

**The Influence of Metaphysics on Embryological Theories: The Case of Neoplatonism
James Wilberding (October 2014)**

Two classical examples of metaphysics influencing embryology. Democritean Mechanism in the case of Hippocratic embryology, Aristotelian Hylomorphism in the case of Aristotle's own embryology.

<p>T1: Hippocrates <i>De natura pueri</i> §17: Ἡ δὲ σὰρξ αὐξομένη ὑπὸ τοῦ πνεύματος ἀρθροῦται, καὶ ἔρχεται ἐν αὐτῇ ἕκαστον τὸ ὅμοιον ὡς τὸ ὅμοιον, τὸ πυκνὸν ὡς τὸ πυκνὸν, τὸ ἀραιὸν ὡς τὸ ἀραιὸν, τὸ ὑγρὸν ὡς τὸ ὑγρὸν· καὶ ἕκαστον ἔρχεται ἐς χῶρην ἰδίην κατὰ τὸ ξυγγενές, ἀφ' οὗ καὶ ἐγένετο, καὶ ὅσ' ἀπὸ πυκνῶν ἐγένετο πυκνά ἐστί, καὶ ὅσα ἀπὸ ὑγρῶν ὑγρά· καὶ τᾶλλα κατὰ τὸν αὐτὸν λόγον γίνεται ἐν τῇ αὐξήσει. [...] Καὶ γὰρ εἰ θέλοις αὐλίσκον προσδεῖσαι πρὸς κύστιν, καὶ διὰ τοῦ αὐλίσκου ἐμβαλεῖν ἐς τὴν κύστιν γῆν τε καὶ ψάμμον καὶ μολίβδου κνήσματα λεπτά, καὶ ὕδωρ ἐπιχέας φυσῆν διὰ τοῦ αὐλίσκου, πρῶτον μὲν ἐκεῖνα ἀναμεμίξεται τῷ ὕδατι, ἔπειτα δὲ χρόνῳ φυσώμενα ἐλεύσεται ὁ τε μολίβδος ὡς τὸν μολίβδον καὶ ἡ ψάμμος ὡς τὴν ψάμμον καὶ ἡ γῆ ὡς τὴν γῆν· [...] οὕτω δὴ καὶ ἡ γονὴ καὶ ἡ σὰρξ διαρθροῦται, καὶ ἔρχεται ἕκαστον ἐν αὐτῇ τὸ ὅμοιον ὡς τὸ ὅμοιον.</p>	<p>T1: Hippocrates <i>De natura pueri</i> §17: “As the flesh grows it is formed into distinct members by breath. Each thing in it goes to its similar – the dense to the dense, the rare to the rare, and the fluid to the fluid. Each settles in its appropriate place, corresponding to the part from which it came and to which it is akin. I mean that those parts which came from a dense part in the parent body are themselves dense, while those from a fluid part are fluid, and so with all the other parts: they all obey the same formula in the process of growth. [...] Suppose you were to tie a bladder on to the end of a pipe, and insert through the pipe earth, sand and fine filings of lead. Now pour in water and blow into the pipe. First of all the ingredients will be thoroughly mixed up with the water, but after you have blown for a time, the lead will move towards the lead, the sand towards the sand, and the earth towards the earth. [...] The seed, or rather the flesh, is separated into members by precisely the same process, with like going to like.” (Lonie translation)</p>
<p>T2: Aristotle <i>De generatione animalium</i> I.21: καθόλου τε γὰρ ἐπισκοποῦσιν οὐ φαίνεται γιγνόμενον ἐν ἑκ τοῦ παθητικοῦ καὶ τοῦ ποιούντος ὡς ἐνυπάρχοντος ἐν τῷ γιγνομένῳ τοῦ ποιούντος [...] ἀλλὰ μὴν τό γε θῆλυ ἢ θῆλυ παθητικόν, τὸ δ' ἄρρεν ἢ ἄρρεν ποιητικόν καὶ ὅθεν ἡ ἀρχὴ τῆς κινήσεως. ὥστε ἂν ληφθῆ τὰ ἄκρα ἐκατέρων, ἢ τὸ μὲν ποιητικόν καὶ κινούν τὸ δὲ παθητικόν καὶ κινούμενον, οὐκ ἔστιν ἑκ τούτων τὸ γιγνόμενον ἐν, ἀλλ' ἢ οὕτως ὡς ἐκ τοῦ τέκτονος καὶ ξύλου ἢ κλίνη ἢ ὡς ἐκ τοῦ κηροῦ καὶ τοῦ εἴδους ἢ σφαῖρα. δῆλον ἄρα ὅτι οὐτ' ἀνάγκη ἀπιέναι τι ἀπὸ τοῦ ἄρρενος, οὐτ' εἴ τι ἀπέρχεται διὰ τοῦτο ἐκ τούτου ὡς ἐνυπάρχοντος τὸ γεννώμενόν ἐστιν ἀλλ' ὡς ἐκ κινήσαντος καὶ τοῦ εἴδους</p>	<p>T2: Aristotle <i>De generatione animalium</i> I.21: If we consider the matter on general grounds, we see that when some one thing is formed from the conjunction of an active partner with a passive one, the active partner is not situated within the thing which is being formed; [...] Now of course the female, <i>qua</i> female, is passive, and the male, <i>qua</i> male, is active – it is that whence the principle of movement comes. Taking, then, the widest formulation of each of these two opposites, viz., regarding the male <i>qua</i> active and causing movement, and the female <i>qua</i> passive and being set in movement, we see that the one thing which is formed is formed <i>from them</i> only in the sense in which a bedstead is formed from the carpenter and the wood, or a ball from the wax and the form. It is plain, then, that there is no necessity for any substance to pass from the male; and if any does pass, this does not</p>

	mean that the offspring is formed from it as from something situated within itself during the process, but as from that which has imparted movement to it, or that which is its 'form'. (Peck translation)
<p>T3: Aristotle <i>De generatione animalium</i> I.22: λάβοι δ' ἄν τις ἐκ τούτων καὶ τὸ ἄρρεν πῶς συμβάλλεται πρὸς τὴν γένεσιν· οὐδὲ γὰρ τὸ ἄρρεν ἅπαν προίεται σπέρμα, ὅσα τε προίεται τῶν ἀρρένων, οὐθὲν μόριον τοῦτ' ἔστι τοῦ γιγνομένου κυήματος, ὡσπερ οὐδ' ἀπὸ τοῦ τέκτονος πρὸς τὴν τῶν ξύλων ὕλην οὕτ' ἀπέρχεται οὐθὲν, οὔτε μόριον οὐθὲν ἐστὶν ἐν τῷ γιγνομένῳ τῆς τεκτονικῆς, ἀλλ' ἡ μορφή καὶ τὸ εἶδος ἀπ' ἐκείνου ἐγγίγνεται διὰ τῆς κινήσεως ἐν τῇ ὕλῃ, καὶ ἡ μὲν ψυχὴ ἐν ἧ τὸ εἶδος καὶ ἡ ἐπιστήμη κινούσι τὰς χεῖρας ἢ τι μόριον ἕτερον ποιάν τινα κίνησιν, ἕτεραν μὲν ἀφ' ὧν τὸ γιγνόμενον ἕτερον, τὴν αὐτὴν δὲ ἀφ' ὧν τὸ αὐτό, αἱ δὲ χεῖρες τὰ ὄργανα, τὰ δ' ὄργανα τὴν ὕλην. ὁμοίως δὲ καὶ ἡ φύσις ἢ ἐν τῷ ἄρρενι τῶν σπέρμα προϊεμένων χρήται τῷ σπέρματι ὡς ὄργάνῳ καὶ ἔχοντι κίνησιν ἐνεργείᾳ, ὡσπερ ἐν τοῖς κατὰ τέχνην γιγνομένοις τὰ ὄργανα κινεῖται· ἐν ἐκείνοις γὰρ πως ἡ κίνησις τῆς τέχνης.</p>	<p>T3: Aristotle <i>De generatione animalium</i> I.22: "These instances may help us to understand how the male makes its contribution to generation; for not every male emits semen, and in the case of those which do, this semen is not a part of the fetation as it develops. In the same way, nothing passes from the carpenter into the pieces of timber, which are his material, and there is no part of the art of carpentry present in the object which is being fashioned: it is the shape and the form which pass from the carpenter, and they come into being by means of the movement in the material. It is his soul, wherein is the 'form' and his knowledge, which cause his hands (or some other part of his body) to move in a particular way (different ways for different products, and always the same way for any one product); his hands move his tools and his tools move the material. IN a similar way to this, Nature acting in the male of semen-emitting animals uses the semen as a tool, as something that has movement in actuality. Just as when objects are being produced by any art the tools are in movement, because the movement which belongs to the art is, in a way, situated in them." (Peck translation)</p>

The core Neoplatonists: Plotinus (205-270 AD), Porphyry (234-305 AD), Iamblichus (245-325 AD), Proclus (410-485 AD), Damascius (462-538) and all the commentators after Alexander: Themistius (317-388 AD); Syrianus (d. 437 AD); Ammonius Hermeiou (440-526 AD), Asclepius (late 5th – early 6th C AD), Simplicius (490-560 AD); Elias (late 6th C. AD); Philoponus (490-570 AD).

Three Fundamental Principles of Neoplatonic Metaphysics

PNP: Production necessarily follows from perfection.

<p>T4: Plotinus <i>Ennead</i> 5.1.6.37-38: Καὶ πάντα δὲ ὅσα ἤδη τέλεια γεννᾶ· τὸ δὲ αἰεὶ τέλειον αἰεὶ καὶ αἰδῖον γεννᾶ·</p>	<p>T4: Plotinus <i>Ennead</i> 5.1.6.37-38: 'And all things when they come to perfection produce; the One is always perfect and therefore always produces.' (Armstrong translation)</p>
<p>T5: Proclus <i>Elements of Theology</i> §25: Πάν τὸ τέλειον εἰς ἀπογεννήσεις πρόεισιν ὧν δύναται παράγειν, αὐτὸ μμούμενον τὴν μίαν τῶν ὄλων ἀρχὴν</p>	<p>T5: Proclus <i>Elements of Theology</i> §25: 'Whatever is complete proceeds to generate those things which it is capable of producing' (Dodds translation)</p>

PAP: The priority of the actual to the potential.

<p>T6: Plotinus <i>Enneads</i> 5.9.4: πόθεν γὰρ τὸ δυνάμει ἐνεργεία ἔσται, μὴ τοῦ εἰς ἐνεργείαν ἄγοντος αἰτίου ὄντος; [...] Διὸ δεῖ τὰ πρῶτα ἐνεργεία τίθεσθαι καὶ ἀπροσδεᾶ καὶ τέλεια · τὰ δὲ ἀτελῆ ὕστερα ἀπ’ ἐκείνων, τελειούμενα δὲ παρ’ αὐτῶν τῶν γεγεννηκότων [...] τελειούντων</p>	<p>T6: Plotinus <i>Enneads</i> 5.9.4: “For in what way will the potential become actual, if there is no cause to bring it to actuality? [...] the imperfect realities come from and derive from the first, being perfected by their begetters.” (Armstrong translation)</p>
<p>T7: Proclus <i>Elements of Theology</i> §17: Πᾶν τὸ δυνάμει ὄν ἐκ τοῦ κατ’ ἐνεργείαν ὄντος ὃ τοῦτο δυνάμει ἐστὶν εἰς τὸ ἐνεργεία πρόεισι ·</p>	<p>T7: Proclus <i>Elements of Theology</i> §17: ‘All that exists potentially is advanced to actuality by the agency of something which is actually what the other is potentially’ (Dodds translation)</p>

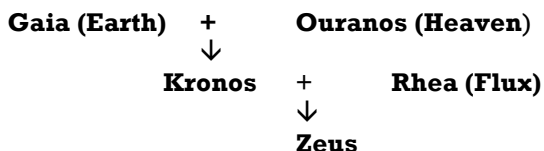
PIP: The product is always an inferior likeness of the producer.

<p>T8: Plotinus <i>Enneads</i> 5.5.13.37-38: Κρεῖττον γὰρ τὸ ποιοῦν τοῦ ποιουμένου · τελειότερον γάρ</p>	<p>T8: Plotinus <i>Enneads</i> 5.5.13.37-38: “For the maker is better than what is made, because more perfect/complete” (Armstrong translation)</p>
<p>T9: Proclus <i>Elements of Theology</i> §7: Πᾶν τὸ παρακτικὸν ἄλλου κρεῖττόν ἐστι τῆς τοῦ παραγομένου φύσεως</p>	<p>T9: Proclus <i>Elements of Theology</i> §7: ‘Every productive cause is superior to that which it produces’ (Dodds translation)</p>

These three principles, and the metaphysics of procession and reversion more generally, easily lend themselves to a sexual/biological application. This sexualized understanding of procession and reversion becomes more marked in later Neoplatonists, largely because of the increased importance of the Chaldean Oracles, the Orphic tradition and the poetic theogonies.

<p>T10: Chaldean Oracles Fr. 28 Des Places: τῆσδε γὰρ ἐκ τριάδος κόλποις ἔσπαρται ἅπαντα.</p>	<p>T10: Chaldean Oracles Fr. 28 Des Places: For in the womb (κόλποις) of this triad all things is sown (ἔσπαρται)’ (Majercik translation)</p>
<p>T11: Chaldean Oracles Fr. 30 Des Places: πηγὴ τῶν πηγῶν, μήτρα συνέχουσα τὰ πάντα</p>	<p>T11: Chaldean Oracles Fr. 30 Des Places: ‘Source of sources, the womb (μήτρα) holding all things together’ (Majercik translation)</p>
<p>T12: Chaldean Oracles Fr. 35 Des Places: Τοῦδε γὰρ ἐκθρώσκουσιν ἀμείλικτοί τε κεραυνοὶ καὶ πρηστηροδόχοι κόλποι παραφεγγεὸς αὐγῆς πατρογενοῦς Ἑκάτης καὶ ὑπεζωκὸς πυρὸς ἄνθος ἠδὲ κραταιὸν πνεῦμα πόλων πυρίων ἐπέκεινα</p>	<p>T12: Chaldean Oracles Fr. 35 Des Places: ‘For Implacable Thunders leap from him and the lightning-receiving womb (κόλποι) of the shining ray of Hecate, who is generated from the Father. From him leap the girdling (ὑπεζωκὸς) flower of fire and the powerful breath (situated) beyond the fiery poles.’ (Majercik translation)</p>

The Genealogy of Zeus:



<p>T13: Plotinus <i>Ennead</i> 5.1.7.27-28: Ταύτης τοι γενεᾶς ὁ νοῦς οὗτος ἀξίας νοῦ τοῦ καθαρωτάτου μὴ ἄλλοθεν ἢ ἐκ τῆς πρώτης ἀρχῆς φύναι, γενόμενον δὲ ἤδη τὰ ὄντα πάντα σὺν αὐτῷ γεννῆσαι, πᾶν μὲν τὸ τῶν ἰδεῶν κάλλος, πάντας δὲ θεοὺς νοητοῦς· πλήρη δὲ ὄντα ὧν ἐγέννησε καὶ ὡσπερ καταπιόντα πάλιν τῷ ἐν αὐτῷ ἔχειν μηδὲ ἐκπεσεῖν εἰς ὕλην μηδὲ τραφῆναι παρὰ τῆ Ῥέα, ὡς τὰ μυστήρια καὶ οἱ μῦθοι οἱ περὶ θεῶν αἰνίττονται Κρόνον μὲν θεὸν σοφώτατον πρὸ τοῦ Δία γενέσθαι ἃ γεννᾷ πάλιν ἐν ἑαυτῷ ἔχειν, ἣ καὶ πλήρης καὶ νοῦς ἐν κόρῳ· μετὰ δὲ ταῦτά φασι Δία γεννᾶν Κρόνον ἤδη ὄντα· ψυχὴν γὰρ γεννᾷ νοῦς, νοῦς ὧν τέλειος. Καὶ γὰρ τέλειον ὄντα γεννᾶν ἔδει, καὶ μὴ δύναμιν οὔσαν τοσαύτην ἄγονον εἶναι.</p>	<p>T13: Plotinus <i>Ennead</i> 5.1.7.27-28: This, then, is the generation of this νοῦς, and worthy of νοῦς in all its purity: it came to be [in the first place] from the first principle [i.e., τὸ ἔν], and when it had already come to be, it produced all those things that truly are: all the beauty of forms, all the noetic gods. It is full of those things that it produced and, as if it had swallowed them up again, contains them in itself lest they spill out into matter and be brought up in the house of Rhea (τραφῆναι παρὰ τῆ Ῥέα). Thus the mysteries and the myths about the gods say riddlingly that Kronos, the wisest of the gods, shuts up again within himself that which he produces before the birth of Zeus, so that he is filled full and is νοῦς in its satiety. After this, they say that in its satiety, νοῦς produces Zeus, for νοῦς in its perfection produces ψυχή. [They are saying that] being perfect, it had to produce, and that it is impossible for such a force to remain unproductive. (Lamberton translation)</p>
<p>T14: Proclus <i>Theol. Plat.</i> 1.28 (122,3-26 Saffrey-Westerink): Πρὸς ταῦτα τοίνυν ἀποβλέποντες καὶ «τὰς» πατρικὰς αἰτίας τῶν μύθων καὶ τὰς γονίμους τῶν μητέρων δυνάμεις ἐξηγησόμεθα. Πανταχοῦ γὰρ δὴ τὸ μὲν τῆς κρείττονος καὶ ἐνοειδεστέρας φύσεως αἷτιον πατρικὸν [καὶ] ὑποθησόμεθα, τὸ δὲ τῆς καταδεεστέρας καὶ μερικωτέρας ἐν μητρὸς τάξει προϋπάρχειν φήσομεν· ἀνάλογον γὰρ μονάδι μὲν καὶ τῆ τοῦ πέρατος αἰτία παρὰ τοῖς θεοῖς ὁ πατήρ, δυάδι δὲ καὶ τῆ ἀπείρῳ δυνάμει τῆ γεννητικῆ τῶν ὄντων ἢ μήτηρ. Ἄλλὰ τὸ μὲν πατρικὸν μονοειδὲς ἀεὶ παρὰ Πλάτωνι καὶ τῶν ἀπ' αὐτοῦ προϊόντων ὑψηλότερον ἴδρυται καὶ ἐν ἐφετοῦ μοίρᾳ τῶν τικτομένων προϋφέστηκε, τὸ δὲ αὐτῶν μητρικὸν δυοειδὲς καὶ ποτὲ μὲν ὡς κρείττον τῶν γεννημάτων ποτὲ δὲ ὡς ὑφειμένον κατὰ τὴν οὐσίαν ἐν τοῖς μύθοις προτείνεται,</p>	<p>T14: Proclus <i>Theol. Plat.</i> 1.28 (122,3-26 Saffrey-Westerink): 'By focusing now on the above, we may explain what is meant by the paternal causes and the procreative (γονίμους) powers of the mothers in the myths. For in all cases we shall posit that the cause of the superior and more unified nature is paternal, and we shall maintain that the inferior and more particular pre-exists in the rank of the mother. For in the domain of theology (παρὰ τοῖς θεοῖς), the father is analogous to a monad and to the cause of limit, whereas the mother is analogous to a dyad and the unlimited power of generation (<i>gennētiké</i>). But for Plato it is always the case that the paternal is of one kind (μονοειδὲς), namely it is situated high above the things that proceed from it and has a prior existence as an object of its offsprings' desire, and the maternal is of two kinds (δυοειδὲς): [Case 1] In the myths she is sometimes put forward as superior to her offspring, and [Case 2] sometimes inferior to them in terms of her</p>

<p>καθάπερ ἐν Συμποσίῳ τὴν Πενίαν τοῦ Ἔρωτος μητέρα λέγουσι· καὶ οὐκ ἐν τοῖς μυθικοῖς πλάσμασι μόνον ἀλλὰ καὶ τῇ φιλοσόφῳ θεωρίᾳ τῶν ὄντων ὡσπερ ἐν Τιμαίῳ γέγραπται· καὶ γὰρ ἐκεῖ τὸ μὲν ὄν πατέρα τὴν δὲ ὕλην μητέρα καὶ τιθήνην ἐπονομάζει τῆς γενέσεως. Αἱ μὲν οὖν γόνιμοι καὶ τελεσιουργοὶ τῶν δευτέρων δυνάμεις καὶ ζωῆς χορηγοὶ καὶ διακρίσεις αἴτιοι μητέρες εἰσὶν ὑπεριδρυμένοι τῶν παραγομένων ἀφ' ἑαυτῶν· αἱ δὲ ὑποδεχόμεναι τὰ προϊόντα καὶ πολλαπλασιάζουσαι τὰς ἐνεργείας αὐτῶν καὶ ἐκτείνουσαι [καὶ] τὴν χείρονα μοῖραν τῶν ἀπογεννηθέντων ἀποκαλοῦνται [δὲ] καὶ αὗται μητέρες.</p>	<p>being (just as in the <i>Symposium</i> they call Poverty the mother of <i>Erôs</i>). And [this manner of expression occurs] not only in the mythical tales but also in philosophical treatises concerned with being, as occurs in the <i>Timaeus</i>. For there [Plato] called 'father' and matter 'mother' and 'nurse of generation.' So those powers [in case 1] that are procreative (γονίμοι) and perfective (τελεσιουργοὶ) of the second powers and providers of life and causes of separation are set down as mothers of the things brought forward from themselves. And those other powers [in case 2], the ones that receive the processions and multiply their activities and extend the lower side of their offspring, are also called mothers.'</p>
--	---

The core theory of Neoplatonic Embryology

1. One-Seed Theory.
2. The male seed is a collection of immaterial form-principles (*logoi*), each existing in its entirety in each part, no matter how small, of a material substratum.

<p>T15: Plotinus <i>Enneads</i> 5.9.6: Καὶ αἱ τῶν σπερμάτων δὲ δυνάμεις εἰκόνα φέρουσι τοῦ λεγομένου· ἐν γὰρ τῷ ὅλῳ ἀδιάκριτα πάντα, καὶ οἱ λόγοι ὡσπερ ἐν ἐνὶ κέντρῳ· καὶ ὡς ἐστὶν ἄλλος ὀφθαλμοῦ, ἄλλος δὲ χειρῶν λόγος τὸ ἕτερος εἶναι παρὰ τοῦ γενομένου ὑπ' αὐτοῦ αἰσθητοῦ γνωσθεῖς. Αἱ μὲν οὖν ἐν τοῖς σπέρμασι δυνάμεις ἐκάστη αὐτῶν λόγος εἷς ὅλος μετὰ τῶν ἐν αὐτῷ ἐμπεριεχομένων μερῶν τὸ μὲν σωματικὸν ὕλην ἔχει, οἷον ὅσον ὑγρόν, αὐτὸς δὲ εἶδος ἐστὶ τὸ ὅλον καὶ λόγος ὁ αὐτὸς ὡς ψυχῆς εἶδει τῷ γεννῶντι,</p>	<p>T15: Plotinus <i>Enneads</i> 5.9.6: "The powers of seeds give a likeness of what we are talking about: for all the parts are undistinguished in the whole, and their rational forming principles are as in one central point; and all the same there is one principle of the eye and another of the hand, known from the sense-object which is produced by it to be distinct. As for the powers in the seeds, then, each of them is one whole formative principle with the parts included in it; it has the corporeal as its matter, for instance all which is moist in the seed, but is itself form as a whole and a formative principle which is the same as the form of soul which produced it" (Armstrong translation)</p>
<p>T16: Proclus <i>in Tim.</i> 1.396,10-20 Diehl = Porphyry <i>in Tim.</i> Fr. 51: εἴπερ γὰρ τὸ σπέρμα τοῦ ἀνθρώπου, τοσοῦτον ὄγκον ἔχον καὶ πάντας ἐν ἑαυτῷ τοὺς λόγους, ὑφίστησι τοσαύτας διαφορὰς τῶν μὲν στερεῶν, οἷον ὁστά τὰ μὲν ναστά, τὰ δὲ κοῖλα, τῶν δὲ μαλακῶν, ὡς πνεύμονα καὶ ἥπαρ, τῶν δὲ ξηρῶν, ὡς ὄνυχας καὶ τρίχας, τῶν δὲ ὑγρῶν, ὡς αἷμα καὶ φλέγμα, τῶν δὲ λιπαρῶν, ὡς μυελὸν καὶ πιμελήν, τῶν δὲ πικρῶν, ὡς χολήν, τῶν δὲ</p>	<p>T16: Proclus <i>in Tim.</i> 1.396,10-20 Diehl = Porphyry <i>in Tim.</i> Fr. 51: If it is the case that human semen, which is so small in bulk yet contains within itself all of the [seminal] reasons, gives rise to so many differences in our hard parts, such as bones which may be either solid or hollow, in our soft parts, like the lungs and the liver, in our dry parts, like our nails and hair, in our fluid parts, like blood and phlegm, in our viscous parts, like marrow and fat, in our bitter parts, like bile, in our insipid parts, like saliva, in our dense</p>

<p>ἀποίων, ὡς σίελον, τῶν δὲ πυκνῶν, ὡς νεύρα, τῶν δὲ ἐξηπλωμένων, ὡς ὑμένας — ταῦτα γὰρ πάντα τὰ τε ὁμοιομερῆ καὶ τὰ ἐξ αὐτῶν πως ὑφίστησιν ἐξ ὀλίγου ὄγκου, μᾶλλον δὲ ἐκ τοῦ ἀόγκου· οἱ γὰρ λόγοι ταῦτα γεννῶσιν, οὔτοι δὲ ἄογκοι πανταχοῦ ὄντες·</p>	<p>parts, like the tendons, in our thinly stretched parts, like the membranes – for it somehow gives rise to all of these, both those that are homoeomerous and those formed from them, from [its own] small bulk, or, rather, from no bulk [at all], because it is the [seminal] reasons which produce these things, and they are without bulk’ (Runia translation)</p>
---	--

3. The *logoi* in the seed are in a state of potentiality, as is required by the **PIP principle**.

<p>T17: Porphyry Ad Gaurum 6.2 and 14.3: ιστέον γε μὴν κάκεινο καὶ μᾶλλον ῥηθήσεσθαι μέλλον κατὰ Πλάτωνα· αἰεὶ γὰρ κατ’ αὐτὸν τὰ ἀπὸ τῆς οὐσίας τινῶν γεννώμενα ὑποβέβηκε <κατὰ> δυνάμεις καὶ οὐσίας ἀπὸ (MS: ἄξια) τῶν γεγεννηκότων, καὶ ἀδύνατον μὲν ὁμοούσια εἶναι τοῖς γεγεννηκόσιν.</p> <p>καὶ διὰ τοῦτο ἢ ἐν ἡμῖν φυτικῆ χειρὸν ἐγέννα ἑαυτῆς τὸ σπέρμα ὡς ἂν ἐλλείπον τῆ κατ’ ἐνέργειαν κινήσει.</p>	<p>T17: Porphyry Ad Gaurum 6.2 and 14.3: ‘But one should realize that this too is certainly going to be aid in conformity with Plato. For according to him the things that have been engendered from the substances of some things are always a step down from the things that had engendered them in terms of power and substance, and it is impossible for them to be of the same substance as the things that engendered them’</p> <p>‘And for this reason the vegetative power in us generated something worse than itself, the seed, since it lacks actual movement’</p>
---	---

4. These *logoi* therefore must be actualized by an external cause that possesses these principles in actuality. This principle is often (but not always) identified with the mother. This is the application of the **PAP principle**.

<p>T18: Porphyry Ad Gaurum 10.5: ὅταν δ’ ἐκ τοῦ πατρὸς καταβληθῆ εἰς τὴν μητέρα, προσχωρεῖ τῆ φυτικῆ τῆς μητρὸς καὶ τῆ ψυχῆ τῆ ταύτης, τοῦ προσχωρεῖν δέοντος ἀκούειν οὐχ ὅτι συμφθείρεται οὐδ’ ὡς τὰ <μῆ> (following Deuse [1983: 187n209]) κραθέντα ἀναστοιχειοῦται, ἀλλ’ ὅτι τὴν θεῖαν ἐκείνην κρᾶσιν καὶ παράδοξον καὶ τῶν ζωικῶν ἰδίαν δύναμιν διασφύζεται</p>	<p>T18: Porphyry Ad Gaurum 10.5: And (ii) once it has been released from the father into the mother, it joins the vegetative [power] of the mother and her soul – and by ‘joins’ one must understand, not that both are destroyed together nor that they are resolved into their elements like <un>mixed items, but rather that they maintain that divine and paradoxical [kind of joining], blending, that is the special power of living [substances].</p>
<p>T19: Porphyry Ad Gaurum 14.3: ἦν προσλαμβάνει ἀπὸ τε τῆς ἐν τῇ μητρὶ φύσεως καὶ ἀπὸ τοῦ περιέχοντος, τοῦ ἐνεργεία προηγουμένου ἐν πᾶσι τοῦ δυνάμει.</p>	<p>T19: Porphyry Ad Gaurum 14.3: ‘the seed receives this actual motion from the nature in the mother and from its environment, since in all things the actual precedes the potential’</p>
<p>T20: Proclus in Platonis Parmenides 792,7-18 Steel: τὸ σπέρμα δυνάμει τοὺς λόγους ἔχει καὶ οὐκ ἐνεργεία· σῶμα γὰρ ὄν οὐ πέφυκε τοὺς λόγους ἀμερῶς καὶ κατ’ ἐνέργειαν ἔχειν. Τί οὖν τὸ ἔχον κατ’ ἐνέργειαν τοὺς λόγους; πανταχοῦ γὰρ πρὸ τοῦ δυνάμει τὸ κατ’ ἐνέργειαν ἡγείται· ἀτελὲς γὰρ ὄν ἄλλου δεῖται τοῦ</p>	<p>T20: Proclus in Platonis Parmenides 792,7-18 Steel: ‘the seed has its form-principles potentially, not actually; for being a body, it cannot have the form-principles undividedly and actually. What, then, is it which has the form-principles in actuality? For everywhere actuality precedes potentiality, and the sperm, being undeveloped, requires something else that will bring it to perfection.</p>

<p>τελειώσοντος. Ἡ τῆς μητρὸς φύσις, ἐρεῖς· αὕτη γὰρ ἢ καὶ τοὺς λόγους τελειοῦσα, καὶ διαπλάττουσα τὸ γινόμενον· οὐ γάρ που τὸ φαινόμενον εἶδος τῆς μητρὸς ποιεῖ τὸ βρέφος, ἀλλ' ἢ φύσις, ἀσώματος οὐσα δύναμις καὶ ἀρχὴ κινήσεως, ὡς φαμεν. Εἰ τοίνυν ἢ φύσις ἐκ τοῦ δυνάμει μεταβάλλει τοὺς λόγους τοῦ σπέρματος εἰς τὴν κατ' ἐνέργειαν διάπλασιν, αὕτη ἂν ἔχοι κατ' ἐνέργειαν τοὺς λόγους.</p>	<p>You will say it is the nature of the mother that does this; this nature is what actualizes the form-principles and forms (διαπλάττουσα) the creature coming to birth. It is not, of course, the visible form of the mother that makes the babe in the womb, but [her] nature, which is a bodiless power and a source of motion, as we say. If, then, it is [her] nature that changes the form-principles of the seed from potentially to the activity of formation (εἰς τὴν κατ' ἐνέργειαν διάπλασιν), it has the form-principles in actuality.'</p>
<p>T21: Asclepius In Aristotelis Metaphysica 404: ὁρῶμεν γὰρ ὅτι καὶ ἐπὶ τῶν τεχνητῶν καὶ ἐπὶ τῶν φυσικῶν πάντα τὰ γινόμενα ἐξ ὁμοειδῶν γίνονται. καὶ ὁ τέκτων γὰρ ἔνυλος ὑπάρχει καὶ τὸ ἀβάκιον τὸ γινόμενον ἐξ αὐτοῦ· ὁμοίως δὲ καὶ τὸ εἶδος ἔχει αὐτοῦ τοῦ ἀβακίου· ὁμοειδὲς γὰρ ἐστὶ τῷ γινομένῳ ἀβακίῳ. ὡσαύτως δὲ καὶ ἐπὶ τῶν φυσικῶν ὁμοειδὲς ἐστὶ τὸ ποιοῦν τῷ γινομένῳ, εἴ γε ἄνθρωπος ἄνθρωπον γεννᾷ, καὶ ἔχουσα ἢ φύσις τῆς μητρὸς τοὺς λόγους ἐν ἑαυτῇ τοῦ βρέφους ὁμοειδεῖς ὄντας τῷ βρέφει οὕτως γεννᾷ. [...] ἔχουσα γὰρ ἢ ἵππος ἐν ἑαυτῇ λόγον ἡμιόνου καὶ εἶδος οὕτως αὐτὸ γεννᾷ</p>	<p>T21: Asclepius In Aristotelis Metaphysica 404: For we observe both in the crafts and in cases of natural generation that everything that is generated is generated by things of the same type (ἐξ ὁμοειδῶν). For both the woodworker and the drawing board that is produced by him are enmattered. And the same goes for the form of the drawing board that the woodworker has. For it is of the same type as the drawing board that has come to be. And similarly in cases of natural generation: the creator is of the same type as what is created, since a human being generates a human being, <u>and it is by having the form-principles of the offspring in itself that are of the same type as the offspring that the mother's nature generates.</u> [...] for the mare generates the mule because she has the form-principle and form of mule in herself</p>
<p>T22: Simplicius in Phys. 313,5-27: ἦ, ὡς εἴρηται πρότερον, ἅμα τῷ καὶ αὐτὴ γίνεσθαι ποιεῖ διὰ τὸ εὐφυέστερον καὶ διὰ τὸ ζῶη τις εἶναι ἐξανισταμένη καὶ διανισταμένη εἰς εἶδος, ἐπεὶ τὸ τοῦ ἄρρενος σπέρμα καὶ <τὴν> (the manuscripts have τὸ) τῆς θηλείας φύσιν ἔχει τὴν τοῦ σπέρματος μεταβολὴν καὶ τελειοῦσθαι πεφυκυῖαν εἰς ζῶον. τὸ δὲ ποιητικὸν κυρίως καὶ προσεχῶς αἴτιον ἐπὶ μὲν τῶν ζῴων ἢ μητρικὴ φύσις ἐστὶ καὶ ἢ πατρικὴ, ἐπὶ δὲ τῶν φυτῶν ἢ τοῦ πυροῦ καὶ τῆς γῆς, τοῦ εἶδους ἐνεργεῖα προϋπάρχοντος ἐν τε τῷ πατρὶ καὶ τῇ μητρὶ καὶ ἐν τοῖς τῆς γῆς κατ' ἐνέργειαν ἐστῶσι λόγοις, καθ' οὓς τὰ δυνάμει εἰς ἐνέργειαν ἄγεται.</p>	<p>T22: Simplicius in Phys. 313,5-27: Well, as we said before, this nature [in the seed] creates simultaneously as it comes to be because it is well endowed and because it is a kind of life that is being raised up and roused to form, because the male seed has <the> nature of the female which is naturally suited for perfecting the transformation of the seed into an animal. The true and proximate creative/efficient cause in the case of animals is the maternal nature and the paternal nature, while in the case of plants it is the nature of the wheat and of the earth, since the form pre-exists in actuality in the father and the mother and in the form-principles established in actuality within the earth, by which what is in a state of potentiality is led to actuality.</p>
<p>T23: Simplicius in Cat. 244,1-4: γεννᾶται γὰρ ἐκ τοῦ τελείου τὸ ἀτελὲς καὶ ἐκ τοῦ ἐνεργεῖα τὸ δυνάμει· ἄνθρωπος γὰρ σπέρμα</p>	<p>T23: Simplicius in Cat. 244,1-4: What is imperfect is generated from what is perfect, and what is in a state of potentiality from what</p>

<p>γεννώ, ὡς περ ὁ πατήρ, καὶ ἐκ σπέρματος πάλιν ἄνθρωπον, ὡς περ ἡ μήτηρ. τὸ γὰρ δυνάμει πᾶν ὑπὸ τοῦ ἐνεργείᾳ ἄγεται εἰς τὸ ἐνεργείᾳ</p>	<p>is in a state of actuality. For a human being generates a seed, as the father does, and again generates a human being from a seed, as the mother does. For everything in a state of potentiality must be led to a state of actuality by something that is in a state of actuality</p>
<p>T24 Philoponus In DA 306,2-8: τί οὖν ἐστὶ τὸ ἄγον τὸ δυνάμει τὸ πρῶτον εἰς τὴν ἔξιν, τουτέστι τὸ δεύτερον μὲν δυνάμει πρῶτον δ' ἐνεργείᾳ; τὸ γεννῶν, φησὶν· ἐν γὰρ τῇ κήσει ἄγεται ἡ ἐπιτηδειότης εἰς τὴν ἔξιν. ὡς περ οὖν τὸ παιδίον ἄγει εἰς τὴν ἔξιν ὁ ἐνεργείᾳ γραμματικός, οὕτως καὶ τὸ σπέρμα καὶ ὄλως τὴν τοῦ ζώου ὕλην ἄγει ἡ ἐν τῇ μητρὶ φύσις ἐπὶ τὴν καθ' ἔξιν αἴσθησιν. ἔστιν οὖν ἡ κήσις ἀλλοίωσις καὶ μεταβολὴ τοῦ πεφυκότος αἰσθάνεσθαι ἐπὶ τὴν καθ' ἔξιν αἴσθησιν</p>	<p>T24 Philoponus In DA 306,2-8: What then is it that first leads what is in a state of potentiality to the possession, i.e., to the state of second potentiality or first actuality? Aristotle says it is 'the generator.' For in gestation the propensity is led to the possession. Just as, then, the man who is actually literate leads the child to the possession [of literacy], so too does the nature in the mother lead the seed and in general the matter of the living thing to sensation in the sense of possession. Gestation, then, is a change and transition of what is of a nature to sense into sensation in the sense of possession</p>

Some conclusions that may be drawn from this research:

1. Reevaluation of the female's role in biological generation.
2. Conclusions may be drawn about the Neoplatonists' interaction with the medical tradition.
3. Subsequent philosophers and physicians may be evaluated in terms of this core theory to determine their commitment to Neoplatonism, e.g., John of Alexandria (6th – mid-7th C. AD), Theophilus Protospatharius (7th or 9th C), Pseudo-Iamblichus' *Theology of Arithmetic*, Pseudo-Galen's *An animal sit* and *De spermate*, Michael of Ephesus's commentary on Aristotle's *De generatione animalium*.

<p>T25: Hippocratic De natura pueri §12: Ἦν ἡ γονὴ μείνη ἀπ' ἀμφοῖν ἐν τῆσι μήτρῃσι τῆς γυναικός, πρῶτον μὲν μίσηται ὁμοῦ, ἅτε τῆς γυναικός οὐκ ἀτρεμεούσης, καὶ ἀθροίζεται καὶ παχύνεται θερμαινομένη.</p>	<p>T25: Hippocratic De natura pueri §12: If the seed which comes from both parents remains in the womb of the woman, it is first of all thoroughly mixed together – for the woman of course does not remain inactive (ἅτε τῆς γυναικός οὐκ ἀτρεμεούσης) – and condenses and thickens as it is heated</p>
<p>T26: John of Alexandria in Hipp. de nat. pueri 138,22-26: Τί ἄρα ποιούσης τῆς γυναικός; μὴ οἰκουρούσης καὶ μέτρῳ κινουμένης; οὐδαμῶς τοῦτο· ἀλλὰ νῦν γυναῖκά φησι τὴν διαπλαστικὴν δύνάμιν τὴν ἐν τῇ μήτρᾳ οὔσαν. φησὶ γὰρ ὅτι ταῦτα τὰ σπέρματα μίγνυνται ἅμα τῆς διαπλαστικῆς δυνάμεως μὴ οὐχ ἡσυχάζουσης, ἐπ' ἅν δέξεται ταῦτα, ἀλλ' ἄλλο ποιούσης.</p>	<p>T26: John of Alexandria in Hipp. de nat. pueri 138,22-26: What, then, is the female doing? Isn't she doing housework and moving in moderation? By no means is she doing this. Rather, Hippocrates calls 'woman' here the formative power in the womb. For he says that these seeds are mixed exactly then when the formative power, upon receiving them, is not at rest but transforming them</p>