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**EMBRYOLOGY IN NEMESIUS' *ON THE NATURE OF MAN*:
BETWEEN PHILOSOPHY AND MEDICINE**

MA Thesis in Comparative History, with a specialization
in Interdisciplinary Medieval Studies.

Central European University

Budapest

June 2015

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(Russia)

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Accepted in conformance with the standards of the CEU.

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I, the undersigned, **Andrey Darovskikh**, candidate for the MA degree in Comparative History, with a specialization in Interdisciplinary Medieval Studies declare herewith that the present thesis is exclusively my own work, based on my research and only such external information as properly credited in notes and bibliography. I declare that no unidentified and illegitimate use was made of the work of others, and no part of the thesis infringes on any person's or institution's copyright. I also declare that no part of the thesis has been submitted in this form to any other institution of higher education for an academic degree.

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Abstract

The content of this thesis is a case study of the understanding of human nature in the late antique tradition. Nemesius of Emesa in his treatise *On the Nature of Man*, written in the second half of the fourth century AD, tends to consider the problem of man at the intersection of philosophy and medicine, where these fields considerably overlap, and he reconciles the achievements of these two disciplines with a developing Christian tradition.

The focus of the thesis is the problem of the embryo's formation in Nemesius of Emesa's anthropological account. Considering different aspects of embryology, I argue that Nemesius' account is a result of the continuity of ancient philosophy and medicine, with a particular influence of the authors of the Hippocratic corpus and Galen, together with the philosophical discourses of Plato, Aristotle and representatives of Stoic and Neoplatonic philosophy. In addition, the thesis argues that Nemesius also tends to adjust their ideas according to the influence of the developing Christian tradition, while he polemicizes with such representatives of Christian thought as Origen, Arius or Eunomius, Theodore of Mopsuestia, who were at the time judged as dubious authorities or heretics.

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Introduction

The development of philosophy is carried out through the expansion and appropriation of new ‘territories’ and practices, which can be seen as a nutrient medium for the further growth of fruit-bearing ideas and approaches. One such territory, extensively discussed by historians of philosophy in recent decades, is the history of medicine. As current research shows, a number of intriguing areas such as anatomy, physiology of the human body, reproduction, causes of diseases, were of a primary curiosity for both philosophers and physicians already during the classical period.¹ The sphere where collaboration of these disciplines demonstrated the most rapid growth in antiquity was the problem of human nature. Thus, the relationship of medicine with philosophy in the apprehension of the human being in antiquity and the early middle ages became for historians of philosophy a new promising subject of investigation, revealing hitherto unknown facets of the classical and medieval traditions.

Nemesius of Emesa was an educated man. He had a genuine interest and profound knowledge in classical philosophy, Christian thought (he was a bishop of the city of Emesa in Syria), and – most importantly for this thesis – medicine. There is almost no external evidence on his life, except for his only surviving treatise *On the Nature of Man* (Περὶ φύσεως ἀνθρώπου), which gives all the available information about him.² From the second

¹ For the introduction to the problem of relation between philosophy and medicine in antiquity see: Philip van der Eijk, *Medicine and philosophy in classical antiquity. Doctors and Philosophers on Nature, Soul, Health and Disease* (Cambridge University Press 2005), 1-45.

² Gregory of Nazianzus in his *Letters* discusses questions of Christianity and pagan philosophy with a governor of Cappadocia (383-389) named as Nemesius. See: Gregory of Nazianzus, *Epistles*, 71, 183, 184, 185. In the seventeenth century, Le Nain de Tillemont put forward the idea that this Nemesius could be identical with the author of *On the Nature of Man*. As William Telfer shows, this hypothesis was widely accepted till the beginning of the nineteenth century, when J. F. Fabricius started a wave of skepticism. Even after the debates in the nineteenth and the twentieth century, this conjecture remains controversial, and there is no further evidence to confirm it yet. See: William Telfer, *Cyril of Jerusalem and Nemesius of Emesa*, (Philadelphia, PA: Westminster Press, 1955), 208-10.

half of the twentieth century scholars agree that *On the Nature of Man* was written towards the end of the fourth century AD.³

Nemesius' treatise is an important piece of writing, which, on the one hand, stands out as a source for the extant as well as lost wisdom of ancient thought; he bears witness to the legacy of a great number of minds of the classical period from the Pre-Socratics to his own contemporaries.⁴ On the other hand, Nemesius tends to consider the problem of man at the intersection of philosophy and medicine where these fields considerably overlap and he reconciles the achievements with a developing Christian tradition. The sharp distinction proposed first in Scholasticism and, in modern times, by Kant and post-Kantian philosophy, between philosophy and theology notwithstanding, in late antiquity philosophy and theology were not distinct disciplines. Both treated metaphysical principles, drawing on different but not mutually exclusive sources, namely reason and intellectual intuition, on the one hand, and Revelation, on the other. This determines the conceptual framework for Nemesius' anthropological system, too, which is, to a great degree, the result of the continuity of ancient philosophy and medicine. Nemesius, explicitly or implicitly, makes use of the medical works of the authors of the Hippocratic corpus, Galen and others, together with the philosophical discourses of Plato, Aristotle and representatives of Stoic and Neoplatonic philosophy, which all had an impact on his thought. Additionally Nemesius tends to adjust them to a developing influence of Christian tradition, while he polemicizes with such representatives of Christian

³ For the problem of dating Nemesius' life see: R. W. Sharples and P. J. van der Eijk, "Introduction" in to Nemesius of Emesa *On the Nature of Man*, (Liverpool: Liverpool University Press, 2008), 2, and: Владимирский Ф.С. [Vladimirskiy F.S.] *Антропология и космология Немезия, епископа Емесского, в их отношении к древней философии и патристической литературе*. [Anthropology and cosmology of Nemesius of Emesa in their relation to ancient philosophy and patristic literature]. (Житомир, 1912), 1-18. It is worth mentioning that even now there are scholars who date the treatise to the second half of the fifth century. See: Prager Walther Alexander "Nemesius of Emesa: Human nature between Definition and Unique Property". https://www.academia.edu/600452/Nemesius_of_Emesa_Human_Nature_between_Definition_and_Unique_Property, accessed 14 March, 2015. (unpublished)

⁴ For historians of philosophy Nemesius' explicit references to Ammonius, Plotinus's teacher, are of extraordinary value. Nemesius (3.129. p.39.16).

thought as Origen, Arius or Eunomius, Theodore of Mopsuestia, judged as dubious authorities or heretics.

The scope of the question associated with the nature of man includes a long number of disciplines and fields of knowledge: from physiology and anatomy to psychology. However, in this thesis I concentrate on one aspect – the generation of the human being – understanding of which paves the way for a consistent picture of the nature of man. The focus of this thesis is the problem of the embryo's formation in Nemesius of Emesa's treatise. My aim is to examine how Nemesius uses his knowledge in philosophy, theology and medicine side by side and makes a creative use of opinions of predecessors and contemporaries to support his own intuition in the overarching aim to present a comprehensive and up-to date picture of the formation of a living being.

In terms of modern medicine embryology is a branch of biomedical science that studies the formation and development of the embryo; the embryological period covers only the first eight weeks of gestation after the moment of fertilization. The subsequent period up to the thirty-eighth week is called the 'fetal period' and it is studied by developmental biology, which deals with the object which is known as fetus but not embryo. I hesitate to answer the question how important it is to follow modern terminology when we speak about history of philosophy, and medicine; however, I want to stress that the terminology in the title of this thesis is not incidental: the content of the thesis accounts for how Nemesius understands the genesis and formation of the embryo rather than for development and growth during the whole period of gestation. The proposed limitation is inevitable due to the content of the treatise, as I shall show that Nemesius delves into the problem of the generation of the human being, but leaves aside all details of its gradual development in the womb.

The scope of Nemesius' account of embryology can be boiled down to three main questions: 1) What is the nature of man? 2) What is involved in human generation? and 3)

How does this coming to be happen? These questions haunt my thesis all the way through, while, practically, the coming to be of a human being for Nemesius is a sum of three components: 1) the generation of the soul; 2) the generation of the body; 3) the soul/body connection. I should hope that, the intertwining of the two rows of questions accompanied by constant appeal to the intellectual background of Nemesius will allow me to provide a plausible account of his ideas on the problem of generation and formation of the embryo.

The work of Nemesius of Emesa survived in a number of manuscripts which came to us in different conditions and reveal partly the history of the work in its way from the Middle Ages to modern times. The last and most recent critical edition of *On the Nature of Man* was published by Moreno Morani in 1987. The rich publishing history of the text, together with the main character of my MA thesis, implies that boundaries of this research can be restricted only to this critical edition; therefore my dissertation in no way involves the work with manuscripts.⁵

There are two English translations of the text, one published by William Telfer⁶ and another one by Philip van der Eijk and Robert William Sharples, which I will consult doing my translations of extracts from Nemesius.⁷

The examination of Nemesius' embryology will allow me to approach from a different perspective the question of the human nature in late antiquity. It will shed light upon late antique and early Byzantine concepts, such as nature, substance, and the individual. The fact that in late antiquity a bishop well-versed in philosophy possessed extensive knowledge in medicine raises a question on the relationship between these disciplines. In this sense, my

⁵ Nemesii Emeseni *De natura hominis*, Bibliotheca scriptorum Graecorum et Romanorum Teubneriana, ed. Moreno Morani, (BSB B.G. Teubner Verlagsgesellschaft, 1987). In references, first, I put a number of a chapter then through pagination and then page and line numbers according to Morani's edition. For the history of the work and its available different codices see the introduction to Morani's work: i-xv.

⁶ William Telfer, *Cyril of Jerusalem and Nemesius of Emesa*, (Philadelphia, PA: Westminster Press, 1955).

⁷ Nemesius, *On the Nature of Man*. Translated with an introduction and notes. by. R.W. Sharples and P.J. Van der Eijk. (Liverpool University Press, 2008).

project can be considered a part of the recent tendency to study ancient medicine in its relation to a variety of disciplines. The treatise of Nemesius was studied so far mostly from only one of these vantage points, either philosophy, or theology, or medicine. Hopefully, the present interdisciplinary investigation would contribute to the study of the relationship between philosophical knowledge and natural sciences in that period, as well as to the understanding of theological debates at that time.

Finally, significant inventions in modern medicine, such as the possibility to change the course of human development has brought embryology into the public domain. This progress raises the bioethical question whether this type of scientific intervention is permissible.⁸ A study of the problem of the formation of human being throughout history will hopefully help to clarify and enrich the approaches in modern philosophical debates.

⁸ Scott F. Gilbert, *Bioethics and the New Embryology: Springboards for Debates* (Sunderland, MA; W. H. Freeman, 2005)

Chapter 1. The Nature of Man: The Domains of Philosophy and Medicine

The content of Nemesisius's writing reflects a shifting process in Christian thought, with a particular focus on the nature of man as a new independent subject of study. On the one hand this statement is based on my assertion that the increased attention to the problem of the human nature in the fourth century AD was caused by strong convergence of theology with the philosophy of Late Antiquity. The first centuries of Christianity were characterized by the active elaboration of doctrinal and apologetic problems. The development of Christian anthropology at first served only the goals of doctrine and theology, where metaphysical interests prevailed over empirical considerations. Yet, in the fourth century, the study of human nature from the Christian viewpoint and in the context of the established Christian doctrines started to become a separate subject of philosophical investigation. It is justifiable to suggest that a number of fourth-century Christian thinkers considered the study of human nature as a central question in their thought.⁹ They also paid great attention to human nature in the general knowledge acquisition and, therefore, tended to consider epistemological problems in the context of philosophical anthropology and from an anthropological point of view. The treatise by Nemesisius of Emesa *On the Nature of Man* thus occupies a special place in early Christian literature as the first attempt at the systematic and fundamental presentation of the problem of human nature as such, without direct dependence on related doctrinal interests.

On the other hand, *On the Nature of Man* is an excellent indication of intellectual life of late antiquity, for it reflects the tendency of philosophy to reach out to the help of

⁹ Besides Nemesisius' treatise, the best example is Gregory of Nyssa's *On the Making of Man*.

medicine, brought on by the desire to chart the whole of human nature; which was caused by empirical and pharmacological achievements in antique and late antique medicine.¹⁰

The focus of this chapter is 1) to show that Nemesisius' thought reflects the necessity to combine philosophy and medicine for the overarching aim to present a comprehensive account of the nature of man; 2) to show the relevance of the question of embryology in the context of human nature, and *vice versa*. The chapter will demonstrate that the framework offered by Nemesisius essentially reflects the nature of thinking in this period and alludes to the synthesis of philosophy and medicine.

1.1 The term nature in ancient philosophy and medicine

The content of this introductory part will be dedicated mostly to Nemesisius' first chapter (and partly to the second), where Nemesisius raises general questions about the nature of man. Logically, the question about the embryology of human beings should be introduced by the question of what human nature is. Thus, Nemesisius begins the treatise as follows:

Many and outstanding men have taught that the human being had been assembled from an intellectual soul and a body in the best possible way, and in fact it was composed so well that it would not have been possible to achieve this otherwise.¹¹

There are two details to note about this first sentence of the treatise. First, Nemesisius embarks on his journey by telling us from what a human being consists of; the second item is the purposefully emphasized excellence of creation. To start with the first issue, the title of the treatise, *περὶ φύσεως ἀνθρώπου*, explicitly suggests the topic. But how should one understand the term 'nature'?

¹⁰ Other examples for theologians, or spiritual authors versed in medicine include Sophronius of Jerusalem, John of Apamea and Shem'un d-Taybutheh.

¹¹ Τὸν ἄνθρωπον ἐκ ψυχῆς νοερᾶς καὶ σώματος ἄριστα κατασκευασμένον καὶ οὕτω καλῶς ὥς οὐκ ἐνεδέχετο ἄλλως γενέσθαι συνεστάναι, πολλοῖς καὶ ἀγαθοῖς ἀνδράσιν ἔδοξεν. Nemesisius, *De natura hominis*, 1.36, p.1.3-5. All translations from Nemesisius' text are mine unless otherwise indicated.

The Greek term *nature* (ἡ φύσις) is derived from the verb φύω (to be produced, sprout, grow), and in its original meaning can be in a certain way reduced to the *principle* of growth and/or change in the thing that grows¹². In Book Five of *Metaphysics* Aristotle says: “Nature in one way is called the genesis of the growing things, as if someone would pronounce the sound *u* long, in another way [nature is] the immanent part of a growing [thing] from which it grows”.¹³ For example, the wooden table has the source of its rest (in a way even the source of a type of change, namely, decay) in the wood which is the primary material of the table. However, in the course of the history of ancient philosophy a certain shift in understanding the categories occurred, which revealed a broader semantic code for the term φύσις. There was a tendency to consider the notion of nature as the underlying concept of essential predication, which during the period of late antiquity was strengthened by understanding *nature* as a term similar in meaning and interchangeably used with the term *ousia* (*substance*). This similarity between the two terms will be discussed in the third chapter of this thesis.

Interestingly enough, the phrase περὶ φύσεως ἀνθρώπου, especially in the medical context of antiquity, does not refer to the same essential predication. It seems pertinent to underline this difference between the philosophical (together with theological context later on) and the medical terminology. In the medical context, the phrase φύσις ἀνθρώπου in the classical period bears a slightly different meaning and never alludes to the notions of *essence* and *definition*. Philip van der Eijk in his recent article about the concept of nature in Galen’s thought, gives a comprehensive explanation of the phrase περὶ φύσεως ἀνθρώπου in antiquity, and remarks that at the present time, the phrase ‘the nature of human being’ evokes

¹² Anthony Preus, “Phusis,” in *Historical Dictionary in Ancient Greek Philosophy*, (Lanham, Md.: Scarecrow Press, 2007), 204.

¹³ Φύσις λέγεται ἓνα μὲν τρόπον ἢ τῶν φουμένων γένεσις, οἷον εἴ τις ἐπεκτείνας λέγοι τὸ υ, ἓνα δὲ ἐξ οὗ φύεται πρῶτον τὸ φουόμενον ἐνυπάρχοντος· Aristotle, *Metaphysics* 5,4 Translation adapted from Aristotle, *Metaphysics*, trans. W. D. Ross, The Internet Classics Archive, accessed 27 April 2015, <http://classics.mit.edu/Aristotle/metaphysics.5.v.html>.

parallels to ‘what it is to be a human being’, although in the period of antiquity it did not seem to be the case.¹⁴ He shows that to question the nature of man in the course of the ancient period was not such a rare task, treatises with the title resembling *περὶ φύσεως ἀνθρώπου* can be found among the works of Hippocrates, Democritus, Diogenes of Appollonia, Prodicus the Sophist, Strato the Peripatetic and Zeno the Stoic.

To complicate matters, discussions on the nature of man are scattered around other treatises of prominent ancient authors, whose primary focus is different. Works under similar titles became standard, discussing a variety of topics with an increasingly common agenda including questions of anatomy, embryology, reproduction, cognition, growth, digestion, diseases. Therefore, the point of this enterprise was to present the question of human nature as a question of the body and its formation.¹⁵ In contrast to Philip van der Eijk who argues for the difference of present and ancient understanding, I would rather follow my own premise about the different understanding in ancient medical milieu compared to the philosophical discourse of late antiquity. Even though some ancient philosophers, such as Aristotle, showed solidarity with the medical definition of the term *physis*, late antiquity and the patristic period marked a rupture with that tradition and used the term in a meaning similar to *οὐσία*.

Nemesius begins his treatise with the phrase that the human being consists of a body and a soul, therefore, for Nemesius the source of nature, which is either growth, or change or rest in the human being, is the composition of soul and body and cannot be reduced only to the body and its elemental structure. Therefore, for Nemesius the predication of human nature depends on its composition, which is both the soul and the body. That is why Nemesius

¹⁴ Philip van der Eijk, “Galen on the Nature of Human Beings,” in *Philosophical Themes in Galen*, ed. P. Adamson, R. Hansberger, and J. Wilberding (London: Institute of Classical Studies, 2014), 89.

¹⁵ This can be proved by testimonies from Galen’s commentaries on Hippocrates. There he clearly says that there are several meaning of the notion *physis*, and one of them is a mixture of first elements. Τῆς φύσεως πολλαχῶς λεγομένης ἀκουστέον νῦν ἐστὶν αὐτῆς κατ’ ἐκεῖνο τὸ σημαϊνόμενον, ᾧ κέχρηται αὐτὸς, ἐν ἑτέροις πολλοῖς καὶ καθ’ ὅλον γε τὸ περὶ φύσεως ἀνθρώπου βιβλίον, ἐν ᾧ τὴν ἐκ τῶν πρώτων στοιχείων κρᾶσιν ὀνομάζει φύσιν. Galen *In Hippocratis aphorismos Commentarii*. 529 14-530.1.

includes such a variety of topics in his discussion, dwelling not only on the composition of the body, but also the soul and the functions of the body and the soul together.

1.2 Excellent creation of man

As for the second observation regarding the opening sentence of the treatise, which is much like a condensed maxim containing the key themes running through the whole work, the idea of the excellent composition of human nature is a *terminus a quo* and *terminus ad quem* of Nemesis' account. Remarks on the excellence of creation were relatively frequent from the beginning of Patristic literature, for example, Clement of Alexandria describes the nature of man as the most beautiful among all other creatures.¹⁶ This uniqueness is a logical consequence of the composition which the human nature undergoes, specifically, the idea that the composition of the body and that of the rational soul belong to two different domains, namely to the worlds of corporeal and intelligible entities respectively.

[the human being] is situated on the border between the intelligible and sensible substance; it is connected, on the one hand, by virtue of the body and corporeal faculties to the irrational animals and the inanimate beings and, on the other hand, by virtue of the rational faculty, to the incorporeal substances [...]¹⁷

Nemesius begins with the twofold structure: the body and (intelligible) soul and then introduces the subdivision of the soul and intellect. The division between νοῦς (intellect) and

¹⁶ Clem. *Paedag.*, lib. 1 cap. 3.

¹⁷ ἐν μεθορίοις ἐστὶ νοητῆς καὶ αἰσθητῆς οὐσίας, συναπτόμενος κατὰ μὲν τὸ σῶμα καὶ τὰς σωματικὰς δυνάμεις τοῖς ἀλόγοις ζῴοις τε καὶ ἀψύχοις, κατὰ δὲ τὸ λογικὸν ταῖς ἄσωμάτοις οὐσίαις. Nemesius, *De natura hominis*, 1.39. p. 2.24-3.2. The definition of man as lying on a border between the intelligible and perceptible worlds was a common account espoused by other theologians in the fourth century, e.g. Gregory of Nyssa describes it as a mixture and absorption of the perceptible and intelligible. (κατὰ τὸν αὐτὸν τρόπον καὶ τοῦ αἰσθητοῦ πρὸς τὸ νοητὸν γίνεται τις κατὰ θεῖαν σοφίαν μίξις τε καὶ ἀνάκρασις) *Oratio Catechetica Magna* (6. 23-25). See also Gregorius of Nazianzus, *Or. 38, On Epiphany that is, on the feast of the birth of the Saviour, 11* (Patrologia Graeca 36, 321D-324A): "The Word [...] as a living being out of the two, that is, of the invisible and visible nature, creates man. Taking the body from preexistent matter and inserts in it spirit (by which our discourse understands the intelligible soul and the image of God), he establishes on earth a kind of second world, a big one in the small one, another angel, a mixed pilgrim, a contemplator of the visible and an initiate to the intelligible creature, the king of those on earth, who is ruled from above, terrestrial and celestial, ephemeral and immortal, visible and intelligible, in between greatness and humility; the same is spirit and flesh, spirit for grace, flesh so that it may not be pretentious..." All these speculations are, in fact, reflections upon Gen 2:7 and Plato, *Timaeus*, 34c-35a, with the difference that Plato assigned it to the *soul* to be on the border of the intelligible and the perceptible.

ψυχή (soul) derives from the philosophy of Plato and Aristotle. After a long succession of arguments, Nemesius arrives to a point similar to Aristotle's about the threefold division of soul (nutritive, vegetative and intellectual), although Nemesius relegates the first two parts to the capacities of the body instead of the soul. Through this threefold division, a human being is in communion with 1) inanimate, 2) irrational (by means of the body and its capacities) and 3) rational beings (through the intelligible soul).¹⁸ However, Nemesius refutes Aristotle's point that the intellect is not actually present in a human being and 'comes from the outside'.¹⁹

Nemesius rejects Plato's point that the soul is the nature of human being and the body is just an instrument, although at the same time he distances his opinion from Aristotle's hylomorphism according to which the soul is a form, or actuality of the body. As I shall show later in this chapter the soul for Nemesius is a substance and in no way a form. Furthermore, Nemesius makes another step in line with the Aristotelian logic and offers something unique about human nature, which exhibits nature as a compound. He makes use of the Aristotelian concept τὸ ἴδιον (peculiar property). The definition of human nature must counterpredicate with what it defines, although not everything what predicates the phenomenon is its definition. Τὸ ἴδιον is the very example which predicates the object but it is not its definition.

From all these beings, the human being has received two special privileges,²⁰ for he alone receives pardon on repentance, and only his body, being mortal, becomes immortal; in fact the corporeal privilege he receives though the soul and the privilege of the soul he receives through the body.²¹

¹⁸ Nemesius, 1.38, p.2.15-25.

¹⁹ Nemesius himself outlines this part of Aristotle's theory: "Aristotle thinks that the potential intellect has been formed together with the man, while the active intellect is added to us from the outside, so that it does not belong to the being and existence of man but contributes to the development of the knowledge and contemplation of the natural faculties" (Nemesius, 1.37, p.1,15-19). Aristotle talks about this in his *Generation of Animals* II.3, where he says that the intellect is added to the human being 'from without' and is the only divine faculty of man. (λείπεται δὲ τὸν νοῦν μόνον θύραθεν ἐπεισέναι καὶ θεῖον εἶναι μόνον) (G.A. 736b 28).

²⁰ At this point Nemesius does not use the term *to idion*, although in the same passage later he explicitly refers to these privileges as *to idion*. See 1.55, p.10.23.

²¹ δύο δὲ τούτων πρεσβείων ὁ ἄνθρωπος ἐξαρέτων ἔτυχεν. καὶ γὰρ μόνος οὗτος συγγνώμης τυγχάνει μετανοῶν, καὶ τὸ σῶμα τούτου μόνου θνητὸν ὃν ἀπαθανατίζεται, καὶ τοῦ μὲν σωματικοῦ, διὰ τὴν ψυχὴν, τοῦ δὲ ψυχικοῦ, διὰ τὸ σῶμα. Nemesius, 1.52, p. 9. 22-25.

Basically, Nemesius argues that the unique properties are what help us to confine the nature of man, this is the point of convergence. For him, the nature of a human being can be defined neither as soul nor as body, but only as both. Therefore the concept τὸ ἴδιον predicates the nature of a human being, although instead of defining it, it just helps us to comprehend the nature of man.

1.3 The nature of the soul

It is reasonable to suggest that the definition of the domain where the body belongs to is straightforward and does not require further clarification. In contrast, the intelligible realm where the soul belongs requires closer scrutiny in the study of Nemesius' concept of the human nature. This, in turn, first necessitates a look at how Nemesius describes the nature of the soul in the second chapter, περὶ ψυχῆς. Nemesius, in order to put his own view in the account of the history of philosophy and medicine, endeavors to offer for the problem a doxography, impressive in its versatility. The possibility to see Nemesius' own view requires going through his meticulous refutation of previous opinions, while his argument gradually evolves and he gives the definition of soul. As a part of his refutation he says:

Eunomius²² defined the soul as an incorporeal substance created in the body [and agreed simultaneously with Plato and Aristotle.]²³ He took the 'incorporeal substance' from the truth but that it is created in the body he took from the teaching of Aristotle. He did not consider, although he was smart, that he endeavors to draw together irreconcilable things. For everything that has a bodily origin and at the same time a temporal one is perishable and mortal.²⁴ This is in accord with the words of Moses, for he, when outlining the origin of the perceptible things, did not explicitly speak in that work about the coming to

²² Eunomius (Εὐνόμιος) of Cyzicus (died c.393), one of the followers of Arius and the leaders the Anomoean movement. The frequent references to Eunomius were among the central reasons allowing to date the life and work of Nemesius to the second half of the fourth century.

²³ The text within square brackets has been deleted by Morani. Yet there is no obvious philological reason for eliminating it. The possibility of agreeing simultaneously with these two contradictory views Nemesius refutes by all means.

²⁴ See Aristotle, *De Caelo* 1,10

existence of the intelligible things. However, some people believe so²⁵, making conjectures, but not everybody agree with this. If someone were to suppose that the soul comes into existence after the body, because the soul was inserted after the formation of the body, he would fail utterly concerning the truth. For neither Moses says that it was created when it was inserted into the body, nor is it so according to reason. Therefore either he should say that it is mortal as does Aristotle, who said that the soul is generated in the body, and also as the Stoics said (ἡ τοίνυν θνητὴν αὐτὴν λεγέτω ὡς Ἀριστοτέλης, φήσας αὐτὴν ἐν σώματι γεννᾶσθαι, καὶ ὡς οἱ Στωϊκοί), or, saying that it is an incorporeal substance, he should decline saying that it has been created in the body, lest he would propose to us the notion of a mortal and totally irrational soul. (ἡ λέγων οὐσίαν ἀσώματον παραιτείσθω λέγειν ἐν σώματι κτιζομένην, ἵνα μὴ θνητῆς ψυχῆς ἔννοιαν ἡμῖν παραστήσῃ καὶ παντελῶς ἀλόγου.)²⁶

In a nutshell, Nemesius puts forward the idea that the soul is created before the body, as he accepts the Aristotelian argument that temporal creation necessarily leads to corruption. Sharples and Van Der Eijk in their commentary to the text trace the roots of Nemesius' idea on the pre-existence of souls to Origen's thought. This is well possible, although Nemesius explicitly rejects Origen's exegesis of Gen 1:1. In fact, the reference to "some people who believe, making conjectures" that the origin of the intelligible beings was included in book of Genesis obviously refers to Origen, according to whom "heaven and earth" of the first day of creation referred to the intelligible and the corporeal beings.²⁷ Regardless of the immediate source of Nemesius' idea, it seems to be important to find the source which shaped Nemesius' understanding of intelligible substances and how they came to be.

The problem of coming to be of (intelligible) substances immediately conjures up the problem of creation/generation of the world, by the same token, it makes legitimate the question about the eternity versus temporality of the world and its destructible/indestructible character. *On the Nature of Man* is an anthropological investigation, therefore, it is not

²⁵ Namely that the origin of the intelligible beings was included in Genesis: this refers to Origen and his followers.

²⁶ Nemesius, 2. 104-106, p. 30.17-31.8.

²⁷ See Origen, *Homiliae in Genesim*, 1.2, 28 and *De principiis*, 3.6.7, 250. According to another translator and editor of Nemesius, William Telfer, "the Crux of creationism, as Nemesius sees it, was that the separate creation of each several soul, at its own moment in time seemed to put God at the beck and call of human lust. To remove the origin of the soul from the time of begetting to the beginning of the world softened, if it did not really overcome, this difficulty." Telfer, *Cyril of Jerusalem and Nemesius of Emesa*, 283

surprising that Nemesius is reticent concerning the questions of physics which was not a primary task for him. When he speaks about the nature of the soul, the scarcity of details concerning Nemesius' general picture on the problem of physics makes any attempt to reconstruct his ideas in this field if not unfeasible, then at least quite problematic. To talk about the nature and the character of this intelligible realm inevitably requires an account on physics, where every reader of Nemesius' treatise falls short. Nevertheless, I argue that the background shared by Nemesius was commonplace for ancient philosophers dealing with the emergence of intelligible and corporeal substances. The distant and most likely starting point of this discussion is the myth about the creation of the world in Plato's *Timaeus*, where Plato introduces the image of a creator god (δημιουργός). According to this myth, the elements involved in creation are: 1) the Demiurge, who operated on a chaotic state of what was going to be the visible universe 2) a plan (eternal model, a paradigm) and 3) an original chaotic state of what is going to become the visible world, which some later interpreters identified with Aristotle's primary matter and also with the mysterious concept of "space" (χῶρα). The point at which Plato's followers stumbled and divided into two schools was the understanding of what took place before the Demiurge reorganized chaos and turned it into order.²⁸ Plato does not make this part explicit.

For God desired that, so far as possible, all the things should be good and nothing evil; wherefore, when He took over all that was visible, seeing that it was not in a state of rest but in a state of negligent and disorderly motion (ἀλλὰ κινούμενον πλημμελῶς καὶ ἀτάκτως), He brought it into order out of disorder, deeming that the former is in all ways better than the latter.²⁹

²⁸ John Dillon in his book *The Middle Platonists* sets forth six questions, which, according to him, had been left unresolved by Plato after he introduced in *Timaeus* 35 the notion of the world soul and the phenomenon of the creation of the world. One of these six questions (and the first as Dillon puts it) is "whether the cosmogonic process described is to be thought as of taking place at any point in Time"? At the end of the paragraph he adds "On these questions controversy continued throughout later Platonism, beginning with Plato's immediate successors". John M. Dillon, *The Middle Platonists, 80 B.C. to A.D. 220* (Ithaca, N.Y.: Cornell University Press, 1977), 7.

²⁹ βουλευθεὶς γὰρ ὁ θεὸς ἀγαθὰ μὲν πάντα, φλαῦρον δὲ μηδὲν εἶναι κατὰ δύναμιν, οὕτω δὲ πᾶν ὅσον ἦν ὁρατὸν παραλαβὼν οὐχ ἡσυχίαν ἄγον ἀλλὰ κινούμενον πλημμελῶς καὶ ἀτάκτως, εἰς τάξιν αὐτὸ ἡγάγεν ἐκ τῆς ἀταξίας, ἡγησάμενος ἐκεῖνο τούτου πάντως ἄμεινον. Plato, *Timaeus* 30a2-6.

For his successors, the description of everything, before turning it into order as being in “a negligent and disorderly motion” (κινούμενον πλημμελῶς καὶ ἀτάκτως) was in the focus of the puzzle. Different interpretations of this phrase entail two different approaches to the issue of creation and eternity/temporality of the world and soul accordingly. Chronologically, Plato was followed by an allegorical interpretation of the myth given by Speusippus and Xenocrates (396-314 BCE), which implies that creation is not temporal, and in line with this view Plato speaks about creation for didactical purposes.³⁰ Immediate disciples of Plato refused a literal interpretation of the myth because the view about an anthropomorphic God creating the world and the soul, which then lasts forever, was an unusual idea for ancient philosophy.

Aristotle in *De Caelo* suggests another, literal interpretation. His argument for the literal understanding of the myth can be concisely summarized in his words:

They [the representatives of an allegorical interpretation] say that in their statements about its generation they are doing what geometricians do when they construct their figures, not implying that the universe really had a beginning, but for didactic reasons facilitating understanding by exhibiting the object, like the figure, as in course of formation. The two cases, as we said, are not parallel; for, in the construction of the figure, when the various steps are completed the required figure forthwith results; but in these other demonstrations what results is not that which was required. Indeed it cannot be so; for antecedent and consequent, as assumed, are in contradiction. The ordered, it is said, arose out of the unordered; and the same thing cannot be at the same time both ordered and unordered; there must be a process and a lapse of time separating the two states. In the figure, on the other hand, there is no temporal separation. It is clear then that the universe cannot be at once eternal and generated.³¹

According to this, in the *Timaeus* Plato says that the world was created at one point in time and, thus it has a beginning;³² Aristotle proposes this interpretation and then, owing to one important assumption, refutes it. For Aristotle it seems to be nonsensical to state that a)

³⁰ Other followers of this interpretation are Taurus from Middle Platonism and almost all representatives of pagan Neoplatonism, including Plotinus, Porphyry and Proclus.

³¹ Aristotle, *De Caelo*, 279b 32-280a11 trans. J. L. Stocks, The Internet Classics Archive, accessed 15 March 2015, <http://classics.mit.edu/Aristotle/heavens.1.i.html>

³² Representatives of the second school were Atticus, Plutarch, Galen and a number of Christian Neoplatonists.

something, which is generated can last forever and is indestructible; b) something which is ungenerated can cease to exist. Therefore, based on the literal interpretation, Aristotle suggested that Plato was wrong. Yet, it is far from being clear whether Aristotle includes in this Platonic account of temporal creation of the visible world the creation of the soul. Owing to Aristotle's theory of hylomorphism it seems to be quite appropriate to assume that, when Aristotle thought about temporal creation and refuted it, he had in mind an imagery Platonic idea of the simultaneous creations of visible and intelligible.

For the arguments of the present thesis, it is important that I draw these debates as a distant source of the antique and late antique polemic of the problem of creation. Undoubtedly, the creation of the world for Nemesisius is of temporal character,³³ although the mechanism offered by Aristotle to refute Plato's allegorical interpretation plays an important role in Nemesisius' understanding of the creation of intelligible substances. Basically, Nemesisius settled with Plato's literal interpretation in the question of the creation of the visible world, however he follows Aristotle and adopts his refutation as proof for the conjecture about intemporal creation of intelligible substances. Again, for Nemesisius the soul is an intelligible substance which is indestructible and, therefore, eternal. Nemesisius, however, makes another emendation to the adopted Aristotelian view insisting on the creation of the intelligible substances, which is likely to be considered as a separate creation, preceding the creation of temporal entities and time.

In general, the reason why Aristotle refutes Plato's account on the appearance of the world and how the (world) soul comes to be is that in his understanding he relies heavily on the ideas expressed in *Physics* and *Metaphysics*. According to the Aristotelian concept of hylomorphism, all creatures are compounds of form and matter, given that the matter without the form (and the other way around) simply does not exist. Aristotle states that the phrase

³³ Nemesisius 5,166 p.53.7-19.

κινούμενον πλημμελῶς καὶ ἀτάκτως cannot not be treated as a movement of matter. Thus, Aristotle asserts that Plato's idea that the creation of the world is preceded by motion of the matter is incorrect, therefore the only way to make this account plausible is to state that the world is eternal.

Nemesius inherited the Aristotelian idea that a particular human being is brought about through the process of the soul entering the body and the moment of leaving the body as the act of death. Nevertheless, he rejected that the point of a soul's coming to being happens at the moment of this copulation.³⁴ It seems to me, that Nemesius talking about perishing character of created implies only temporal creation, whereas soul is something created not in time. It is the argument about the temporal creation of intelligible substance which can only be understood in the context of the Aristotelian argument against the allegorical interpretation of the myth in the *Timaeus*. However, if it is correct, that, contrary to Aristotle, Nemesius exhibits intemporal existence of the soul as an intemporal creation of intelligible beings, but not as eternal existence. Because, it is this temporal creation which in Nemesius' argument implies the perishable character of the soul's substance, and at this point he settles with Plato who in *Timaeus* (and elsewhere) does not object to the soul to exist without the body. The perishable character of everything created – the point put forward by Aristotle in his refutation of allegorical interpretation – must be equated with Nemesius' point of the perishable character of everything created in time. To sum up this part, for Nemesius, soul is not a body, nor its quality, but it is an intelligible substance, which exists and is imperishable.³⁵

³⁴ Therefore the question of the creation of the soul in ancient and medieval philosophy was basically answered in three possible ways: a) after (or at the moment of) the formation of the body (Eunomius, Gregory of Nyssa); b) before the formation of the body and created by God (Origen and his followers, Nemesius); and c) the soul is inherited from the parent(s) (Aristotle, whose supposition will be discussed in the second chapter of this thesis; and Apollinarius)

³⁵ Towards the end of the second chapter Nemesius rehearses this thought several times.

1.4 Top-down and bottom-up explanatory strategies

As it has not yet been clarified how Nemesius connects the intelligible substance, that is, the soul and the corporeal realm of the body, discussing it as early as the third chapter of this thesis is not justifiable in terms of sequentiality. It suffices to recur to what is clear at this point, namely that, according to Nemesius of Emesa, human nature can equally be approached from two different angles, a corporeal substance (body), on the one hand, and an intelligible substance, on the other (soul). Developing the argument, Nemesius repeats time and again the definition of man as a creature which connects these two spheres, for example: “So man came to being as the one who binds together the two natures”.³⁶ And at another place: “the place of the human being has been assigned at the borders of the irrational and rational natures”.³⁷ Nemesius endeavors to present an account of human nature combining two explanatory strategies. For him, this nature has a dual structure: it consists of the body and the soul, where the latter is of superior rank. The soul is united to the body and, as it is anticipated in the present research, it is not affected by the body. Thus, first, Nemesius stresses the presence of a higher principle (the rational soul) which is of divine origin; this principle is indispensable for explaining the corporeal structures and functions. For example, the intelligible soul transcends the physical structure of the body, although Nemesius insists that the human body is suitable for the functioning of reason. The matching character of the bodily facilities with some supreme principle is called teleology in ancient philosophy. However, contrary to Aristotle, who proposed the first teleological account in the *Generation of Animals* and conceived of the soul as a formal principle, Nemesius states that soul is an intelligible substance, which being more lordly than the body moves it as its instrument.³⁸

³⁶ ἐγένετο οὖν τὸ συνδέον ἀμφοτέρας τὰς φύσεις ζῶον ὁ ἄνθρωπος. Nemesius, 1,44. p.5. 6-7.;

³⁷ μεθορίοις οὖν τῆς ἀλόγου καὶ λογικῆς φύσεως ὁ ἄνθρωπος ταχθεὶς; Ibid, p.5.9-10.

³⁸ καὶ ἄλλως δὲ κυριωτέρα τοῦ σώματος ἢ ψυχὴ πᾶσιν ἀνθρώποις εἶναι καθωμολόγηται, ἀπὸ ταύτης γὰρ ὡς ὄργανον κινεῖται τὸ σῶμα. (Nemesius, 1,38 p.2. 9-10) The clearest example for Nemesius' teleological account

Consequently, the first explanatory strategy – top-down – is confined to the definition of the human being, when some primary (higher) principles determine the lower activities of the body.

Secondly, the elemental structure of the body is also very important for Nemesius, who sometimes explains the functioning of the body in terms of elements and elemental qualities. This suggests that Nemesius, even as a Christian relying on Platonic philosophy, is not willing to ignore the role of the body in constituting the scope of a human being. This constitutes the second explanatory strategy – bottom-up. Nemesius states that the excellence of the human being also depends on the well-disposed state of the body: “How, then, do certain natural vices and virtues come upon men? Truly it happens because of the bodily mixture. For in the same way as some people are by nature healthy or ill because of the mixture, in the same way some are by nature, being full of bitter bile, coleric, others timid, others attracted to lowly things; yet there are some who dominate <these vices>, or even conquer them – it is clear, then, that they are dominating the mixture.”³⁹ The question at stake here is how much understanding of the human nature depends on natural elemental science and how much on higher intelligible principles?

In this part of the chapter I will rely on the structure, logic and terminology proposed by Philip van der Eijk in his article about Galen’s notion of nature, who spotted these two explanatory strategies of the human being in Galen and calls them ‘up-down’ and ‘bottom-up’.⁴⁰ Although Van Der Eijk primarily concentrates on Galen, he also forays into the afterlife of his theory, which happens to be largely reflected in Nemesius’ treatise. The bishop of Emesa highly appreciated Galen’s works, having mentioned him explicitly at least six

is the location of reason in the head, because of its physiological suitability, explaining that the middle cavity of brain and the *pneuma* inside is the most suitable organ for the functioning of reason.

³⁹ Nemesius, 2,91. p.25.20-22.

⁴⁰ Philip van der Eijk, “Galen on the Nature of Human Beings,” in *Philosophical Themes in Galen*, ed. P. Adamson, R. Hansberger, and J. Wilberding (London: Institute of Classical Studies, 2014), 89-135.

times in his text and once calling him “the marvelous physician”.⁴¹ Given that Nemesius was under Galen’s strong influence, it stands to reason that even if, for the content of his theory on the human nature, Nemesius also used other sources, perhaps also shared by Galen, the form of presentation most likely comes from Galen. The application of the model proposed for Galen by Van Der Eijk appears to be legitimate and applicable for Nemesius.

The equal (or at least similar) relevance of bottom-up and top-down strategies for the definition of man is a point of convergence for medicine and philosophy in Nemesius’ account respectively. A cursory reading of different texts on the nature of man in the classical period accompanied by evidence from the secondary literature shows that two distinct patterns emerge in the analysis of human nature in the classical period: “A further related question concerning ancient discussions of the nature of human beings is whether the account is meant to be merely factual, descriptive, and mechanistic, setting out what are believed to be the constituents of the body and how they work, or whether it is intended to be evaluative, even normative, expounding what the nature of human beings is ideally speaking, and what the perfect human being is.”⁴² Plato, Aristotle, Galen and Nemesius all prefer to describe the human nature at its excellence, furthermore, they all presume different variations, which are known to be divergences from this lofty ideal.

The primary question to be answered here is what this ideal state of human being for Nemesius is, and how he perceives it in the sense of the human being in general and in the sense of the state of a particular individual who comes to existence? In other words, the issues at stake are a) the lofty ideal of human nature and b) the state of every newly born individual. An additional question is how divergence from this ideal should be perceived and what is responsible for the origin of the deficiencies? In the course of the history of ancient

⁴¹ Nemesius, 2,123. p.37.10.

⁴² Philip van der Eijk, “Galen on the Nature of Human Beings,” 93.

philosophy this question was constantly addressed and answered in different ways.⁴³ The Christian response, in contrast, is largely restricted to two points: the Creation and the Fall. For Nemesius, the way in which man was created is ultimately connected to the description of his nature:

It is agreed that, according to the Hebrews, man came into existence in the beginning as neither mortal nor immortal, but at the boundary of the two natures, so that, if he should pursue bodily affections, he would be subjected also to bodily changes, while, if he should prefer the goods of the soul, he might be thought worth of immortality.⁴⁴

The creation of being on the boundary offers a possibility to proceed in both directions, which means that originally the perfection and imperfection of human nature is entirely up to free will. Nemesius seems to present the initially created human nature as neutral, although designed to pursue the lofty model of immortality. It is due to free will that committing sin subsequently alters the bodily composition and man inevitably becomes a subject to corporeal change. At this point of Nemesius' account medicine 'steps into the limelight', and the bishop of Emesa demonstrates his precise familiarity with classical medical theories. For him, the bodily composition is a mixture of the four elements: fire, earth, air and water, which, mixed in a certain ratio, produce all structures in the world. This theory was introduced by the earliest Greek philosophers. Thus Empedocles called the elements the root of all things. Then, it came to be widely used to explain the bodily composition in medicine. As will be studied in the second chapter of this thesis, this composition of elements corresponds to a combination of four qualities, hot, cold, wet, dry; and to four humours: blood, phlegm, yellow and black bile.

The decent state of a human body implies the good balance of these four elements/humours and the state of disease is caused by the imbalance and flaw in this

⁴³ For the essence of this problem see: Van Der Eijk, who specifically talks about the most intricate and philosophically unsatisfactory attempt offered by Aristotle. Van Der Eijk, "Galen on the Nature of Human Beings," 97.

⁴⁴ Nemesius, 1,46. p.6.5-11. Translated by Sharples and Van Der Eijk.

composition. How do faults and excellence come upon man? According to Nemesius, some of these occurs because of the composition of the body.⁴⁵ Therefore, on the one hand, free will and the soul's capacities initiate the possible shift towards deficiency, but on the other hand the imbalance of every particular individual can be caused also by a bad balance in mixture of elements. The latter can be recovered by a certain medical treatment:

Because of the imbalance of the qualities and the loosening of our bodily coherence we are in need of physicians and medical care (ἰατρῶν καὶ θεραπείας ἐν χρείᾳ κατέστημεν). When a change of qualities happens, it is necessary to lead the condition of the body to equilibrium by means of the opposite qualities. For it is not, as some people suppose, set before doctors to chill the heated body, but to restore it into balance, for if it was cooled, the disposition [of the man] would be turned into the opposite disease.⁴⁶

To make certain, the hint that an imbalanced state of a being might be restored through medical treatment by no means stresses the prevailing character of the medical intervention for the purposes of adjusting the body and human being to the lofty ideal in Nemesius. One of the peculiarities listed above (*to idion*), the privilege of the body – “a body being mortal to be made immortal”,⁴⁷ – can be fulfilled through the soul and divine mercy. This shows that the achievement of a perfect (original) state is not something which can be achieved solely by medical treatment. The soul should fight for the usefulness of the “instrument”, much like a musician who has to keep his lyre in a decent condition, Nemesius says⁴⁸. Nevertheless, this indication of the importance of medicine is not accidental here. Integration of the equal possibility of medicine and ‘psychology’ (theology) to improve the ill-balanced state of a human being reflects an interesting change in Christian culture which occurred exactly in the second part of the fourth century. As Anne Elizabeth Merideth argues in her PhD dissertation “Illness and healing in the early Christian East”: “In this [Christian] discourse, the language

⁴⁵ Nemesius, 2,91. p.25.20-22.

⁴⁶ Nemesius, 1,51. p.9.2-8. About possibility to improve elemental structure through the medical treatment Nemesius speaks at the end of the seventieth chapter. See: Nemesius, 17,220. p.76.1-4.

⁴⁷ Ibid 1,53. p.9. 24-26.

⁴⁸ Ibid. 2,92. p.25.26-26.3

of disease does not refer to actual bodily ills and physical suffering. Rather disease becomes a primary metaphor for all forms of religious and social deviance and disruption”.⁴⁹ Nemesius of Emesa maintains a rather moderate position staying on the brink of this shift in understanding medicine and healing. In a recently published article Wendy Mayer analyzes the late fourth-century upsurge of convictions that diseases have moral roots. Based on the legacy of the Church fathers, such as the Cappadocian Fathers and especially John Chrysostom, Mayer shows that sermons and admonitions became frequently used tools in healing. The idea of this type of medical therapy can be seen as an adaptation of the classical medical therapy to the needs of Christianity. Concerning the main argument of Mayer’s study it is necessary to note that she by no means insists on a dominant character of psychological treatment over the traditional medical healing: “it is not just the philosopher or pastor who is doctor of the soul, but also the physician, and this shows how closely in his thought world the sick soul and the sick body are intermingled”.⁵⁰ In addition, it is known that some church fathers participated in the foundation of hospitals where patients underwent both the psychological and somatic treatment, for instance John Chrysostom was involved into setting up of such hospitals.⁵¹ However, most likely the practice of using sermons as medical therapy ceased to exist as early as the beginning of the sixth century. Thus, similarly to how the state of perfection according to Nemesius can be explained either from the up-down strategy, when primary principles subjugate physical structures, or bottom-up with a prevailing character of the elemental mixture, by the same token, a state of deficiency is also a subject of this two-fold explanation.

⁴⁹ Anne Merideth “Illness and Healing in the Early Christian East” (Ph.D. diss., Princeton University, 1999), 153.

⁵⁰ Wendy Mayer, “Medicine in Transition: Christian Adaptation in the Later Fourth-Century East,” in *Shifting Genres in Late Antiquity*, ed Geoffrey Greatrex, Hugh Elton, and Lucas McMahon (Aldershot: Ashgate, 2015): 19.

⁵¹ Testimonies for that can be attested to Palladius. See: Palladius, *Dial.* 5 (SC 341, 122).

1.5 Philosophy and Medicine

The concept of the elemental (qualitative) mixture that Nemesius uses is a product of a long development process shaped by the fact that at first philosophical theories of human nature informed medical discussions, and then at a certain point medical empiricism reciprocally provided natural philosophy with new factual background. This mutual process is known to have started with the figure of Hippocrates and his treatise *On Ancient Medicine* (*De vetere medicina*), in which Chapter Twenty criticizes the philosophical account of the nature of man, which assumes the understanding of it as equal to the question ὅ τι ἐστὶν ἄνθρωπος. Empedocles's answer to this question is that the nature of man is a compound of elemental constituents. Hippocrates approaches the same problem indirectly, pursuing the inquiry of how objective medicine is built. Mark J. Schiefsky, in his analysis of *De vetere medicina*, points out that for Hippocrates "it is impossible to know anything clearly 'about nature' (*peri physeos*) except from medicine."⁵² It is clear from the Hippocratic response that medicine must be based on the knowledge of the human nature; not so much the origin and development, as the medical knowledge based on the effects of regimen on human beings. To be more precise, what doctors need to know is not how human beings develop out of the set of primary elements but how the various foods, drinks and other components of human regimen affect each individual. Schiefsky mentions that, owing to Hippocrates, medicine in antiquity started to be considered as *techne* as opposed to *tyche*, where therapy and empiricism played a crucial role, inasmuch as *techne* necessarily requires the achievement of success only due to a certain deliberate procedure. Obviously, there were some objective reasons for such approach to human nature, i.e. besides the speculative interest, philosophical curiosity, and heuristics, it was pain, diseases and death that actually forced people to tackle the problems of human nature. The shift from speculation about the inception of human

⁵² M. J. Schiefsky, "On Ancient Medicine on the Nature of The Human Beings," in *Hippocrates in Context*, ed. P. J. van der Eijk (Leiden: Brill, 2005), 71.

beings towards a fact-based and experimental development of the problem of man was caused by the ‘challenges’ of death, diseases and the necessity to cope with pain, which instigated to seek answers in medical theory. The opposition to the reductive explanatory scheme of nature offered by philosophy triggered the processes which in the following centuries changed the entire understanding of the problem of man thanks to the authors of the Hippocratic corpus, also to Diocles of Carystus (375–295 BC), Herophilus (335–280 BC), Erasistratus (304–250 BC) and others. Francis Dunn, another author contributing to the volume *Hippocrates in Context*, describes this as a process in which the pre-historical population of Greece turns into a capable and skillful society.⁵³

From this point onward nature was perceived as an organizing principle of the body, more specifically as a principle of elemental composition. Such a seemingly simple idea influenced the development of medicine and, consequently, philosophy as well. For the latter, this method was first formulated by Plato in the *Phaedrus* (270 BC) where, searching for the way to disentangle the question of the nature of the soul, he eventually uses the Hippocratic method of the body’s analysis. The core of this method, as Plato himself describes it, is to divide the object into basic elements.⁵⁴

Mark Schiefsky in his study of *De vetere medicina* convincingly shows that the Hippocratic elemental analysis and insistence on practice and therapy was the opposite of the philosophical understanding of human nature, where it was perceived not just as a matter of composition but as a composition of a vast variety of types. In order to elaborate this idea about mixture in depth, ancient physiologists undertook a long-term investigation, which represents a systematic pattern to reveal the nature of deficiencies. This was best summarized

⁵³ Francis Dunn, “On Ancient Medicine and its Intellectual Context,” in *Hippocrates in Context*, 52

⁵⁴ Phaedrus talks with Socrates about rhetoric and its power, particularly about its potential to define the nature of the soul, and Socrates proposes an argument that the way in which rhetoric treats the nature of the soul resembles how medicine treats the nature of the body: “in both cases we have to divide into parts the nature, [the nature] of the body in one case [medicine] and [the nature] of the soul in the other.” (Ἐν ἀμφοτέραις δεῖ διελέσθαι φύσιν, σώματος μὲν ἐν τῇ ἐτέρᾳ, ψυχῆς δὲ ἐν τῇ ἐτέρᾳ) [rhetoric] Plato, *Phaedrus*, 270b4-5.

long after Hippocrates, in the second century AD by Galen, who further elaborated the ideas set forth first by Hippocrates. As Jacques Jouanna elegantly puts it, Galen's idea of mixture is "one of Hippocratic pearls on nature, that Galen retained in the jewellery box of his memory."⁵⁵ The cornerstone of the Galenic theory is the newly introduced idea of describing deficiency and illness by the good (or bad) mixture of elements.

In Galen's oeuvre, these questions of the constitution and elemental structure of the human body are mostly discussed in *Mixtures* and *The Formation of the Foetus*. In these he explicitly asks how we can account for human nature: should nature be perceived only in terms of elements/qualities and their proportion or we cannot refrain from a higher principle? Galen's way to deal with the questions is also an attempt to describe the lofty state of human nature and try to see the cause of derivations. He singles out three types of mixture which altogether make nine kinds of mixture: the first one where one of the qualities predominates (for example, "cold") (four mixtures); the second type is when two qualities predominate (another four mixtures), and there is a third type (ninth type),⁵⁶ the "well-mixed state (*eukrasia*), in which the elemental qualities are all present to an extent that is exactly appropriate for that specific kind of living being."⁵⁷ Nemesisius referring to Galen makes use of these different types of mixture in his thinking.⁵⁸

Talking about state of imbalance (*dyskrasia*) Galen ascertains that this is actually a domain of medicine and pharmacology, which are both capable of restoring the elemental structure into the well-mixed state through medical treatment. In addition, he also refers to a formative/shaping capacity (*διαπλαστική δύναμις*), which is capable of doing the same. Van Der Eijk corrects this point: "Galen's reference to the divine elements is expressed in

⁵⁵ Jouanna, "Galen's Concept of Nature" in *Greek Medicine from Hippocrates to Galen. Selected Papers*. Translated by Neil Allies. Edited with a Preface by Philip van der Eijk. (Studies in Ancient Medicine 40.) (Leiden and Boston: Brill, 2012). 290.

⁵⁶ Galen, *On Mixtures* 1.8 vol. 1. 559.4-9.

⁵⁷ Van Der Eijk "Galen on the Nature of Human Beings." 102.

⁵⁸ Nemesisius, 1,65 p.24.15-20.

remarkably cautious terms,” and adds that the reason for such a fuzzy answer for the question of formative principle lies in the aim of the treatise, which logically leads to the question of diseases and pharmacology.⁵⁹ To relegate the question of perfection and healthiness to the matter of the divine would have meant for the craft of medicine to surrender.

Turning from this speculation to the question of embryology, Galen makes himself more clear:

What happens is like the case of those who engineer theatrical effects: they provide the first impetus of the motion and then depart, so that their devices continue to move – by design – for a short space of time. It could be that in the same way the gods, once they have constructed the seeds of plants and animals in such a way as to be able to perform these enormous transmission of motions, no longer act themselves.⁶⁰

Looking at this passage I agree with Jouanna that for Galen nature resembles the Demiurge; nature for him has foresight, πρόνοια, and creates with this foresight: προνοητικῶς ἡ φύσις ἐργασαμένη.⁶¹ At a glance, it appears to dismantle the whole theory about difference between bottom-up and top-down strategies. However, as Galen himself testifies, it is not a question of contradiction but rather of hierarchy, where medicine can be represented as a handmaiden of nature. It is not an exaggeration to suggest that Galen’s work resulted in a certain backward shift in the relations between philosophy and medicine. The nominal superiority of philosophy proclaimed by Galen legitimized a trend which dismissed the opposition of philosophy and medicine established by Hippocrates.⁶²

Nemesius of Emesa adopts Galen’s synthesis of philosophy and medicine and the mixture of two different strategies. In his thought it is possible to present human nature only by approaching it from different perspectives. The reconciliation of these strategies forces him to make use of his philosophical background together with basic medical principles that

⁵⁹ Ibid, 115.

⁶⁰ Galen, *Foet.form*, VI 701 K = 104.27-106.7 Translated by Van Der Eijk

⁶¹ Jacques Jouanna, “Galen’s Concept of Nature,” in *Greek Medicine from Hippocrates to Galen: Selected Papers by Jacques Jouanna* (Leiden: Brill, 2012), 301-2.

⁶² He wrote even a short treatise entitled “That the Best Physician is also a Philosopher”. See: P. Brain, “Galen on the ideal of Physician”, *History of Medicine* (1977), 936-8.

had their origins in antiquity. The synthesis of these strategies was not Nemesisius' innovation, although he advanced this approach and leveled it by certain tenets of Christian theology.

There is no doubt that there was understanding of reciprocal attractiveness between philosophy and medicine in the classical period, although, there had been a split between these two fields at the time of Hippocrates, when the author of *De vetere medicina* avowedly proclaimed that philosophy is not knowledge with which medicine should be engaged with, and such attitude towards philosophy was caused by a simplistic approach to the notion of nature. The 'Hippocratic turn' described above definitely falls within the definition of Greek medicine as an empiric surge of science in ancient Greece,⁶³ which was based on empirical observation eschewing superstitions and beliefs. Nevertheless, this development of medicine in the classical period, continuing in the Middle Ages, was not a complete rift with philosophy and religious involvements.⁶⁴ It is of importance for my argument, in accord with Wendy Mayer's statement, that understanding the worldview of late antiquity in general, specifically Nemesisius' concept of the nature of man, is possible by breaking up established dichotomies that were unknown at the time, such as the "post-Enlightenment divorce of the body from the soul" or the "divorce of science from philosophy and religion."⁶⁵

Summarizing this introductory chapter, I would like to highlight two main points. Firstly, the intermingling character of the domains of philosophy and medicine in Nemesisius' account of human nature is conditioned to a large extent by a two-fold structure of human nature. What is particularly important is that, compared to Galen, Nemesisius' explanation of the human nature stands out due to his understanding of the soul as intelligible substance

⁶³ For the different understanding of the term rationality in respect of ancient medicine see Philip van der Eijk *Medicine and Philosophy in Classical Antiquity: Doctors and Philosophers on Nature, Soul, Health and Disease* (Cambridge: Cambridge University Press, 2005), 9.

⁶⁴ Although, the assumption that Greek medicine tended to tolerate superstitions, religion etc. has to be treated with caution so as the distinctive character of Greek medicine compare to earlier times is not denied.

⁶⁵ Mayer, "Medicine in Transition," 12.

which pre-exists the body. The aim of the chapter was to prove that Nemesisius' position in this regard is a fruit of his philosophical background accompanied by an influence of Christian thought. Domains of philosophy and medicine should be considered together with the divergent and at the same time unifying character of top-down and bottom-up strategies in understanding human nature. Secondly, the equality of the up-down and bottom-up models in the description of man are proven by the pursuit to explain the 'nature' of the lofty ideal of man and the 'nature' of his deficiencies.

Finally, the breadth of the discussion above has shown that this extremely interesting synthesis of philosophy and medicine in Nemesisius' account of embryology could fill volumes and the limitations of the present thesis do not allow detailed discussion of topics such as the responsibility of free will and the role of elemental mixture in bodily/mental/psychological deficiencies. This question is of special interest in the sense of how Nemesisius judged about the state of imbalance of newborn human individuals, which, in turn, raises questions about the nature of original sin and its application to individuals born after the advent of Christ. If Nemesisius admits the presence of physical deficiencies of newborn babies, it begs the question of the cause for these deficiencies. If deficiencies are caused by the flaw in the elemental structure either by heredity or environment and so on, the argument inevitably leads to the conclusion that the elemental structure dominates over higher principles in human nature. Explaining deficiencies as being caused by free will, implying the will of predecessors, puts Nemesisius outside of Eastern tradition where it was believed that human individuals do not inherit the Sin but only the change of mode of the nature as a consequence of the Sin. On the one hand, to answer this question is a difficult enterprise simply because Nemesisius is quite reticent concerning the details of this issue. On the other hand, at the time of Nemesisius' life, the question of Sin did not yet gain the importance and relevance normally associated with Augustine and the debates about

Pelagianism in the fifth century. This means that discussing Nemesisius' thought through the prism of these posterior debates would be anachronistic.

Keeping in mind this chapter's conclusions about the relations of philosophy and medicine in *On the Nature of Man*, in the following chapter I will turn to the question of the formation of the body.

Chapter 2. Generation of the body: the problem of semen

Even a cursory reading of ancient and early medieval sources on the problem of generation reveals that the formation of the body was an issue of big curiosity and amongst the primary investigations. Regardless of the type of philosophical discourse, the question of the development of a living object hidden in the womb sparked genuine interest. At first glance, it becomes obvious that the problem of the generation of living beings in early medieval thought hinges largely on the same questions as in antique thought. From the Pre-Socratics, the attempt to trace the origin and generation of the human body leads to the notion of semen as the beginning of new life. The description of the process of a fetus's formation in antiquity meant to deal with the problem of the nature of the semen, and to answer the question: why do the offspring resemble their parents? The focus of this chapter is the problem of generation of the body and the nature of semen in Nemesius of Emesa's embryology, and I argue that deconstructing the multiple layers of Nemesius' idea about semen is another step closer to understand his embryology.

In terms of modern medicine, the problem of the nature of semen lies within the field which is technically beyond the scope of embryology and the problem of the formation of the body, because embryology is the study of the early stages of development of an embryo, which comes about after the union of the semen and ovum.⁶⁶ The discovery of ovum took place as late as the nineteenth century, before which the understanding of conception was an unresolved issue for both medicine and philosophy. However, it would be an exaggeration to suggest that it was stabbing in the dark, as thinkers of antiquity ventured into the

⁶⁶ It is a common definition of embryology given by average modern dictionaries of medical terms. For instance, see: Mikel A. Rothenberg and Charles F. Chapman, *Dictionary of Medical Terms* (Hauppauge, N.Y: Barron's Educational Series, 2000), 124.

comprehension of the nature of semen and conception. Moreover, some terminological disambiguation is necessary before the discussion. According to the dictionary of medical terms, the semen (as seminal fluid or sperm) is the thick pale fluid containing spermatozoa, produced by the testes and seminal vesicles and ejaculated from the penis.⁶⁷ Thus, modern terminology allows us to speak about the semen only for male seminal fluid, although in antiquity and Middle Ages the term was often suitable for both male and female, which substantially influenced the ancient understanding of formation of the body.

As James Wilberding states in his paper, the problem of semen (and, consequently, the formation of the living being) in antiquity can be confined to three main questions: 1) In which manner is the offspring present in the seed? 2) What is the corporeal origin of the seed? 3) What is the role of parents in supplying the semen?⁶⁸ Moreover, ancient and especially late antique teachings about the nature of seed were closely related to the problem of the psychological status of the semen, because it was a widespread view that in this or that manner the soul is also something inherited from the parents. Due to Nemesisius' teaching that the soul is an intelligible substance created by God and preexisting to the body, Nemesisius left aside these speculations about the soul's presence in the seed. Thus, it seems important to note that the first question (put by Wilberding) for Nemesisius' account is limited to the corporeal presence of offspring in the seed. Two other questions will be the framework which I stick to in my consideration of Nemesisius' theory on the generation of the body.

2.1 Nemesisius: on the body

Nemesisius, having given the general introduction to the problem of the human nature and the nature of soul, turns to the problem of the composition of the body in the fourth

⁶⁷ Ibid, 370.

⁶⁸ James Wilberding "Porphyry and Plotinus on the Seed" *Phronesis* 53 (2008), 407.

chapter. He begins with the statement, “Every body is a compound from the four elements and from them it came about.”⁶⁹ In the second sentence of this passage Nemeseius repeats this thought, although in a slightly different way: “The bodies of animals with blood are composed directly from the four humours, blood, phlegm, yellow and black bile.”⁷⁰ The doctrine of the four humours was first formulated by Hippocrates in his treatise *De natura hominis*, where he associates each of the humours with a specific combination of qualities (warm/cold, dry/wet).⁷¹ Nemeseius likens humours with elements in the following way: black bile to earth, phlegm to water, blood to air and yellow bile to fire.⁷²

Nemeseius, developing his argument from the problem of the human body’s composition, goes further to the question of its formation and generation, which involves turning from the field of physiology towards questions of embryology. He specifies that the body of the living being is formed by means of the transformation of the four elements into four types of humours, and the latter, in turn, change into homogenous parts which are parts of the body.⁷³ However, later in the same fourth chapter, Nemeseius refers to Aristotle’s idea that the body is formed from blood.⁷⁴ As evidence for this, he refers to the anatomical experience of phlebotomy, when all the four humours can be found in the blood.⁷⁵ Therefore, Nemeseius combines the Hippocratic presupposition about the formation of the body out of the four humours with Aristotle’s statement that the blood is the source of the composition of

⁶⁹ “Πᾶν σῶμα τῶν τεσσάρων στοιχείων ἐστὶ σύγκριμα καὶ ἐκ τούτων γέγονεν,” Nemeseius, 4. 145. p.44.24.

⁷⁰ “Ἐκ τῶν τεσσάρων χυμῶν,” Nemeseius, 4.145. p.44.25.

⁷¹ To be more precise this teaching was only one of a number of humoral theories, which were in circulation in the fifth century BC, e.g. there is a certain discrepancy even within Hippocratic Corpus; namely, in *Peri geneses*, these four humours are blood, bile, water and mucus. The scheme given by Nemeseius had become canonical in the period of late antiquity through Galen.

⁷² Nemeseius 4.145. p. 45.4-6.

⁷³ Nemeseius. τῶν δὲ χυμῶν τὰ ὁμοιομερῆ, ἃ ἐστὶ μέρη τοῦ σώματος. Ibid. p.45.4.

⁷⁴ Aristotle. *Generation of Animals* 726 b2-5; 726b9-10; 740a21. The works where Aristotle deals with the problem of generation and the formation of the body are *History of Animals*; *On the Parts of Animals*.

⁷⁵ Philip van der Eijk commentating upon corresponding parts from the Nemeseius’ text (4.146 p.4515) claims implicitly that such opinion is based on Galen’s experience, which he describes in his treatise *Elements*. According to Galen, the color of blood, during venesection of even healthy people, sometimes appears to be of different color: varying from yellow to black. See: Nemeseius, *On the Nature of Man*. Translated with an introduction and notes. by. R.W. Sharples and P.J. Van der Eijk. (Liverpool University Press, 2008), 89.

the body, (blood ostensibly containing all four humours) and ends up with the ambiguous conclusion that there is no serious contradiction between the two views: “From where, the men [Aristotle and Hippocrates], seem to agree with each other somehow.”⁷⁶

The preliminary picture of Nemesius’ view on the formation of the body, based on the legacy of Aristotle and Hippocrates, is quite obscure and certain points are still elusive. First, it seems important to emphasize that his encyclopaedic knowledge of philosophy and medicine notwithstanding, the position of Nemesius in the question of the formation of the body is cherry picking. He selects the theories of Aristotle and the Hippocratic corpus from among a large number of ancient doctrines about generation and uses only these two. It is highly probable that the reason why he did that, was the prevailing character of psychology in the late antique theories on the semen.⁷⁷ Still, the absence of any indication of a familiarity with Porphyry’s concept makes us suspicious. Furthermore, Nemesius comes up with an attempt to reconcile the arguments of Hippocrates and Aristotle, mentioning that there is no contradiction between them. Even if one imagined that Nemesius was the only source telling us about Aristotelian and Hippocratic embryology, it would still not be easy to agree with such a simple conclusion about the absence of contradiction.

One of the reasons why Nemesius sees no difference between Aristotle and Hippocrates is that in this chapter he overlooks the mediating substrate between the body’s composition and the first elements that constitute it. This mediating stage is the semen. Semen is the end point in this succession from the body to its formation as the embryo. Both for Aristotle and Hippocrates the core of the problem of the formation of the human body’ is the nature of the semen. The most frequent source of Nemesius’ medical knowledge – Galen, in his treatise *On Semen* – is very explicit about the clash between the Aristotelian and

⁷⁶ “ὅθεν δοκοῦσιν πως ἀλλήλοις συμφωνεῖν οἱ ἄνδρες,” Nemesius, 4.147. p.45.18.

⁷⁷ For the Neoplatonic theories about the semen see: James Wilberding “Porphyry and Plotinus on the Seed” *Phronesis* 53 (2008), 406-32.

Hippocratic approaches to the notion of semen.⁷⁸ Research undertaken in this field also proves the existence of a serious opposition between Aristotle and Hippocrates. Even the titles of the papers by Anthony Preus⁷⁹ and Michael Boylan⁸⁰ show the lack of agreement in the ancient theories of generation. However, what is striking, neither Preus, nor Boylan, mention Nemesius and his strange intention to find coherence between Aristotelian and Hippocratic approaches.

A textual analysis of the twenty fifth-chapter (*On the generative and seminal faculty*), where the notion of semen comes up and receives thorough attention, only reinforces the statement about the intricate mixture of ancient embryology in Nemesius. Nemesius' organisation of the content of his treatise was far from random: the block of chapters is grouped according to a preliminary plan. The chapters about the body (2-3) are followed by a physiological account primarily dealing with different capacities of the human being. The capacity to generate, described in his twenty-fifth chapter as an integral part of human nature completes the circle of man's activity. In this chapter, the author firmly insists that the source of semen is blood, this time without any indication about humoral theory: "Organs for seminal faculty are veins and arteries. In them seminal fluid at first is generated by the transformation of the blood."⁸¹

In the history of philosophy and medicine there were three major answers to the question about corporeal origin of the semen.⁸² The first suggests that it is taken from the brain,⁸³ the second suggests that it comes from the whole body (from the humours) and the

⁷⁸ Other treatises by Galen such as *On the natural faculties*, *On the Usefulness of the Parts* can also be listed here.

⁷⁹ Anthony Preus "Galen's Criticism of Aristotle's Conception Theory," *Journal of the History of Biology* 10, no. 1 (1977), 65-85.

⁸⁰ Michael Boylan, "Galen's Conception Theory," *Journal of the History of Biology* 19, no. 1 (1986), 47-77; "The Galenic and Hippocratic Challenges to Aristotle's Conception Theory," *Journal of the History of Biology* 17, no. 1 (1984), 83-112.

⁸¹ Nemesius, 25.244. p.86.2-3.

⁸² James Wilberding "Porphyry and Plotinus on the Seed" *Phronesis* 53 (2008), 408-409.

⁸³ As Wilberding assures this concept is the oldest one and can be traced to Alcmaeon of Croton. Ibid. 409.

third that it comes from the blood. Nemesius settled between two last opinions, however the problem is that the hypothesis that the semen comes from the elements (as I shall show later) implies that the human body is already present in the semen, whereas the followers of the theory that blood is the source of semen stated that the formation of the body is a gradually evolving process. In such terms, the opposition between these two opinions becomes more obvious and to see how Nemesius coped with this seems to me a crucial feature of his account of the generation of the human body.

A possible explanation may suggest that Nemesius had been simply incompetent regarding this question: he neglected the difference by ignorance and awkwardly mixed the two approaches, although such assumption would be superficial. I must admit that to give an adequate explanation to this puzzling question in Nemesius's thought is an unsurmountable task. Based on the chapters dedicated to the problem of body's formation and seminal faculty, it is difficult to say whether according to Nemesius a human body is formed already in the semen or he prefers the way of gradual development of the physical state of the body. However, in one place in the chapter twenty-eight *On Respiration*, Nemesius mentions that the formation of the different organs of the body happens in the womb, and there is a certain order in this formation. Thus, some organs, such as, brain, heart and liver come first and only their development facilitates the development of other organs.⁸⁴ Still, there is a number of ambiguities in Nemesius' account, therefore I propose to look in the sources of this confusion: and through the re-examinations of Aristotelian and Hippocratic theories to emphasise the main features that Nemesius took from both of them. At the end, putting these notes together I will try to give a plausible account of his theory of the formation of the body.

⁸⁴ Nemesius, 28,259. p.91.23-92.2

2.2 Ancient theories of semen

Anthony Preus claims that “before the time of Aristotle, there was no one generally accepted theory of generation.”⁸⁵ I by no means want to challenge the statement of Preus, however, he himself points out that the questions raised during the pre-Socratic discussion on the problem of generation worked as an impetus for the alignment of the powers which conditioned the formation of well-established theories. There was no coherent theory but the questions raised are worth considering. One of these questions queried the nature of the seed. In general, our knowledge about ancient theories of the nature of semen comes from the first book of Aristotle’s *Generation of Animals*, where he, in line with his well-known method, criticizes everything previously written in order to build something genuinely new.⁸⁶

A number of ideas later attributed either to Hippocrates or to Aristotle were already presented by ancient authors, albeit in a scattered and inconsistent way. One of the most ancient ideas about conception and the development of the body presents the process through the analogy of the seed sown in the earth; in the secondary literature the number of such ideas usually appear under the widely accepted term ‘furrowed field theory’.⁸⁷ The earliest can be attributed to Aeschylus (*Eumenides*) and Euripides (*Orestes*), who compare the mother to a field where seeds are sown. Anaxagoras seems to have supported this theory as well, because Aristotle in *Generation of Animals* attributed to him the idea that “the seed is generated by the male, and female provides the place”.⁸⁸ The extreme version of this view was the theory

⁸⁵ Preus, “Galen’s Criticism of Aristotle’s Conception Theory,” 65.

⁸⁶ A famous collection of pre-Socratic texts issued by Hermann Alexander Diels later revised several times and eventually published in 1934-1937 after another revision by Walther Kranz is another source of knowledge of ancient theories of semen. See: Hermann Diels and Walther Kranz, *Die Fragmente der Vorsokratiker, griechisch und deutsch* (Zürich: Weidmann, 2004). In terms of the secondary sources, earlier theories of the nature of seed and conception were best presented by Erna Lesky and Joseph Needham. See: Erna Lesky, *Die Zeugungs- und Vererbungslehre der Antike und ihre Nachwirkung* (Mainz: publisher, 1950); Joseph Needham, *A History of Embryology*, (New York: publisher, 1959). A short overview of ancient conception theories was presented also in Michael Boylan, “The Galenic and Hippocratic Challenges to Aristotle’s Conception Theory,” *Journal of the History of Biology* 17, 1 (1984), 83-112.

⁸⁷ See: Boylan, “The Galenic and Hippocratic Challenges to Aristotle’s Conception Theory,” 85-87.

⁸⁸ Aristotle, *GA* IV.1, 763b30.

of preformationism, arguing that the complete body of the fetus is already assembled in the male seed. On the other end of the scale was the concept of parthenogenesis.⁸⁹ However, Preus convincingly argues that “none of the ancient Greeks believed that parthenogenesis is the normal mode of reproduction”.⁹⁰ The obvious drawback to both theories was the necessity to explain the resemblance of the offspring to the opposite gender.

Another theory proposed by ancient thinkers, which explained better the nature and source of the semen, suggested that both female and male provide the semen, and whole parts of the body are involved in the process of generation. As I briefly mentioned before, in accordance with this theory, the seed comes from virtually all parts of the body. The best known followers of such theory were Empedocles and Democritus, who held the opinion that semen comprises the complete individual which before the mixture of two semina is torn asunder. Such a theory, which in the Post-Enlightenment period was known as *pangenesi*s, had become a well established concept after it was widely promoted by Hippocrates⁹¹ in his work *On Seed*.⁹² He introduces the concept as follows: “The semen comes from all humours, which is in man, and the strongest (τὸ ἰσχυρότατον) parts are separated from it,”⁹³ and then adds that “the semen is secreted from the whole body, both from hard and soft parts, and from the humours.”⁹⁴

Note that the description given by Hippocrates largely corresponds with the first sentences of Nemesius’ fourth chapter written nearly eight centuries later. In order to see the

⁸⁹ Parthenogenesis is a form of asexual reproduction in which growth and development of embryos occur without fertilization. In animals, parthenogenesis means the development of an embryo from an unfertilized egg cell of the female.

⁹⁰ Preus, “Galen’s Criticism of Aristotle’s Conception Theory,” 69.

⁹¹ The dual semen theory was also advocated by Galen. I shall discuss this example later.

⁹² Term pangenesi

s was at first offered by Charles Darwin in the concluding chapter of his book *The Variation of Animals and Plants under Domestication* as a hypothetical mechanism for heredity. The pangenesis theory implies that the whole of parental organisms participate in heredity. He posited that atomic sized gemmules formed by cells would diffuse and aggregate in the reproductive organs.

⁹³ Hippocrates *On Semen*. References to the original Greek text are made to the following edition: Hippocrate. T. 11, *De la génération ; De la nature de l'enfant ; Des maladies IV ; Du foetus de huit mois*. by Robert Joly, (Paris: Belle Lettres, 1970), J1.1

⁹⁴ Hippocrates, *De la génération*, J3.1

point of the Hippocratic theory about generation, Anthony Preus delves into the origins tracing it back to the legacy of the earliest authors. He disagrees with Erna Lesky who suggests that the atomism of Democritus seems to be the source of the pangenetic theory.⁹⁵ Preus discusses the opinion that Anaxagoras is the most likely source of this set of theories. According to him, the misuse of Aristotle as a source for the reconstruction of pre-Socratic thought might have led to a misunderstanding. *Homoiomereis* as material parts attributed to Anaxagoras is an Aristotelian term, whereas Anaxagoras himself uses the term *spermata* (seeds), because everything comes about from them. In support of his argument Preus quotes the excerpt from *Die Fragmente der Vorsokratiker*: “How can hair come from not hair, and flesh from not flesh?”⁹⁶ and again: “For in the same semen there is both hair and nails, vessels and arteries, sinews and bones, and these are invisible, because they are too small, but when they grow they become discernible”.⁹⁷ Based on such linguistic consideration Preus concludes that even Anaxagoras was not the founder of the antique theory of pangenesis but should be considered as one of its proponents.

The reason why the theory of generation had drawn such broad attention from different perspectives in antiquity cannot only be explained by the importance of this problem in the course of a more complex issue in cosmology, the aim of which was to account for the generation-corruption problem. The lack of observational data required certain theoretical inference, but at this point, every proposed account suffers from a sometimes too incoherent character. However, it is this scientific intuition that advances knowledge in its historical evolution. The nature of the arguments involved in the refutation of Hippocratic theory reveals its practical and methodological weakness. The main problem with epigenetic theory was the lack of practical reasoning. There were mostly two objections: 1) how two complete

⁹⁵ Preus, “Galen’s Criticism of Aristotle’s Conception Theory,” 72.

⁹⁶ Diels Hermann and Walther Kranz, *Die Fragmente der Vorsokratiker, griechisch und deutsch*. (Zürich: Weidmann, 2004), 59B10.

⁹⁷ Ibid.

organisms (one in each semen) can become a single one after the mixture; 2) how particles of the soft and hard parts of the body can be together in liquid semen.

In an attempt to answer the first question, Democritus and Empedocles proposed that the bodies existing in the semina are torn asunder in order to mix halves in conception. The long-term consequences of this view are quite obvious; one is the difficulty to form the gender of the future fetus; another obstacle is that if two bodies were torn asunder in order to make one, there would be extra unused parts, which either should be of use for something or will be wasted. The waste of parts is something that goes against the general ancient understanding of nature and was not accepted.⁹⁸

The second question implies another difficulty: assuming that the semen comes from tissues and bones its transfer should be corpuscular, but if, on the contrary, the semen comes from humours, it means that it is formed in a liquid milieu. Trying to solve this antinomy Michael Boylan suggested that according to Hippocratic logic the substance extracted from the other can be by nature and composition of different substrate:

Then, although seed may be drawn from the humours or the soft and the hard body parts, what is drawn is of a markedly different character than those parts. Thus it would make no difference to the seed whether the originating part were hard or soft, since what is being drawn out is different in its material constitution from the contributing part.⁹⁹

To support this assumption, Boylan reaches out to the thesis from another treatise of the Hippocratic corpus *On the Nature of the Child or Pregnancy*,¹⁰⁰ which hints to the existence of the ability of a non-material power (*dynamis*) to be transformed into material substrate. Therefore, this treatise suggests that it is possible that some potency is derived from all parts of the body and is transformed into material substrate in the semen.

⁹⁸ Some witnesses say that during his stay in Alexandria (where there was no prohibition for the dissection of corpses) Galen in order to prove or disapprove this point dissected wombs in his search of wasted parts of the body.

⁹⁹ Boylan Michael. "Galen's Conception Theory," *Journal of the History of Biology* 19, no. 1 (1986), 50.

¹⁰⁰ "καὶ ἀναγκάζεται ὑπὸ τῆς ἰκμάδος συστρέφεσθαι ἡ δύναμις," Hippocrates and Robert Joly, *De la génération*, J. 22. 8-9.

In short, Hippocrates suggested a rather original solution for understanding how particles are extracted from different parts of the body to shape a future seed. However, on the one hand, the understanding of *dynamis* when possibility is directly connected to physical substance is a unique, less than obvious, example for understanding this issue. On the other hand, such understanding is completely incompatible with the argument in the work *On Seed*, where, as Boylan reasonably argued, the author, talking about extracted parts, often uses the word τὸ μέρος which definitely refers to material substratum.¹⁰¹ The fact that all theories covered by the term *pangeneses* are preformationist in their character is pretty straightforward. In order to be coherent, each theory postulating that the semen comes from all parts of the body should agree that this presupposition implies the idea that all parts are assembled in a shape of that body. The assertion that the parts are present in the body in a sort of potential form and then unfold gradually puts that theory in the category of epigenetic theories.

2.3 Aristotle's theory

The person who boldly challenged the antinomy was Aristotle. Admittedly, he changed the course of scientific and medical thinking on the question of the nature of semen for at least five centuries, putting forward his theory whereby the male and the female play different functions in the conception.¹⁰² The major advantage that bolsters Aristotelian theory was the perfect ratio in combination of scientific inference and observational data. The reason why his biological treatises deserve their place in the history of philosophy is that his biological concerns were closely related to his philosophical ones. Aristotle's interest in biology was not accidental and forms an inseparable part of his plan to present a

¹⁰¹ Boylan, "The Galenic and Hippocratic Challenges to Aristotle's Conception Theory," 92.

¹⁰² Aristotelian theories on the nature of semen and conception were widely studied in the 1970s. See Boylan, "The Galenic and Hippocratic challenges to Aristotle's conception theory," Horowitz Maryanne Cline, "Aristotle and Women," *Journal of the History of Biology* 19, (1976), 186-213; Morsink Johannes, "Was Aristotle's Biology Sexist?" *Journal of the History of Biology* 12 (1979), 83-112.

comprehensive picture of nature. Since his father was a physician at the Macedonian court, Aristotle most probably was acquainted with medical works of contemporaries long before his interest turned toward philosophy. Even though Aristotle looks at medicine as a craft, he still can be considered as the first theoretical biologist. As Marjorie Grene and David Derew put it, Aristotle undertook biological inquiry mostly for its own sake rather than for practical benefit.¹⁰³

Within the broader critique of Hippocratic embryology and ancient pangenetic theory, which assumes that each part involved in the creation of semen comes from the particular organ and contains the nature of that organ or its part,¹⁰⁴ there is one objection by Aristotle that Preus concisely summarizes as follows: “it goes too far and not far enough”.¹⁰⁵ The argument elegantly reveals the real disadvantage of pangenesis. On the one hand, Hippocrates asserts that the wide variety of materials must be present in the semen, and in this sense Hippocrates goes very far; on the other hand, however, he does not really explain how these “parts” are present in the material, or in other words, “it does not go far enough in asserting the degree to which a nature may be present in a particular material”.¹⁰⁶

There are several items of note in Preus’ altogether justifiable argument. The body, when subdivided, first consists of heterogeneous (or unlike) parts. For example: a head, limbs, a heart, a liver etc. are heterogeneous parts of the body; however, the further division of those parts produces certain parts, which remain the same even after the subdivision. It is those parts that Nemesius calls τὰ ὁμοιομερῆ – homogenous parts. The next stage of this subdivision of the homogenous parts is the four humours or elements, which constitute the

¹⁰³ Majorie Grene and David Derew, *The Philosophy of Biology: An Episodic History* (Cambridge: Cambridge University Press, 2004), 4.

¹⁰⁴ Regardless of the fallacies of the Hippocratic proponents, several Aristotelian objections always remain the same. If all parts of the body are scattered about in the semen how do they remain alive? If they are connected, there should be a tiny animal, which is, according to Aristotle, absurd. And even if we assume that this is true, Aristotle asks why the female does not produce female children on her own. See: Aristotle. GA. 722b5-10

¹⁰⁵ Preus, “Galen’s Criticism of Aristotle’s Conception Theory,” 77.

¹⁰⁶ Ibid.

semen according to Hippocrates. Aristotle in his dialectical refutation in the first book of *Generation of Animals* observed an obvious issue, which the previous tradition overlooked: the offspring's resemblance to parents is not so much of a material character but of a formal one. Simply speaking, it is the resemblance of the disposition of like-parts, that really makes the son's appearance similar to the father. It is due to Aristotelian philosophical intuition that the simple observation that usage of the same like-parts does not really make any similarity between parents and offspring eventually led to a breakthrough in ancient embryology.¹⁰⁷ Aristotle says:

And yet without this [assemblage] (ταύτης [τῆς συνθέσεως]) the parts would not have the resemblance (ὅμοια); so if there is something which sets to work later on to bring this assemblage about, then surely this something (τοῦτο), and not the drawing of the semen from the whole of the body will be the cause of resemblance.¹⁰⁸

This assemblage by itself is not a material thing in effect because the disposition and the order of like-parts does not require a material factor. The sameness of unlike-parts can be the cause of the resemblance between parents and offspring but the sameness of the like-parts cannot bring about this similarity; only their disposition can do that. For the sake of simplicity this disposition might be confined to a power, the power to arrange these like-parts. For this reason Aristotle asks why one part of the living being cannot provide this power, the power to develop the simple substrate into the complete new individual. Such a substrate for Aristotle is blood, which as soon as concocted into semen possesses that disposition for arranging like-parts.¹⁰⁹

¹⁰⁷ In the late antique period, particularly in the legacy of Plotinus and Porphyry, this Aristotelian theory was transformed into a special teaching about heredity, which is conveyed by the transmission of *nature* and *logoi* from the parents to offspring. For instance, a presence of a snub-nose of a son can be explained by the transmission of the *snub-nose-logos* from the parents. See: Wilberding, "Porphyry and Plotinus on Seed", 420-1.

¹⁰⁸ ἀλλὰ μὴν ἄνευ γε ταύτης [τῆς συνθέσεως] οὐκ ἂν εἴη ὅμοια. ταύτην δ' εἴ τι δημιουργεῖ ὕστερον, τοῦτ' ἂν εἴη τὸ τῆς ὁμοιότητος αἴτιον ἀλλ' οὐ τὸ ἀπελθεῖν ἀπὸ παντός. G.A. 722a35-b3. All translations of G.A. are adapted from Aristotle *Generation of animals*, with an English translation by A.L. Peck (Harvard University Press, 1943).

¹⁰⁹ Semen is "either blood or the analogous substance or something formed out of these." (ἥτοι αἷμα ἂν εἴη ἢ τὸ ἀνάλογον ἢ ἐκ τούτων τι.) G.A. 726b5.

Aristotle elaborates the theory of producing the semen and makes it more sophisticated not only from the philosophical point of view, but also in terms of physiology. Aristotle considers blood as a source of both female and male seminal fluids, and the formation of these fluids as a result of a succession in digestive processes. This is exactly the point, which Nemesius took after Aristotle, who makes blood the source of the semen. Back to Aristotle, to be transformed into blood, digestive material (food) must pass three stages of digestion (πέψις): first in the stomach, second in the liver and finally in the heart. During the process of the third *pepsis*, food is transformed into blood in the heart. After that, blood goes into the brain, and upon cooling it is directed around the body circulating for various functions and needs. Michael Boylan, in a brief glossary of medical terms used by Aristotle, thoroughly describes the role and importance of the *pepsis* in Aristotle's understanding of digestive and reproductive systems, and points out two main results of *pepsis*: nourishment (τροφή) and side-product (περίσσωμα).¹¹⁰ The word περίσσωμα, literally meaning 'that which is over and above', basically refers to the side-product of digestion which, composed of solid and liquid elements, can be equally useful and useless. In case of a useful residue, this final product (περίσσωμα) of the third *pepsis* goes to the gonads in order to be transformed into seminal fluids, which is the goal of this secretion.¹¹¹ All of the περίσσωμα is transformed into either the male seed or the female reproductive fluid (καταμήνια). The point is that, according to Aristotle, basically only the male gonad is capable to produce the semen, whereas the female one produces καταμήνια, which certainly is involved in the formation of the fetus but has a slightly different function.

Understanding the Aristotelian argument depends on a much broader context than simple biology. He did not work on his *physics* and *metaphysics* for the sake of zoological

¹¹⁰ Boylan, "The Galenic and Hippocratic Challenges to Aristotle's Conception Theory," 95.

¹¹¹ "The semen is a part of a useful residue (Χρησίμου ἄρα περιττώματος). The most useful (χρησιμώτατον) of residues is that which is the last [produced] and from which each from the parts comes about directly." G.A. 725a11-13.

insight, but he did make use of *it*. The notion of natural change studied in *Physics* is integral to the notion of generation in the species/genera sense. The equal state of similar seminal fluids presupposed by the Hippocratic corpus, according to Aristotle, puts certain limitation on what the influence of one seminal fluid upon another is like. If there is A and there is B, which both have equal state in terms of quality and quantity, then it is less than obvious how they act upon one another in the mixture, and therefore the question of heredity becomes acute. That is why Aristotle considers the mixture of two seminal fluids not as a quantitative change but as qualitative one, where both the male and the female undertake different roles. For Aristotle, heredity can be described only by means of asymmetrical interrelation. The principle of four causes (efficient, material, formal and final) together with his notion ofhylomorphism are two components which are difficult to dispense with in a discussion of Aristotelian embryology. In Book One, Chapter 20 of *Generation of Animals* Aristotle develops his critique of the equal material contribution of the male and the female in conception, and proposes the idea of different roles played by them:

However what happens, is just one would reasonably expect, since the male provides the form and the source of change (τό τε εἶδος καὶ τὴν ἀρχὴν τῆς κινήσεως),¹¹² the female provides the body and the matter (τὸ σῶμα καὶ τὴν ὕλην), just as in coagulation of milk, the milk is the body, and fig-juice or the curd is that which carries the source for assembling...¹¹³

The thought expressed in this passage is one of the clues for understanding the Aristotelian idea of the generation of a living being. He fits the process of conception into the paradigm of four causes, where the male and the female semina are ascribed to one of these causes. In accordance with the four-causes theory, Aristotle states that the male semen does not in fact make any material contribution to the fetus. On the contrary, he sees it as a power which is supposed to organize the matter provided by the female body. The generation of the human being can be presented in this sense as a movement which brings the power (*dynamis*) to the

¹¹² I translate the word κίνησις as a *change* but not a *movement* deliberately. See hereafter.

¹¹³ G.A. 729a 9-13

matter, and the union of form and matter brings about the energy which is a real living being.¹¹⁴

Accompanied by a search across the works of his successors, the further analysis of the Aristotelian treatise reveals a certain inconsistency in his understanding, and underpins two basic approaches to the application of causalities to this. The material contribution of the female is something which has been clearly stated in *Generation of Animals*. The crucial role attributed to the female seminal fluid should not be underestimated because it contains potentiality, and actuality is directly restricted to the nature of this matter. As opposed to this, the nature of the male semen is much less clear, even within the short definition in the passage quoted above. For example, the phrase τό τε εἶδος καὶ τὴν ἀρχὴν τῆς κινήσεως caused confusion between commentators of Aristotle, because formal and efficient causes coincide and are present in one place simultaneously. This confusion continues in the secondary literature too, where some consider the male as an efficient cause and others as formal cause.¹¹⁵

Linear development seems likely to be a main feature of Aristotelian epigenesis. Initial movement is only one stage of the more general process. For Aristotle, the formation of the fetus is a gradual process, which entails the development of a composite entity from a simple one. Movement (κίνησις) can be of four different types: qualitative, quantitative, spatial, and substantial.¹¹⁶ It is the mixture of the male semen with female καταμήνια that Aristotle describes as this substantial change caused by initial movement, the change from *dynamis* to *energeia*. Aristotle describes this change as coagulation of matter in accordance with certain form, and he calls this preliminary mixture, σύνεσις, which is followed by the next stage:

¹¹⁴ GA.1.19 727b14-16; 1.21 729b25-27ff; 730a214-16

¹¹⁵ For instance, Anthony Preus, as well as Alan Code, "Soul as Efficient Cause in Aristotle's Embryology," in *Aristotle: Critical Assessments*, vol. 2, Physics, Cosmology and Biology, ed. Lloyd P. Gerson, (London: Routledge, 1999) assert the efficient character of the male semen in Aristotle's conception theory.

¹¹⁶ Although, to do justice, I must say that according to Aristotle, the qualitative change can be qualified as κίνησις only to a very limited extend.

κύημα (embryo). From this point onwards, the embryo is a separate being, which develops epigenetically. Thus, the final cause is coupled with the formal one in the male semen and they both rule over the efficient cause, while all of them are of supreme nature to material cause. Aristotle, takes an example of a carpenter as the most fitting analogy to generation, where the artisan possesses the image of a future wooden table, and by means of tools (efficient cause) is able to create this table out of the raw wood (matter). Aristotle, in a way, restricts the role of the male semen by its initial movement which triggers the development, but does not contain this development, and the form of the embryo becomes available only after being mixed with the matter. Thus, despite all achievements of Aristotle's account, the later philosophers, physicians and especially Galen criticized him for conceding the role of semen only to male, while its function is strongly restricted, whereas the contribution of the female is not even a semen, but carries the 'bigger' responsibility for the development of the embryo.

2.4 Nemesisius and the influence of the Galenic synthesis.

After all listed features of ancient theories on the nature of semen, I believe, Nemesisius' account can be summarized in two major directions. He states in the fourth chapter that human bodies consist of four elements, and this is a material composition of the bodies, whereas the source of their generation is the semen which comes from blood. Thus, I would argue that in general Nemesisius stuck to the Aristotelian epigenetic pattern, especially taking again into account his random mentioning about the development of brain, heart and liver in the womb.¹¹⁷ However, he stepped back from the Aristotelian notion of only one semen, and

¹¹⁷“All the mentioned organs of the first three principles that control the body came about for themselves. For thee, which are called ‘in accordance with nature’ in the most proper sense, were constructed first and as primary in rank, and take their birth in the womb from the seed itself (καὶ ἐν τῇ μήτρᾳ ἐκ αὐτοῦ τοῦ σπέρματος λαμβάνει τὴν γένεσιν), as also the bones”. Nemesisius, 28,259. p.91.23-92.2.

sided with the Hippocratic corpus in this question, while he, at the same time, takes the Aristotelian presupposition that contribution of both semina to the formation of the body is not equal and rather has qualitative then quantitative character.

Aristotle and Democritus suppose that the female does not contribute any semen to the birth of children. For they maintain that what is given off by the women is the sweat of a part rather than seed. But Galen refuting Aristotle says that women produce seed and the mixture of both makes the embryo - this is why copulation is also called mixture [in Greek] - however, [according to Galen], women do not have perfect seed like a man's, but it is still undigested and more wet. Being like this, the seed of the woman becomes the food of the man's seed.¹¹⁸

One of the reasons why Nemesius does not accept the Aristotelian idea of seminal fluids is its ambiguity about the role of male fluid. As it has been previously noted, according to the general thought of Aristotle, the formal contribution of male semen is nothing else than soul in potentiality, which upon mixture with matter becomes actuality and produces perceptible objects.¹¹⁹ But for Nemesius the theory that the male semen is a formal/efficient cause and brings the soul was hard to accept. It is therefore reasonable to argue that Nemesius' philosophical (perishable character of temporal creation) and theological preferences (creationism instead of traducianism¹²⁰) conditioned his choice in medical matters.

Another reason for the confusion of Aristotelian and Hippocratic ideas in Nemesius is most probably the synthesis of these theories in Galen's work. It is Galen who should be considered as Nemesius' intermediate source of ancient theories about the semen. Galen's point of view on this matter is a mixture of ideas belonging to Hippocrates and Aristotle.

¹¹⁸ Nemesius, 25.247. p. 86.19-87.3.

¹¹⁹ Following this logic, Alan Code argues that the idea of the soul's preexistence in the semen can be inferred from the Aristotelian blend of biology and physics. "Soul as Efficient Cause in Aristotle's Embryology." To be more specific, Code does not claim that the very soul pre-exists in the semen, because it has different form of actuality, and "the soul is present even in the male semen, though at the lowest possible degree of potentiality." Code, "Soul as Efficient Cause in Aristotle's Embryology," in *Aristotle: Critical Assessments*, vol. 2, Physics, Cosmology and Biology, ed. Lloyd P. Gerson, (London: Routledge, 1999), 299.

¹²⁰ Theological concept which states that the origin of the soul is its natural generation. Soul as immaterial is believed to be transmitted along with the body which is the material aspect of human beings.

According to Galen, semen is produced by both male and female bodies,¹²¹ in which he follows Hippocrates. But, instead of connecting this model with the pangenetic theory, as Hippocrates, Galen follows Aristotle and makes blood the source of semen. He argues that the blood is produced in a digestive process after passing through the stomach and through the veins to the liver, and then serves the main needs of the body. However, sometimes more ‘charged’ blood is necessary: blood that has passed through another *pepsis* in the heart, causing its transformation into semen. On its way from the heart through the venous and arterial system to the ovaries, ‘charged’ blood twists in the male and female semen.¹²² We find the same description in Chapter Twenty-Five, “On the generative or seminal faculty,” in Nemesius’ treatise: “Organs for seminal faculty are primarily the veins and the arteries. In them seminal fluid at first is generated by the transformation of the blood.”¹²³ In this description Nemesius follows Aristotelian logic and takes proposed achievements on physiological system. But at the same time Galen severely criticized the Aristotelian limitation on the contribution of the male semen, which I treated at the end of the subsection about Aristotle. For Galen, who returned to the two-semen concept almost five centuries after Aristotle, the reason for this was the aforementioned Aristotelian tendency to confine the role of the male semen to an initial movement. On the one hand, this theory attributes too many tasks to one single ‘blow’, on the other hand it assigns too many duties to the female semen. Provisionally the female is not even semen, and has ostensibly too little to do, while the Aristotelian thought implies that the female fluid is responsible for the development of the embryo to a larger extent. It is that argument that forced Galen to

¹²¹ This statement was also based on some physiological discoveries. Ancient physician Herophilos (335-260), well-known for being the first who investigated dead bodies, discovered such female organs as the ovaries and uterine [fallopian] tubes. Galen in his investigation of these organs found a certain humour and decided that it is female semen, suggesting a common structure of male and female reproductive systems. (Galen, *Galenī opera omnia*, vol. 4, ed. Karl Gottlob Kühn (Leipzig: Car. Cnoblochii, 1821-1833), 634-35. In this suggestion Galen was way far from truth and discovery of female ovum, which happened as early as XIX century, as I mention at the beginning of the chapter.

¹²² *Galenī opera*, vol. 4, 583.

¹²³ Nemesius, 25.244. p.86.2-3.

return to the two-semen model, although he also argues for an unequal contribution of them.¹²⁴

Researchers agree with the opinion that Galen's views on the nature of semen and embryology are those, which have received the greatest criticism by the followers.¹²⁵ The explanation for this in general is quite simple: Galen could not decide whether to follow Hippocrates or Aristotle. He takes Aristotle's idea of epigenesis and gradual development of a living organism, while he criticizes Aristotle for the minor role assigned to the male semen; which critique entails the rebirth of the two-semen theory. The argument proposed by Galen gives rise to further confusion, which one can find in Nemesius's account.

To sum up, I would say that the reconciliation of Aristotle and Hippocrates in Nemesius' treatise is not due to any obvious similarities between them but is caused by their combination mediated through Galen's thought. At the same time, as stated above, the problem of the body's generation in antique thought and in Nemesius' legacy logically depends upon the question of the relationship between the body and the soul. In an attempt to understand the problem of the formation of the body it is difficult to ignore the problem of the soul/body connection. The ambiguity of Nemesius' embryology might be explained to some extent by the necessity to reconcile medical knowledge and philosophical intuition with a Christian dogma. The idea of the creation of the soul, exhibited by Nemesius in Chapter Two of his treatise, forces him to reject Aristotle's point about the male semen as a formal cause, which affects his embryology. Thus, for Nemesius, the body consists of four humours but in the embryological development the body's source is a combination of male and female semina produced correspondingly through the process of *pepsis* from blood. Anticipating the following chapter, I would make the conjecture that another reason to ascribe an epigenetic

¹²⁴ Galen *On Semen*, 2.4.24.

¹²⁵ See: W. Telfer, *Cyril of Jerusalem and Nemesius of Emesa*, ed. by William Telfer, (Philadelphia, PA: Westminster Press, 1955), 369; Boylan, "Galen's Conception Theory," 69.

account of generation of the body to Nemesius is his teaching that the soul penetrates the whole of the body (ὅλη δι' ὅλου) and does not reside in its different parts. The problem of the soul/body connection in Nemesius' embryology is the subject of study in the next section.

Chapter 3. Soul and body connection

The twofold structure of the nature of man set forth by Nemesius, and the definition of man as situated on a border between the intelligible and the corporeal realms, makes man a denizen of two worlds. The fact of matching the two worlds together in one nature, inevitably requires Nemesius to ascribe every single man's coming to be to the unification of these two substances. In this chapter, I will confine myself to an outline of the main features of this union in Nemesius' thought.

To reiterate, Nemesius, at the end of the chapter *περὶ ψυχῆς*, gives a full definition of human soul, showing that it is neither a body, nor attunement, nor mixture, nor quality, but it is some incorporeal substance that exists on its own.¹²⁶ Moreover, the soul is none of those things that have their being in something else,¹²⁷ and is immortal. As for the human body, the chapter *περὶ σώματος* testifies that the body is a compound of the four elements, which, being mixed, constitutes the body in conception. Furthermore, in the following chapter *περὶ στοιχείων* Nemesius makes it explicit that every physical body is a compound of these four elements, implying a universal character of the composition of the human body.¹²⁸ However, the development of this composition takes its origin in the blood, which is the source of the semen. Given that two partners (male and female) have semen, the mixture of them, having been supplemented with the soul, brings about a new human being, which is gradually developed in the womb. Therefore, the crux of embryology for Nemesius is an understanding of the mixture between two substances – the body and the soul.

¹²⁶ δῆλον ἐκ τούτων ὡς οὐσία τις ἐστὶν ἀσώματος ἡ ψυχὴ. Nemesius, 2,124 p.37.22-23.

¹²⁷ This is a hint that the soul does not come from the semen of the parents, nor does it receive its existence upon entering the body.

¹²⁸ Τὸ στοιχεῖον τὸ κοσμικόν ἐστὶν μέρος ἐλάχιστον τοῦ συγκρίματος τῶν σωμάτων.” Nemesius, 5,150 p.47.4-5 “The element of which the universe is made (universal element, the basic matter of the universe – Telfer) is the smallest part of the compound of the bodies”.

3.1 The way of connection

Nemesius' treatment of the soul/body connection needs to be scrutinized in order to clarify the concept of embryology in his thought. Nemesius begins the opening paragraph of the chapter *περὶ ἐνώσεως ψυχῆς καὶ σώματος* declaring:

One must seek how the union of the soul and the soulless body comes about. For this task is puzzling. However, if man is combined not only from these alone [that is, soul and body] but also from mind, as some people want it, it is yet more puzzling. For all those elements that come together into the reality of one being are united by all means, but all things united are changing and do not remain as they have been.¹²⁹ [...] Therefore, how does the body being united with a soul still remain a body, or again, how does the soul, being incorporeal and substantial in itself, become united to the body and become a part of the living being, while keeping its own substance unconfused and incorruptible?¹³⁰

First, Nemesius himself confirms that the question of the soul/body connection is not an easy one to resolve with a plausible solution. The task of explaining the mixture of two different substances in one being seems to be puzzling and intricate by definition, given the condition that both components should remain themselves, insofar as it is clear from the passage that the different nature of the two substances does not allow Nemesius to admit a confusion of the two substances. This passage puts forward the main questions to be tackled in this chapter of the thesis. How, according to Nemesius, from two substances – corporeal and intelligible – appears only one? How does Nemesius understand this appearance? Was he interested in the problem of person, given that he uses the term hypostasis, or was he satisfied with postulating a unification of these substances in the human nature in general and not every particular unification was a point of his concern? In a time as heavily steeped in the debates about the

¹²⁹ Ζητητέον δὲ πῶς ψυχῆς καὶ σώματος ἀψύχου γίνεται ἔνωσις· ἄπορον γὰρ τὸ πρᾶγμα. εἰ δὲ μὴ μόνον ἐκ τούτων, ἀλλὰ καὶ τοῦ νοῦ συνέστηκεν ὁ ἄνθρωπος, ὡς εἰπὼν τινες, ἔτι πλέον ἀπορώτερον. πάντα γὰρ τὰ συνιόντα εἰς μιᾶς οὐσίας ὑπόστασιν πάντως ἐνοῦται· πάντα δὲ τὰ ἐνούμενα ἀλλοιοῦται καὶ οὐ μένει ἢ πρότερον ἦν, ... Nemesius, 3,126 p.38.13-17

¹³⁰ πῶς οὖν ἢ τὸ σῶμα ἡνωμένον τῇ ψυχῇ ἔτι μένει σῶμα ἢ πάλιν ἢ ψυχή ἀσώματος οὔσα καὶ οὐσιώδης καθ' ἑαυτήν, πῶς ἐνοῦται σώματι καὶ μέρος γίνεται τοῦ ζώου, σφύζουσα τὴν ἰδίαν οὐσίαν ἀσύγχυτον καὶ ἀδιάφθορον; Nemesius, 3,126 p.38.16-20

difference between such terms as nature/essence/hypostasis as were the fourth and the fifth centuries, some sort of confusion is detectable particularly everywhere.

A second very important item to note in this part of Nemesisius's anthropology is that the prevailing character of the nature/hypostasis problem amounts inevitably to a connection to theology. Namely, Christian authors frequently exploited the argument of the way the soul and the body are connected for modelling the way in which the divine and the human natures are united in the incarnate Christ.¹³¹ The two subjects are related in Nemesisius' theory, too, in a way that the union of the two natures somehow anticipates his solution of problem of the union of soul and body.

As William Telfer notes in his commentary on Nemesisius's text, the bishop of Emesa in this chapter "had alluded to the possibility that some of his readers may not acknowledge the authority of Scripture";¹³² that is why Nemesisius reached out to the help of pagan philosophy and especially Porphyry, explaining the mixture between soul and body. It is obvious that, apart from its theological essence, the question of mixture involves a purely philosophical meaning too, mainly manifested in understanding the mechanism of connection of two kinds of beings.

Refuting the possibility of confusion, juxtaposition and mixture when two become one, Nemesisius asks how then, after this union, a human being can be called one.¹³³ According to Nemesisius the soul as an incorporeal substance completely penetrates the whole of the body (ὅλη δι' ὅλου).¹³⁴ Moreover, not being confined spatially the soul is not present somewhere in the body physically (ἐν τόπῳ ἐν σχέσει), but connected through the relation,

¹³¹ Connection of soul/body problem with the doctrine of mixture in Christology is quite close, as indicated by many sources from the patristic heritage. For example, Gregory of Nyssa wrote: "But supposing you are ignorant of the way in which the soul is in union with the body, do not suppose that that other question [in what way Deity is mingled with humanity] is bound to come within your comprehension..." Gregory of Nyssa *Oratio catechetica magna*. 11. 1-3. NPNF (V2-05). 144. 768.

¹³² William Telfer *Cyril of Jerusalem and Nemesisius of Emesa*, (Philadelphia, Westminster Press, 1955), 304.

¹³³ εἰ δὲ μήτε ἡνωται μήτε παράκειται μήτε κέκρται, τίς ὁ λόγος τοῦ τὸ ζῶον ἐν λέγεσθαι; Nemesisius, 3,129 p.39.11-12

¹³⁴ ἡ δὲ ψυχὴ ἀσώματος οὕσα καὶ μὴ περιγραφομένη τόπῳ ὅλη δι' ὅλου χωρεῖ καὶ τοῦ φωτὸς ἑαυτῆς καὶ τοῦ σώματος, καὶ οὐκ ἔστι μέρος φωτιζόμενον ὑπ' αὐτῆς ἐν ᾧ μὴ ὅλη πάρεστιν. Nemesisius, 3,134 p.41.5-8

thus it animates the body and at the same time does not suffer any change remaining unconfused.¹³⁵

The unifying character of the soul's penetration into the body marks a break with a well settled tradition in ancient philosophy and medicine that the soul (or different parts of the soul) are physically located in different parts of the body. According to Plato, three different parts of the soul are located in three different parts of the body: the rational part (λογιστικόν, or he also uses Stoic term ἡγεμονικόν – ruling part) – is located in the brain, the spirited part θυμοειδής is located in the heart and the desiderative part ἐπιθυμητικός – located in the liver.¹³⁶ Galen supports this view in *On the Doctrines of Hippocrates and Plato* and *The faculties of the Soul flow the mixtures of the Body*.¹³⁷ Except for the minor similarity between the Platonic idea of the cerebral location of the rational part of the soul and Nemesisius's variant to substitute it with the view that only mental capacity is there, although it is not a part of the soul, Nemesisius drew back from this tradition. This view quite closely corresponds for Plotinus' teaching exposed in IV.3.¹³⁸

Yet, I would argue that Nemesisius's teaching on the problem of the soul/body connection is also tributary to his continuous emphasis on the incompatible diversity of the natures of soul and body. Other Christian writers (contemporaries of Nemesisius as well his predecessors) pointed out the difficulty of the soul/body connection problem;¹³⁹ Gregory of Nyssa called this problem as exceeding human understanding (ἀκατανόητον), inexpressible (ἄφραστον), extraordinary (ἀμήχανον).¹⁴⁰ It is interesting to see what kind of solutions were offered by other theologians, and evidence shows that this very much depends on their stand

¹³⁵ So when it is said to be in a body, it is not said to be in a body as in a place (ἐν τόπῳ), but as in a relationship to it and by being present (ἐν σχέσει)... Nemesisius, 3,135 p.41.14-16.

¹³⁶ See Plato *Republic* IV 436a-438b; *Timaeus* 44d, 65e, 67b, 69d-70a.

¹³⁷ For the problem of psychology in Galen's oeuvre, see Pierluigi Donini, *Psychology* in The Cambridge Companion to Galen. (Cambridge: Cambridge University Press, 2008), 184-210.

¹³⁸ Plotinus, IV.3.27. (22-23)

¹³⁹ See for example Gregory Nazianzus *Epistle* 32; John Chrysostom *On the Incomprehensible Nature of God*. Sermon 5.

¹⁴⁰ Gregory of Nyssa, *De Opificio Hominis*. PG. 44. 177b

on the nature of mixed substances. The case of Gregory of Nyssa is a particularly good example, which shows that, one's view on the nature of substances strikingly influences one's notion of their mixture. First, for Gregory of Nyssa the difficulty comes only at the stage of connection between soul and body after the Fall, for before that the originally created body, staying without contamination, was not opposing to the soul. The mixture of them after the Fall is another question. Second, the solution offered by Gregory of Nyssa heavily relies on the Neoplatonic concept of matter as "utter indetermination (ὑποκείμενον)"¹⁴¹. In accord with Plotinus, the intelligible world is an "image" of the One. Now, since form must have realization in matter, there is in the intelligible world a universal substratum, "incorporeal matter". Thus, for Plotinus real being is an attribute of ideas only and matter by itself does not exist, while being only an aggregation of qualities. From this point of view the opposition between the intelligible and the corporeal is discarded which leads to a possibility of reconciliation between soul and body.¹⁴² Therefore, I should venture to argue that while Gregory of Nyssa endeavors to diminish the tension between two substances he goes so the easiest way, whereas Nemesis forces himself to find another solution.

3.2 Ἀσύγχυτος ἔνωσις

Nemesis took stock of philosophical terminology used by different philosophical schools describing a mixture of physical object and intelligible substance. To complicate matters, by approaching the problem from the philosophical point of view and adducing the theological problem of the connection between two natures in Christ, Nemesis seems to be pleasing both parties.

¹⁴¹ Plotinus, *The Ennead*. III, 4, 1.

¹⁴² Gregory of Nyssa, *De Opificio Hominis*, chapters 23-24, PG 44, 212-213; *On the soul and the resurrection*, PG 46, 124 CD

In a nutshell, the terminology conveying the meaning of different kinds of mixture was introduced into the language of Christian theology from ancient philosophy, where, in turn, it was finely elaborated during the long debates between the Stoic and Peripatetic philosophical schools.¹⁴³ Here, I trace this philosophical background and ascertain the evolution of this terminology, which after all became an acceptable solution for Nemesius in his *task* to explain the soul/body connection.

During the polemic in the classical period between the Peripatetics¹⁴⁴ and Stoics,¹⁴⁵ the scope of categories of this discussion includes three types of mixture. The first one – παράθεσις, συνάφεια (juxtaposition, conjunction) corresponds to the type of mixture whose components just contact with each other, while retaining their qualities and substances.¹⁴⁶ The second type – σύγχυσις (confusion) – describes a connection where the qualities and substances of the two elements entering the mixture do not remain intact, forming a third substance. Finally, the third type of mixture, a point of divergence between Stoics and Peripatetics, is covered by the categories κρᾶσις and μῖξις. According to the Stoics it is the type of mixture where connecting subjects interpenetrate each other creating unity while retaining the substance and quality, so that later they could recover back.¹⁴⁷ This proposed type of mixture evoked indignation amongst the philosophers who reproduced it in their

¹⁴³ The dependence of the Christological dogma of the two natures union in Christ on the Stoic doctrine of mixture has long been stated by scholars. See: Richard Sorabji, *Matter, Space and Motion. Theories in Antiquity and their Sequel*, (London, 1990): 120; Harry Wolfson, *The Philosophy of the Church Fathers: Faith, Trinity, Incarnation*, (Cambridge, 1976), 372 – 433.

¹⁴⁴ Aristotle expounds his teaching about mixture of substances in his treatise *On generation and corruption*.

¹⁴⁵ The teaching of Stoics about mixture came to us indirectly through a doctrine elaborated by Alexander of Aphrodisias in *De Mixtione*; also through the work of Plutarch *On the Common Notions against the Stoics* (*De communibus notitiis*), Stobaeus *Eclogues* and Diogenes Laërtius *Lives and Opinions of Eminent Philosophers*. Moreover, a number of treatises attributed to different authors, extracts thereof represented in a collection of fragments of earlier Stoics composed in 1903–1905 by Hans von Arnim *Stoicorum Veterum Fragmenta*, bring us scattered information on the problem of mixture in Stoic philosophy.

¹⁴⁶ Alexander of Aphrodisias *De Mixtione* III.216.22.

¹⁴⁷ The conventional name for this kind of mixture accepted in the English-language literature is *total blending*. “The third type of mixture he [Chrysippus] says occurs through certain substances and their qualities being mutually coextended in their entirety and preserving their original substance and qualities in such a mixture.” *De Mixtione* III. 216. 25-217.2 The translation is given according to the following edition: Robert B. Todd. *Alexander of Aphrodisias, on stoic physics: study of the De mixtione with preliminary essays, text, translation and commentary* (Leiden, 1976), 117.

critiques. According to Peripatetics, whose main proponent was Alexander of Aphrodisias, the category κρᾶσις (commingling) implies a mixture when the elements entering the union remain intact but their operations become one in a third substance constituting the medium for the commingling. Contrary to this, μῖξις (mixture) means that the qualities of the objects change so much so that, out of the two substances a third is created. Aristotle calls this change “from its own nature in the direction of the other one”. However this change does not result in absorption of one in another but something third appears; in other words, they become “something in between and common to both”¹⁴⁸. Alexander of Aphrodisias in *De Mixtione* even strengthens Aristotle’s point insisting that ‘total blending’ (μῖξις) occurs not between substances which preserve their essences but between those which become one and the same in the essence.¹⁴⁹

As was mentioned above, Nemesius also lists these categories and concludes that none of them adequately describes the soul/body connection, arguing on the basis of logical absurdities to which one must arrive if one assumes one of these mixtures between soul and body.¹⁵⁰

After transferring these categories from ancient philosophy to the Christian theological thought, they were long used as synonyms both in anthropological and Christological context. For example, Gregory of Nyssa in the controversy with Apollinarius describing the connection of the Christ’s two natures, used a variety of terms interchangeably, namely – ἔνωσις (a general term covering the process of mixture in philosophical language since Aristotle), συνάφεια, also κρᾶσις, μῖξις and even συνδρομή. The difficulty is that in the following century some of these categories turned into special terms of Christological heresies. This happened, for example, with the category συνάφεια, (which was adopted by Nestorius) and the term κρᾶσις and its derivatives – ἀνάκρασις, κατάκρασις

¹⁴⁸ Aristotle *De gen. et corr.* 328a 29-31.

¹⁴⁹ Alexander of Aphrodisias *De mixtione* XIII 228 35-36.

¹⁵⁰ Nemesius 3,127 p.38.19-39.11.

(which was used by Eutyches and other monophysites). In fact, every category in its transition from one to another tradition of thought is known to be a selected term first conveying to us a definite meaning, which can be either accepted or rejected for a more adequate term reflecting the doctrine of a new tradition. All this led to the necessity for Christian authors to express their Christological doctrine by means of new terms. When we refer to the dogma of Chalcedon and the terminology that describes the connection of two natures in Christ, we see the solution the Christian thought had achieved after quite a long historical way of dealing with the problem:

Following, therefore, the Holy Fathers, we all in harmony teach confession of one and the same Son our Lord Jesus Christ, the same perfect in Godhead and the same perfect in manhood, truly God and the same truly man, of a rational soul and body, consubstantial with the Father in respect of the Godhead, and the same consubstantial with us in respect of the manhood <...> acknowledged in two natures without confusion, change, division, or separation (ἐν δύο φύσεσιν ἀσυγχύτως, ἀτρέπτως, ἀδιαιρέτως ἀχωρίστως), (the difference of the natures being in no way destroyed by the union, but rather the distinctive character of each nature being preserved and coming together into one person and one hypostasis), not parted or divided into two persons, but one and the same Son, Only-begotten, God, Word, Lord, Jesus Christ ...¹⁵¹

One of the features of the unity of Christ's hypostasis (ἀσυγχύτως) in aggregate with a category, which describes the mixture in the dogma (ἕνωσις) creates the fundamental phrase of Christological dogma – ἀσύγχυτος ἕνωσις – “unconfused unity”. The phrase ἀσύγχυτος ἕνωσις – describes the kind of mixture in which both the main statement of Christological dogma and the unity of soul and body in a human being are to be realized, namely a complete mixture of substances while they preserve their essences intact.¹⁵²

The formula ἀσύγχυτος ἕνωσις as it is has an anti-Stoic connotation, since it is derived from the Stoic category σύγχυσις, which means a confusion of identities. This type of mixing in the Stoic legacy is sharply different from the total blending in which the qualities are

¹⁵¹ *The Acts of Council of Chalcedon*. Translated with an introduction and notes by Richard Price and Michael Gaddis. Vol. 1. (Liverpool University Press, 2005), 204.

¹⁵² Hereafter I will frequently use the Latin abbreviation of this phrase – AH (asugchutos henosis), which is fairly well settled in the current searches.

retained, and the elements can be recovered. From this it follows that for the Stoics, the phrase “total blending” (κρᾶσις δι’ ὅλων) covers the kind of mixture which later began to be described by the phrase ἀσύγχυτος ἔνωσις. The main difference between these two formulas is that for the Stoics κρᾶσις δι’ ὅλων is the mixture of corporeal beings, and in the Christian tradition ἀσύγχυτος ἔνωσις describes the kind of connection, where at least one of components is intelligible. Therefore, the problem here was not in the designation of the familiar Stoic content with a new ‘name’, but in the possibility to apply this formulation to the mixture of sensible and speculative entities.

Nemesius’s *On the Nature of Man* is the earliest extant source of the formula describing the unconfused union of two substances by means of ἀσύγχυτος ἔνωσις; as a phrase, which describes the union of two natures in Christology and anthropology as well, it became settled only in the middle of the fifth century. How did Nemesius know this phrase? Where did the use of it in this particular context come from? In the text we can find that Nemesius attributes this formula to the thought of Plotinus’ teacher Ammonius Saccas. Nemesius writes:

“...Ammonius, the teacher of Plotinus, solved the problem in the following way: he said that intelligible things (τὰ νοητά) had such a nature as to be both unified with things capable of receiving them, as are things which perish together with one another, but also to remain unconfused and incorruptible in the union (καὶ ἐνούμενα μένειν ἀσύγχυτα καὶ ἀδιάφθορα), just as those things which are juxtaposed”.¹⁵³

This short passage is important for several reasons. First, it describes all the three types of mixture in the original terms (mixing, juxtaposition, confusion), while we are dealing with the nature of the intelligible. Second, if we take Nemesius’ words for granted, it can be argued that the AH is quite an old formula already used by Ammonius. But this immediately raises a question about the authenticity of Ammonius’ statement, because due to many

¹⁵³ Ἀμμώνιος δὲ ὁ διδάσκαλος Πλωτίνου τὸ ζητούμενον τοῦτον τὸν τρόπον ἐπελύετο. ἔλεγεν τὰ νοητὰ τοιαύτην ἔχειν φύσιν ὥς καὶ ἐνοῦσθαι τοῖς δυναμένοις αὐτὰ δέξασθαι καθάπερ τὰ συνεφθαρμένα, καὶ ἐνούμενα μένειν ἀσύγχυτα καὶ ἀδιάφθορα, ὥς τὰ παρακείμενα. Nemesius, 3,129 p.39.16-20

sources we can say with a degree of confidence that Ammonius wrote nothing. If so, how could Nemesis know for sure statements by Ammonius, especially taking into account the fact that the historical distance of two centuries separates the lives of these two persons?

The reference to the Neoplatonic sources of AH in Nemesis' treatise makes us pay closer attention to this philosophical tradition, in the search of the origins of this formula. In general, long before the council of Chalcedon, description of the unity via the predicate ἀσύγχυτος can be found in the writings of the Neoplatonic philosophers, but mostly to describe the 'connection' of incorporeal entities. Exploring Neoplatonic sources of this formula in the context of describing the mixture of corporeal and intelligible beings must be carried out in the range of the doctrines of connection between soul and body. For the Neoplatonic discourse the soul/body connection theme was of a sufficient importance. In *Vita Plotini* Porphyry tells us that within three days he interrogated his teacher about how the soul is present in the body.¹⁵⁴ The result was a long treatise which later Porphyry cut into three constituting Enneads IV.3-5 [27-29] "On the Questions Concerning the Soul". In none of these treatises the formula ἀσύγχυτος ἔνωσις is encountered, although the description of the connection of the soul and the body in IV.3 [27] 22-23 approximates the same doctrine. Plotinus' simile there is the presence of the light in the air: the light is completely permeating the air and is illuminating and heating it without even touching it, as light is the subtlest material substance. Even it is not the light that is in the air but the air is in the light. This, Plotinus adduces as the closest simile to an immaterial substance completely permeating a material substance, without any one of them losing any of its substantial qualities. This amounts to the concept of an ἀσύγχυτος ἔνωσις without employing the expression. Plotinus insists that this union is not a Stoic "total blending"¹⁵⁵. Plotinus' pupil, Porphyry, also

¹⁵⁴ Porphyry, *Vita Plotini*. 13.

¹⁵⁵ In 4.3.2 Plotinus suggests that the mixing of body and mind can be like presence of a flame in the air. The fire is present throughout the air, but does not mix with them. And similarly, says Plotinus, the strength of the soul present there, where it is necessary.

developed this issue. In his treatise *Sententiae ad Intelligibilia Ducentes*, considering the problem of relations between the corporeal and incorporeal, Porphyry speaks of the presence of incorporeal in corporeal as not locally (οὐ τοπικῶς), but relationally (σχέσις).¹⁵⁶ As it was mentioned earlier, the category σχέσις is also used by Nemesius to describe the mixture, and therefore can be attributed to Porphyry.¹⁵⁷

The relation of Nemesius's treatise with the works of Porphyry gives us the greatest reasons for seeking the origins of the AH formula in the tradition of the Neoplatonic thought, since, as we have already pointed out, the quoting of Ammonius by Nemesius evokes serious doubts in the scholarly community. According to Hans-Rudolf Schwyzer all we know of Ammonius is what we can receive from Porphyry, and references to the teachings of Ammonius given in *On the Nature of Man* have nothing to do with it.¹⁵⁸ Another researcher, H. Langerbeck, mentions the treatise of Nemesius in his work devoted to the life and teachings of Ammonius¹⁵⁹ only once.

There are two opposing views on the problems of reference to Ammonius in Nemesius treatise and those of Nemesius's dependence on the text of Porphyry. The first one is by Heinrich Dörrie¹⁶⁰ and the second by John Rist.¹⁶¹

Dörrie, comparing the third chapter of Nemesius's treatise with the text of Priscian's *Solutiones ad Chosroen*, where similar terminology is used to describe the theme of mixture, suggests that these two texts strictly depend on the extinct treatise of Porphyry *Miscellaneous*

¹⁵⁶ "Things essentially incorporeal, are not locally present with bodies, but are present with them when they please; by verging towards them so far as they are naturally adapted so to verge. They are not, however, present with them locally, but through habitude, proximity, and alliance". (Τὰ καθ' αὐτὰ ἀσώματα, οὐ τοπικῶς παρόντα τοῖς σώμασι, πάρεστιν αὐτοῖς ὅταν βούληται, πρὸς αὐτὰ ῥέψαντα ἢ πέφυκε ῥέπειν· καὶ τοπικῶς αὐτοῖς οὐ παρόντα, τῇ σχέσει πάρεστιν αὐτοῖς.) Porphyry, *Auxiliaries to the perception of intelligible natures*, in *Select works of Porphyry*. Transl. from Greek by Thomas Taylor. (London, 1823), 201, (3.1-4.)

¹⁵⁷ Nemesius 3,135 p.41.14-16.

¹⁵⁸ Schwyzer H.-R., *Ammonius Sakkas, der Lehrer Plotins*, (Rheinisch-Westfälische Akademie der Wissenschaften, 1983), 72-73.

¹⁵⁹ Langerbeck H., "The Philosophy of Ammonius Saccas," *The Journal of Hellenic Studies*. 77. 1 (1957): 67-74.

¹⁶⁰ Dörrie Heinrich, *Porphyrios' Symmiktá Zetemata*, (Munich, 1959).

¹⁶¹ Rist J.M. "Pseudo-Ammonius and the Soul/Body Problem in Some Platonic Texts of Late Antiquity," *The American Journal of Philology*. 109. 3. (1988), 402-415.

Questions (Συμμεικτὰ ζητήματα), which is mentioned by both Nemesius and Priscian. Thus, Dörrie concludes that the AH is Porphyry's formula, and its attribution to Ammonius in *On the Nature of Man* comes directly from Porphyry's writings. However, if Dörrie is right, the question arises why this phrase is not found in other extant works of Porphyry, in particular, those preserved where the problem of body and soul is under consideration? Yet, one must admit that very little from Porphyry's works has survived the repeated condemnations and confiscations.

Despite the noted shortcoming of Dörrie's theory, it long predominated in the scholarly literature until the release of Rist's study, which offered an alternative perspective on this issue. John Rist, using third-party sources, reveals rather more intricate evidence concerning the teaching of Ammonius. For example, the fifth-century Neoplatonist, Hierocles, a pupil of Plutarch, also claimed that he knew something about Ammonius.¹⁶² Moreover, Rist notes that in the prologue of Priscian's treatise not only are Porphyry's *Miscellaneous Questions* mentioned, but also a self-standing source of a certain Theodotus: *Ex collectione Ammonii scholiarum*.¹⁶³ On the basis of these facts, Rist puts forward the hypothesis that around the time of Nemesius's life, i.e. in the second half of the fourth century, a set of doctrines under the name of Plotinius's teacher was circulating. It is to this doctrine that the primacy of AH use in the context of the soul-body problems belongs. Rist calls this set of doctrines the teaching of Pseudo-Ammonius. He also suggests that the possible authorship of these doctrines belongs to the very Theodotus, who was mentioned by Priscian.

The hypothesis of the inauthenticity of the formula of ἀσύγχυτος ἔνωσις is only the first part of Rist's theory; the second one is built on the basis of Nemesius's use of AH in the field of Christology. According to Rist, Nemesius used AH in his Christological statements in

¹⁶² Ibid. 407.

¹⁶³ However, one has not reject entirely the possibility that this refers to Ammonius the son of Hermeias.

a polemical manner, namely, to oppose the neo-Arian follower – Eunomius. Nemesisius argued with Eunomius, who denied the mixture of Christ's natures, since ἕνωσις of entities includes changing of them, whereas Nemesisius held strictly opposite views. Rist affirms that the solution of the difficulties encountered in trying to describe the origins of the AH in the context of mixture of corporeal and intelligible can be found if we admit the possibility that the AH's use primarily had a Christian source,¹⁶⁴ i.e. the set of doctrines of the Pseudo-Ammonius was originally made up in a Christian manner. Yet, Rist does not take into consideration the fact that Plotinus' description of the union of soul and body in IV.3, 22-23, matches content-wise the meaning of the formula, even if it does not contain the formula itself.

All these may seem like nothing more than hypotheses. Needless to say that the question of AH's origin in Christian or Pagan philosophy goes beyond the scope of my thesis and at best may be addressed in a separate research. However, both adduced points of view have their own value. The reason why Nemesisius made use of AH and put it as a Neoplatonic source is clear: The target audience of the treatise had a different denominational background, and Nemesisius was aware that any argument built on the authority of Scripture would not find a broad response among pagan philosophers. Therefore, either willingness to please both parties, or just later emendations implemented in the text due to the conversion of Nemesisius himself, forced him to combine the arguments.

As to my own opinion, I am inclined to agree with Dörrie, at least as to the origin of AH in psycho-somatic context. Even though in the Neoplatonic tradition we may encounter the use of the predicate ἀσύγχυτος denoting unity of intelligible substances, still in the Christian context the adjective ἀσύγχυτος was used to describe the Word's incarnation even before Nemesisius. What matters here is that Nemesisius was the first author to whom we can

¹⁶⁴ John Rist writes: "A neat solution to the difficulties which arise in our attempt to chronicle the origins of AH in contexts not of the relationships of incorporeals, but of the soul-body relationship, can be found if we examine the possibility that this usage is of Christian origin." Ibid. 411-412.

ascribe the use of the term AH in the soul/body connection problem, while this seems to be indeed the teaching of Plotinus. Regardless of the source of this wording, I argue, it is his presuppositions of the different natures of soul and body, and the idea of a total penetration of the soul into the body that forced Nemesius to look for a specific theory of mixture, which can adequately reflect the main features of this union.

3.3 The problem of nature/substance – hypostasis

Following the arguments put forward so far, one might say that the development of the embryo starts according to Nemesius after the unconfused union between the preexistent soul and the body composed from the four elements. This unconfused character of the unity of two substances reasonably raises the following question Christian thought faced: how can two natures fit into one?

Embryology describes common processes, which are present in a particular case and each particular unity of soul and body. Again, drawing a parallel with Christology one may see that the question of how to fit two natures in one entailed in the fifth century the elaboration of the concept of hypostasis and the principle of individuation.

Next, I would consider how Nemesius understands the human being, scrutinizing the use of the terms φύσις, οὐσία, ὑπόστασις and πρόσωπον.

The term πρόσωπον should not be taken into consideration of the problem, because it does not add anything for the clarification of how Nemesius explains the appearance of a human being.¹⁶⁵ The logical connection of the three other terms is of a bigger help for my purposes. It is well known that the categorical apparatus of Christian writers was largely

¹⁶⁵ Nemesius hardly uses the term πρόσωπον, which is encountered only twice in the chapter περὶ τοῦ δι' ἄγνοιαν ἀκουσίου. “They are what is called circumstantial parts by rhetoricians: who, whom, what, by means of what, where, when, why, which way, such as a person (πρόσωπον), a deed, an instrument, a place, a time, a manner, a reason. Person (πρόσωπον) is an object or subject of action”. Nemesius, 31,273 p.97.15-17

formed by ancient philosophy and the *Categories* of Aristotle deserved a prominent place in it. Aristotle places every object of human comprehension under ten categories, which make feasible the proposition of all the possible kinds of things. The first category, which he introduces, is οὐσία.

Substance (οὐσία), in the truest and primary (πρώτως) and most definite sense of the word, is that which is neither predicable of a subject nor present in a subject; for instance, the individual man or horse. But in a secondary sense (δεύτεραι δὲ οὐσῖαι λέγονται) those things are called substances within which, as species, the primary substances are included; also those which, as genera, include the species.¹⁶⁶

Aristotle singles out two types of substances: primary and secondary. 1) The former are what cannot be predicated of anything or be said to be in anything – a particular man or particular tree. 2) The latter are universal and *can* be predicated – man or horse as species. In the Patristic period the vocabulary was amended and the interchangeable use of the terms οὐσία and φύσις was the normal state of affairs. After all, this led to the confusion which happened in the fifth century in Christology, where God's nature was perceived as a whole divine nature (second substance) and as a single incarnate nature of Christ (first substance).

It is difficult to give an unequivocal answer to the question whether the terms οὐσία and φύσις are absolutely the same in the Greek Patristic literature of the fourth-fifth centuries or different. The attempts undertaken, for example by George Leonard Prestige¹⁶⁷ or, much later, by Johannes Zachhuber,¹⁶⁸ who voted for their distinctive character are not fully successful. At the same time the opposing point of view issued for instance by A. Meridith

¹⁶⁶ Aristotle, *Cat.* 2a11-16.

¹⁶⁷ Prestige G.L. *God in Patristic thought*, (London-Toronto, 1936), 234-235.

¹⁶⁸ Zachhuber J. *Human nature in Gregory of Nyssa: Philosophical background and theological significance* (Supplements to Vigiliae Christianae, Brill 2000), 73-74.

who denied this distinction,¹⁶⁹ I also cannot accept completely, due to the way how these terms are used in *On the Nature of Man*.

In the first chapter of this thesis when I dealt with the problem of the human nature's situation on the border between intelligible and corporeal, I cited different parts of Nemesisius' text where he speaks about this. In some cases he says that the human nature is a denizen of intelligible and corporeal *substances*,¹⁷⁰ while elsewhere he claims that two different *natures* constitute the human nature.¹⁷¹ Let us see whether these categories are equal for Nemesisius or not.

Based on a meticulous analysis of the text I concluded that according to Nemesisius the use of the term φύσις is straightforward and does not give room for divergent treatments.¹⁷² Nature is a term which predicates more than one thing and refers to universal properties common to all within the class. Concerning human nature, by means of the term φύσις, Nemesisius implies humankind and each individual is leveled by common for this totality. By the same token, φύσις predicates the universal properties of the corresponding multitude, for example the totality of intelligible and corporeal beings as well.

The textual analysis concerning the term οὐσία reveals a more diverse picture. On the one hand one can frequently come across an identical a use of the term to that of physis. For example, in the first chapter of the thesis I pointed out that, in order to bind soul and body Nemesisius uses the concept *to idion*, as a special property of human nature, exemplified, for instance by the capability to laugh as one of them.¹⁷³ I do not tend to deem that possibility to laugh predicates only a particular thing, but rather tells about the universal property of the

¹⁶⁹ Meridith A. *Studies in the Contra Eunomium of Gregory of Nyssa*, D. Phil, Unpublished, (Oxford, 1972), 252-4.

¹⁷⁰ ἐν μεθορίοις ἐστὶ νοητῆς καὶ αἰσθητῆς οὐσίας Nemesisius 1,39 p.2.24

¹⁷¹ ἐγένετο οὖν τὸ συνδέον ἀμφοτέρως τὰς φύσεις ζῶον ὁ ἄνθρωπος. Nemesisius 1,44 p.5.6-8

¹⁷² See Nemesisius: 1,40 p.3.17-18; 1,44 p.5.9; 1,46 p.6.7; 1,47 p.6.20-21; 1,51 p.8.21-23; 1,57 p.11.25-27; 1,58 p.12.12-14; 1,58 p.12.16-18; 1,60 p.13.9-11; 2,101 p.29.12-15; 4,149 p.46.19-20; 5,151 p.47.13-14.

¹⁷³ ἴδιόν ἐστιν τῆς οὐσίας αὐτοῦ τὸ γελαστικὸν Nemesisius, 1,53 p.10.9

human substance or nature.¹⁷⁴ However, other examples of the use of the term *ousia* might suggest a necessity to think in the direction of some different meaning. For instance, denoting the soul as a substance¹⁷⁵ and especially the passage from the beginning of the third chapter:

For all those elements that come together into the reality of one being are united by all means, (πάντα γὰρ τὰ συνιόντα εἰς μιᾶς οὐσίας ὑπόστασιν πάντως ἐνοῦται), but all things united are changing and do not remain as they have been. [...] Therefore, how does the body being united with a soul still remain a body, or again, how does the soul, being incorporeal and substantial in itself, become united to the body and become a part of the living being, while keeping its own substance unconfused and incorruptible (σώζουσα τὴν ἰδίαν οὐσίαν ἀσύγχυτον καὶ ἀδιάφθορον)?¹⁷⁶

I have to quote this passage again because it is a particularly good example for tackling Nemesisius' understanding of concrete human being. In the second instance, at the end of the passage, οὐσία predicates the one, or the whole nature of soul as intelligible substance, whereas in the first case it most likely indicates the individual being of man.

As clarification of different philosophical definitions was not the task for Nemesisius, to see the difference between them sometimes is a puzzling enterprise. Compare to, let us say, to a letter ascribed to Gregory of Nyssa, *Epistle 38*,¹⁷⁷ which aims to show the difference between οὐσία and ὑπόστασις, to deal with Nemesisius's text thus resembles extraction of implicit meaning based on a general context of the narrative and a use of terms. Again, my task here is not to tackle the vocabulary of Nemesisius, but his concept of generation. In this sense, I venture to argue that for Nemesisius οὐσία sometimes is an item that which causes something *to be* what it is. However, what really causes the intelligible substance of soul and corporeal substance of body to be a unified one is for them the possibility to be a hypostasis. Nemesisius mentions the term ὑπόστασις five times throughout the whole work,¹⁷⁸ with the

¹⁷⁴ For a similar use of the term *ousia* see: Nemesisius, 1,39 p.2.24-3.3; 2,67 p.16.14-15 etc.

¹⁷⁵ Ibid. 2,104 p.30.17-31.8

¹⁷⁶ Nemesisius, 3,126 p.38.15-20.

¹⁷⁷ *Concerning the difference between οὐσία and ὑπόστασις*

¹⁷⁸ Nemesisius, 1,59 p.12.25-13.1; 2,112 p.33.14-16; 3,126 p.38.13-17; 5,167 p.53.15-17; 43,358 p.132.6-8

conveyed meaning of existence or actualization. In the above passage the pairing of *ousia* and *hypostasis* gives a grasp of the idea of an individual, a thing, which includes common nature and is actualized in the unity of soul and body. It makes individual an individual by giving it its own existence. To sum up, for Nemesisius the hypostasis of human being, the connection of soul and body cannot be thought without the human nature, which consists of two substances. Nevertheless, at the same time the human nature cannot exist in any other way than through the hypostasis. The use of these terms allows me to say that the realization of the mixture of the two natures can come about through the hypostasis, and this union is possible only in this way. Speaking in terms of late medieval philosophy, Nemesisius was a moderate nominalist, with the idea of the human nature as only present in a particular human being and not as a universal concept.

Conclusion

The content of this thesis was a case study of the problem of how the human nature was understood in late antique tradition. *On the nature of Man* was a particularly good example to show how in late antiquity the philosophical theories of human nature informed medical discussions and, conversely, medical empiricism provided natural philosophy with new factual background in order to give a broader context and a more comprehensive account.

The aim of the thesis was to examine how Nemesius uses his knowledge in philosophy and medicine side by side, creatively, in order to present a comprehensive picture of human embryology. The process under scrutiny is not visible and occurs in the hidden part of the human body, though the phenomenon itself belongs to the physical world; this fact led to the birth of unusual ideas intermingled with speculations in the minds of ancient philosophers and physicians. In this sense, the treatise *Περὶ φύσεως ἀνθρώπου* is a distinguished point of convergence for these different types of knowledge, which itself gives an interesting account.

First, I analyzed the necessity for Nemesius to combine medicine and philosophy based on his understanding of the nature of man. Second, I outlined that, for Nemesius, the problem of embryology is confined to soul and the formation of the body, where he approaches the soul from the philosophical point of view, whereas the investigation of the body requires Nemesius to combine philosophy with medical knowledge. Third, I discussed the problem of the generation of soul and body. Fourth, I investigated different facets of the soul/body connection which, according to Nemesius, marks the beginning of a new embryo's life.

The content of the first part of the investigation shows that, for Nemesius, the necessity to combine philosophy and medicine stems from the endeavor to present human nature as a compound of soul and body, where the former is of superior character. On the one hand, one can argue for the Platonic character of Nemesius's thought, for he points out the presence of a higher principle – the intelligible soul – which is of divine origin; this principle conditions the explanation of the bodily structure and its functions. On the other hand, the elemental structure of the body is also substantial for Nemesius. This suggests that he, even as a Christian relying on Platonic philosophy, is not willing to ignore the role of the body in constituting the scope of a human being. Therefore, Nemesius' picture of the nature of man can be almost equally approached from two explanatory strategies: – top-down and bottom-up – and its reciprocal importance facilitates the integral combination of philosophy and medicine.

The psychology of Nemesius, with its main feature of divine character of the preexisting soul, does not leave room for medicine in this part of his embryology. On the contrary, the bodily structure and coming to be is a domain shared between philosophy and medicine. Domains of philosophy and medicine should be considered together with the divergent and at the same time unifying character of top-down and bottom-up strategies in understanding of human nature.

Nemesius' account on the problem of the formation of the body is a result of the influence of the Hippocratic and the Aristotelian traditions, with a mediating role of Galen. Mostly, Nemesius stuck to an Aristotelian epigenetic pattern, with a Hippocratic contribution regarding the problem of male and female semen. Analysis of other medical sources showed that the reconciliation of Aristotle and Hippocrates in Nemesius' treatise is not due to the obvious similarities between them but caused by their combination mediated through Galen's thought.

The study of the problem of the soul/body connection shows the importance of theological discourse in this part of Nemesius' embryology. The model of the soul/body connection was taken by Nemesius as analogous to the relation of the two natures of Christ. An investigation of this problem demonstrates strong dependence of this problem of the formation of the nature of soul and body. The intelligible nature of the soul conditions the total blending with the body, while the pangenetic model of the body's formation does not allow for the hosting of different parts of the soul in different organs of the body.

This thesis contributed to the understanding of such categories of late antiquity as nature, substance and hypostasis and showed that the pairing of the terms *ousia* and *hypostasis* facilitates the understanding of the idea of individual, a thing, which includes common nature and is actualized in the unity of soul and body. It makes an individual an individual by giving it its own existence. For Nemesius the existence of a human being cannot be thought of without the human nature, which consists of two substances; nevertheless at the same time the human nature cannot exist in any way other than through the hypostasis. Speaking in terms of late medieval philosophy Nemesius was a moderate nominalist, with the idea of the human nature as only present in a particular human being and not as a universal concept.

This thesis also contributed to the investigation of the problem of embryology in ancient philosophical and medical tradition. The complex analysis showed the continuity of the ancient and early medieval traditions. The aftermath of Nemesius' treatise proves that he was used for a long time in the middle ages as a point of reference to the medical and philosophical accounts on the nature of man.

This thesis sets the stage for further research on the problem of the influence of medical and philosophical theories of generation and seminal faculty on 1) theological debates about the problems of freedom in the context of the dogma of Original Sin; and 2)

controversies about the concept of *nature* in the course of the Christological debates in the fifth-seventh centuries. These debates stimulated the interest of theologians in questions of generation and embryology. They made use of different embryological theories, both philosophical and medical, according to their theological preferences. Thus, the controversy around traducianism vs creationism revitalized the question of male/female contribution to conception and led to different solutions of the problem of heredity and formation of the individual.

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