing this himself, Furley concludes that Aristotle wishes to stress that the environment is a necessary condition of animal motion.⁷ This, however, falls short of explaining why self-movers should necessarily pursue external objects. On the face of it, Furley cannot but deem Aristotle's account of intentionality as inadequate.

III The Parthood-View

Morison offers an alternative reading, by referring to *Physics* VIII.5.⁸ In this chapter, Aristotle defines self-movers as entities with two parts: one part, the agent, is unmoved, and causes the motion of the other part, the patient, which is moved thereby (257a32ff.). The parthood view has it that this suffice explaining why animals are not really self-movers: a part of them is not moved in its own right. Morison also suggests that P1's and P2's examples are devoted to contrast self-motion with other kinds of natural changes affecting the animal, such as sleep. Unlike self-

6 Aristotle suggests elsewhere that the object of desire is the unmoved mover of animal motion (cf. *De Motu Animalium* 700b114-15 and *De Anima* 433b10-13). Furley mentions these passages to support his view (Furley:1978, pp.8ff.).

7 *Ibid.*

8 Morison:2004.

motion, these are not due to an unmoved mover.

Although *prima facie* appealing, Morison's reading presents difficulties. For one, it entails that Aristotle's point about self-motion has nothing to do with environment-changes. However, in P1 Aristotle connects appetite and desire with external changes (253a16-17). He claims that the environment affects the faculty of desire, which in turn moves the body. Were he only contrasting, as Morison contends, environment-changes with self-motion, why pointing out that those changes play a role in one's self-moving?⁹ A second difficulty concerns P2.¹⁰ Aristotle closes P2 by claiming that what moves accidentally, that is, as being part of what moves in its own right, does not cause eternal motion (259b20-22). Presumably, he refers to the animal soul, which is carried along with the body it enforms and moves. To Morison, the claim is puzzling. For the parthood-view cannot explain why something that moves accidentally cannot cause continuous change.¹¹ Yet, Aristotle needs to give us a reason for thinking that the animal soul cannot cause continuous motion. This is what he is trying to establish. If in P2 he does something completely different, his remarks threaten to be off the point.

IV A Third Approach

It seems to me that both Furley and Morison do not give enough weight to Aristotle's examples. In this section I shall reconsider P1 and P2. It is my contention that, by focussing on changes like sleep, Aristotle makes a point about animal teleology.

9 Morison denies that this is what Aristotle does (Morison:2004, p.70). He suggests that waking up might depend on the stimulation of thought or desire (*ibid*, n.9). The claim lacks support, however.

10 Morison:2004, pp.78-79.

11 *Ibid*.

P1 Reconsidered. Aristotle begins P1 by considering that something from outside moves the animals, although they can self-move (259a9-12). He seems to contrast self-motion with some other changes affecting animals. In the next lines, then, he let us know that these other changes affect animals all the time, and are presumably (*isôs*) due to the environment (253a13-14). Indeed, he adds, the only change that animals self-cause is locomotion (13-14). Two points are in order. First, I suggest interpreting the *isôs* as indicating a plausible, but unsupported, assumption. Later Aristotle will rely on the assumption that changes affecting the animal other than self-motion are due to the environment, and nowhere in P1 he offers reasons to endorse it. Accordingly, by line 15 he establishes that some changes affect the animal full-time, independently of the occurrence of self-motions, and assumes that these changes are due to the environment.

With the next sentence comes the apparent denial of self-motion: “it is presumably (*isôs*) necessary that many changes occur in the body as a result of the environment, and that some of these move thought or desire, which in turn move the whole animal” (15-18). As above, I take *isôs* to introduce an unsupported thesis, which this time is supposed to have modal force (Modal Thesis):¹²

(MT-1) Necessarily, e-changes affect the animal, and move (*kinetai*) the thought or the appetite, which move the animal.

We know from *De Anima* that thought and appetite are the two soul-states causing self-motion.¹³

¹² I endorse a wide-scope reading of *isôs*, taking it to range over the whole clause.

¹³ 433a9-10.

By mentioning both, Aristotle refers to the animal capacity of self-starting motion in general. The difficulty with the MT-1 is then to see in which sense e-changes affect one's capacity to self-start motion.

It seems implausible that e-changes literally move the soul. For this is an unmoved mover.¹⁴ More likely, *kinetai* has a loose sense here.¹⁵ Its meaning is clarified by what follows. When animals sleep, Aristotle continues, their perception is off; nonetheless, at some point they wake up and move (18-20). The reference to perception is relevant. For self-motion occurs only when animals are perceiving – indeed, they direct themselves towards (perceived) objects. This suggests that by saying that e-changes move the thought and appetite, Aristotle might stress that animals can self-start motion only once awake (and perceiving):

(MT-2) Necessarily, e-changes cause wakening and enhance the animal capacity to self-start motion.

where 'enhance' refers to the dependence of moving on wakening. The idea is that it is up to e-changes to wake up the animal: only when *that* happens, self-movers come back in action.

With the MT-2, Aristotle is in a position to put forward his argument against the self-motion of the universe. All he needs in order to establish that the universe is not a self-mover is that there is some necessary connection between self-motion and the environment. If so, the universe, which has no environment, is not a self-mover:

¹⁴ Aristotle will endorse this few chapters later, in *Physics* VIII.5.

¹⁵ As it does in *De Anima* 408a34ff.

(1) Some changes other than self-started motion affect the animal. [self-started motion is only locomotion]

(2) These changes are due to the environment. [MT-2, first bit]

(3) Necessarily, these changes enhance self-started motion [MT-2, second bit]

So,

(4) The universe, having no environment, does not self-start moving [1, 2, 3]

Since the argument relies on the MT-2, one would like some remarks in its favor. Aristotle does not say why it is the environment that enhances self-started motion; nor does he explain why the MT-2 holds by necessity. However, by preceding with *isôs* his stating the MT-2, he has warned us that this thesis is provisional, so far. He ends by suggesting that Aristotle will come back on this later (20-21). Therefore P1 establishes a conditional:

If the MT-2 is true, the universe is not a self-mover.

We will hear more about MT-2 in P2.

P2 Reconsidered. P2 begins with the claim that animals move themselves only by one kind of motion – as we know from P1, this is locomotion – and ‘not *kuriôs*’ (259b 5-7). It continues expanding the second conjunct: “for the cause (*aition*) of this is not the animal itself, but there

are other changes in the animal, which they do not undergo through themselves” (6-8). Here Aristotle appears to claim that animal changes not due to the animal itself – he adds afterwards that they are due to the environment (10) – are responsible for self-motion (Responsibility Thesis):

(RT-1) e-changes are responsible self-stated motion.

The RT-1 becomes more precise with the next three examples: respiration, increasing and decreasing (9). Notice that these are not casual affections of the environment, like a blow of wind moving my hair, or a rain-drop falling onto my nose. Rather, they all necessarily affect the animals who undergo them, if these are to be alive. For Aristotle, breathing is directed to internal cooling, which in turn is an essential life-keeping process of those animals who breath.¹⁶ As to decreasing and increasing, they are essential to all living creatures.¹⁷ He therefore considers self-motion as dependent on changes that are connected with the animal life-maintenance (l-changes):

(RT-2) l-changes are responsible for self-motion.

¹⁶ See *On Breath*.

¹⁷ *De Anima* 434a22-26.

One can notice that the RT-2 is correct only if all l-changes are e-changes – that is, if the environment is the cause of all the life-preserving affections of the animal. It seems to me that Aristotle endorses such identification, provided it is restricted to efficient causation. Remember that he starts P2 (and P1) by noticing that animals only self-cause locomotion (7).¹⁸ He means efficient causes, for this is what is under investigation – whether animals can be the efficient cause of certain kind of motion. (In P1, whether the universe efficiently causes its own motion like animals do). But if animals only self-cause locomotion, then the efficient cause of other changes, changes in the animal but not caused by the animal, must be something else. It might be some part of the body. This, however, raises the question of what moves that part. On the most plausible option, at some point in the change-series there will be a cause outside the animal, from the environment (*to periechon*, lit. “what surrounds the animal”).¹⁹

It remains to be clarified in which sense l-changes are responsible for self-motion. At 259b10, Aristotle notices how l-changes affect the animal while it rests – i.e. it does not self-move. He then gives again P1’s sleep-example, in a more elaborate version (13-14). Food, we are told, causes some motions in the animal: first, the animal digests and sleeps; then, when the food is distributed, it wakes up and moves. The point looks similar to P1’s. An agent, food, acts upon the body, by affecting its organs. These, in turn, start out digestion processes that end up with the animal wake, once the digestion is complete. Joint with the platitude that animals can move only when awake, Aristotle’s example suggests the following:

18 I lack to space for considering how to square this claim with the idea that the soul is the efficient cause of say, nutrition and perception. I assume for the sake of argument that there is no inconsistency with these two theses.

19 At this stage of P2 Aristotle has not brought in the soul-body distinction, and refers to animals, not their souls, as causes of self-motions. This is probably why he does not explicitly rule out that some bodily part is the ultimate starting-cause of l-changes. An argument against such option: since every chain of changes starts with an unmoved mover (cf. 259b1-2), all bodily movements are preceded either by changes started by the soul, or by changes started by something from outside; the latter, at some point, will be started by another unmoved mover; hence, option-3 (some bodily part causes l-changes) collapses either in option-1 (the soul causes l-changes) or in option-2 (the environment causes l-changes); the soul only starts locomotion; so, option-3 collapses into option-2.

(RT-3) l-changes cause wake and thereby enhance the exercise of self-motion,

where ‘enhance’ stands for the relation between waking and self-moving. Although a lion does not cease to be a self-mover when asleep, sleep temporarily prevents its starting motion. By causing its wake, l-changes bring it closer to self-move. This, I suggest, is the sense in which the environment is responsible for self-motion, both in P2 and P1. (I take the RT-3 to represent the more accurate version of the MT-2, the thesis left unjustified in P1.)

If at all, the RT-3 holds by necessity. For it cannot be by coincidence that l-changes cause the animal waking up. However, this necessity does not depend on, say, food itself. It is true that for Aristotle food necessarily relates to animals as “what by which” a living being is nourished (*De Anima* II, 416b911). But one might envisage that something other than food causes an animal to wake up – perhaps, the animal itself. Let me break the issue in two. One can consider (i) whether it is necessary that an animal relates to food, and (ii) whether the processes triggered by food entail wake. I have just mentioned how Aristotle answers (i) in the positive. A passage of *De Somno* confirms he does the same for (ii):

[sleep’s] end is the conservation of animals ... the waking state is for an animal its highest end, since the exercise of sense-perception or of thought is the highest end for all beings to which either of these appertains...and the highest end is what is best ... it follows that sleep belongs of necessity to each

animal. (*De Somno*, 455b22-28, Barnes's trans.).²⁰

For one thing, the final cause of sleep is life-preservation. For another, the final goal of an animal is to exercise perception – and, I take it, the functions that require perceptions, such as locomotion – once awake. If so, it is by necessity²¹ that animals sleep, and that their nutritive functions, by ending the sleep-period, wake them up.²² It thus seems that the efficient causation of food on the animal is not sufficient to explain Aristotle's qualification of self-motion. Rather, this holds good on the backdrop of his animal teleology. It is in order to be alive that a lion must interact with the environment before self-moving.²³

Dependence on teleology notwithstanding, P2 only refers to efficient causation.²⁴ Why so? To answer, it is worth considering the framework of *Physics* VIII. The purpose of the chapter is that of individuating the efficient cause of the whole motion of the universe. Aristotle starts the book by arguing that any change is caused by a moved efficient cause (I-V). He then contends that the ultimate efficient cause of change in the universe is an unmoved and eternal mover (VI-X). P2 comes between these two stages, with the task of showing that self-motion does not ruin the picture. It is then not a surprise that it only mentions efficient causes. Aristotle claims that the

20 Lowe:1978 argues that the passage is spurious. I assume this is not the case. Everson:2007 defends its integrity. There are anyway analogous claims at 454b5-10, b31-a1, 458a1023-25, 30-32)

21 Aristotle talks of "conditional necessity" (*ibid.*): given the end of preserving animal existence, these changes must occur.

22 Hence Aristotle's mentioning growing, decreasing and breathing in P2: these changes, connected with or due to the nutritive functions of an animal, require rest-periods (cf. *De Somno* 454b31-455a 1).

23 The point could be made in terms of formal causation: it is by nature that an animal must sleep before self-moving. I prefer final causation for it emphasizes that sleep is directed to enable wake-periods in the animal. Moreover, final causation more naturally justifies the temporal priority of e-changes: plausibly, if Y's occurrence comes for the sake of X's occurrence, X must happen before Y.

Thomas Johansen suggests considering food as an instrumental cause of waking, and understanding self-motion in *Physics* VIII as referring to the animal capacity to self-cause motions in general (Johansen:2007). The problem with this suggestion is that it makes P2's argument unsuccessful.

24 The lack of reference to other causes is pressing with the phenomenon of sleep: Aristotle thinks that for understanding it we must specify all its four causes; by narrowing to efficient causation, one could confuse sleep and fainting (*De Somno*, 456b9-11).

environment is the (chronologically) first cause (*proton aition*, 14) of self-motion, namely that there cannot be self-motion lest prior changes, not due to the animal itself, affect the animal. By casting P2 in terms of efficient causation, he can highlight that self-motions are posterior to changes due to a moved mover (15-16) – the environment.

P2's framing becomes relevant in its last lines. These introduce the soul-body distinction, and recall *Physics* VIII.5: the efficient cause of self-motion is a peculiar kind of unmoved mover which moves accidentally (16-23). With this *précis* in hand, Aristotle can turn P2 into an argument that indirectly supports the postulation of a prime mover:

(1) Animals cannot start motion independently of prior changes [CT-3]

(2) The cause of animal self-motion is an unmoved mover which moves accidentally

[*Physics* VIII.5]

So,

(3) What moves accidentally cannot cause continuous motion. [1, 2]

Since there are changes prior to self-motion, unmoved movers that move accidentally cannot cause everlasting motion. For this, one needs an unmoved mover of a different sort.

Conclusion

In *Physics* VIII, Aristotle does not point out external objects as the goals of self-motions, nor he merely regards self-motion as one kind of animal changes. Rather, (i) he thinks of self-motion as self-started motion, because of an interest in determining the cause of the whole motion of the universe, and (ii) he emphasizes that the efficient causation of the environment is necessary to the animal life. Although his attention is restricted to the starting-causes of motions, this should not mislead us. His qualification of self-motion holds good on the backdrop of his teleology.

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