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'Nutritive and sentient soul in Aristotle's *Generation of Animals* II.5'

Abstract

This paper argues that focusing on Aristotle's theory of generation as primarily 'hylomorphic' can lead to difficulties. This is especially evident when interpreting the association between the male and sentient soul at *GA* II.5. If the focus is on the male's contribution as form and the female's as matter, then soul becomes divided into nutritive from female and sentient from male which makes little sense in Aristotle's biological ontology. In contrast, by seeing Aristotle's theory as 'archêkinetic', a process initiated by the male, the development of nutritive and sentient capacities emerges as intertwined, neither capacity originating in only one sex.

Key words

sperma, hylomorphic, nutritive soul, sentient soul, generation

How do male and female contribute differently to generation according to Aristotle? The most general way to characterise this is in terms of matter and form. Thus, as shorthand, many scholars regard Aristotle's theory to be 'hylomorphic'.¹ This paper argues that too much emphasis on matter and form can lead to difficulties in understanding the development of the nutritive and generative capacities of the soul in the embryo. This is because one prominent line of interpretation associates the male contribution of form with the exclusive contribution of sentient soul, while the female is deemed to provide nutritive soul. This conclusion stems

¹ 'Reproductive hylomorphism' was coined by Devin Henry in his PhD dissertation, 'How to Build an Animal: The Metaphysics of Aristotle's Ontogeny', King's College London, 2004 (see pp. 9, 89, 145, 181n.12, 196n.29) and is taken up by many other scholars of the *GA*; see for example Gelber 2010, 197, 203, 209; Stavrianeas 2018, 51-71 at 68 and even myself in Connell 2016, 301, 318.

from a single passage at *GA* II.5, 741a4-741b7.² In this text, Aristotle focuses on the phenomenon of the wind egg, i.e., something produced by a female bird without a male bird.³ In explaining why females do not generate on their own, he remarks that the male is needed in order for the embryo to eventually develop sentient soul (741b5-7). The hylomorphic analysis of this passage concludes that the male provision of sentient soul is what is meant by his contributing ‘form’ to generation.⁴ This interpretation, as will be argued more thoroughly in what follows, has the potential to lead to misunderstandings of Aristotle’s theory. Viewing the male role as an isolated ability to convey or instantiate sentient soul sits ill with understanding it as the efficient cause of substantial generation, ensuring that the soul is gradually actualised as an integrated whole. Furthermore, viewing Aristotle’s theory primarily in terms of the concepts ‘form’ and ‘matter’, serves to obscure, rather than illuminate, some of the more dynamic aspects of his account, and the complexity of the female role. Regarding the female contribution as solely or mainly responsible for the advent of nutritive soul confuses rather than elucidates its role of contributing materials capable of specific living functions, proper to the animal in question. These proper parts and their operations ought not to be separated from their role in the sentient life to come.

The paper will proceed as follows. It will begin in Section (I) by offering an overall interpretative strategy to rival the hylomorphic one, which will be referred to as the archêkinetic framework. It will next provide in Section (II) a brief overview of the main tenets of Aristotle’s reproductive theory before detailing the context and content of *GA* II.5, 741a4-

² The content is later repeated at *GA* III.7, 757b14-20.

³ It is mainly in birds that this occurs, although Aristotle notes its possibility in certain fish as well (*GA* III.1, 750b27-31; III.5, 756a18-21).

⁴ See especially Henry 2004; 2006; 2009; 2019. The view appears to originate in Peck’s edition of the *GA* (Aristotle 1942, xiii-xiv).

741b7 in Section (III). The rival interpretation of this passage will be presented in Section (IV) along with the many difficulties this view creates, before concluding in Section (V) that the fact that it provides a more coherent reading of this passage is just one of the many advantages the archêkinetic has over the hylomorphic reading of Aristotle's theory of generation.

I. Hylomorphic versus Archêkinetic

Many commentators hold that Aristotle has a 'hylomorphic' theory of generation, whereby the male contributes form to the female's matter. While it cannot be denied that the generation of animals is an instance of form coming to be in matter, thinking of matter and form as the key to understanding the phenomena serves to obscure the more dynamic aspects of the process. In particular, Aristotle is not as concerned with the male as form giver as many modern commentators are; he is more keen to find that the process fits to his four-causal schema, with final causes directing the ends of development (*GA* I.1).

There are only four passages in the *Generation of Animals* that associate the male role with form: *GA* I.20, 729a9-12; 1.21, 729b18-19; II.1, 732a4-5; IV.1, 765b12.⁵ There are several ways to interpret what these mean to convey to the reader. On one prominent reading, form is taken to be somehow present in semen and transmitted to the female contribution.⁶ This view invites oversimplification, a certain 'form container model', whereby form is 'present' or 'stored' in the male semen and handed over to the female.⁷ Often, this thought is also added:

⁵ Commentators tend to cite the first three plus *GA* II.4 738b26-8 (e.g. Henry 2009, 380, n.11). This fourth passage says that the body (or bulk) comes from the female and the soul from the male, and so is not concerned with form and matter *per se*, although of course in some contexts Aristotle emphasises that soul and form are equivalent.

⁶ E.g. Pellegrin 1985; Balme 1987; Furth 1988; Cooper 1988.

⁷ Furth holds that form is 'stored' in the semen (Furth 1988, 112); Morsink that the semen 'carries' the form (1982, 108); and Pellegrin that form is 'present in' semen (1985, 110).

that the *kinêseis* ('movements')⁸ present in the generative residues are 'movements of the form', like the motions of a carpenter's tools in forming a chair and so belong only to the male.⁹ This, in turn, leads to the notorious difficulty of reconciling this account of the male role with Aristotle's view that hereditary influences come from both male and female sides (*GA* IV.3).¹⁰ Some scholars who regard Aristotle's theory as 'hylomorphic' attempt a reconciliation by positing that Aristotle modified his view so as to allow some contribution of form from the female.¹¹ A more nuanced version of that view has it that, based on *GA* II.5, the male formal role is restricted to part of the form which is sensory soul, leaving the female to contribute the part of form that is nutritive soul.¹² Thus, the awkwardness of all formal contributions and all 'movements of the form' coming from the male is to be avoided and hereditary influences from the female are more easily accounted for.¹³

This modification, however, comes with three key problems of its own which this paper will detail. First of all, it is hard to see how the soul 'parts' could possibly be separated into male

⁸ The translation of this word as 'movements' is not always appropriate. The singular term, *kinêsis*, is used in Aristotle and in other Greek authors for the more general phenomena of change or process, of which motion (i.e. change in place) is only one type. Aristotle *Ph.* V.1, 225a34-225b9.

⁹ See, e.g. Balme 1987, 312: 'The male semen contributes nothing somatic to the fetus, but only "form" though the medium of "movements".'

¹⁰ Cooper's implausible solution whereby the male contribution is deemed responsible for the offspring's resemblance to the female's side of the family, shows how the attractions of a hylomorphic reading often do not manage to outweigh its disadvantages (Cooper 1988, 30).

¹¹ Furth 1988; Balme 1987; Henry 2006; accepting this reading: Gotthelf 2012, 100.

¹² See here especially Henry's adoption of Peck's reading of *GA* II.5 (Henry 2006, 2009).

¹³ For Henry heredity is due to indirect influences, dormant until activated (Henry 2006, 291). For a similar account see Connell 2016, 321-4.

and female contributions.¹⁴ Next, it is far from clear that Aristotle ever adopts the view that form (in animals) is actually sensory soul. Although it is true that having sensory soul is what makes this living being an animal rather than a plant, its form is more than simply sensory soul *per se*. And finally, it is difficult to maintain that this is still a hylomorphic account, given that nutritive soul which the female supposedly solely contributes is part of an animal's 'form'. Because the interpretations in question are so attached to the idea of hylomorphism, they focus much of their attention in interpreting the *GA* in a manner that mitigates these difficulties. Thus, in order to maintain a strict divide between the contributions of male and female in terms of form and matter, interpreters adapt their understanding of form and essence, to make it refer to 'what it is to be an animal', i.e. sentient soul only.¹⁵ And since the view is also that the female animal contributes only nutritive soul, a story of how that works must be manufactured, i.e. that the female contributes only the 'metabolic system' to offspring.¹⁶

It is unnecessary to make these problematic modifications to Aristotle's theory, which are in any case not evident in the text of the *GA*. What must be done instead is to reset the framework of analysis, so as to begin with a summary of Aristotle's theory of generation which emphasises the dynamic aspects of his account. As a summary of Aristotle's theory of the sexes' roles in generation, hylomorphism leads to difficulties if it is not always accompanied by the four-causal structure which Aristotle puts in place explicitly in *GA* I.1 (715a3-6).¹⁷ When

¹⁴ Nutritive and sentient souls are not ontologically separable when they occur in animals. This Aristotelian doctrine will be further examined in sections III and IV.

¹⁵ See especially Henry 2006; 2009; 2019. This will be discussed in more detail in section V.

¹⁶ 'The mother contributes the part that governs the development of the metabolic system, while the father contributes the part that governs the development of the sensory system' (Henry 2009, 374).

¹⁷ Gotthelf and Falcon put it this way: '[for Aristotle] the male contribute[s] the form by means of his role as source of motion' (Gotthelf and Falcon 2018, 21).

considering the content of *GA* II.1-3 in detail we see how careful Aristotle is to make his radical theory of generation seem plausible by providing a dynamic picture of embryological development. Aristotle never speaks of generation merely in terms of matter and form.¹⁸ Instead, male and female are most often characterised as material and efficient causes: the male role is to initiate substantial change (ἡ ἀρχὴν κινήσεως; e.g. *GA* I.2, 716a5-7; I.21, 730a24-30; II.1, 732a4-5, 8-9; II.4, 740b25-6; III.11, 762b3-4; IV.1, 765b14-15)¹⁹; the female is the material cause. When the passages cited most often as Aristotle's key statements of a 'hylomorphic' theory are examined closely, this becomes most apparent. The following brief analysis of each of these is illustrative: (1) *GA* I.20 729a9-12, (2) *GA* I.21 729b18-19 and (3) *GA* II.1 732a4-5. An additional, passage (4) *GA* IV.1, 765b9-14 will also be examined.²⁰

(1) *GA* I.20 729a9-12: 'But it happens as is reasonable, since the male provides the form, i.e. the start of the change, and the female provides the body, i.e. the matter'²¹

¹⁸ For this point see also Kosman 2010, 149, 154; Gelber 2010, 202; Connell 2016, ch.5; Carraro 2017, 285 n.27.

¹⁹ This is a point that Henry acknowledges but attempts to minimize in a footnote: 'In other places Aristotle simply says that the male contributes the "starting point of change" (*arkhe tes kineseos*)' (Henry 2009, 380n.11). Henry's book is a masterly treatment of Aristotle on substantial generation, which makes clear many of the dynamic aspects of his account. However, in defending 'a hylomorphic model of substantial generation in all Aristotle's work', Henry focuses more on form and matter than on the four causes or potentiality and actuality, although these are taken to be crucial as well. The main disagreement here is not with much of this analysis of substantial generation, but with the view that male and female roles are the exclusive provision of different parts of soul. It is the need to keep referring to where matter and form come from that leads to the difficulties this paper will detail. See Henry 2019, 1-20.

²⁰ All translations are mine unless otherwise specified.

²¹ ἀλλὰ συμβαίνει ὡσπερ εὐλογον, ἐπειδὴ τὸ μὲν ἄρρεν παρέχεται τὸ τε εἶδος καὶ τὴν ἀρχὴν τῆς κινήσεως τὸ δὲ θῆλυ τὸ σῶμα καὶ τὴν ὕλην

This passage is often translated differently. The *kai* after *eidos* in the first part about the male is translated ‘and’ while the *kai* in the second part about the female is taken to be epexegetical (i.e.). I have translated both as epexegetical, which makes better sense of the parallel structure of the two parts of the sentence. Thus, Aristotle is seen to be explaining or qualifying the idea that the male provides the form; by this he means that it is the proper efficient cause of substantial generation. As *Physics* III.2 makes plain, the efficient cause brings about the form, insofar as it makes the thing what it is, once the change is complete (202a7-10). But this is not the same thing as saying that the male imparts or conveys form to female matter or that his semen somehow contains form.

(2) *GA* I.21 729b15-17: ‘It is not from these [male and female] that it comes to be one, except like a bed comes from the carpenter and the wood or a sphere from the wax and the form’²²

The hylomorphic interpretation relies heavily on the final phrase, which likens female and male to wax and its form or shape. This is a small point, though, extracted from a much longer discussion with focuses on active and passive potentials (*GA* I.21, 729a34-729b22). In this context, Aristotle is challenged to explain how two components (i.e. the sexes) manage to create a unified result, something he is sure his parallel seed opponents cannot account for.²³ He can do so by noting that the male is the active potential and the female is the passive potential for substantial generation (729b9-11). When they meet, there is then one event: the generation of a unified being, a new animal. We must also note that the first comparison in the

²² οὐκ ἔστιν ἐκ τούτων τὸ γινόμενον ἓν, ἀλλ’ ἢ οὕτως ὡς ἐκ τοῦ τέκτονος καὶ ξύλου ἢ κλίνη ἢ ὡς ἐκ τοῦ κηροῦ καὶ τοῦ εἴδους ἢ σφαῖρα.

²³ ‘Further, if [the semen] is drawn from both parents alike, then two animals will come to be’ (*GA* I.18, 722b8-9). For so-called pangenesis as a ‘parallel seed theory’ see Connell 2016, ch.3.

passage does not convey the idea that the male contributes form to the female's matter but rather that the male is like the carpenter, i.e. the efficient cause.

- (3) *GA II.1 732a4-5*: 'As the first cause of change (to which belong the order and the form), being better and more divine by nature than the matter, it is better that the superior one be a separate individual from the inferior one.'²⁴

The context here is Aristotle's explanation of the final cause for the separation of different animals into male and female tokens. Since both principles can exist within the same living being, as happens in plants, the purpose of their separation cannot be generation itself but instead comes from 'a higher principle', i.e. a normative metaphysical consideration.²⁵ We can notice here that within the passage, and also straightaway after, the contrast between male and female is primarily parsed in terms of efficient and material causes (732a9).

- (4) *GA IV.1, 765b9-14*: 'male and female are differentiated by a certain ability and inability; for the male is able to concoct and produce and to discharge seed which has the principle of form. I mean, by principle not 'that from which' such an animal comes to be similar to parents, like matter, but the source of change.'²⁶

This passage is actually very seldom cited by hylomorphic theorists; in it, Aristotle uses 'form' in association with the male role in generation. Once again, however, form is posited only in the context of a dynamic account. The principle of the form does not stand alone but must be

²⁴ βελτίονος δὲ καὶ θειοτέρας τὴν φύσιν οὐσης τῆς αἰτίας τῆς κινούσης πρώτης—ἢ ὁ λόγος ὑπάρχει καὶ τὸ εἶδος—τῆς ὕλης, βέλτιον καὶ τὸ κεχωρισθαι τὸ κρεῖττον τοῦ χείρονος.

²⁵ For a compelling account of this see Lefebvre 2018.

²⁶ ἀλλ' ἐπεὶ τὸ ἄρρεν καὶ τὸ θῆλυ διώρισται δυνάμει τινὶ καὶ ἀδυναμίᾳ· τὸ μὲν γὰρ δυνάμενον πέττειν καὶ συνιστάναι τε καὶ ἐκκρίνειν σπέρμα ἔχον τὴν ἀρχὴν τοῦ εἶδους ἄρρεν (λέγω δ' ἀρχὴν οὐ τὴν τοιαύτην ἐξ ἧς ὥσπερ ὕλης γίγνεται τοιοῦτον οἶον τὸ γεννῶν, ἀλλὰ τὴν κινουῦσαν πρώτην).

qualified as what begins or initiates substantial generation (*tên kinousan prôtên*). In this context, after the elaboration of his theory in *GA* II.1-6, Aristotle is happy to concede that the sort of animal the offspring is, is due, at least in part, to the materials out of which it is constructed.²⁷

The above passages cannot be interpreted as hylomorphic without qualification; all connect form to the efficient cause of generation. The archêkinetic framework, in contrast, accepts the intimate connection between efficient causation and form. The male role is connected to the form of a new animal because the father (or a tool of the father's nutritive soul, the semen)²⁸ is the proper efficient cause, ensuring the advent of another animal like in form to the parents.²⁹ But, note, this is not the same thing as saying that Aristotle's theory of generation can be summarised, in brief, as the male supplying the form and the female the matter. Although it is correct to say that the male does not contribute matter (*GA* I.21, 729b18-20), it is not quite right to say that the female has nothing to do with the form that comes to be in the new animal. In order to produce a new animal, the same in form as the male, mating must occur with a female *the same in form*. This is shown most clearly in the case of hybrid animals; when the female animal is not the same in form as the male animal, then generation to type fails; the new animal is *not* a horse or a dog or any kind: it is a deformity that displays characteristics midway between the parent's bodily structures.³⁰ Rather than saying that the form exists in the semen and is conveyed by the father (the 'form-container' model), it is better to think of generation in terms of active and passive potentials. The female has the passive and

²⁷ In rejecting the view that development occurs due to a principle that 'like makes way to like', he notes that the parts are formed in the embryo 'because the residue of the female is potentially the same as the nature of the [new] animal' (*GA* II.6, 740b19-20).

²⁸ *GA* II.1, 734b8-9.

²⁹ For a more thorough analysis see Connell 2016, ch.5.1.

³⁰ *GA* II.4, 738b30-31.

the male the active potential to generate (*GA* I.20, 729a24-31; II.4, 740b22-25; *Metaph.* IX.1, 1046a19-26; *Ph.* III.3, 202a13-19) and this means that as active agent, similar to the craftsman, the male is the cause (of the advent of form) properly speaking. This is because he (sometimes through tools) is the active agent of generation.³¹ This means that the difference between the contributions of the two sexes is not the static – ‘provides form’, ‘does not provide form’ – but the more dynamic, ‘is able to generate’ versus ‘is not able to generate’ (*GA* I.21, 730a29-30; II.5, 741b3-4; III.1, 750b27-9; III.5, 755b5).³² The following reading of the *Generation of Animals*, and in particular Book II, chapter 5, shows the advantages of this archêkinetic framework of interpretation of Aristotle’s theory of generation.³³

II. Preliminaries: Aristotle’s theory of *sperma* as a residue

In order to get a sense of what Aristotle is concerned about in *GA* II.5, it is necessary to place it within the context of the tasks occupying him in *GA* II.1-6. Towards the end of *GA* II.1, Aristotle

³¹ Aristotle often refers to the male (or his tools) as the *demiourgos* -- ‘maker’ (e.g. *GA* I.18, 723b2-3; 723b30; II.4, 738b21; *GA* IV.4, 771b22). The first two passages refer to the nutri-generative soul as the maker, the last two assign this to the male animal’s action in generation – it is, as we will see, only his nutri-generative soul (and not the female’s) that is fully functional.

³² Aristotle often expresses the view that what it is to be male is to achieve or complete generation while what it is to be female is to be unable to do so without the male (*GA* I.21, 730a29-30, II.5, 741b3-4, III.1, 750b27-9, III.5, 755b5). This can also be parsed in terms of the female being unable to complete the concoction of semen, e.g. *GA* I.20, 728a18-19, II.3, 737a29, IV.1, 765b9-16.

³³ Gotthelf’s emphasis on the ‘potential for form’ in Aristotle’s theory of generation is closer to the archêkinetic perspective: ‘the father, as ultimate efficient cause, acts on the material supplied by the mother....which initiates a process leading in normal circumstances to the production of an offspring one in form with the father’. Gotthelf also finds it necessary, however, to accept the Peck-Henry reading of *GA* II.5 to mean that the female contributes to ‘the formal side of generation’ (Gotthelf 2012, 97, 100). See also Gotthelf and Falcon 2018, 26: ‘the male supplies the perceptive soul’.

begins to pose a number of challenges (or *aporiai*) for his radical new theory of generation proposed in *GA I*. In that book, after setting out certain methodological principles, Aristotle completes a survey of the generative parts. He begins with the non-uniform parts and promises an account of the uniform ones; it is only at the end of *GA I.16* that he starts what will be his own theory of generation, by elucidating what he posits at first to be a uniform part: *sperma* (seed). *Sperma* is the origin of the new animal; the new animal comes to be from *sperma* and *sperma* comes to be from the parents (*GA I.1*, 716a8-14). *Sperma* is no ordinary part; instead, it is a portion (*meros*) of the useful residue of nourishment (*GA I.18*, 725a11). The final nourishment (i.e. blood) is used to make up and maintain the adult's living body but an animal that is fully grown and reasonably well fed will have a little bit of this left over (i.e. residual). Although they are different (*GA I.18*, 724a36-724b8), the nutritive origins of female *sperma* are the same as that of the male variety. The difference between them is slight, i.e. degree of concoction, the female *sperma* is less concocted (*GA I.20*, 26-27, IV.1, 765b35-766a3). With this small difference, Aristotle is able to put in place his differentiated seed hypothesis; the male acts as an agent only, being the efficient cause of substantial generation, while the female supplies specialised materials which are potentially like the body of the new animal (*GA I.20*, 729a27-8; I.21, 729a34-729b9; 730a24-28).³⁴

GA II takes up this theory but with the challenge of explaining how it is that the male does not contribute anything material to generation but rather 'a certain potential and [source of] change' (I.21, 729b6).³⁵ The difficulties Aristotle presents in *GA II.1-5* mostly relate to the male role. How can something that does not contribute any matter influence the offspring (*GA*

³⁴ For the idea of Aristotle's view as a 'differentiated seed hypothesis' see Connell 2016, ch. 3.

³⁵ After an initial section on the normative basis of sex difference and how different methods of generation relate to body heat, Aristotle focuses back on his new theory and posits a series of 'problems' (*aporiai*) for it (*GA II.1*, 733b23-5, 733b31-734a2, 734a17; II.3, 736a31-2).

II.1, 733b24734a16)? What happens to the bodily semen (II.3, 736a26)? How is semen (*gonê*) related to the soul of the new animal (II.3, 736a28-33)? The theory of seed as a residue is not initially that helpful in supporting the unique role of the male. First of all, both male and female seeds are residues, so the male seed's status as a residue does not explain this interesting new non-material role.³⁶ Next, that the 'most useful' residue 'is the last from which come to be each of the parts [of the body]' (725a11-13) is a description that best applies not to the male but to the female contribution which will become the body of the new animal (GA II.5, 741b7, II.6, 738b26). Thus, Aristotle continues to battle with the problem of how the male can bring about the changes that will make a new animal develop without contributing any physical part to it. These problems are aided by Aristotle's earlier analogy of generation to a mechanical puppet (GA II.1, 734b4-17): gradual foetal development is like the sequential interconnected spatial movements of the puppet, started by one initial push or trigger (II.5, 741b8-9).³⁷ This is how the male is able to be the source of substantial change, by starting what has within it the capacity to react according to a set pattern. This account highlights the importance of the materials supplied by the female. These materials are highly specialised, containing (potentially) all the parts and the whole body of an animal the same in form as the female (II.6, 738b7-9, 740b19-21). Putting all that together in the first part of GA II, it is unsurprising that another potential difficulty arises – why, given that the female has this special material, ready to become the living body of the offspring, and a place for gestation to occur, does it not

³⁶ That the male contributes no material is Aristotle's great innovation in reproductive theory (GA I.21, 729b18-20). He shares views about the origins of the generative contributions with various Presocratic and Hippocratic authors: see especially Louguet 2015.

³⁷ There is no good reason to take the changes in the foetus to be local motions; the puppet is an analogy and no literal similarity is implied. For a fuller account of the automatic puppet as a solution to the puzzle of male agency, see Lefebvre *forthcoming*.

generate all on its own (*GA* II.5, 741a4-9)? It is in the context of trying to solve that puzzle, that Aristotle makes his remarks about the male's close association with sentient soul, the passage to which we now turn.

III. The passage from GA II 5

As Aristotle begins to make clear already in GA I, the differentiation of the sexes is in terms of the ultimate ability to generate another (I.20, 728a17-21). However, he also recognises that the female, as he puts it, can ‘generate up to a point’ (I.21-22, 730a30-33). But it cannot **start** the generation of **an animal** in earnest without a male principle (I.21, 730a28-30; II.3, 737a34).³⁸ This problem returns once again to occupy Aristotle in GA II.5. In order to make sense of his statement about sentient soul it is important to look at the passage from the very beginning of GA II.5 up to 741a29. I will take this in two sections, and discuss each separately (A) 741a6-18; (B) 741a18-29. I will then discuss (C) 741a33-741b9, where the lines ‘the male imparts (*empoiein*) the sentient soul’ occur (741b6).

(A) GA II.5, 741a6-29: (1) If the female has the same soul and the matter is the residue of the female, why is the male required in addition? Why doesn’t the female generate by itself from itself? (2) The reason is that an animal differs from a plant through sensation. It is impossible without the presence of sentient soul for a face or hand or flesh or any other part [of an animal to exist] either actually or potentially, whether in some way or absolutely so. For that will be like a corpse or a dead part. (3) So if the male is the active agent of this type of soul, where male and female are separated, the female is unable by itself to generate an animal from itself. For it was said that this is what it is to be male. (4) However, it is reasonable to be puzzled, as it is clear in those wind eggs generated in birds that the female is able to generate up to a point.³⁹

³⁸ Animals that generate on their own are normally hermaphrodites like bees (GA III.10).

³⁹ εἴτε ἔχει τὸ θήλυ τὴν αὐτὴν ψυχὴν καὶ ἡ ὕλη τὸ περίττωμα τὸ τοῦ θήλεός ἐστι, τί προσδεῖται τοῦ ἄρρενος ἀλλ’ οὐκ αὐτὸ ἐξ αὐτοῦ γεννᾷ τὸ θήλυ; αἴτιον δ’ ὅτι διαφέρει τὸ ζῶον τοῦ φυτοῦ αἰσθήσει· ἀδύνατον δὲ πρόσωπον ἢ χεῖρα ἢ σάρκα εἶναι ἢ ἄλλο τι μόριον μὴ ἐνούσης αἰσθητικῆς ψυχῆς ἢ ἐνεργεία ἢ δυνάμει καὶ ἢ πη ἢ ἀπλῶς· ἔσται γὰρ οἷον νεκρὸς ἢ νεκροῦ

Peck's interpretation of this passage, reflected in his translation of (3), is that (2) is giving the reason why females cannot generate by themselves which (3) then elaborates.

Peck's translation of (3) is as follows:

(3) 'Thus, if the male is the factor which produces the sentient Soul in cases where male and female are separate, it is impossible for the female all by itself and from itself to generate an animal: because the faculty just mentioned [footnote: The production of sentient soul] is the essence of what is meant by "male"'⁴⁰

One can first contest the assumption in Peck's reading that (2) is a complete answer to (1) and then that (3) is some kind of elaboration of (1) which marks a modification of his earlier view of female generative infirmity. On the Peck hypothesis, rather than implying here, as he did before on numerous occasions that the female is defective and ungenerative, Aristotle is saying that females have the ability to generate nutritive soul but not sentient soul. This reading then leads to the conclusion that the ability to generate sentient soul (and sentient soul only) is what

μόριον. εἰ οὖν τὸ ἄρρεν ἐστὶ τὸ τῆς τοιαύτης ποιητικῶν ψυχῆς, ὅπου κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν ἀδύνατον τὸ θῆλυ αὐτὸ ἐξ αὐτοῦ γεννᾶν ζῶον· τὸ γὰρ εἰρημένον ἦν τὸ ἄρρεν εἶναι· ἐπεὶ ὅτι γ' ἔχει λόγον ἢ λεχθεῖσα ἀπορία φανερόν ἐπὶ τῶν ὀρνίθων τῶν τὰ ὑψηλὰ τικτόντων ὅτι δύναται μέχρι γέ τινος τὸ θῆλυ γεννᾶν.

⁴⁰ Peck introduces the idea that the male contributes *only* sentient soul. This is not in the Greek and is not suggested in previous translations. One can look, for example, to Arthur Platt's translation, reprinted in Aristotle 1984, 1150: (3) 'Thus if it is the male that has the power of making the sensitive soul, then where the sexes are separated it is impossible for the female to generate an animal from itself alone, for the process in question was what being male is.' This does not indicate that the male only generates sentient soul but rather suggests that the process of generation requires it to initiate the advent of the whole soul.

it is to be male, the essence of maleness.⁴¹ This argument has a logical structure. However, one can see it as unsound on Aristotelian grounds. The premises that are adopted in this interpretation clash with the views he espouses elsewhere in the *GA*, in particular these three points (i) that the females cannot generate because they lack sentient soul, (ii) that the soul capacities can be divided between the contributions of male and female and, finally, (iii) that sentience is what it is to be male. None of these are usually held by Aristotle and, furthermore, there is no evidence in the rest of the *GA* that he has changed his mind and is now incorporating these three theses into his theory of generation. We will return later to these ideas, suggested by the Peck translation, which have become more entrenched as an interpretation of this passage.⁴²

In interpreting the passage above, there is a more viable alternative which fits with Aristotle's views expressed elsewhere in the *GA* and in other works. Let's first consider the import of (2): as a reason for (1), it is inadequate on its own and invites us to consider the possibility of non-explicit assumptions. Aristotle is pointing out that none of the parts of an animal can develop if there is no sentient soul present from the outset (e.g. at *GA* II.1, 735a6-9); the heart, once it becomes the locus of development, must be the first actualisation of sentient soul – no plant has a heart. Plants only have nutritive soul and so can grow immediately once the material is present, which is why they can grow from cuttings (i.e. materials that are potentially like the same plant).⁴³ But Aristotle is not here separating nutritive from sentient

⁴¹ In all of this, Peck is closely followed by Henry, 2006, 2009 as will be explained in more detail in section V.

⁴² (ii) and (iii) are addressed in (b) and (c) of Section IV. (i) is addressed in the discussion of (B) that follows in this section.

⁴³ Plants do not have the same spatial organisation and patterns of growth as animals do. They will nourish indiscriminately and grow in all directions (*DA* II.2, 413a28-30). Some look to Aristotle's description of wind eggs in *GA* III to support the idea that the female contributes actual nutritive soul.

functions. He is adamant in *DA* that they are ontologically inseparable in animals (*DA* II.3, 415a1-2, Cf. *PA* II.1, 647a25-27; *Somn.* 455b34ff.), a point to which we will return shortly. (3) is of course related to (2) but not as an elaboration of any argument but as a better and more complete answer to (1). (3) is going back to *GA* I on the differentiation of male and female roles in generation. The male is the active agent bringing about the generation of an animal which has a combined nutritive and sentient soul. Aristotle doesn't say 'sentient soul' but 'this sort of soul' (741a13-14 τὸ τῆς τοιαύτης ποιητικὸν ψυχῆς), i.e. an animal soul, with both nutritive and sentient faculties combined in one soul. This is the sort of soul the female cannot generate. He then states that this is what it is to be male, i.e. the definition of male. If this were a *new* definition of male, which redefined it as what was about to produce or implant *sentient* soul only, then why would Aristotle say 'as has been said before'? If we go back to previous definitions of male in the text, these all relate to agency in generation – the ability to generate, being like the carpenter, etc.⁴⁴ And so it is best to conclude that this is what he is referring to here as well. The male is that which is able to initiate the generation of a new animal of the same sort, i.e. with the same sort of soul, as the parents. Furthermore, it cannot make sense for 'what it is to be male' (741a9-10) to be the contribution of sentient soul only, given that

There Aristotle remarks that 'the [wind] egg itself regarded as the fetation of a plant is complete (*teleion*), but regarded as the fetation of an animal is incomplete (*ateles*)' (III.7, 757b19). The first phrase cannot mean that the female wind egg is a plant fetus because it could only make an animal; animals do not make plants. It must be taken counterfactually, i.e. 'if the living being were a plant, then this fetation would be a complete one' but since this female bird is not a plant, its fetation cannot be complete. The nutritive soul is not yet activated; it is not drawing nourishment to itself and digesting it.

⁴⁴ *GA* I.2 says what it is to be male is to possess the principle of [substantial] change and generation (716a5-6; cf. IV.1, 765b14-15). *GA* II.4 defines the male as a 'maker' (*dēmiourgos*) (738b21), which is the same term used to identify the male at III.2, 762b3-4. On Aristotle's definition of male (in contradistinction from female) see also note 32 above.

there is a male principle in plants,⁴⁵ and no plant has sentient soul. It must mean that the male is the efficient cause of substantial generation, the active agent of this change, as was established in *GA I* (i.e. ‘as has been said before’).

The question that Aristotle does not answer explicitly here, but is available from what we have already gathered in *GA I*, is why the female, even though it has in some sense ‘the same soul’ as the male cannot generate on its own. The answer is simply that the female being weaker and colder cannot produce internal nourishment in its final form. Only the male seed can initiate generation.⁴⁶

Being a residue, *sperma* is being changed by the same change as that by which the body grows through distribution of the final nourishment, when it enters the uterus it sets and changes the residue of the female by the same change which it itself happens to be changed by. For [the female matter] is a residue, and it has all the parts in it potentially, none in actuality.... For the female is like a deformed male, and the menstrual fluid is *sperma*, but impure. For it does not have only one thing -- the principle/start of soul (τὸ γὰρ θήλυ ὡσπερ ἄρρεν ἐστὶ πεπηρωμένον καὶ τὰ καταμήνια σπέρμα, οὐ καθαρὸν δέ· ἔν γὰρ οὐκ ἔχει μόνον· τὴν τῆς ψυχῆς ἀρχήν, 737a18-30).

The female is not said to lack the form or the ability to contribute sentient soul; it is said to lack precisely what the male is defined in terms of – i.e. the ability to start off the generation of a new animal. It is female because it lacks what it is to be male.

So why might commentators think that there has been a modification of the theory of male and female contributions? One reason is what Aristotle ends up saying about the wind-egg phenomenon, which some interpret to mean that the female contributes *only* nutritive soul;

⁴⁵ All sublunary life shares in male and female – *GA* 1.23, 731a24-33; I.1, 732a12-14.

⁴⁶ For an account of how the female’s nutri-generative soul is still generative see Connell *forthcoming*.

this then serves as a fitting counterpoint to the male contributing *only* sentient soul. A certain interpretation of (B) reinforces this dichotomy, so let's consider its import now.

(B) GA II.5, 741a18-29: (4) However, it is reasonable to be puzzled, as it is clear in those wind eggs generated in birds that the female is able to generate up to a point. (5) Further, there is this puzzle: in what sense are these eggs said to live? For they are not like fertilised eggs (for what comes to be from these are actually ensouled) but neither are they like wood or stone. For these eggs rot so that before that, they were in a certain manner living. It is clear that they have some sort of potential soul. But which sort? It must be the least, i.e. the nutritive sort. This is present in all animals and plants alike. (6) Why are the parts and the animal not completed? Because they need to have sentient soul [because a male wasn't involved], for the parts of the animal are not like those of the plant. Because of this, the male must share [the work]. For in these [i.e. animals] the male is separate.⁴⁷

This second portion of the passage begins to answer to the initial question, i.e. (1) 'If the female has the same soul and the matter is the residue of the female, why is the male required in addition? Why doesn't the female generate by itself from itself?' This question arises because the female has the 'same soul' as the male. They are the same in form (GA I.23, 730b34,

⁴⁷ τὸ γὰρ εἰρημένον ἦν τὸ ἄρρεν εἶναι· ἐπεὶ ὅτι γ' ἔχει λόγον ἢ λεχθεῖσα ἀπορία φανερόν ἐπὶ τῶν ὀρνίθων τῶν τὰ ὑπηνέμια τικόντων ὅτι δύναται μέχρι γέ τινος τὸ θῆλυ γεννᾶν. ἔτι δ' ἔχει καὶ τοῦτο ἀπορίαν πῶς τις αὐτῶν τὰ ὡὰ φήσει ζῆν· οὔτε γὰρ οὕτως ὡς τὰ γόνιμα ὡὰ ἐνδέχεται [ἐγίγνετο γὰρ ἂν ἐξ αὐτῶν ἐνεργεῖα ἔμψυχον] οὔθ' οὕτως ὡς περ ξύλον ἢ λίθος. ἔστι γὰρ καὶ τούτων τῶν ὡῶν φθορά τις ὡς μετεχόντων τρόπον τινὰ ζωῆς πρότερον. δῆλον οὖν ὅτι ἔχει τινὰ δυνάμει ψυχῆν. ποῖαν οὖν ταύτην; ἀνάγκη δὴ τὴν ἐσχάτην. αὕτη δ' ἐστὶν ἡ θρεπτική· αὕτη γὰρ ὑπάρχει πᾶσιν ὁμοίως ζώοις τε καὶ φυτοῖς, διὰ τί οὖν οὐκ ἀποτελεῖ τὰ μόρια καὶ τὸ ζῶον; ὅτι δεῖ αἰσθητικὴν αὐτὰ ἔχειν ψυχῆν· οὐ γὰρ ἐστὶν ὡς περ φυτοῦ τὰ μόρια τῶν ζώων. διὸ δεῖται τῆς τοῦ ἄρρενος κοινωνίας· κεχώρισται γὰρ ἐν τούτοις τὸ ἄρρεν.

Metaph. I.9); and form is soul (*DA* II.1, 412a20). The nutritive soul strives to make another animal like itself (II.4, 415a22-415b7), so why wouldn't the female, which clearly has a nutritive soul (and the materials needed for the foetal body), do this on its own?⁴⁸ Section (C) completes Aristotle's answer.

(C) *GA* II.5, 741a32-741b7: (7) If there is a genus which is female without having a separate male, it can generate a new animal from itself. This has not been reliably observed up to now; some sorts of fish are a cause of doubt. For amongst the so-called erythrinus no male has been so far observed, but females full of fetations have. Although these have not been reliably observed, some fish types have neither male nor female, such as eels and a certain sort of kestrees which lives in marshland rivers. (8) In animals where male and female are separate, it is not possible for the female to generate from itself by itself to completion. For the male would be in vain, and nature does nothing in vain. Therefore, in these sorts, the male always completes generation. (9) For it imparts/causes sentient soul, either through itself or through semen.⁴⁹

⁴⁸ Pellegrin thinks it odd that Aristotle did not ask why the male cannot generate on its own (Pellegrin 2018, 87). But this query cannot get off the ground; because the male role is immaterial, it could never make another sublunary living being on its own. If the male were to supply its own blood or residues as the matter for the new animal, then that would *be* the female role – it would be female as well as male, i.e. a hermaphrodite.

⁴⁹ Εἰ δ' ἐστὶ τι γένος ὃ θήλυ μὲν ἐστίν, ἄρρην δὲ μὴ ἔχει κεχωρισμένον, ἐνδέχεται τοῦτο ζῶον ἐξ αὐτοῦ γεννᾶν ὅπερ ἀξιόπιστως μὲν οὐ συνῶπται μέχρι γε τοῦ νῦν, ποιεῖ δὲ διστάζειν ἐν τῷ γένει τῶ τῶν ἰχθύων· τῶν γὰρ καλουμένων ἐρυθρίων ἄρρην μὲν οὐθεὶς ὥπται πω, θήλειαι δὲ καὶ κυημάτων πλήρεις. ἀλλὰ τούτων μὲν οὐπω πεῖραν ἔχομεν ἀξιόπιστον· οὔτε δὲ θήλεα οὔτε ἄρρην καὶ ἐν τῷ τῶν ἰχθύων γένει ἐστίν, οἷον αἱ τ' ἐγγέλεις καὶ γένος τι κεστρέων περὶ τοὺς τελματιαίους ποταμούς. ἐν ὅσοις δὲ κεχώρισται τὸ θήλυ καὶ τὸ ἄρρην ἀδύνατον αὐτὸ καθ' αὐτὸ τὸ θήλυ γεννᾶν εἰς τέλος· τὸ γὰρ ἄρρην μάτην ἂν ἦν, ἢ

Aristotle attempts both theoretical and empirical answers to the worry about parthenogenesis. The brief, and perhaps somewhat unconvincing, theoretical reply is that if females could generate on their own, there would be no need for males, and ‘nature does nothing in vain’ (8). Even if we accept this axiom, it does not guarantee that females cannot generate on their own. This is because nature often works to make situations better or easier for species;⁵⁰ thus there is nothing to stop the inference that females *can* generate on their own, it is just that males make it better or easier for them to do so.⁵¹ Thus Aristotle focuses on empirical observations. Initially he broadens the worry to certain animals that seem to be only female (741a33-37). Of this there has been no ‘trustworthy’ (ἀξιόπιστον) observation.⁵² If anyone has taken note of this phenomenon it is the only great observational zoologist of this time period, i.e. Aristotle himself; his opponents do not concentrate on such obscure and rare sighting. What is far more threatening to his case is something extremely common and well-known, i.e. unfertilised eggs, or ‘wind-eggs’, which is why he spends so much time on them here. Wind eggs, conveniently, appear in kinds which have obvious male and female tokens (8). In these animals, he says, females cannot generate without the male.⁵³ Earlier the empirical point

δὲ φύσις οὐδὲν ποιεῖ μάτην. διόπερ ἐν τοῖς τοιοῦτοις ἀεὶ τὸ ἄρρεν ἐπιτελεῖ τὴν γένεσιν. ἐμποιεῖ γὰρ τοῦτο τὴν αἰσθητικὴν ψυχὴν ἢ δι’ αὐτοῦ ἢ διὰ τῆς γονῆς.

⁵⁰ GA I.4, 717a15-16: ‘nature does everything either because it is necessary or because it is better’. For an account of luxury parts see Leunissen 2010, 33 and Sec. 3.2.

⁵¹ This is how Aristotle understands the female orgasm – generation can occur without it, but it opens up the uterus and so makes for easier conception (GA II.4 739a29-34).

⁵² See also GA III.7, 757b22-24.

⁵³ In fact, the empirical case is not that straightforward. Aristotle has a lot of difficulty finding copulation in some sorts of animal, for example, fish. He concludes that they are so quick about it, that they avoid observation (GA III.5, 756a36-756b3).

(reinforced again at 741a30-33) was made that females are not found to generate when males have not been involved. So, wind eggs are female-only products but they are ungenerative.

Wind eggs are not uniform but have a crude differentiation into white and yolk. For Aristotle, the white of the egg is closer to form and 'contains in itself the soul heat' (GA III.1, 752a2). He insists it is 'not due to the male and the female, the white being male and the yolk female: both are from the female' (751b26-7). The first time wind eggs are mentioned is in GA I in conjunction with an empirical proof of the male role as 'maker' or active agent of generation: if a wind egg has not yet been differentiated into white and yolk, and copulation occurs, it will become fertile (I.21, 730a5-8). However, this not only shows that males are required to produce fertile eggs that develop into animals but also that the female can 'generate up to a point' without the male (I.21-22, 730a30-34). As with many other topics left hanging in GA I, Aristotle takes up a fuller exposition of it in GA II. This passage (4-6), then, answers any remaining worries. In GA I, the male action is to 'set' (*sunistami*) the embryo at conception. Supposedly, this is how rennet (I.21, 729b6) acts on milk in the cheese-making process, by integrating the homogenous stuff (*παραπλήσιον ποιούσης*) (GA I.21, 729b31, I.22, 730b3, I.23, 731a16, II.1, 733b21, II.3, 737a21, II.4, 739a8, 739b21-4).⁵⁴ It might seem that when the male animal 'sets' the female contribution (and when the female can occasionally do this itself), since this is likened to making cheese, then the outcome would be a solidified mass. However, this cannot be accurate. The limitations of the analogy become much clearer later on in the GA when more than one offspring is produced at one time (GA IV.4, 771a17-771b14). This cannot be like cheese-making, since more milk and rennet never result in lots of little cheeses coming to be, but instead simply one large homogeneous mass. And this is precisely what does not happen in animal generation, since each embryo has a fixed size based on its

⁵⁴ It can make many of these parcels at once if the animal is multiparous (GA I.20, 729a4-14).

essence (771b33-772a4).⁵⁵ Already in *GA* I-II the analogy is shown to be imperfect: this is because only minimal, localised solidification occurs in an embryo, unlike in a cheese. Most of the new foetus or egg must remain liquid, as this is how it remains potentially like any body part before these begin to be differentiated and solidified in different ways.⁵⁶ If it were to become solid, it could not begin to develop. There will be semi solidification in the formation of a membrane, which is one of the first things to form around the living being.⁵⁷ In the case of the egg, there will also be internal membranes which separate the white from the yolk. If this sort of solidification occurs before the male has any input, then this is the end of any potential to become an animal.

The crude differentiation into white and yolk does not indicate that there could be any living being here – there is no activation of nutritive soul; the wind egg is nowhere near being able to feed and nourish itself.⁵⁸ One cannot easily infer from this thought that the female must contribute the nutritive soul and the male the sentient soul. First of all, the female cannot activate the nutritive soul; this was made clear in *GA* I and remains central to the account in

⁵⁵ For an analysis of how multiparity works see Connell 2018.

⁵⁶ This is very clear in Aristotle's embryogenetic story – the heart is the first part to be formed and actualised – it directs the development of the other parts, which are formed out of liquid, i.e. the final nourishment, blood or its analogue, using the tools of hot, cold, wet and dry which create different qualities of solidified uniform parts (*GA* II.6, 743a2-743b25).

⁵⁷ Aristotle makes the reader particularly aware of this in his discussion of how the foetus gains nourishment in the uterus or egg. Some posit that foetuses suck on bits of flesh but Aristotle is adamant that this is impossible because it is surrounded by membranes from the outset (*GA* II.7, 746a1, a23-26).

⁵⁸ Wind eggs have no soul functions (e.g. *GA* I.21, 730a30, II.3, II.5, 737a30, 741b6, III.1, 750b9f.; see also uterine moles, *GA* VI.7). They cannot nourish themselves, and so it cannot be the case that they have actualised nutritive soul (*GA* II.3, 736b10-11). For the view that the wind egg's nutritive soul is never actualised see Gelber 2010, 200.

GA II, where we discover that the formation of the heart in the early fertilised embryo is due to the male action.⁵⁹ Thus, the nutritive and sentient soul, which are together and ontologically inseparable in animals, are actualised only after the male contribution comes together with the female contribution. That the male completes generation is already clear in the initial definitions of male and female. Female needs male to generate; male ensures the whole soul is activated, including sentient capacities, which will make it the animal it is to be. But Aristotle does not here say or imply that that male or his contribution *only* activates that part of soul.

The wind egg is an odd phenomenon; it is a manifestation of what happens to the female contribution when generation fails to take place which would normally be invisible. The failure of male and female contributions to meet at the right time, leave the female contribution over-ripe, i.e. going beyond the capacity to be fertilised. Aristotle makes this clear already in GA I and reinforces this point in GA III – the egg can only become fertile if copulation occurs *before* the white and yolk have separated (I.20 I.21, 730a730a5-8; III.7, 757b6-8). After that, it is beyond any hope (GA III.7, 757b1-2). Thus, the wind egg is not equivalent to the female contribution to generation. This is important because when Aristotle says the wind egg has the lowest portion of soul potentially (5), he is not here speaking about the female contribution to generation; he is not redefining the contributions of male and female. It is the wind egg in particular he is worrying about; it is the wind egg that has the nutritive soul only

⁵⁹ GA II.4, 740a2-4: '[T]he heart is the first part to be distinguished in actuality (ἀποκρίνεται πρῶτον ἡ καρδία ἐνεργεία). Once the heart is in place, the embryo has, in a sense, an actualised nutritive soul (GA II.1, 735a12-18; II.4, 740a5). In another sense, its nutritive soul is not properly actualised until after its birth, when it can locomote and attain its own food in the way that is natural to it as the sort of animal it is. For an interesting analysis of Aristotelian embryology along these lines, see Carraro 2017, 289-90. For the importance of the way in which animals acquire food see e.g. HA I.1, 487a14-487b8; for the effect of food acquisition on character and behaviour, see e.g. HA VII(VIII).1, 590a18-596b20, VIII(IX).1, 608b19-609a3.

because it has been thwarted and is a dead-end product – it can never become an animal.⁶⁰

The female contribution, in contrast, has nutritive and sentient soul (together) potentially – because it has the potential to become an animal when it still has the chance of meeting with the male contribution.

IV. The Peck-Henry Interpretation: Form Means Sentient Soul

It was Arthur Peck, in his 1942 English translation with introduction and notes, who first posited that *GA* II.5 was a new theory of the contributions of male and female to generation. As Peck put it: ‘the meaning of the statement that “the male supplies the Form” can only be that the male supplies that part of the Form known as sentient Soul; everything else, including nutritive Soul, can be supplied by the female... the only difference between them is that the male’s contribution possesses also *sentient* Soul potentially’ (Peck, *Aristotle*, xiii-xiv). The way that Peck translates the passage shows how he understood the argument to go. For him, (2) is the solution to the puzzle of (1), and (3) an elaboration of this. Thus, the question of why the female cannot generate on its own is that it cannot contribute sentient soul (interpretation of 2) and that’s because only the male can do this (interpretation of 3). The female, instead, contributes nutritive soul (interpretation of 4-6) and the male sentient soul only (9). This understanding of (1)-(6) and (9) is then taken to be a modification of the theory of the contributions of the sexes that has appeared so far in the treatise. For Peck (and others) this is primarily to be characterised in terms of matter and form. The male supplies the form, the female the matter. (1)-(6) and (9) then must be a modification of this, such that the male supplies the part or version of form that is sentient soul. Devin Henry takes up this view and provides a detailed

⁶⁰ See also De Ribera-Martin 2019, 119-120. It is puzzling, though, that Aristotle gives the wind egg potential nutritive soul when this can never be actualised. It appears that he is struggling to describe the process that the egg undergoes on its own and reaches for the nearest equivalent: it is in some sense like the seed of a mere plant.

account of what he takes to be the gradual refinement of the hylomorphic theory from *GA* I.17 to *GA* II.5.⁶¹ Henry posits first that there are two ways in which the male contributes form. The first occurs at end of *GA* I (near the passages listed above which mention ‘form’): when the male semen *sets* the menses, it ‘forms’ them (from a liquid to a solid mass). This, however is not the ‘male’s exclusive contribution’, since the female can produce wind eggs, which show that the female can set offspring too (I.21-22, 730a30-33).⁶² The second version comes in *GA* II.4-5: the female contributes the body; the male, the soul.⁶³ The male does not, however, contribute the whole soul but only the sensory soul (*GA* II.5).

‘[W]hen we turn to *GA* II 5 we discover that this body/soul hylomorphism does not actually apply to the offspring’s entire soul but only a certain part of it. In the final analysis, what

⁶¹ Balme also thinks that Aristotle is putting forward a view here that is distinct from that which he expresses earlier about the male role. However, he is more cautious, commenting that ‘when Aristotle considers how unfertilized eggs can come about..., he concludes that the female material itself also has nutritive soul potentially; but until it receives perceptive soul from the male it cannot develop animal parts...Otherwise Aristotle usually speaks as he does here: the male contributes the source of soul, including nutritive’ (in his *Aristotle*, comments on 737a33, p.165).

⁶² Henry 2006, 293-5; 2009, 373; 2019, ch.5.

⁶³ The passage in *GA* II 4, 738b25-739a2 appears to be doing different work than simply clarifying form and matter in generation. Here Aristotle is offering another answer to the challenge that males have to contribute material to generation (*GA* II.3, 736a27-29), something he is still concerned to refute and which will also help him to explain how some male animals have no semen at all (738b12). The passage is therefore not designed to refine his hylomorphic hypothesis but to show that males do not have to contribute materials to generation – because the body or bulk (*soma*) comes from the female, a point reinforced by a reference to hybrids whose bodies are like their female parents (738b27-36). In any case, the idea of male contributing soul and female body complicates hylomorphism since these are even more difficult to separate ontologically or conceptually than form and matter. For that latter problem see especially Connell 2016, 155-156 and Carraro 2017.

the male *alone* is said to provide is the offspring's sensory soul... This is what Aristotle ultimately means when he says that the father's exclusive contribution to the generation of an animal is its form' (Henry 2006, 295).

The hylomorphic framework now requires that some account be given of how sensory soul is the form. Henry writes: 'For the sensory soul is the form of an animal in the most strict sense: it is the property that makes a creature an animal (its substantial being)' (ibid).⁶⁴ It is then claimed that this account provides a way to keep the theory hylomorphic while avoiding the difficulties of making sense of hereditary resemblance. The idea that the father provides sensory soul 'does not conflict with the view that the mother supplies movements that account for hereditary resemblance' (ibid.).

Even if this revised reproductive hylomorphism were to avoid a conflict between hylomorphism and the account of hereditary resemblance in *GA* IV.3, it creates other difficulties of its own in terms of fitting with Aristotle's philosophy.⁶⁵ These can be listed in short as follows:

- (a) It is difficult to imagine in what sense nutritive and sentient soul could be separated into male and female contributions

⁶⁴ Both of the above points are repeated almost verbatim in Henry 2009, 373.

⁶⁵ The Peck-Henry hypothesis has been taken up quite unquestioningly by a number of commentators on the *GA*. See, for example, Witt 1985, 52n.18; Dean-Jones 1994, 186; Mayhew 2004, 43, 45-7, 50; Leunissen 2010, 12; Pellegrin 2018; Dean-Jones 2020; for further references see Connell 2016, 173 n.31. Carraro initially thinks that *GA* II.5 'looks like a partial revision, or at least refinement' of Aristotle's theory of generation but cautions later that thinking that the male provides the sentient soul and the female the nutritive one 'overstates the case' (Carraro 2017, 285-6).

- (b) If form means sensory soul, this is a highly unusual sense of the concept in Aristotle's biology and philosophy more generally
- (c) The female, on this view, contributes to the form (or contributes 'part of the form') and so the interpretation is not, after all, a hylomorphic one

I will address each of these difficulties in turn.

- (a) Nutritive and sentient soul as female and male contributions⁶⁶

Proponents of the modified hylomorphic interpretation of Aristotle's theory of generation posit that the exclusive contributions of male and female to generation are of sentient and nutritive souls. In *de Anima*, Aristotle explains that there are 'separable' soul capacities; these are separable in two senses, either ontologically or conceptually.⁶⁷ Nutritive and sentient soul are conceptually separable because they can be defined without reference to each other. Nutritive soul is that which 'maintains its possessor as such' (*DA* II.4, 416b17-19), while sentient soul is what 'receives sensible form without matter' (*DA* II.12, 424a18-19; III.2, 427a14-16). Soul capacities are ontologically separable if they can exist apart from other soul capacities; nutritive soul can do so, but only in plants (*DA* II.2, 413a31-2, *GA* I.23, 731a24-26). For plants, nutritive soul is not a soul part, but the whole soul (*DA* I.1, 411b27-30).⁶⁸ Sentient soul, in contrast, is not ontologically separable from nutritive soul. Those living beings that are sentient, i.e. animals, do not have two souls but only one soul with both nutritive and sentient capacities.⁶⁹ How, then, would it be possible to separate out these soul functions into male and female contributions? One answer might look to embryological development, the nutritive soul being

⁶⁶ This is a necessary consequence of interpreting the passage as Peck does which is listed as assumption (ii) in Section III.

⁶⁷ This summary broadly follows Corcilius and Gregoric 2010.

⁶⁸ Corcilius and Gregoric 2010, 92.

⁶⁹ No living being can have sentient soul without also having nutritive soul (*DA* II.3, 415a1-2).

actualised in an embryo before the sentient faculty. Aristotle notes at several points that the embryo is like a plant (GA II.4, 739b33-740a4; 740a24-28; II.3, 736b13-4).⁷⁰ This could perhaps mean that at this stage it only has nutritive soul; Aristotle also says that it acquires sentient soul as it develops (II.3, 736b1-2). There is good reason to believe, however, that there is no temporal separation of this kind. Immediately once the embryo becomes viable, and is a living being in its own right, it has a heart, the first principle of life (GA II.4, 740a2-4, II.5, 741b16-17). The heart is not only a tool of the nutritive soul but also necessary to and the centre of the sensory capacities.⁷¹ No plant has a heart because the heart is a sentient organ. Thus, an animal embryo is never exactly like a plant even if it acts like one by failing to locomote and thus needing a 'root' to get its nutriment from the mother or egg (GA II.4, 740a24-28). It acquires more complex levels and varieties of sensation as it gets more body parts and begins to be able to wake up and consciously sense (GA III.2, 753b26-27; V.1, 778b25-779a2). Its ability to sense continues to develop when it is born and encounters a different world and different capacities of its own (e.g. to locomote and to feel more intense pleasure, pain and desire; DA III.11, 434a2-4). The gradual development of levels of perceptual ability is entirely compatible with the first actualisation of sentient soul occurring from the very beginning. It seems, then, that sentient soul must be present from the very outset and there is no temporal separation between the advent of the dual capacities in an animal's soul. So, female and male's different contributions cannot be found in any time lapse.

⁷⁰ These passages are noted by Henry 2019, 137 to support his reading.

⁷¹ Nutritive and sentient soul are co-located in the heart (PA II.1, 647a25-27; *Somn.* 455b34ff.). Once nutritive soul has been actualised in the embryo, it is then the principle (*archai*) of the sequential development of the rest of the body parts, including all the sentient parts (GA II.1, 735a, GA II.4, 739b34-740b9, II.6, 741b25-745b22).

Another assumption about the different soul parts coming from male and female is of exclusivity: the male contributing *only* the sentient portion or capacity and the female *only* the nutritive one. It is very unclear how the male could contribute only sentient soul – since the embryo cannot actualise nutritive soul, and draw nourishment to itself (*GA* II.1, 735a15-16) until and unless the female has mated with a male animal. Thus, the male looks to be absolutely necessary to start off not just the sentient soul but also the nutritive soul. The supposed implication that the female is in charge of constructing the nutritive capacities is also problematic.⁷² First of all, it is not the case that Aristotle says that the female contribution to generation in normal circumstances is to contribute nutritive soul potentially; instead this is what he says of the dead-end wind egg, which will never become an animal. Secondly, he does not imply, thereby, that the female contribution can only affect nutritive aspects of the embryo. The animal never has a nutritive form separable ontologically from sentient form (or the sentient ‘part of form’).

(b) Strictly speaking, the form of an animal is its sentient soul⁷³

For the Peck-Henry interpretation to remain hylomorphic, it must explain how it is that the male contribution of form is now converted to a contribution of ‘sensory soul only’. If, as is posited, this is now what Aristotle means by ‘form’, it ought to be acknowledged that this is quite a significant change for him and a very different idea of what form is than appears in most of his works. Form, as applied to animals, is to be identified most strongly with the soul (*PA* I.1, 641a18-19) as opposed to the body as matter. However, form is also the animal’s nature (the

⁷² ‘Aristotle observes that unfertilized “wind-eggs” never develop to the point where they begin to form sense organs, which (he thinks) shows that the father’s contribution must be responsible for the development of the sensory system. The fact that wind-eggs develop at all, however, shows that the nutritive power of soul comes from the female’ (Henry 2009, 373).

⁷³ This is an assumption made in the original Peck translation. See note 40 above.

source of change and rest in all four categories) and essence (what it is to be that animal) (*PA* I.3, 644a24-5). The picture we get of an animal's form, soul, essence and nature from the biological works is not significantly distinct from that we get from Aristotle's more abstract treatises and none of them suggest that there ought to (or even could) be a sole focus on sentient capacities.⁷⁴

One reason given for the sensory soul being form in the 'most strict sense' is that 'it is the property that makes a creature an animal (its substantial being)'.⁷⁵ Here it seems that an ambiguity between universal 'animal' as 'substantial being' and a particular animal's substantial being is being exploited. What would it mean for 'animal' to be essential to any animal's substantial being? As a substance, any animal must necessarily first and foremost be an animal, and for this it needs a sensory soul. But Aristotle rarely talks of an animal's form in that sort of abstract way. In *de Anima*, where he details the sensory soul, Aristotle never says that it is the essence of any particular animal. It could be an essential property of 'animal' taken universally, as a definition at that level of abstraction. Animal is a sensing being, for example.⁷⁶ But Aristotle is much more focused on particular kinds of animal when he is thinking about their forms and not something like 'the form of animal itself *qua* animal'. This is all the more the case in the generation of animals, where we hear so often that the male animal makes another like in form to itself (*GA* II.1, 734b21-22; 735a18-22), which indicates form taken at

⁷⁴ There are, of course, many important and lengthy discussions about how the accounts of form and essence in both sets of works are related. For excellent treatments, see for example Lennox 1985, 81-82; Lennox 1987, 339-359, especially at 356-8; Lloyd 1996, ch.3.

⁷⁵ Henry 2006, 295. See also Henry 2004, 196 note 29: 'it follows from Aristotle's reproductive hylo-morphism that an offspring will receive only one movement for the parts of its sensory system (the movement "Animal" which comes from the father).'

⁷⁶ See *Juv.* IV, 469b3-5; *GA* II.3, 736b1-2

species level. Indeed, this is how Aristotle characterises what is so important about the generation of animals in his other works as well (*GC* II.11, 338b7-17, *DA* II.4, 415a29-b9).

Within his zoology and in his metaphysical works more generally, Aristotle's idea of the form of an animal is what specific sort of animal it is, for example, a lion. The lion has a certain arrangement of organs, put in place by its form or essence, so as to serve its particular kind of life (*bios*).⁷⁷ The organs of the lion, its stomach, heart, lungs, and the orientation and composition of its limbs, are all there so that it can be a lion; these are not divided into nutritive and sentient portions of its capacities, although of course some of the organs are for nutrition and others for locomotion or sensation. The form of the lion must surely encompass them all. And when we consider the soul of the lion, it would be odd to say that what it was to be a lion involved only its sensory capacities; surely the lion digests and breathes in a lion-like manner as well. Even if we were to concede that conceptually, the lion's sentient soul had much more to do with being a lion than its nutritive soul, it still seems impossible to separate the two ontologically, which would have to be possible if one were to come from the male and the other from the female. The nutritive soul in an animal produces blood which goes to make up all the parts of the body, including the sentient parts; blood itself, which is manufactured by nutritive action, is the carrier of sensory information to the central sense organ (i.e., the heart or its analogue). The nutritive soul aims to produce another living being like itself (nutritive soul is generative soul): the new animal will be sentient, but this is not brought about by sentient soul but by the action of the male animal's nutritive soul (*DA* II.4, 415a26-28). A simple example illustrates how interwoven these soul capacities are. The bending of a lion's legs, which affects the way in which it is able to progress, depends on facts about the way it protects and feeds its

⁷⁷ The soul determines the arrangement of the parts in order to serve the ends of a particular way of life. Another example from the zoological works is of predator birds who have feathered wings because 'swiftness of flight is useful to their way of life (*bios*)' (*IA* 10, 710a26-27). See especially Lennox 2009.

young (*IA* 12, 711b12-32). Here, the way the body is structured to be a locomotive and sentient being, seeking food and mates on foot, is inseparable from the way in which it lactates and thus its 'nutri-generative system'.

When we also consider the male role in generation and how it is related to form, this again does not fit at all well with this form being 'sensory soul only'. It makes much better sense if, by being the efficient cause of this particular type of change, his contribution were in fact ensuring that the whole soul of the animal, nutritive and sentient together, comes to be in the unique way it does for his particular kind.⁷⁸ Something that is already a lion (male parent) is making something else a lion.⁷⁹ Because the male is said to contribute the soul, he also must contribute the essence, the 'what it is to be' that animal (*GA* II.4, 738b26-7). But by the analysis just conducted, it would seem that this essence includes the whole soul, not only its sensory capacities.

(c) The female, on this view, contributes to the form (or contributes 'part of the form')⁸⁰

The hylomorphic interpretation is quite explicit that the female animal, according to Aristotle's supposedly more nuanced theory of *GA* II.5, contributes to the form of the new animal.⁸¹ If the

⁷⁸ See also D. Balme 1972 [1994], 165 notes on 737a33; Gelber 2010, 198-200; Morsink 1982, 118-9.

⁷⁹ *GA* II.1.734a30-31; 734b21-3, 735a21; Cf. *Metaph.* VII.7, 1032a25, VII.8 1034a35-b8; see Connell 2001, 316.

⁸⁰ Gelber is also keen to refute the idea that the female contributes 'part of the form' (Gelber 2010, 201).

⁸¹ 'Most interestingly, Aristotle also reveals in *GA* II 5 that the mother's contribution is not confined to providing the offspring's body. She too provides part of its soul.' (Henry 2006, 295) and later on: 'However neat and tidy the traditional interpretation may be, when we trace Aristotle's reproductive hylomorphism through the *GA* we find that it clearly does not divide the contributions of mother and father exhaustively into matter and form.... nowhere is it stated that the mother does not supply anything formal. Indeed, as we have seen, Aristotle makes a case for his as early as Book II by saying that the mother does (or at least

theory is to remain significantly hylomorphic, it must attempt to minimize this supposed formal role. It attempts to do so in part by emphasising that the sentient soul is more properly an animal's form (see the previous section for my analysis of that proposal). It must also make sense of the female being solely responsible for the development of the nutritive soul. On this score, there is an attempt to further nuance Aristotle's supposed refinement. Recognising that the nutritive soul can be said to construct the sensory parts of the body and that the soul needs to be unified rather than divided between parents, Henry (2009, 374) proposes distinguishing between: (1) 'nutritive soul' in *GA* II.4 which is identified with the *offspring's* generative nature and (2) 'nutritive soul' in *GA* II.5 which comes from the mother.

(1) is generative soul, which is from both parents

(2) is the 'general capacity of a living thing to process nutriment and to increase and maintain its size' which is from the mother alone (*ibid*).

The idea here is that the maternal contribution is not the nutritive soul of the new animal but a special sort of truncated nutritive capacity which can only construct nutritive parts or systems and cannot construct the sensory parts. As Henry put is: 'The mother contributes the part that governs the development of the metabolic system, while the father contributes the part that governs the development of the sensory system'.⁸²

can) supply part of the offspring's soul.' (298). In this Henry follows Balme 1987, 305: 'the female matter contributes some formal qualities'.

⁸² Henry 2009, 374; 381, n.16. In his book, Henry produces a more nuanced account of how male and female contribute the different parts of soul (2019, 138-142). However, the main idea remains in place: 'what the semen possesses is a certain power (*dunamis*) for generating sensory organs whose own developing capacities constitute the sensory part of the future offspring's soul.... Likewise Aristotle argues that the menstrual blood is endowed with a set of spermatic motions in virtue of which it transmits the nutritive part of the soul (also as a power for generating the corresponding

It is difficult to see how this account could fit with Aristotelian embryogenesis. Aristotle nowhere says that the female contribution contains special powers that form the nutritive parts only and the male, ones that form the sensory parts only. Even the thought that the female contribution is responsible for forming a 'metabolic system' and the male for forming a 'sensory one' is pretty difficult to construct in terms of Aristotelian physiology. Notoriously, he has no separate 'nervous system' – all nutritive and sentient functions revolve around the same heart/heart analogue and blood (*Juv.* 1, 467b27-32, 2, 468a21-23, 3-4, 468b28-469b7).⁸³ There does not appear to be a clear separation between nutritive and sensory parts – the blood and heart are involved in both and fleshy parts like the mouth are used to masticate but also to sense with. With the larger and clearer differences between nutritive and sentient parts (e.g. stomach, liver, lungs versus flesh, mouths, ears), these parts don't seem to have separate lines of formation, somehow directed by two causal systems. There is certainly no temporal difference in formation, as noted above: the head and eyes and other upper parts come to be before the lower parts (with stomach and intestines, *GA* II.6, 742b14-15); flesh, the primary sense organ, is among the first parts to form in the foetus (743b3-5). If, as is posited, the female

system of organs)' (141). 'On the interpretation developed here, what the father transmits in his semen are a series of motions whose function is to endow the embryo with a set of active powers (*dunameis*) for forming sensory organs, while those from the mother include active power for developing parts of the nutritive system. The developed capacities (or first-actualities) of those different physiological systems constitute the sensory and nutritive parts of the offspring's soul respectively' (Henry 2019, 159-160).

⁸³ The final nourishment is perfected in the heart (*Juv.* 3, 469a5). Development of all the body parts, a nutritive function, is directed from the heart, in the embryo (*GA* II.6, 742b30-743a1). Sensory information travels to the heart from the sense organs and the images are preserved in the blood (*Juv.* 1-4, *Mem.*1).

contribution of wind eggs ‘never develop to the point where they begin to form sense organs’,⁸⁴ we would expect to see a stomach or other such ‘nutritive’ parts in the wind egg, which of course we do not.

A complete refutation of the view that the female ensures the formation of nutritive systems and the male sensory ones would take far too long. However, we can now see what a very radical theory this would be, given the rest of Aristotle’s embryology. Thus, if an alternative interpretation of *GA* II.5 can be offered that would not require such intricate complications, this would be preferable.

V. Conclusions: Hylomorphism or Archêkineticism?

Retaining a focus on Aristotle’s theory of generation as ‘reproductive hylomorphism’ leads to many difficulties that can be distracting when trying to understand Aristotle’s theory of the differentiated roles of male and female as part of form/soul, as the previous section detailed. Why, given these complications, have some found it so important to retain the hylomorphic framework as the main way to structure analysis of Aristotle’s theory of generation? This must be because it is perceived to allow for a continuity with discussions of abstract substantial generation in the rest of the Corpus (e.g. *GC*, *Metaphysics Z*).⁸⁵ This is, then, to some extent, a way to read Aristotle’s biology in the hope that it will illuminate metaphysical problems found elsewhere in his works.⁸⁶ But rather than viewing Aristotle as trying to fit

⁸⁴ Henry 2009, 373.

⁸⁵ Henry 2019, 14: ‘The basic argument of this book is that Aristotle employs a single model of generation throughout the corpus – the hylomorphic model’.

⁸⁶ ‘The philosophical issues examined in relation to biology, then, are already determined by reference to other nonbiological texts. After the problems arising in more canonical texts have been clarified, the reader is invited to turn to the biological treatises in the hope of finding some solutions’ (Connell 2001, 298).

animal generation into a rigid matter / form dichotomy, it is better to acknowledge more fully how his account of the intricacies of the most complicated natural phenomenon, animal generation, brings about a different emphasis. Souls are dynamic and interconnected; male and female animals both have souls which work together to bring about the gradual development of embryo and do not seem to divide tasks between soul functions.⁸⁷

Thinking of Aristotle's theory of generation as archêkinetic explains the content of *GA* in a more interrelational manner. Let's consider again wind eggs in *GA* II.5. If we are not focused on the contrast of form and matter, then there is no need to infer from what is said about them that the female provides part of form. Instead these eggs indicate the complexity of matter (ύλη).⁸⁸ The fact that a wind egg rots (II.5, 741a23) shows that it has already been undergoing a living process – not as a living being in its own right, but as the nutritive residue of the female animal. In *GA* II.3 Aristotle says explicitly that the generative products of male and female animals are not soulless (736a32-35).⁸⁹ Wind eggs show that the female is able to generate 'up to a point' (*GA* I.21, 730a31; II.5, 741a18; III7, 757b15); the agency in both passages is assigned to the female or, rather, to the nutritive soul of the female. As indicated earlier, the wind egg is unlike the female contribution to generation when it is successful, because it has passed the point at which it could become a viable animal. But the wind egg and the passage about the need for the male in *GA* 2.5 can tell us more about the female contribution as the contribution of the nutritive residue of the female animal, brought into existence by the agency of her nutritive soul.

⁸⁷ Henry's account of male and female roles is much improved by considering the potential for change in the generative residues and the gradual development of the embryo, although the focus is still on sentient as opposed to nutritive potentials (Henry 2019, ch.5).

⁸⁸ Gelber 2010, 201; Connell 2016, 156, 160; 2001, 319-22.

⁸⁹ This is a difficult passage, because Aristotle doesn't make clear if the *kuêmata* are fertilised or unfertilised generative products. For an analysis of this issue see De Ribera-Martin 2019, 119-120.

The female contribution to generation is the most concocted portion of blood, which is the female's attempt to generate another like itself. It also contains *dunameis* ('powers') that strive to generate a female resembling herself and her family (GA IV.3, 767b33-768a9, 768a10-21). A wind egg develops beyond the usual female contribution, indicating how interaction between male and female contributions can happen after conception (as in GA IV.1-4). This is why it has soul in some sense and is not completely inanimate, like a 'dead eye' (GA II.1, 735a8). The female contribution is moving toward becoming a sentient being, as effected by the agency of the female animal's nutritive soul. It is in a state of transition, similar to the one that the male contribution to generation is in as it conveys living qualities of the animal from the male's nutritive soul to the female's materials.⁹⁰ The female's materials are not only passive to that action; they are brought into being by the female's nutritive soul and so also conveying living qualities. It is only during a short time that these bodily fluids will retain these capacities, since like blood, they will eventually cool down and lose them, particularly if they are no longer in the right place at the right time. Semen and menstrual blood that exit the body without having formed a viable fetation are merely waste products (GA II.4, 738a27-30; HA IX(VII).1, 581b29-33). However, we have learnt that the female contribution, before it exits and when it still has the potential to meet with the male contribution, is moving toward becoming a *sentient* being. The female cannot bring this about, because of an incapacity in her nutri-generative function; but she is not thereby attempting to produce a plant; her residue must be moving toward a being like in kind to herself, i.e. some kind of animal. It is wrongheaded to say, then, that the female role can be defined in terms of contributing 'only nutritive soul potentially' (which is

⁹⁰ '[T]he semen is said to be actually changing – because in order for it to convey the change that comes from the father's soul, it must itself be changing in that direction, just as the tool that heats another object must itself be heating up', Connell 2016, 178. I here explain how it is that the nutritive soul is an 'unchanged changer' as described in *Ph.* III.5, 256b13-20. See also Connell *forthcoming*.

said of the wind egg).⁹¹ Furthermore, the male role is not to ‘provide’ sentient soul. It is much more accurate to say that the male simultaneously establishes the beginning of the development of the intertwined and co-dependent nutritive and sentient aspects of the soul of the particular kind. The female cannot complete the generation of ‘this sort of soul’ because it is an animal soul, which is both nutritive and sentient together.

Scholars of Aristotle’s *Generation of Animals* need to abandon Peck’s translation of *GA* II.5 741a6-741b9 and reject the idea that sentient soul is strictly speaking the form. Instead the form Aristotle is referring to in his embryology is the form of the kind, passed through the action by the male from one generation to the next. One might think the interpretation offered here takes away the concession that Aristotle makes to the female role: that it is also ‘part of the form’, i.e. nutritive soul, which it exclusively contributes. However, the alternative interpretation is inaccurate and distorts his theory. And furthermore, it does not help us understand the complexity of the female role in generation for Aristotle because while it gives her the ability to produce nutritive soul, it takes away any influence on sentient soul. Aristotle does not divide soul parts between the sexes; instead he defines them in terms of ability/inability and action/passion. The male initiates both soul parts and the female contribution is potentially able to become an animal body that facilitates both soul parts – both are in both – one as potential and one as the capacity to actualise. There is, then, no need to try to separate soul capacities that are ontologically indivisible in Aristotle’s philosophy.

⁹¹ However, this statement is somewhat puzzling. See note 60.

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