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#### ABSTRACT

The central criterium of Catholic censorship of books and essays discussing the animal soul was the hierarchy of forms, running from vegetative, through sensitive, to intellectual souls. Thus, the contest pivoted on the consequences of Cartesianism, which triggered two positions that were seen as erroneous. Followers of Descartes viewed the animal body as a mere machine, eliminating vegetative and sensitive animal souls. Those who opposed this position were criticized for their excessive 'upgrading' of the animal soul, because this possibly lead to claiming its spirituality and even its immortality.

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La riflessione morale di fronte al *Mind/Body Problem*.

Problemi storici e prospettive teoriche

Unità di Ricerca ILIESI - CNR

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### Presentazione del volume

L'origine dell'anima diventa un argomento di speculazione sistematica nella filosofia e nella scienza greca. Il problema si presenta quando si suppone che genitori fisici producano una prole fisica con una dimensione non fisica: immateriale e/o immortale. La procreazione dei corpi fisici è relativamente priva di problemi; diversamente, come e quando venga generata l'anima, e come essa si unisca al corpo solleva varie questioni. I Presocratici associarono, in generale, l'anima a uno dei quattro elementi materiali. Al contrario, Platone formulò la concezione che l'anima discende dal regno delle idee. Nell'ilemorfismo aristotelico, invece, ogni essere naturale è un composto di materia e forma. Altra questione riguarda la formazione dell'embrione e il momento dell'animazione. Nell'antichità furono proposte sia l'animazione mediata che quella immediata, idee sostenute con teorie biologiche e mediche che analizzavano la concezione biologica e lo sviluppo embrionale. Filosofi come Seneca credevano che tutte le parti del corpo umano erano già presenti nel seme (come un *homunculus*), mentre Aristotele e

Galeno rifiutarono la dottrina preformistica e insistettero sul fatto che lo sviluppo embrionale avviene gradualmente. Nei primi secoli del pensiero cristiano, due teorie si sono sviluppate per risolvere il problema dell'origine dell'anima umana: da una parte, l'anima è ritenuta essere generata dai genitori allo stesso modo come il corpo (traducianismo); dall'altra, si ritiene che essa sia formata da uno speciale atto di creazione da parte di Dio per ciascuno e per ogni individuo (creazionismo). Su entrambe le dottrine gravano problemi teologici. Se l'anima ha origine con il corpo, perché allora non perisce con il corpo? E se Dio crea invece l'anima di nuovo in ogni essere umano, come può essere imperfetta, quale l'anima della natura 'decaduta' necessariamente è? Si presenta anche una concezione diversa della creazione dell'anima: secondo le sue diverse formulazioni, ogni essere vivente esisteva in un antico regno, o creato lì o increato. La pre-esistenza dell'anima è stata formulata in tempi diversi ed è stata adombrata in diverse modalità filosofiche, teologiche e letterarie. L'idea platonica e pitagorica della pre-esistenza era solo in parte affine alla concezione ebraica, ed emerge già nel cristianesimo primitivo. Nella Chiesa antica la pre-esistenza dell'anima è stata sostenuta da Origene e da alcuni suoi seguaci. Durante il Medioevo l'origine dell'anima fu discussa in un contesto teologico, concentrandosi su creazionismo e peccato originale. Il quadro concettuale si modificò dopo la diffusione della filosofia e della scienza aristotelica in Occidente. Le riflessioni di Alberto Magno sul potere formativo nel seme hanno esercitato un'influenza duratura sulla filosofia e la medicina medievale e rinascimentale. Tommaso d'Aquino riuscì a unire dati biologici, ragioni filosofiche e implicazioni dogmatiche nella sua dottrina relativa all'animazione, che si articola in una successione di anime (vegetativa, sensitiva, razionale) nell'embrione. Con la rinascita del neoplatonismo nel XV secolo, ritorna l'accento sull'origine nobile e divina delle anime. L'onda lunga della filosofia neoplatonica 'moderna' si propagò fino al secolo XVII, arrivando ai platonici di Cambridge. L'origine dell'anima non fu, invece, tra i temi che si presentarono in particolare tra i filosofi aristotelici attivi nell'ambiente accademico nei secoli XV e XVI. Un'eccezione interessante si è verificata nel 1640, quando Antonio Rocco dedicò un ampio trattato alla difesa dell'immortalità dell'anima nel quadro concettuale del traducianismo. Con l'avvento della Riforma protestante la questione dell'origine dell'anima era comunque ritornata in evidenza, in particolare tra gli studiosi attivi presso università tedesche e olandesi. I teologi luterani oscillarono tra traducianismo e creazionismo, mentre i calvinisti, di regola, abbracciarono il creazionismo. Nel corso del secolo XVII, la maggior parte degli scienziati e dei filosofi moderni era convinto che la natura operasse attraverso leggi meccaniche, ma delle leggi meccaniche non appaiono sufficienti a spiegare la generazione e la costruzione degli organismi viventi. Alcuni filosofi moderni considerarono l'anima umana come sostanza composita, fatta di una parte materiale e una parte divina, e tentarono di conciliare una visione atomistica della generazione dell'organismo umano con la dottrina cristiana dell'anima immortale. Una soluzione più semplice al problema della vita era supporre che il feto fosse stato preformato prima del concepimento e, successivamente, solo alimentato nell'utero. Inoltre, in una versione della pre-esistenza materialista analoga al traducianismo, alcuni autori proposero che tutti gli esseri viventi erano stati creati come semi nella creazione originale. Il preformismo diventò un elemento importante nelle riflessioni filosofiche di Malebranche e Leibniz sull'origine e lo stato dell'anima umana. La dottrina del preformismo e di entità pre-esistenti comportò alcuni problemi insormontabili, e a partire dall'inizio del secolo XVIII fu attaccata anche l'embriologia meccanicistica. Autori di diversi orientamenti teorici hanno sostenuto la necessità di un principio vitale per generare e plasmare esseri viventi, e varie alternative vitalistiche al preformismo furono sviluppate, in particolare in Francia. È da sottolineare che l'origine dell'anima è ancora un argomento di discussione per l'autore della voce «anima» nella *Encyclopédie*. Tuttavia, a partire dalla seconda metà del secolo XVIII, il problema scompare come oggetto di speculazione filosofica e scientifica, sopravvivendo fino ai nostri giorni come una questione teologica ed etica.

LEEN SPRUIT

THE ORIGIN OF THE SOUL  
FROM ANTIQUITY  
TO THE EARLY MODERN ERA

A SHORT INTRODUCTION



AGORÀ & CO.

*Laborem saepe Fortuna facilis sequitur*

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Unità di Ricerca dell'Istituto per il Lessico Intellettuale Europeo  
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*To Alma*



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## INTRODUCTION\*

The issue of the origin of the soul involves philosophical, scientific, and religious views and doctrines. The concept of soul had itself to evolve before questions of its origin could arise. The idea that the body is possessed of some animating principle or some entity that is the seat of life is thousands of years old. The religious system of ancient Mesopotamia dating back from the fourth millennium BC has creation narratives that provide a window into the emergence of the idea of a human soul, its genesis in the heaven, and its ambiguous status in the universe. The origin of the soul became a systematic subject of speculation in Greek philosophy and science. A problem emerges when physical parents are considered to produce physical progeny with a nonphysical, immaterial and/or immortal dimension. The procreation of physical bodies is relatively unproblematic. How and when a soul or spirit is generated or created and joined to the body raises several issues.

Presocratics usually associated the soul with one of the elements. Plato endorsed the dogmatic view that the soul descends from the realm of ideas. In Aristotelian hylemorphism, every natural being was believed to be a composite of matter and form. This view is problematic. If the soul is the form of the body, how can it be drawn from, or descend upon, formless matter? How can matter be activated or animated, or ensouled? Are celestial bodies and their influence (live-giving heat) responsible for the soul of the offspring? Is there any other natural power assigned to matter? Or are souls due to an agent beyond the natural realm?

Two other, closely linked, issues regard the formation of the embryo and the moment of animation. In the Greek world mediate or immediate animation was proposed, defended, argued for or rooted in biological and medical theories that analyzed biological conception and embryological development. Philosophers like Seneca<sup>1</sup> believed that all human body parts are already in the semen (as a little *homunculus*), whereas Aristotle and Galen were against the preformationistic doctrine and insisted that embryological development takes place gradually (step by step).

\* I am grateful to Davide Cellamare for his detailed comments and suggestions on the entire essay; I thank José Manuel García Valverde for helpful comments on several chapters.

<sup>1</sup> *Quaestiones naturales*, III, 29.3 (text in the Appendix).

## INTRODUCTION

By contrast, with the rise of Christianity in the first centuries the argumentation is based also on theological views, more precisely, on exegesis, ethics and dogmatics. In early Christian thought, two theories evolved to resolve the problem of the origin of the human soul. The soul was held to be either generated from the parents in the same way as the body (traducianism) or it was believed to be formed by a special act of creation on God's part for each and every individual (creationism). Traducianism can be traced to Tertullianus and was later embraced by the Eastern Orthodox Church and Luther. Creationism was taught by many early Fathers and proclaimed by the majority of medieval and early modern schoolmen, as well as by Calvinist theologians. Both doctrines are encumbered with theological problems. If the soul originates with the body, then why does it not perish with the body? And if God creates the soul afresh in every human, how can it be imperfect, as soul of fallen nature necessarily is?

There is also an altogether different conception of the soul's creation. According to its several formulations, every living soul existed in a former realm, either there created or eternally uncreated. Pre-existence of the soul has been formulated at various times and it has been adumbrated in many forms of philosophy, theology and literature. Though sometimes found in conjunction with metempsychosis (transmigration or reincarnation of souls), pre-existence is a distinct doctrine and neither entails nor is entailed by a doctrine of cyclical rebirth or multiple lives.

The idea of pre-mundane existence, usually connected to the idea of a divine assembly of gods and angels, resurfaces in several biblical texts. The themes of divine beings who descend, out of punishment or challenge, to take upon themselves human bodies become firmly established in the early Christian era. To be sure, at least some of the versions of pre-existence appearing in the Jewish and Christian traditions at this time derive from Plato's philosophy and Hellenistic religious thought. However, significant differences are apparent. To the Greek the soul that pre-exists was or tended to be the personality, the man's real thinking self; while to the Jews it was only a part of the coming man.<sup>2</sup> The core scriptural text is Genesis 2:7, according to which a human is constituted of earthly clay and divine breath or spirit. The pre-existence of the *neshama* (breath or spirit) is a very different thing from the pre-existence of the *psyche*. Yet, it can be reasonably argued that the Platonic and Pythagorean view of pre-existence was partially akin to Jewish

<sup>2</sup> Givens 2010, p. 19.

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thought and was duly incorporated into early Christianity. In the ancient Church pre-existence was endorsed by Origen and some of his followers.

During the high Middle Ages the origin of soul was discussed in a theological context, focusing on creationism and original sin. Yet, many authors pondered upon pre-existence and theorized the idea of a descent of the soul. The conceptual framework changed after the spread of Aristotelian philosophy and science in the West. Albert the Great's reflections on the formative power in the seed exercised a long lasting influence on later medieval and Renaissance philosophy and medicine. Thomas Aquinas succeeded in merging biological data, philosophical reasons and dogmatical implications in his doctrine of animation which was articulated as a succession of souls (vegetative, sensitive, rational) in the embryo.

With the revival of Neoplatonism in the fifteenth century returned the emphasis on the noble and divine origin of souls. The issue of the celestial origin of the soul was usually connected to the notion of universal animation, and thus to that of the world soul or universal intellect. By consequence, several authors developed universalist solutions for the origin of the soul. Frequently, this topic was associated with theological questions such as God's relationship with the universe and the immortality of the human soul, but not necessarily so. The long wave of modern Neoplatonic philosophy reached deep into the seventeenth century, arriving at the Cambridge Platonists and their strenuous defence of Origen and the pre-existence of the human soul.

The origin of the soul was not among the issues that particularly agitated Aristotelian philosophers active in an academic environment in the fifteenth and sixteenth centuries, exception made for some brief discussions running among Alexandrist authors, including Pomponazzi, Porzio, Castellani and Zabarella. This also holds for the majority of the authors of later scholastic manuals and lexica. An interesting exception to this situation occurred in the 1640s when Antonio Rocco devoted an extensive treatise to the defence of the immortality of the soul in the conceptual framework of traducianism.

With the rise of the Protestant Reform the origin of the soul returned as an intensively discussed question, in particular among scholars active at German and Dutch universities.<sup>3</sup> Lutheran theologians wavered between traducianism and creationism. Luther's view that the soul was transmitted

<sup>3</sup> See Casmann 1594-1596; Goclenius 1597 and 1598; Thumm 1622; Deusing 1645; Thomasius 1669; Sand 1671.

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from the parents to the offspring, was not accepted by Melanchthon who endorsed creationism, while several later Lutherans developed detailed defences of the soul's transmission through the seed. Calvinists, as a rule, embraced creationism. The rejection of the immortality of the soul by Luther and several later English authors also bears on the origin of the soul, because the mortality of the soul excluded creationism as a viable hypothesis or acceptable doctrine.

The idea of a 'formative virtue', which stems from Galen and was developed by the Arabs and Albert the Great, stimulated Renaissance physicians, such as Nicolò Leonicensi and Jakob Schegk, to reflect on the intricate relation between the seed, the vehicle of the soul, the fetal formation, and the introduction of the (rational) soul. Is there a vehicle of the soul? Does this vehicle act as an intermediary also after the fetal formation? Does the seed itself 'carry' the soul? Is the vehicle rarified air, called *pneuma* or spirit? Or is it the heat conveyed by the seed's *spiritus*?

At the threshold of the seventeenth century Fortunio Liceti devoted a treatise to the issue of the origin of soul, developing the notion that the human soul is an essentially composed entity. Subsequently, in the 1620s and 1630s, Thomas Feyens and Paolo Zacchia, two scholars who rejected the Aristotelian theory of delayed animation, made important historical contributions that led ultimately to the Church's abandoning the speculation that there is such a thing as an unanimated (or non-human) fetus.

In the same period philosophers and physicians, among whom Jan Baptiste van Helmont, Jan Marek Marci and Sebastiano Bartoli, returned to esoteric views about the origin of the soul, grounded not only on biblical, Kabbalist and Paracelsian ideas, but also on insights derived from the new experimental approach in scientific research. Then, in a continuous discussion with the theological, philosophical and scientific tradition, Daniel Sennert developed his idea that the parental soul is multiplied and transmitted through the male and female seed.

During the seventeenth century, the interest in the issue of the origin of the soul and of the animation of the embryo became popular mainly with naturalists and physicians. The majority of modern scientists and philosophers was convinced that nature must operate through mechanical laws, but mechanical laws are not sufficient to account for the generation and construction of living organisms.

Some modern philosophers, among whom Pierre Gassendi and Walter Charleton, viewed the human soul as a composite substance, made up of a material and a divine part, and attempted to reconcile an atomistic view

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of the generation of human organism with the Christian doctrine of the immortal soul.

A much easier solution to the problem of life was to assume that the fetus was preformed before conception and had thereafter to be only fed in the womb. In a version of materialistic pre-existence analogous to traducianism, subsequently some authors proposed that a seed-like beginning for every creature that would ever appear, had been thought to be created in the original Creation. Among other virtues, the theory had the benefit of adding an element of scientific plausibility to the concept of original sin, since all the human beings would have been present in the body of Adam (or Eve, depending on whether the animalculists or ovists were writing) and therefore were party to the first sin. Preformationism became an important element in the philosophical reflections of Malebranche and Leibniz on the origin and status of the human soul.

The doctrine of preformationism and pre-existent germs labored with several unsurmountable difficulties, and starting from the beginning of the eighteenth century also mechanistic embryology came under attack. Authors from different theoretical orientation argued for the need of a vital principle to generate and shape living beings, and from the 1740s vitalist alternatives to preformationism developed, particularly in France. The origin of soul is still a topic of discussion for the author of the entry 'soul' in the *Encyclopédie*, but from the second half of the eighteenth century it disappears as subject of philosophical and scientific speculation, surviving till our days as a theological and ethical issue.

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This essay traces the rise, the evolution, and the dissolution of the issue concerning the origin of the soul. It offers an overview to anyone who wants to navigate the complex web of questions developed around this issue, as well as its philosophical, theological, medical, and cultural implications. As regards the central chapters, namely those on Renaissance Aristotelianism, Protestant disputes, and early modern medicine, the following caveat is due. It goes without saying that many authors who now are discussed in a chapter, could also be placed in another. For example, authors such as Schegk and Sennert, though physicians, could also be included in the chapter on Protestant psychological discussions. Now, the

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collocation of an author in a chapter rather than in another is not due to precise theoretical choices, but is essentially inspired to the need for greater clarity with respect to the evolution of debates and issues. Further, the categorization implicitly involved in the titles of the chapters in no way entails strictly delimited boundaries, but is intended to guide the reader in paths that are not purely chronological.

## CHAPTER ONE

# GREEK PHILOSOPHY AND MEDICINE

### 1.1. GREEK PSYCHOLOGY: PRESOCRATICS TO NEOPLATONISM

In ancient Greek philosophy the underlying distinction between things with *psychai* (*ta empsycha*) and those without (*ta apsycha*) was not that between those capable and those incapable of conscious activity, but just that between what is alive and what is dead. Self-movement was taken to be the criterial sign of life.<sup>1</sup> Several Presocratic philosophers attempted to explain the nature of the soul in terms of the elements which they took to constitute the physical world as a whole. Thus, the soul was generally seen as an emergent quality. Anaximenes claimed that as «wind and air enclose the whole world», so «our soul, being air holds us together and controls us».<sup>2</sup> Heraclitus believed that the soul is constituted by fire and Democritus thought that the soul, since it produced movement, must itself be constituted by the «most mobile» atoms.<sup>3</sup> Also Empedocles did not draw a clear distinction between psychological phenomena and the physical constitution of our body, as he ascribed mental faculties to all natural entities.<sup>4</sup> Philolaus claimed that the soul is not a type of substance at all, but rather a particular condition of the body, its 'attunement' (*harmonia*).<sup>5</sup>

By contrast, other authors thought that *psyche* required explanation in its own terms. Anaxagoras, although still treating his psychic principle *nous* as a material substance, declined to identify it with any other type of matter.<sup>6</sup> Subsequently, Orphism and Pythagorism attributed a divine origin to the soul, which resides temporarily as a guest in the home of the

<sup>1</sup> Everson 1991, p. 4.

<sup>2</sup> DK 13B2.

<sup>3</sup> DK 68A101; see Couloubaritsis 1980.

<sup>4</sup> DK B107, 109, 110; see Kahn 1960.

<sup>5</sup> Plato, *Phaedo*, 86b-c; see Scaltsas 1990.

<sup>6</sup> DK 59B11; for discussion, see Schofield 1980.

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body and then returns to its source for reward or punishment after death.<sup>7</sup> This paved the way for more sophisticated dualist accounts.

Plato treated *psyche* as a substance but abandoned the attempt to explain it in material terms. Since the soul is self-moving, it must be prior to the body and in order to know the forms, it must be immaterial.<sup>8</sup> In *Phaedo* the soul is seen as an inner person, the source of moral and cognitive activity. This work also contained conflicting views. For example, the body as the prison of the soul, the soul as an ectoplasmic fluid permeating the body, and the soul as life principle. In *Meno* Plato stressed the divine origin of the human soul<sup>9</sup> and in *Republic* he developed his theory of a three-partite soul.<sup>10</sup>

Plato dwelled in some detail upon the issue of the origin of the soul in *Timaeus*. Here he depicted the world soul, which is a mixture of the being that is indivisible and the being that is transient and divisible, as an intermediary between the divinity and the sensible world, having come into existence by the agency of the best of things intelligible and ever-existing as the best of things generated.<sup>11</sup> He argued that the individual souls, created by the Demiurg, are made of the same substance, that each soul is assigned to a star, and finally, that souls were of necessity implanted in bodies.<sup>12</sup>

*Timaeus* will prove to be one of the most important texts to the subsequent development of Platonism and Neoplatonism. It will be the only Platonic dialogue known in its entirety during the Middle Ages. Positing claims about the human origin, it is a text that will present special appeal as well as challenges to Christian philosophers.

Aristotle argued for a psycho-physical, composite unity of human being and defined soul as the form of a living body as opposed to its matter, which allowed the *psyche* to be analyzed as a distinctive entity, and at the same time manages to bring it within his more general physical and metaphysical schemes of explanation.

The matter-form distinction was developed to solve certain puzzles about the nature of change. Its success with these puzzles encouraged Aristotle to

<sup>7</sup> See DK 21B7; Plato, *Cratylus*, 400c; Diogenes Laertius, *Lives of the Philosophers*, VIII.3.

<sup>8</sup> *Laws*, X, 893a.

<sup>9</sup> *Meno*, 81b.

<sup>10</sup> *Republic*, 586e-587a.

<sup>11</sup> *Timaeus*, 37a (text in Appendix).

<sup>12</sup> *Timaeus*, 35a, 41d-42a (text in Appendix), and 43a. For discussion, see Robinson 1970, p. 78; Solmsen 1983; Robinson 1990; Robinson 2000; Ferrari 2007.

extend it to other fields and other puzzles, where as often as not it proves merely obfuscating.<sup>13</sup> Indeed, there is no scholarly agreement on whether his psychology should be qualified as dualist, materialist or functionalist. However, these labels only marginally touch the issue of the origin of soul. Aristotle regarded animation as a gradual process, that is, as a goal-directed actualization of a potential. The soul emerges in stages: the embryo is first animated by a nutritive or vegetative soul, then it develops a sensitive soul, and only in the end it receives a rational soul.<sup>14</sup> And although Aristotle frequently claims that the intellect is separate, in some passages he stressed that intellectual capacities depend upon specific physiological qualities and circumstances. For example, warm, thin and pure blood favors the intellectual powers,<sup>15</sup> and also the softness of the flesh is a condition for efficient cognitive activity.<sup>16</sup>

Thus, acquiring an intellectual soul is linked to the biological development of the embryo, and man's intellectual supremacy is anatomically and physiologically based. By envisaging the relation between different clusters of vital capacities as that of an ordered series of nested potentialities Aristotle was able to secure the unity of the ensouled individual and the variegated activities of the soul.<sup>17</sup>

Alexander of Aphrodisias, Aristotle's most famous ancient follower, developed and systematized his psychology. Of particular interest is Alexander's naturalistic understanding of the soul, on which the soul is a «power and form and completion of the body». Now, composite bodies with articulated parts have a form with a plurality of powers. And only the form of organic, articulated bodies may be defined as 'soul'.<sup>18</sup> Thus, the soul comes into being as the result of a unique combination of primary bodies. This does not entail, however, that soul is a harmony. The soul is a vital force comparable to the more concentrated power for healing which results when a number of medicinal drugs are combined.<sup>19</sup>

<sup>13</sup> Barnes 1971-1972, p. 106.

<sup>14</sup> See section 2 below.

<sup>15</sup> *De partibus animalium*, II.2, 648a2, and II.4, 650b20.

<sup>16</sup> *De anima*, 421a22.

<sup>17</sup> Modrak 1990-1991, p. 757.

<sup>18</sup> Alexander Aphrodisiensis 1887, pp. 10, l. 23-11, l. 5.

<sup>19</sup> Alexander Aphrodisiensis 1887, p. 24, ll. 2-3, 18-24.

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Alexander thought the soul supervenes on the bodies that give rise to it, but this does not mean that the soul is generated by the body,<sup>20</sup> as he argued that the form is not liable to generation and corruption. Rather, the soul can and cannot be there. Thus, Alexander replaced generation and corruption by presence and absence.<sup>21</sup>

After Aristotle, the Hellenistic philosophers reverted to a less nuanced materialism. They held that humans are part of the natural world and argued that the corporeal *psyche* was generated with the body. Epicurus espoused an atomic physics and tried to explain psychic activity in terms of the movements of atomic particles. In his *Letter to Herodotus*, he defined *psyche* as constituted of atomic material different from the rest of the body: «a fine-structured body diffused through the whole aggregate, most strongly resembling wind with a certain blending of heat».<sup>22</sup> Both Epicurus and the Stoics objected to the thesis that the soul is immaterial on the grounds that this would make it causally inert. The Stoics claimed that the soul was a system of compressed air stretching out through the body from the heart, the commanding faculty. The early Stoics held that the soul is connate *pneuma* at a sufficiently high tensile level to allow it to function as soul-*pneuma*.<sup>23</sup> Indeed, *psyche* is not just the presence of *pneuma*, but a specific level of *pneuma*, enabling perception and motion.<sup>24</sup> Thus, psychological activity is coextensive with breathing, as respiration is functional in nourishing the psychic *pneuma*.<sup>25</sup>

For all Platonists, only the rational soul truly exists, but the rational soul entered a body through its vehicle – which is itself of an ontological status, inhabiting the mean between soul and body – and now experiences bodily existence, inhabiting the second of two different stages in the soul's life. First, there is the rational soul itself existing by itself. Second, there is the

<sup>20</sup> According to Moraux 1942, p. 39, Alexander's psychology was a materialistic, un-Aristotelian deviation.

<sup>21</sup> For discussion, see Donini 1970-1971; Thillet 1981; Accattino 1988 and 1995; Sharples 1994.

<sup>22</sup> Long-Sedley 1987, 14A1.

<sup>23</sup> Long-Sedley 1987, 53G6.

<sup>24</sup> SVF, II.988; Staden 2000, p. 101.

<sup>25</sup> Gigon 1986; Gourinat 2008; Kerfeld 1971.

rational soul in a body. From Cicero onwards, Platonic oriented authors emphasized the celestial or divine origin of the soul.<sup>26</sup>

Middle Platonists dealt with the origin of the human soul in the context of cosmogonic speculations. They stressed the divine origin of the soul and focused on the relation between superior entities, including the intellect and the world soul, on the one hand, and the human soul, on the other.

Plutarch (ca. 46-120) argued that the demiurg did literally bring the soul and the body of the kosmos into being, not from nothing, but from pre-cosmic principles, that is, from a disordered corporeality and an irrational 'motivity'. The demiurg did not construct the soul in the absolute sense, but made the soul of the universe out of entities already available.<sup>27</sup> The demiurg introduced intelligence and reason into the irrational soul and thus created the soul of the kosmos. Under the influence of the intellect, the pre-cosmic soul becomes world soul and individual human soul. By consequence, the human soul is similar to the cosmic soul, but its lower part is weaker.<sup>28</sup>

Numenius (2<sup>nd</sup> cent.) argued that the origin of the human soul is in the universal intellect. Indeed, before entering the sensible world, the soul is pure intellect. Through its fall, that is, 'meeting the matter', the intellect becomes soul and acquires mundane capacities.<sup>29</sup>

Also Albinus (fl. ca. 150) endorsed a continuity between the superior *nous* and the lower souls. The soul enters the body when the human being is still an embryo and merely has the status of a living being ruled by an animal soul. He held that the irrational parts of the soul are mortal. This does not entail that the human soul is some kind of union, because he suggested that the irrational parts are probably transformed after death.<sup>30</sup>

Apuleius (125-180) grounded the unity of the essence of the human soul on its origin in the world soul.<sup>31</sup> Macrobius claimed a return of the soul after embodied life. When the soul descends into the body, it loses natural powers, but seeds of truth remain, and therefore it might be stirred up.<sup>32</sup>

<sup>26</sup> See, for example, Cicero, *Tusculan Disputations*, I.66 (text in the Appendix).

<sup>27</sup> *De animae procreatione*, 1024A.

<sup>28</sup> Hershbell 1987.

<sup>29</sup> Cf. Deuse 1983, p. 71; Emilsson 1994, p. 5337.

<sup>30</sup> Deuse 1983, pp. 81-95.

<sup>31</sup> *De Platonis dogmate*, I.99, 199.

<sup>32</sup> *In Somnium Scipionis*, I.12.1-4 and 17; Elferink 1968.

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Macrobius' description of the descent of the soul through the planetary spheres will become a classical *locus* in medieval discussions.

Also some of the teachings of the *Corpus Hermeticum* echoed *Timaeus*, such as the belief that all souls come from the one soul of the all, and that when the body gets its bulk and drags the soul down to the body's grossness, the soul, having separated from itself, gives birth to forgetting.<sup>33</sup>

In Plotinus' (204-270) philosophy, at least four kinds of souls can be distinguished: first, a transcendent soul which is not the soul of any particular thing or individual; second, the world soul which is responsible for the life of the visible cosmos, and which is not always strictly distinguished from the transcendent soul; third, nature or the vegetative soul which is immanent in the cosmos; finally, the individual human souls.<sup>34</sup> For present purposes, the relevant aspect of Plotinus' psychology is the idea that the soul is not divided 'in itself', but only with respect to the human bodies which are unable to 'accept' it undivided.<sup>35</sup> Thus, the soul is one and many,<sup>36</sup> and although all souls arise from one soul, the (human) soul is not a part of the universal soul.<sup>37</sup> That the soul is undivided and present in every human individual is restricted to the rational soul, whereas this does not hold true for the lower (part of the) soul. Plotinus even held that the lower, vegetative soul is made of the four elements.<sup>38</sup> This material second soul comes from the world soul,<sup>39</sup> is present in the womb before the descent of the individual human soul proper. The lower soul makes up a compound with the body,<sup>40</sup> and thus the (rational) soul comes down to an animated body.<sup>41</sup> By contrast, the rational soul does not fully descend in the body and 'remains', as it were, a member of the intelligible realm.<sup>42</sup> The *nous* or intellect, which is present in us, pertains to the intelligible world of the second hypostase. Thus, Plotinus gave a Platonic turn to the Aristotelian

<sup>33</sup> *Corpus Hermeticum*, X.7, 15.

<sup>34</sup> See Emilsson 1988, pp. 23-25.

<sup>35</sup> *Enneades*, IV.9.4-5.

<sup>36</sup> *Enneades*, IV.2.1-2.

<sup>37</sup> *Enneades*, IV.3. 2, 5 and 7.

<sup>38</sup> *Enneades*, II.9.5.

<sup>39</sup> *Enneades*, IV.9.3.

<sup>40</sup> *Enneades*, I.1.7.

<sup>41</sup> *Enneades*, VI.7.7.

<sup>42</sup> *Enneades*, IV.9.3.

doctrine of the intellect that comes from without, a view that he knew from Alexander.<sup>43</sup> The *nous* is a part of us to which we attempt to return.<sup>44</sup> A mixture of *logoi* explains the resemblance between parents and children.<sup>45</sup>

Porphyry (234-ca. 305) claimed that the father's lowest soul is responsible for producing seed. The seed first combines with the mother's nature: during conception the vegetative soul of the father present in the seed meets both the vegetative and the superior soul of the mother.<sup>46</sup> The higher soul of the mother may influence the soul of the embryo at the moment of conception, and thus it contributes to likeness without the seed.<sup>47</sup> Only at the moment of birth arrives the rational soul, which before entering the body passes through the seven celestial spheres. The rational soul can function only in a totally organized body.<sup>48</sup> The match maker is the world soul which ensures that descending souls find their way to bodies suited to them.

Themistius' (317-ca. 390) paraphrase of Aristotle's *On the Soul* is the source of the notion of a hierarchy of matter-form relations in the human soul. In contrast to Alexander of Aphrodisias' notion that the active intellect is equivalent to Aristotle's prime mover, he identified the active intellect with the essential self, thus introducing a distinction that originated in Plato between the human organism and one's essential self. Themistius also drew a distinction between the potential and the passive intellect. The former is seen as joined to the active intellect as matter to form; collectively they form a rational soul that is immortal. The passive intellect is equivalent to the corporeal soul that mediates between the rational soul and the body. The (universal) active intellect is one in a primary sense, while the (individual) active intellects are many; but as they share the same activity, they are one and the same essence.<sup>49</sup>

Themistius' idea that the soul is the architect of its own house was destined to become a famous adagio in the Renaissance.<sup>50</sup> Themistius did not

<sup>43</sup> Armstrong 1960.

<sup>44</sup> *Enneades*, I.1.13; II.9.2.

<sup>45</sup> *Enneades*, V.7.2; VI.7.7; I.1.11. For discussion, see Blumenthal 1971a and 1971b.

<sup>46</sup> Porphyrius 2011.

<sup>47</sup> Porphyrius 2011, 6.2-3.

<sup>48</sup> Deuse 1983, pp. 129-227; Porphyry 2011, «Introduction».

<sup>49</sup> Themistius 1899, pp. 98-108, and Themistius 1996, pp. 122-134.

<sup>50</sup> Themistius 1899, p. 24, and Themistius 1996, p. 40 (text in Appendix); see ch. 6.1, under Scaliger.

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explicitly discuss the issue of the origin of the (rational) soul. However, his analysis of earlier definitions of the soul and doctrines of ensoulment in book I of his paraphrase strongly suggests that he endorsed the view that the corporeal soul originates from the world soul, and that the rational soul or intellect comes from without.<sup>51</sup>

Nemesius of Emesa (fl. ca. 390) submitted to the view that the soul must be an incorporeal, intellectual entity, subsistent in itself, immortal, and yet designed to be one with the body. He argued that the soul does not arise at the same moment as the body. Nemesius implies that it pre-exists the body, but not in the manner of the Platonic myth.<sup>52</sup> Alluding to Antiochene doctrine of christology,<sup>53</sup> he suggests, in an original manner, that the body-soul relationship parallels Christ's union of the divine Word with his human nature in the incarnation. Like Plotinus, he challenged the Stoic view of the mixture of body and soul, and endorsed the doctrine of the unfused union of body and soul, that is, a union in which the constituents are not altered or fused.<sup>54</sup>

Later Neoplatonics did not accept Plotinus' view that (a part of) the rational soul remains in the intelligible world. According to Jamblichus (245-c. 325) the entire rational soul descends and undergoes substantial changes without losing its identity. Thus, the essence of the soul is descended in the body, with the result that of the soul's two functions – animating the body and uniting with the divine – the soul can only perform the former. It is the role of theurgy to make up for what the soul cannot do.<sup>55</sup>

Also Proclus (412-485) held that the soul descends totally, but he was hesitant about substantial changes. Proclus takes the soul's pre-existence rather as a premise, and not as a conclusion. The soul itself, though in some sense a product of the intellect, as emanation, is taken by definition not to have an origin in time.<sup>56</sup>

<sup>51</sup> See Themistius 1899, pp. 14-38; Themistius 1996, pp. 29-55.

<sup>52</sup> Nemesius 1975, cap. 2.

<sup>53</sup> While the Alexandrian school adopted the 'hypostasis union' or the 'nature union' of God and man to assert the oneness of Jesus Christ, the Antiochian School accepted the 'indwelling theology', that is, the Godhead dwells in manhood, as if Jesus Christ were two persons in one, to assert that no confusion had occurred between the Godhead and manhood, and to avoid attributing human weakness to His divinity.

<sup>54</sup> Nemesius 1975, cap. 3.

<sup>55</sup> Jamblichus 1973, pp. 42f and 168-175; cf. Steel 1978, p. 52f.

<sup>56</sup> Steel 1978, p. 69.

In his commentary on Aristotle's *De anima*, Simplicius (ca. 490-ca. 560) argued the rational soul may be said to exist at a number of distinct ontological and psychological levels. Simplicius distinguished between an unchanging 'remaining intellect' and a 'progressing intellect'. The rational soul is a 'progressing' intellect when it projects itself onto the perceptual faculties, the so-called 'second lives.' At this stage it is a potential intellect: in the downward projection it moves from thought to perception. From this imperfect state the human soul may recover its perfection by a process of introspection, characterized as 'ascent'.

The rational soul is not a static faculty. Simplicius actually suggested that the nature of the soul changes in accordance with its different activities at various stages, distinguished ontologically as well as psychologically. The soul has no fixed nature; rather, any alleged nature it may be said to have is at any time the instantaneous outcome of a process in which the soul is a self-moving force.<sup>57</sup>

## 1.2. ANCIENT MEDICINE AND EMBRYOLOGY: HIPPOCRATES TO GALEN

The origins of systematic embryology in the West are generally associated with Hippocrates, whose importance resides primarily in the library of approximately seventy medical works which were attributed to him or his school.<sup>58</sup> A two part work is devoted to embryology, *The Seed* and *On the Nature of the Child*. The author of these works explained the formation of the embryo as a process of generation that starts with the mixing of male and female seed. The male seed is thought to be secreted from the whole body and for this reason can generate all the different parts. The fluid is concentrated in the brains and then passes down the spinal column to the testes. The seed of a woman is identified with the moisture secreted in the womb during intercourse. When the seeds are mixed and retained in the womb, a process of development and differentiation starts. In *On the Nature of the Child* the *pneuma* ('breath,' that was supposed to be involved in various functions within human and animal bodies) is said to cause growth and articulation of the embryo. The evaporation of the moisture

<sup>57</sup> Simplicius 1882; Steel 1978.

<sup>58</sup> For earlier views, see Needham 1959, pp. 27-31.

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due to the heat initiates the breathing process that marks the beginning of life. The form of the embryo is complete around after forty days.<sup>59</sup>

The authors of the above mentioned works did not attempt to answer questions about the origin of the soul. By contrast, the treatise *On Regimen* clearly states that the human soul is a blend of fire and water, and that the soul of the offspring arises from a combination of the two parental souls.<sup>60</sup>

Aristotle was the first to perceive the antithesis between epigenesis and preformation, fresh development or simply unfolding of pre-existent structures, the subsequent history of which is almost synonymous with the history of embryology.<sup>61</sup> He introduced the comparative method into embryology, and by studying a multitude of living forms he was able to lay the foundation for future research into embryogeny. He decided against preformation and explained the formation of the embryo with his categories of form and matter: «what the male contributes to generation is the form and the efficient cause, while the female contributes the material».<sup>62</sup> Aristotle rejected Democritus' view that the seed was composed of all the different parts of the body.<sup>63</sup> He argued that the seed of the male comes from the blood in a highly concocted state, when it is capable of nourishing and forming the body's parts.<sup>64</sup> It does not contribute anything somatic, but activates the form in the menstrual blood. The male seed acts upon the matter provided by the female matter as rennet acts upon milk, namely by setting it.<sup>65</sup> The seed is (re)productive because it contains vital heat, being a natural principle analogous to the element of the stars.<sup>66</sup>

In Aristotle's view, the seed is an instrument, and in virtue of its instrumental power it imparts a kind of movement which is communicated from part to part generating the fetus and transforming it into an embryo. The cause of development is thus in one way from the outside, that is, from the

<sup>59</sup> Needham 1959, pp. 31-37; King 1990; Gundert 2000; Jouanna 2008.

<sup>60</sup> Hippocrates, *On Regimen*, I, 25 and 29 (text in Appendix).

<sup>61</sup> Needham 1959, p. 40; for discussion of Aristotle's embryology, see Needham 1959, pp. 37-62.

<sup>62</sup> *De generatione animalium*, I.20, 729a10-11 (text in Appendix).

<sup>63</sup> Morel 2008.

<sup>64</sup> On the production of the seed, see Margel 1995.

<sup>65</sup> *De gen. an.* II.4, 739b20-25.

<sup>66</sup> *De gen. an.* II.3, 736b29-36 (see text in Appendix).

power of the male parent transmitted in the seed; in another way the cause is within it.<sup>67</sup>

The male seed is a kind of instrument which transmits the soul to another, but it is not itself alive, not even potentially, because the matter of the seed contributes nothing to the embryo. The seed contains a principle that is able to trigger formal reproduction. In this sense, it contains the soul potentially.<sup>68</sup> The female element in generation is potentially alive and therefore it is also said to contain soul potentially.<sup>69</sup>

The soul cannot be acquired before the organ takes shape because «there can, for example, be no walking without feet».<sup>70</sup> First the embryo develops animal features, then human ones. Aristotle thought that the vegetative or nutritive soul exists in the material of the embryo. Thus, the vegetative and sensitive souls develop from matter, but the rational soul comes «from the outside».<sup>71</sup> It was only when the embryo was sufficiently formed to be recognizably human that it could be reckoned to be organized or animated by a rational, human soul. Entering the womb and ‘moving’ the female blood, the seed evaporates or rather ‘pneumatizes’ (*pneumatoutai*), and thus makes the arrival of the intellect possible.<sup>72</sup>

In *On the Soul*, Aristotle argued that the act of understanding is not, like sight or phantasy, the actualization of a bodily organ.<sup>73</sup> And whilst acquiring an intellectual soul is linked to the biological development of the embryo, the possession of the rational soul nevertheless does not require the possession or perfection of any organ of the body.<sup>74</sup>

The Stoics argued that all animal embryos (including man) are vegetative beings which are a part of the womb. The soul is generated only at birth. Under the effect of the cold air the natural breath of the embryo is turned into a soul, a process similar to the solidification of burning iron submerged in water. Thus, the origin of soul is a process of condensation.<sup>75</sup>

<sup>67</sup> *De gen. an.* II.1, 734b12-24 (text in Appendix).

<sup>68</sup> *De gen. an.* II.1, 735a4-8 (text in Appendix).

<sup>69</sup> *De gen. an.* II.3, 737a20-35.

<sup>70</sup> *De gen. an.* II.3, 736b24.

<sup>71</sup> *De gen. an.* II.3, 736b28.

<sup>72</sup> *De gen. an.* II.3, 737a7-16.

<sup>73</sup> *De anima*, III.4, 429a25.

<sup>74</sup> Lefèvre 1972, pp. 251-281; Balme 1990; Freudenthal 1995; Margel 1995; Morel 2008.

<sup>75</sup> Porphyrius 2011; Long-Sedley 1987: I, p. 314; Gourinat 2008, p. 71.

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After its coming to be the soul 'alimentates' itself through exhalation, that is, with warm blood produced by the respiration. This entails that psychological activity is co-extensive with breathing.<sup>76</sup>

The physician Herophilus (330-250) who discovered the nervous system, individuated the brain as the center of psychic activity. The soul possesses powers that operate and extend through the nerves. Herophilus distinguished between motor and sensory nerves, and between sentience and voluntary motions (the domain of the *psyche*), on the one hand, and the unconscious motions (domain of nature), on the other. Unfortunately, the extant fragments are not clear about the exact relation of the *pneuma* of the soul and the *peuma* in the nerves. His contemporary colleague Erasistratus argued that the vital *pneuma* derives from external air through respiration. Then, the vital *pneuma* may become psychic *pneuma* which is distributed through both sensory and motor nerves and which is responsible for cognitive and motor functions.<sup>77</sup>

Galen regarded the living being as a kind of artistic creative power, a *techne*, which acts on the things around it by means of the faculties (*dunameis*), by the aid of which each part attracts to itself what is useful, and repels what is not. His theory of reproduction resumes the Hippocratic idea of a role of both male and female seed.<sup>78</sup> The male seed has a weak material principle and a strong dynamic principle; the female menstrual blood just the other way round. Galen argued for epigenesis: when the seed is transformed into blood, the organs gradually come to be, first the heart, then the liver, and in the end the brain. Galen suggested that the seed is already a living substance, but he refrained from pronouncing himself on the substance and the (im)mortality of the soul. His agnosticism is the effect of the demands and criteria of certainty and authority of science. In his view the contentions that can be made regarding the soul's essence never achieve a demonstrative and scientific cogency.<sup>79</sup> Although Galen decided to skip the question of the soul's substance, there are some significant hints in his works.

<sup>76</sup> Calceidius 1975, c. 220; SVF, II.879.

<sup>77</sup> Needham 1959, pp. 61-64; Staden 2000, pp. 87-96

<sup>78</sup> For discussion, see Needham 1959, pp. 69-74; Accattino 1994.

<sup>79</sup> Tieleman 1996, p. xviii; Donini 2008, p. 186.

First, he suggested that the soul is either the *pneuma* contained in the cerebral cavity or else this *pneuma* is the primary instrument of the soul in its relation to the physical organism and its function.<sup>80</sup> The idea that the soul might be identical with the cerebral *pneuma* is taken up again in a slightly reformulated form in the work entitled *That the Qualities of the Mind Depend on the Temperament of the Body* (*Quod animi mores*). And in this work Galen also stated that the faculties of the soul follow the temperament of the blood of the mother.<sup>81</sup>

Second, in his embryology Galen developed the idea of a ‘molding faculty’ (*dunamis diplastikê*). This faculty or force, which cannot be reduced to the qualities of the four elements, was responsible for a series of highly complex actions in the formation of living beings, and thus apparently holds a key to grasping the origin of the soul.<sup>82</sup> Galen sometimes inclined to identify the molding power with the vegetative soul residing in the seed, but he hesitated in accepting this identification, since the vegetative soul is entirely devoid of reason, and thus apparently not able to accomplish any intelligent work such as the formation of the fetus.<sup>83</sup> Although Galen’s answer does not settle the issue, his idea of a molding faculty was transmitted to the Latin West through the works of Avicenna and Averroes, and was developed into the notion of ‘formative power’ (*virtus formativa*) by Latin schoolmen and physicians, among whom Albert the Great and Pietro d’Abano.<sup>84</sup>

Finally, Galen had a clear preference for Plato’s concept of a three-partite soul, which he accommodated to Aristotle and Stoicism, and attempted to modernize with empirical findings. Plato was not concerned with the physiological connection between the soul’s parts and the bodily organs. The location of the parts was governed by moral concern, not by anatomical or physiological detail. Galen located the rational soul in the brain, the emotions in the heart, and the appetite in the liver. These three organs are the centre of the nervous system, the arteries, and the veins, respectively. The association of the rational part with the brain is sustained

<sup>80</sup> Tieleman 2003, p. 141; Donini 2008, p. 85.

<sup>81</sup> *Quod animi mores*, 7; Accattino 1994, note 56.

<sup>82</sup> See *De semine*, 2.2, 2.5; *De naturalibus facultatibus*, 1.6, 2.3, 2.6; for discussion, see Hirai 2011, pp. 19-20.

<sup>83</sup> See *De foetuum formatione*, in Galenus 1821-1833: IV, pp. 700-701.

<sup>84</sup> See chs. 3.5, and 7.1.

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by observation and argumentation.<sup>85</sup> In *Quod animi mores* Galen seemed to adapt a thesis regarding the soul which at first sight seems different: the soul and its parts are seen as the temperaments of the organs. The *enkrasis* of the body contributes to the excellence of the soul, but it is unclear how. However, Galen did not attempt to explain what it means for the soul and its parts to be in a certain place, having decided to skip the question of its substance. He was prudent about the precise relationship between brains and rational soul.

In sum, Galen's psychology can be defined as a platonically inspired application of an anatomical geography to psycho-physiology, but he remained silent or obscure on many psychological issues. He did not know how to specify the substance of the soul, and was unable to explain how the soul first enters the body.<sup>86</sup>

<sup>85</sup> *De placitis Hippocratis et Platonis*, V, 219-220; Donini 2008, pp. 191-192.

<sup>86</sup> For further discussion, see: Lloyd 1988; Ballester 1988; Tieleman 2003; Boudon-Millot 2008.

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### THE JEWISH AND EARLY CHRISTIAN TRADITION

From the outset, the basic problem of any Christian psychology was its scriptural justification. The Bible provides scanty elements, and the New Testament appears to contradict the Old Testament. The Gospels and the Letters of Paul stress the salvation of the human soul, while it is not evident that the Old Testament throughout either asserts or implies the distinct reality of the soul. As a consequence, Christian psychology was largely dependent upon extra-biblical sources, in particular on ancient medical and philosophical views.

Since on the one hand pagan philosophers were inclined to attack the Church and the doctrine, while on the other hand Christian apologists and theologians frequently borrowed the weapons of their adversaries when they thought that these weapons could serve their purpose, it is only to be expected that the Christian writers should show a divergence of attitude in regard to ancient philosophy and medicine.

#### 2.1. OLD AND NEW TESTAMENT

Man, according to the Old Testament, is a psychosomatic unity. In the Old Testament three terms are used for the soul: *nephesh*, *neshamah*, and *ruah*.

The term *nephesh* is used in different ways. First, the term is employed simply as a synonym for a person;<sup>1</sup> and in legal matters the word was used to denote an individual.<sup>2</sup> Second, the word *nephesh* is used to denote the form of life that man possesses in common with animals and that ceases to exist at death. Thus, it means 'desire', 'vitality', or 'life-force' and refers to the animal and vegetative nature. When a person dies, *nephesh* is said to

<sup>1</sup> Exod. 1:5: «All the souls that came out of the loins of Jacob were seventy souls». Cf. Deut. 10:2.

<sup>2</sup> Lev. 4: 2: «If a soul (*nephesh*) shall sin through ignorance against any of the commandments of the Lord concerning things which ought not to be done [...]».

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depart;<sup>3</sup> and if in special circumstances life should be restored to the corpse, it is said to 'return'.<sup>4</sup> Third, the idea of the soul is used to refer to the varied emotions or inner thoughts of a man. Man was called to love God with all his heart and with all his soul.<sup>5</sup> From the soul (*nephesh*) originate knowledge and understanding (Ps. 139:14), thought (1 Sam. 20:3), love (1 Sam. 18:1), and memory (Lam. 3:20). An individual does not have a *nephesh* in the sense of a separate or separable possession, rather, an individual is a *nephesh*; the human life is coterminous and coextensive with its *nephesh*; it refers to psychic power, abounding personality, energy.

The term *neshama* (literally: breath) is used for the first time in the famous passage in Gen. 2: 7: «Then the Lord God formed man from the dust of the ground, and breathed into his nostrils the breath of life; and the man became a living being». Also elsewhere in the Old Testament it indicates the breath of life,<sup>6</sup> but in other passages it refers to man's spirit as intellectual principle.<sup>7</sup>

Also *ruah* is frequently associated to the breath of life, or the breath of God.<sup>8</sup> And indeed, sometimes both terms are used in the same line: «The Spirit (*ruah*) of God hath made me, and the breath (*neshamah*) of the Almighty hath given me life» (Job 33:4).

The association of the creation of the world with the forming of a new human being is a recurring theme through a number of biblical texts.<sup>9</sup> A good example is from the book of Eccles. (1:5): «Just as you do not know how the breath (*ruah*) comes to the bones in the mother's womb, so you do not know the work of God, who makes everything». The reference to the breath coming to the bones in the womb echoes the story of God forming the first human being, Adam, and breathing into his nostrils the breath of life.<sup>10</sup> The story of the making of Adam involves two aspects: that of forming the body, molding it from the dust of the ground; and that of giving life, breathing into his nostrils the breath of life. The act of molding is

<sup>3</sup> Gen. 35:18; 1 Kgs. 17:21.

<sup>4</sup> 1 Kgs. 17:21; Hab. 2:5; Ps. 107:5; Jer. 2:24, 15:9; Job 11:20, 41:21.

<sup>5</sup> Deut. 13:3.

<sup>6</sup> 1 Kgs 17:17; Isa. 2:22; 42:5; Job 27:3.

<sup>7</sup> Prov. 20:27; Job 26:4.

<sup>8</sup> Isa 57:16; Job 32:8; 33:4; Eccles. 12:7.

<sup>9</sup> Job 10:9-11 contains a passage of embryological importance (text in the Appendix).

<sup>10</sup> Gen. 2:7.

distinct from and prior to the act of giving life. First the body is formed, afterwards the body is vivified. This order is maintained in the passage from Eccles. (11:5) where the bones seem to be formed first and only then does the spirit come into them.<sup>11</sup>

When the Hebrew concepts expressed by *nephesh* and *ruah* were rendered by the Greek *psyche* and *pneuma*, they took on new connotations. These were shaped, at least in part, by Greek philosophy which influenced the translators of the Septuagint, the Greek-speaking Jews, and the first Christian authors.

The Septuagint uses *pneuma* in 75 per cent of the cases to translate the Hebrew word *ruah* (in Latin: *spiritus*); *psyche* is used in almost 90 per cent of the cases to translate the Hebrew *nephesh*, rarely for heart (*leb*). However, the translation of *nephesh* with *psyche* is insufficient and even misleading, because it introduces Greek dualism. *Psyche* is connotated to the idea of the soul as the immaterial, or at least invisible, essential core of man that can be thought of as distinct from the body. And this idea is alien to the Old Testament.

An important contribution to later Jewish thought was the infusion of Platonism into it by Philo of Alexandria (20 BC-50 CE). He taught the immediate divine origin of the soul, its pre-existence and transmigration. Rational souls are created at the creation of the world, prior to their imprisonment in the bodies. Philo claimed that the pre-existent rational souls that become embodied are equal to the celestial spheres; they are placed in bodies already endowed with irrational souls. Further, he contrasted the *pneuma*, or spiritual essence, with the soul proper, the source of vital phenomena, whose seat is the blood. Thus, he revived Platonic dualism, attributing the origin of sin and evil to the union of spirit with matter.<sup>12</sup>

Also Flavius Josephus is an important source for Greek-Hebrew syncretistic doctrines about soul and *psyche* (inner person). He reported that the Pharisees believe that every soul is immortal, that good souls enjoy reward and evil souls receive punishment. By contrast, from 1 Macc., it can be gathered that the Sadducees were materialists, denying immortality and all spiritual existence (angels and demons). Furthermore, Josephus wrote that the Essenes believed that the human souls are immortal, and that they

<sup>11</sup> A similar, slightly different pattern is in Ezekiel 37.

<sup>12</sup> Givens 2010, pp. 39-46.

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come out of the most subtle air, and are united to their bodies as to prisons.<sup>13</sup> The pre-existence, indeed, was professed also by Josephus himself.<sup>14</sup>

The motif of pre-existence figures clearly in several apocryphical and pseudepigraphical texts, among which the Book of Wisdom, dating back to the period between the first centuries BC to the dawn of the early Church. In fact, while the Bible is tendentially traducianist, the Midrash, the Talmud and the Kabbalah represent pre-existence and creationism.<sup>15</sup>

The tendency of Christ's teaching was to centre all interest in the spiritual side of man's nature: the salvation or loss of the soul is the great issue of existence. Let us examine in some detail the psychological terminology used by the Gospel-writers and the Apostles. In the New Testament, *psyche* stands for life-force, it sets criteria for what gives (or keeps) life in human nature, both during the life in this world and the world to come.<sup>16</sup> In the Gospels, *psyche* indicates life that is manifest in the individual human: «For those who want to save their life (*psyche*) will lose it, and those who lose their life for my sake will save it».<sup>17</sup> In many collateral passages *psyche* is mentioned along with *pneuma*.

Paul of Tarsus' (ca. 5-ca. 67) view of human nature and soul is ambiguous, as his conceptual vocabulary is small and his attempts to reconcile Greek and Christian views on the status of the soul hinge on incommensurable doctrines about the soul. His anthropological, and by consequence psychological categories are subordinated time and again to particular theological arguments. Central in Paul's theological thought is the idea of the salvation and sanctification of man as a complete person, consisting of body and soul. This explains his polemics against the early Christian Gnostics in Corinth and the enthusiasts in Thessalonike.<sup>18</sup>

Paul did not use the terms *psyche* and *pneuma* as interchangeable. *Psyche* preserves the basic connotations from the Old Testament and stands for earthly life, individual life, and the individual person. By contrast, man's spirit is a portion of the divine spirit. It does not constitute the inner man, but is a gift from God, and this God-related portion of man sur-

<sup>13</sup> *War of the Jews*, II.8.11.

<sup>14</sup> *War of the Jews*, III.8.5.

<sup>15</sup> See section 4 below.

<sup>16</sup> Matt. 2:20; Luke 12:20.

<sup>17</sup> John 12:25; cf. Luke 9:24; Matt. 16:25; Mark 8:35.

<sup>18</sup> Jewett 1977; Heckel 2000.

vives.<sup>19</sup> In this context the apparent conflict between spirit and soul in 1 Cor., should be interpreted: «First Adam is a living soul; second Adam is a life-giving spirit».<sup>20</sup> Paul used Gnostic terms against the Gnostic doctrine that the original spiritual Adam had been corrupted by the psychic Adam. Paul did so, in order to prove bodily resurrection. He hoped for a body not corruptible and earthly, not burdening the soul, but fitted for its highest and best life. According to Paul the *psyche* is not the immortal part of man. Body and soul must both be spiritualized if man is to attain immortality.<sup>21</sup>

## 2.2. THE CONTROVERSY OVER GNOSTICISM

The Gnostics held that the divine spark which descends to animate Adam, is created by the Angels, in the image of a heavenly being reflected in the waters of the primordial chaos. In the beginning it was the Angels, perhaps divided into good and bad cohorts, who created two human types or races, one evil (Cainites) and one good (Sethian). As there are three primeval principles, mankind can be divided into three classes: *pneumatici* or spiritual, *psychici* or animal, *choici* or earthly. To each class the Gnostics ascribed a different origin and destiny. The spiritual were of the seed of Achemoth, and were destined to return in time whence they had sprung – namely, into the *pleroma* (the fulness of divine nature). Even in this life they are exempted from the possibility of a fall from their high calling; they therefore stand in no need of good works, and have nothing to fear from the contaminations of the world and the flesh. This class consists of course of the Gnostics themselves. The *psychici* are in a lower position: they have capacities for spiritual life which they must cultivate by good works. They stand in a middle place, and may either rise to the spiritual or sink to the hylic level. In this category stands the Christian Church at large. Lastly, the earthly souls are a mere material emanation, destined to perish: the matter of which they are composed being incapable of salvation. This class contains the multitudes of the merely natural men.<sup>22</sup>

<sup>19</sup> 1 Thess. 10: 9.

<sup>20</sup> 1 Cor. 15: 35-44

<sup>21</sup> See Porter 1908, pp. 88-89.

<sup>22</sup> MacDonald 2004-2007: II, pp. 119-134.

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The Fathers of the early centuries rejected Gnosticism. The attribution of an absolutely spiritual nature to a creature, and the claim to endless existence asserted as a strictly *de jure* privilege in the case of the «perfect», seemed to them an encroachment on the incommunicable attributes of God. Also the theory of emanation was seen to be a derogation from the dignity of the divine nature.

For this reason, Justin Martyr (103-165), supposing that the doctrine of natural immortality logically implies eternal existence, rejected it, making this attribute dependent on the free will of God; at the same time he plainly asserted the *de facto* immortality of every human soul. Similarly, Tatian (110-180) denied the simplicity of the soul, claiming that absolute simplicity belongs to God alone. All other beings, he held, are composed of matter and spirit.

Also Irenaeus († ca. 202) developed a doctrine of human nature in conscious opposition to Gnostic dualism: «When this spirit, mingled with the soul (*anima*), is united to the material form, then, because of the outpouring of the Spirit, the human becomes spiritual and perfect; and it is such a human who is made in the image and likeness of God». <sup>23</sup> Irenaeus equated the ‘likeness’ to God, denoting perfection in human nature as the Holy Spirit’s gift, and uses ‘image’ to refer to the human body. He thus draws a distinction between the breath of life (*afflatus*) and the life-giving Spirit, which perfects him as spiritual. It is humans’ material form which will be brought to life again in the resurrection.

It should be kept in mind that many early Christian authors writers did not distinguish between corporeity in strict essence and corporeity as a necessary or natural concomitant. Thus, the soul may itself be incorporeal and yet require a body as a condition of its existence. In this sense, Irenaeus attributed a certain ‘corporeal character’ to the soul; he represented it as possessing the form of its body, as water possesses the form of its containing vessel. At the same time, he taught fairly explicitly the incorporeal nature of the soul.

The writings of Clement of Alexandria (150-ca. 215) perfectly capture the uncertainties and theological dragons that lurked at the peripheries of any discussion of the world’s creation and the soul’s origin in an era of uncertain dogma. He apparently accepted the pre-existence and descent of

<sup>23</sup> *Adversus Haereses*, 5.6.1.

noble souls,<sup>24</sup> but recognizing the serious difficulties he held that the soul is produced along with the body. He opposed Irenaeus' view, as he claims that due to their possession of *nous* the humans are made in the image of God, since mind is an endowment unique to the human species.<sup>25</sup> In Clement's view, the human soul is not a portion of God, but is created by God. The human soul consists of heavenly and terrestrial parts. The latter are transmitted by the parents to their children. The former not only precedes the formation of the body, it is seen as its very cause.<sup>26</sup>

Arnobius († ca. 330) devoted a large part of the second book of his *Against the Heathen* to the origin and immortality of the human soul. For Arnobius, immortality was an attribute of the divine alone, unless it was, in the case of humans, emphatically made contingent upon God's grace.<sup>27</sup> He rejected pre-existence, and argued that the souls are not directly created by God, but by some sort of demiurg.<sup>28</sup>

### 2.3. THE RISE OF CHRISTIAN PSYCHOLOGY

There was no general consensus in the early Church about the origin of soul before birth. The writings of the New Testament were primarily concerned with human salvation through the person and action of Jesus Christ. The focus was on the fate of soul after death and not on how human living came to be. The early Fathers were divided between those who held that the soul was generated by the parents and those who held that it was given by God from the outside. The latter position can be further divided, namely either the pre-existence of the soul since the Creation or the creation of souls in time for each human individual. These positions had advantages and disadvantages. Traducianism, the belief that the soul is inherited from the parents along with the body, could clarify the source of original sin, but it could not as easily explain the soul's immortality. Creationism struggled with the exact inverse problem: if God creates the soul directly, its immortality is understandable, but it is unclear how or

<sup>24</sup> *Stromata*, I, 15.

<sup>25</sup> *Stromata*, VI, 14. 112.

<sup>26</sup> *Stromata*, V, 13.

<sup>27</sup> *Adversus nationes*, I.58.

<sup>28</sup> Arnobius 1875, II, chs. 35-37 (text in the Appendix).

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why the fallen state of Adam is transmitted to the entire human kind. The creationists were beset with great trouble to account for original sin, because if souls are created daily, either God created a tainted soul or a sinless soul that becomes corrupt in the body.

The view that the soul was generated by the parents was developed by Tertullianus. In his *On the Soul*, he formulated the view that the soul was immortal but corporeal. He saw this as confirmed by the Gospels, and in particular the story of the rich man and Lazarus.<sup>29</sup> In this passage the souls of the rich man and Lazarus were described in corporeal terms. However, Tertullianus strongly opposed the Stoic view that the soul was received from the outside with the first breath and departed with the last breath.<sup>30</sup> He maintained that the soul was generated «ex dei flatu»<sup>31</sup> and that it was generated at the same time as the body. As evidence he cited that not only physical features but also intellectual and spiritual features could be passed from parent to child.<sup>32</sup> In Tertullianus' view, the whole human race was produced from one human being and every soul was produced from one soul.<sup>33</sup> In this scheme, the woman was reduced to the 'appointed seed-plot' fertilized by the male and the seed of the soul was drawn from the soul of the (male) parent, as the seed of the body was drawn from the body.<sup>34</sup> The soul is present from the beginning, but Tertullianus is aware that the embryo is at first relatively unformed and comes to attain its various powers gradually. Nevertheless, while «all the natural properties of the soul which relate to sense and intelligence are inherent in its very substance [...] they advance by a gradual growth through the stages of life and develop themselves in different ways».<sup>35</sup>

Obviously, Plato's view of the origin of soul proved highly influential, as he argued in several of his dialogues (*Meno*, *Phaedo*, *Phaedrus*) that the soul pre-existed to the body. The union of body and soul was thus regarded not as natural or original but rather as the result of some failure on the part of the soul. The certain sort of pre-existence is also implied in the book of

<sup>29</sup> Luke 16:19-31.

<sup>30</sup> *De anima*, c. 25.

<sup>31</sup> *De anima*, c. 3.4.

<sup>32</sup> *De anima*, c. 22.2; c. 27 (texts in Appendix).

<sup>33</sup> *De anima*, c. 4 and 25.

<sup>34</sup> *De anima*, c. 27.9.

<sup>35</sup> *De anima*, c. 38. For discussion: Festugière 1949; Pouderon 2008, pp. 163, 172-173.

Wisdom (included in the Septuagint and thus in the Catholic canon of the Old Testament), although it is not the pre-existence of the conscious moral self.<sup>36</sup> And according to Flavius Josephus, also the sect of the Essenes (now associated with the community of Qumran by the Dead Sea) believed in the pre-existence of souls.<sup>37</sup> Another allusion to the pre-existence occurs in the Book of Enoch.<sup>38</sup> Also the Apocalypse of Abraham and various passages in the Talmud suggest a coherent strand of thought favoring a form of pre-existence of the soul.

In the influential *Recognitions of Clement*, attributed (erroneously according to most scholars) to Clement of Rome, and known and quoted by Origen already in the early third century, there is a first affirmation of the pre-mortal existence of the soul. From his earliest youth, the author says, he has been preoccupied with the condition of mortality and asked himself «whether I did not exist before I was born».<sup>39</sup>

Justin Martyr appeared to endorse the pre-existence of the soul in his *Dialogue with Trypho*, affirming that human souls «are begotten wholly apart, and not along with their respective bodies». However, he was at the same time persuaded by Trypho to disallow both metempsychosis and the version of pre-existence Origen will shortly champion.<sup>40</sup> By the rise of the next generation of Church Fathers, a new center of intellectual activity was established: in Alexandria pre-existence would find fertile ground.

Origen (185-254) affirmed that the issue of the origin of the soul is not distinguished with sufficient clearness in the teaching of the Church.<sup>41</sup> Origen used the idea of a pre-existent fall to explain the entrance of the soul into the body. However, the entrance of the soul was not due to a spiritual gravity, an attraction to the flesh, it was rather the result of divine judgment.<sup>42</sup> He held that God created all rational natures equal and alike, and argued that the multiplicity and diversity of rational entities that people the cosmos, from divine to demonic, proceed from their individual choices. Some regress while some make progress. There remained some souls who had

<sup>36</sup> See section 4 on the Jewish tradition below.

<sup>37</sup> *Jewish Wars*, II, 154.

<sup>38</sup> *Book of Enoch*, 23: 2.

<sup>39</sup> Clement, *Recognitions*, I.1, 28.

<sup>40</sup> Justin Martyr, *Dialogue with Trypho*, IV-V; see Givens 2010, p. 83.

<sup>41</sup> *De principiis*, I Praef. 5 (text in the Appendix).

<sup>42</sup> *De principiis*, II, 9.8.

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not sinned so gravely as to become daemons, nor on the other hand so very lightly as to become angels. God therefore made the present world and bound the soul to the body as a punishment.<sup>43</sup> This presupposed that during the six days of the creation of the world, God has created a sufficient number of souls for the entire mankind.<sup>44</sup> Origen found additional scriptural support in the Genesis narrative of the Fall, which, like Philo, he read allegorically:

The expulsion of the man and woman from paradise, and their being clothed with tunics of skin [...] contain a certain secret and mystical doctrine (far transcending that of Plato) of the soul's losing its wings, and being borne downwards to earth, until it can lay hold of some stable resting place.<sup>45</sup>

Origen's conception of the pre-existent fall of souls was accepted only by some of his disciples (Evagrius Ponticus and Didymus the Blind<sup>46</sup>). Cyril of Jerusalem (4<sup>th</sup> cent.) was adamant in embracing pre-existence while rejecting its Origenist formulation.<sup>47</sup> Synesius of Cyrene (ca. 373-ca. 414) and Nemesius of Emesa (fl. ca. 390) endorsed the doctrine of pre-existence, because they found both traducianism and creationism to have problems that were simply insuperable.<sup>48</sup> Finally, Origen's translator Rufinus managed to avoid either renouncing or endorsing Origenist pre-existence.<sup>49</sup>

Later authors challenged his teachings in *On First Principles*.<sup>50</sup> In the mid-fifth century the first official denunciations and anathemas directed at pre-existence began to appear. Leo the Great wrote at least two letters of censure.<sup>51</sup> Eventually, the view of the pre-existence of the soul was condemned by a decree of Justinian in 543, and by the Second Council of Constantinople in 553.

<sup>43</sup> *De principiis*, I, 8.1.

<sup>44</sup> *De principiis*, II, 9.1-3 (text in the Appendix).

<sup>45</sup> *Against Celsus*, IV.40.

<sup>46</sup> Layton 2004; Givens 2010, pp. 106-107.

<sup>47</sup> Givens 2010, p. 103.

<sup>48</sup> Nemesius, *De natura hominis*, II.17; Givens 2010, pp. 109-10; see also ch. 1.1.

<sup>49</sup> Rufinus, *Apology*, I.28.

<sup>50</sup> For example, Augustine, *De Civitate Dei*, XI, 23; Hieronymus, *Contra Rufinum*; and Gregory of Nyssa, *De opificio hominis*, 28.

<sup>51</sup> To Turribius, bishop of Asturia (Letter 15), and to Julian, bishop of Cos (Letter 35).

A materialistic variant of traducianism, which was promoted by the sect of the Luciferians in the fourth century, was contrasted by Hieronymus.<sup>52</sup> Then, Gregory of Nazianze (ca. 329-389/90) distinguished between soul, spirit and body. He argued that the soul and the flesh were contained in the seed, but that the spirit is created by God.<sup>53</sup>

Some elements of Tertullianus' account were taken up by Gregory of Nyssa (335–after 394). Gregory rejects transmigration of soul and pre-existence. He stated that the soul was spiritual, but he also held that the soul and the body had a common cause, and that the soul was created at the same time as the body, with the creation of the human being as an ontological whole.<sup>54</sup> The soul is present from the beginning in the unformed embryo even though it has to wait for a necessary sequence of events before it is made manifest.<sup>55</sup> The soul is not adapted to a strange 'building', it grows in correspondence with the subject, gains and increases with it.<sup>56</sup>

Gregory's view of immediate animation was partially inspired to christological motives. If the soul of Jesus Christ was infused after conception, then he probably was not totally man from the very start of his life. Also for Maximus Confessor it was inconceivable that Christ's soul for a certain period was only that of an animal. By consequence, these Greek Fathers concluded that every man is animated at the moment of conception.<sup>57</sup>

By the late fourth century it was possible to delineate at least five theories as to the origin of the soul. These were listed in a letter of Hieronymus to bishop Marcellinus:

In regard to the origin of the soul: (1) does it descend from heaven, as the philosopher Pythagoras and all Platonists and Origen think? (2) or is it part of the essence of the Deity, as the Stoics, the Manichaeans, and the Priscillianists of Spain imagine? (3) or are the souls kept in a divine treasure house wherein they were stored of old as some ecclesiastics, foolishly misled, believe? (4) or are they daily created by God and enter into bodies, according to what is written in the Gospel? 'My Father is working still, and I am working'? (5) or are souls really produced, as Tertullianus, Apollinaris, and the majority of the Western divines

<sup>52</sup> *Altercatio Luciferiani et Orthodoxi*, in PL, 23.

<sup>53</sup> Ellverson 1981.

<sup>54</sup> *De opificio hominis*, 29.1.

<sup>55</sup> *De opificio hominis*, 29.4.

<sup>56</sup> Harl 1980.

<sup>57</sup> See Caspar 1991, p. 11.

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conjecture, by propagation, so that as the body is the offspring of body, the soul the offspring of the soul?<sup>58</sup>

As a rule, the second possibility was rejected by all Christian authors, as it contradicted the fundamental distinction between God and creatures. Hieronymus thought that also the views of Origen and Tertullianus should be rejected. Origen seemed to open the door for reincarnation, while Tertullianus endangered the spiritual and immortal character of the human soul. Hieronymus argued that human souls were created individually by God at the same time as the body was formed in the womb. He set out his views at length in polemics against Rufinus.<sup>59</sup> He later stated his position more succinctly when he reduced from five to three the possible accounts of the origin of soul, and placed creationism between the opposite errors of traducianism and pre-existence.<sup>60</sup> This scheme dominated the discussion from then onwards.

Augustine (354-430) approached the issue in quite a different spirit. From his earliest works to his *Retractions*, he expressed his inability to solve the problem. He opposed body and soul, but against the Manichaeans he asserts the worth and dignity of the body. For Augustine, it is virtually axiomatic that the human soul is both immaterial and immortal. Yet, he most probably thought that the origin of the soul was perhaps beyond the capabilities of our knowledge, as he never definitely decided between traducianism and creationism.<sup>61</sup>

In *On the Freedom of the Will* (395), Augustine listed four current accounts: I. the traducian view that all particular souls are derived from one original soul; II. the creationist view that every soul is made at birth; III. divine embodiment: God installs each soul from an inventory of pre-existent souls; IV. voluntary embodiment, according to which each soul chooses to install itself at an individual's birth.<sup>62</sup> In his *Enchiridion*, he admitted his uncertainty as to when the embryo acquired a soul and began to live.<sup>63</sup> Writing to Marcellinus in 412, Augustine referred again to the four theo-

<sup>58</sup> Letter 126.1 (the numeration in the quote is mine).

<sup>59</sup> *Apologia adversus libros Rufini*, PL, 23, II, 4, 8-10; III, 28-31.

<sup>60</sup> *Letter to Pammachius against John of Jerusalem*.

<sup>61</sup> For discussion, see Theiler 1970a and 1970b; O'Daly 1983; O'Connell 1987; Caspar 1991; Matthews 2000.

<sup>62</sup> *De libero arbitrio*, III.21.

<sup>63</sup> *Enchiridion*, 86.

ries of the soul he had outlined in his book on the will, indicating he is no closer to a verdict: the obscurity of this darkest question simply does not admit of a clear solution.<sup>64</sup>

He returned to the question in his later *On the Soul and its Origin* (ca. 420). Again he confessed his ignorance and pointed out that the Scripture did not resolve the question. He strongly affirmed the spiritual character of the soul, but he was uncertain how much weight to place on philosophical arguments in an area so deeply mysterious as the human soul.

Further complications and issues are raised by the doctrines of original sin and justification through Christ. Paul asserted that mankind was lost through the sin of one man and accordingly that it is saved through the justification of one man.<sup>65</sup> This raises the problem of unbaptized children: if they are guilty, their guilt can depend only on their soul. And thus, traducianism has a point to defend.<sup>66</sup> In his *Retractions* Augustine formulated the 'double-life' theory. We live a personal life and a 'transpersonal' life in Adam; that is, we lived, sinned, and died in Adam. This explains the transmission of original sin.<sup>67</sup>

Augustine is an important point of reference for the centuries to come, not only for his 'positive' psychological views, but may be even more for his attempts to draw distinctions between orthodox and heterodox views in psychological matters. For example, in book VII of *The Literal Meaning of Genesis*, he systematically confuted a long series of doctrines that he viewed as plainly heretical or erroneous. He concentrated in particular on the origin of the human soul. The latter is neither «de substantia Dei»,<sup>68</sup> nor «de corpore mundi».<sup>69</sup> Although admitting that there is no certainty about the origin of soul, in a next chapter Augustine tackled the issue of the «ratio causalis animae», excluding at the outset that it is «in angelica natura» or «in corpore coeli». Then, he discussed a first hypothesis, that is, «anima est priusquam in corpore veniat», and a second one, namely that the soul is «creata simul cum corpore». Finally, he concluded that the soul

<sup>64</sup> *Epistola*, 143.

<sup>65</sup> Rom. 5:12, 18-19.

<sup>66</sup> *De Genesi ad litteram*, X, 16.29.

<sup>67</sup> *Retractiones*, I.1.13; cf. *De civitate Dei*, XIII.14.

<sup>68</sup> See also the Letters 205, 190, 166, where Augustine explicitly denies that the soul is a «particula dei».

<sup>69</sup> *De Genesi ad litteram*, VII, 2.3 and 3.5.

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which God inspired to man is not of His own substance, but that it is nonetheless incorporeal, «facta a Deo de nihilo», «immortalis, sed mutabilis».<sup>70</sup> In book X of this work, Augustine tackled the problem raised by Origen that God completed his work of creation in six days, and he eventually concluded that in the creation of individual souls in time no new kind of creature is created.<sup>71</sup>

Already Lactantius (245-325) argued that, since the soul was spiritual, it could not be generated by the parents but must be especially created by God.<sup>72</sup> The majority of later Fathers generally endorsed the view that the soul was neither generated nor pre-existent, but created by God. Cassiodorus regarded *animus*, *spiritus*, and *mens* as mere aspects of the human soul. The soul is a light-like, spiritual substance, created by God, rational and immortal.<sup>73</sup> And although doubts about the origin of the soul were expressed by Isidore of Seville and Gregory the Great,<sup>74</sup> the doctrine that the soul is created by God and not derived from the parents came to prevail in the Latin West. In the East the picture was different, due to the influence of Gregory of Nyssa and Basil of Caesarea (a great admirer of Origen), and later Maximus the Confessor and John Damascene.

In christology, Maximus (ca. 580-662) argued that Jesus acquired a rational soul at the moment of conception, and as Jesus shares the same human nature as all other human beings, then everyone acquires a rational soul at conception.

John Damascene (675-749), defined the human soul as the connecting link between the visible and the invisible natures, created by God after His own image and likeness. Body and soul were formed at one and the same time, not first the one and then the other, as Origen so senselessly supposed. The soul is a living essence, simple, incorporeal, immortal, reasoning and intelligent, formless, making use of an organized body. The soul is the source of the powers of life, and growth, and sensation, and generation, mind being but its purest part and not in any wise alien to it. Further the soul enjoys freedom and volition and energy, and is mutable, that is, it is given to change, because it is created. All these qualities according to

<sup>70</sup> *De Genesi ad litteram*, VII, 28.42.

<sup>71</sup> *De Genesi ad litteram*, X, 3.5.

<sup>72</sup> *On the Workmanship of God*, 19.

<sup>73</sup> *De anima*, c. IV, in Cassiodorus 1998, p. 38.

<sup>74</sup> See Da Cruz 1964, p. 189, and notes 60-62, for references.

nature the soul has received by the grace of the Creator, from whom it has received both its being and this particular kind of nature.<sup>75</sup>

#### 2.4. THE LATER JEWISH TRADITION

While Christians debated, theologized, and anathematized over pre-existence, Jewish speculation on the idea proceeded without impediment. There is an important difference, however, between the Jewish and Greek ideas of pre-existence. In Greek philosophy the doctrine of pre-existence is connected to the contrast between spirit and matter, and expresses the thought that the soul exists before its physical embodiment, and is man's real thinking self. The Jewish conception of pre-existence, on the other hand, rests on the contrast between God and man. Things are hidden with God and in the appointed time are manifest on earth. To Jewish authors the soul is only a part of the coming man, the divine breath or spirit which was to make him alive. Thus, the pre-existence of the *neshama* is a very different thing from the pre-existence of the *psyche*.<sup>76</sup>

The ideas of the later rabbis as to the relations of soul and body rested on the Hebrew conception of the nature of man. They distinguished more clearly than the Old Testament speech allows between the two parts of human nature. But their conception was not so much that of contrasted substances as of opposite origins. The body was from below, from the earth, and the soul (*neshama*) from above, from God. The basis of their 'psychological' reflections is to be found not in scientific observations or philosophical theory, but in a few often repeated texts of Scripture: first of all the breath of life in Gen. 2:7; then Isa. 57:16, with its suggestion that 'souls' are already made; 1 Sam. 25:29, furnishing the idea that God keeps the souls; finally Job 12:10 (the *neshama* belongs to God and remains in his keeping), Eccles. 3:21, 12:7, on the *ruah* that returns to God who gave it; and few others.

Other biblical texts fuelled the later Kabbalist speculation on the origin and destiny of the human soul, qualifying the *neshama* as the third *sefirah*, or divine emanation.<sup>77</sup>

<sup>75</sup> John Damascenus, *De fide orthodoxa*, bk. II, ch. 12.

<sup>76</sup> See Porter 1908, pp. 56-61.

<sup>77</sup> The following two paragraphs draw mainly on Givens 2010, pp. 129-132, 139-146.

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In the centuries after Philo, rabbinic formulations imputed to a number of specific entities prior to the physical world: the Torah, the throne of God, Israel, the temple and the Garden of Eden. Human souls make frequent appearances in both Mishnah and Midrashim, from 200 CE onward. *Bereshit Rabbah*, a later, sixth-century midrashic text prohibited to inquire what existed before creation. And yet, if the scenes before creation are closed to speculation, those before mortality are not. In the seventeenth century Menasseh ben Israel will cite the same *Bereshit Rabbah* as holding that human souls existed before embodiment.<sup>78</sup> Also other midrashic texts look at human pre-existence as a necessary postulate following from Gen. 2:1-2, wherein the heaven and the earth «and all the host of them» are created by the sixth day. More specifically, one midrash indicates, «all the souls that existed from the time of Adam the first man until the end of time, were all created during the six days of Creation. And all of them were in the Garden of Eden, and all of them were present at the giving of the Torah».<sup>79</sup> This same theme of the heavenly treasure of the souls of men appears throughout rabbinic literature.<sup>80</sup>

Kabbalistic texts pertaining to Elijah's vision of the divine chariot often refer to the heavenly court. In 3 Enoch this motif is found alongside a version of pre-existent souls. The archangel Metraton shows Rabbi Ishmael both the righteous souls who have returned from their mortal lives and the souls of those who have not yet been 'created' as mortals.<sup>81</sup> The mystical cosmology of Kabbalah and the goal of theurgy, or mystical union with the divine, are the particular context in which Kabbalistic notions of the soul need to be viewed. The *sefirot* are taught as a scheme of manifestations or aspects of the divine reality. *Neshama*, one of the higher aspects of the human soul is seen as corresponding to the third *sefirah*, *Binah* (Understanding). Unlike the Gnostics and Origen, by most Kabbalists life is not looked upon as a downfall or exile, but as a means for education and a beneficial trial. In the *Zohar*, humanity's pre-mortal existence is clearly presented as an allegorical reading of the patriarch Abram's call from Ur to Canaan.

A similar picture emerges from the *Zohar's* treatment of the birth of Moses, as recorded in Exod. 2:1-2. Not only do human souls pre-exist their

<sup>78</sup> Berg 1999, p. 66.

<sup>79</sup> *Midrash Tanhuma Pekude*, III.11, quoted in Givens 2010, p. 131.

<sup>80</sup> *Hagigah* 12b, in *Babylonian Talmud*, vol. IV, p. 72.

<sup>81</sup> 3 Enoch 43.1-3.

bodies, but their form too is different, according to the *Zohar*. Every soul and every spirit, before coming into this world, is composed of a male and a female united in one being. In descending to earth, these two halves separate and go to animate different bodies. At the time of marriage, the Holy One unites them as before, and they become again one single body and one single soul.

Skirting as they did the strictures of Christian orthodoxy, the *Zohar* and Kabbalistic traditions preserved the ideas about pre-existence that had migrated to the peripheries of Christian intellectual culture. In the following centuries, a number of enlightened and syncretistic authors would mine these traditions. Giovanni Pico della Mirandola, Francesco Giorgio, and in the seventeenth century Henry More and Menasseh ben Israel are cases in point.<sup>82</sup>

<sup>82</sup> See ch. 4.3.



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### MEDIEVAL DISCUSSIONS

Due to the limited availability of ancient philosophical and scientific texts initially theology and Platonic views predominated the medieval discussion on the origin of the soul (sections 1-2). The first inflow of translated medical texts started to change the context of the speculation on animal generation (section 3), but it was not until the massive influx of Aristotelian and Arab texts that the conceptual frame for matters psychological gradually, and yet essentially changed (section 4).

Early thirteenth-century Western psychology was heavily influenced by Avicenna, whose *On the Soul* blurred the linguistic and conceptual contrasts between Peripatetic and Neoplatonic psychologies. Thus, the newly discovered Peripatetic philosophy, especially in the interpretation provided by Arabic commentators, did not so much supersede prevalent tendencies, but actually reinforced the then existing forms of psychological theorizing which was cast in an Augustinian mould. This situation changed when Aristotle was fully available, enabling outstanding schoolmen to develop innovative biological and psychological doctrines. Albert the Great, Thomas Aquinas, Giles of Rome, and Pietro d'Abano are significant cases in point (section 5). The synthesis of Catholic theology and Peripatetic philosophy did not lead to an overall uniformity; due to the structure of the scholastic method of discussion and research, a widely branched network of alternative theories and viewpoints developed (section 6).

#### 3.1. CREATIONISM AND ORIGINAL SIN

During the High Middle Ages creationism was generally accepted. It was convincingly defended in a work entitled *De ecclesiasticis dogmatibus*, which was written by the fifth-century Gennadius, but erroneously attributed to Augustine. It was also implicitly sustained by Anselm of Canterbury's (1033-1109) new conception of the transmission of original sin.

Augustine held that the *concupiscentia* of the parents infects on the moment of sexual intercourse the seed and by consequence the body of the

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child before it is born. The body transmits this 'infection' to the soul at the moment of its infusion. Anselm explained the transmission of the original sin through the realization of the human nature in Adam and then individualized in all human persons.<sup>1</sup> Original sin is transmitted by generation, which is not the cause, but rather the *conditio sine qua non* of the transmission of original sin. Thus, it was no longer necessary to invoke traducianism, because the soul was tarnished for the very fact of participating in human nature. Yet, according to his biographer Eadmer, until the end of his life Anselm thought the question of the origin of the soul was still an open one.<sup>2</sup>

Creationism, however, raises the issue of the infusion of the soul in the body. The soul's infusion could occur on several moments: during conception, when the form of the body has been finished, at the first movement, or at birth. The first possibility was rejected by Anselm, who thought it absurd, because it would lead to a host of lost souls.<sup>3</sup> Also later authors opted for a delayed infusion, among whom William of Conches (ca. 1090-after 1154).<sup>4</sup> However, there was no consensus about the period of infusion, which was established between forty and ninety days.<sup>5</sup>

From the twelfth century onwards the theory of the delayed infusion gained the upper hand, but it was sometimes connected to the Neoplatonic idea of pre-existence. In a treatise on original sin, Odo of Cambrai (1060-1113), follower of Anselm, discussed the origin of the soul, and tackling the issue whether God created all souls during the Creation, he apparently did not exclude some sort of pre-existence.<sup>6</sup> His own position is an outcome of his Platonic realism: souls of individual human beings derive from and participate in the universal human soul, i.e. the soul of Adam and Eve considered as one.<sup>7</sup> With the corruption of the universal soul in Adam and Eve, every soul has been tainted by original sin. As the soul is a simple substance, it cannot generate another soul.<sup>8</sup>

<sup>1</sup> *De conceptu virginali et originali peccato*, 27.

<sup>2</sup> Southern 1963, p. 142.

<sup>3</sup> Da Cruz 1964, pp. 190-191.

<sup>4</sup> *Philosophia mundi*, IV.51, in William of Conches 1980, pp. 112 and 228.

<sup>5</sup> Lugt 2008, pp. 235-238.

<sup>6</sup> *De peccato originali*, PL, 160, col. 1077. See also Nauta 1996, pp. 121-123.

<sup>7</sup> *De peccato originali*, col. 1079.

<sup>8</sup> *De peccato originali*, cols. 1100-1102.

Honorius of Autan (1080-1154), another pupil of Anselm, was more explicit. All souls are created simultaneously and in a pure and invisible matter. Once individuated, they are tainted, as they are linked to a body.<sup>9</sup>

The view that God kept creating human souls in each individual had become generally accepted in the days of Peter Lombard (1096-1164).<sup>10</sup> The erroneous attribution of *De ecclesiasticis dogmatibus* continued to play an important role in the rejection of traducianism, it surfaces in Bonaventure's (1221-1274) analysis of this doctrine.<sup>11</sup> Also Domenico Gundisalvi rejects traducianism in his *Book on the Soul*.<sup>12</sup>

### 3.2. THE DESCENT OF THE SOUL

The proscriptions of the Church Councils notwithstanding, and in spite of Justinian's suppression of paganism and the Platonic Academy, Plato's *Timaeus* continued to exert its influence into the high Middle Ages. The descent of the soul, central in Middle Platonism and Neoplatonism, was also found alluded to or extensively discussed in the following four texts, which since the Carolingian times occupied an important place in the curricula of the cathedral and monastic schools: Macrobius' *Dream of Scipio*, Martianus Capella's *On the Marriage of Philology and Mercury*, Calcidius' translation of Plato's *Timaeus* with a commentary, and Boethius' *Consolation of Philosophy*.

Macrobius gave an elaborate account of the several stages the soul goes through on its way to an earthly body.<sup>13</sup> It becomes forgetful of its divine origin and loses all or most of the knowledge it had when still in heaven. In order to carry out its operations during the period of embodiment, it obtains reason and understanding in the sphere of Saturn, the power to act in Jupiter's sphere, a bold spirit in Mars', sense perception and imagination in the Sun's sphere and so forth.<sup>14</sup>

<sup>9</sup> *Elucidarium*, PL, 172, cols. 1144-1145.

<sup>10</sup> *II Sent.*, d. 18 and d. 31, c. 3; Da Cruz 1964, p. 194. For twelfth and early thirteenth-century authors, see Guillaume de Saint-Thierry 1988, pp. 128, 154, and passim; and Bartholomaeus Anglicus 1979, pp. 24-25.

<sup>11</sup> *In II Sent.*, d. 18, a. 2, q. 3, concl.; in Bonaventura 1885: II, p. 453a.

<sup>12</sup> Gundisalvi 1940, p. 52.

<sup>13</sup> *Somnium Scipionis*, I.12.

<sup>14</sup> Nauta 1996, p. 103.

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Boethius wrote that God had allotted each soul to a star, a light chariot,<sup>15</sup> for its companion from which it descended at its appropriate time into a body. Although tainted by its embodiment, the soul retained some seeds of truth.<sup>16</sup>

A crucial notion in John Scotus Eriugena's (ca. 815-ca. 877) *Periphyseon* was the pre-existence of mankind in primordial causes. However, this does not entail a descent of the soul into the body on account of sins it committed in a previous life. Soul and body are created together, as the unity of human nature cannot be shattered. There is an uncreated part in human soul under the aspect of its uncreated eternity. Human nature shares in the divine one and thus takes part in all things.<sup>17</sup> In his reading and glossing of Martianus Capella, Eriugena qualified the metempsychosis and related Neoplatonic doctrines «poets' ravings» (*poetarum deliramenta*).<sup>18</sup>

The notion of the descent of the soul is present in ps-Bede's *De mundi celestis terrestrisque constitutione* (datable to the second half of the eleventh century).<sup>19</sup> The author of this work held that the soul is both generated and ingenerated. The author also thought that Boethius' opinion that the souls were allotted to the stars was in agreement with the view that the souls which were destined to be embodied, were born from the blood of Abel. Eventually, he held that the souls are born together with the body itself, that is, they come into existence some time after the conception of the seed which is fashioned into the human body.<sup>20</sup>

Hildegard of Bingen (1098-1179) gave an account of embryological development and of the entry of the soul into the fetus. In an illustration from the Wiesbaden codex of her *Liber Scivias*, the soul is shown passing down from heaven into the body of the pregnant woman and to the embryo within her.<sup>21</sup>

The image of the soul's descent through the heavenly spheres also fascinated Platonizing poets such as the twelfth-century Bernardus Silvestris

<sup>15</sup> For the Neoplatonic doctrine of the luminous body or vehicle of the soul, see, for example, Finamore 1985.

<sup>16</sup> Boethius, *Consolatio philosophiae*, III, metre 9 and 11. For discussion, see Nauta 1996, pp. 104-105.

<sup>17</sup> Eriugena 1968-1981: II, pp. 530d and 585d.

<sup>18</sup> Nauta 1996, pp. 108-10, cf. Mathon 1960.

<sup>19</sup> ps-Beda 1985, p. 63.

<sup>20</sup> ps-Beda 1985, p. 67.

<sup>21</sup> Needham 1959, p. 84.

and Alain de Lille.<sup>22</sup> William of Conches, who wrote commentaries on Plato, Boethius and Macrobius, rejected the fall of the soul along Platonic lines, but attempted to reconcile the doctrine of the descent of the soul with Christian faith interpreting it in terms of original sin.<sup>23</sup> It was in these years more common, however, for pre-existence to appear as poetic trope or mystical imagery than as rationally defended theology.

### 3.3. CELESTIAL CAUSALITY

The treatise *On Human Nature*, attributed to Constantinus Africanus († 1098/99),<sup>24</sup> is the first Latin account of the influence of the planets over the month by month development of the embryo.<sup>25</sup> The planet-month correlation, familiar in medieval works, does not seem to appear in Antiquity. Aristotle held that the capacity of the sperm to shape matter and bring it to life is due to warm breath (*pneuma*) and that this *pneuma* was analogous to the material of the stars.<sup>26</sup> Although Aristotle did not suggest that the *pneuma* originated from the aether or was affected by it, such an inference was made by later commentators, among whom Avicenna.<sup>27</sup> The planet-month correlation was probably developed in Hermetic and Gnostic circles and reached the Latin West through Arabic astrological works, where it is found from the late eighth century. The precise source of the aforementioned *On Human Nature* is unknown. For present purposes, it is important to note that its author held that soul entered the body when the main organs (heart and liver) had been formed.<sup>28</sup> Subsequently, Alubater established in his *De nativitatibus*, that God infused the soul in the fourth month.<sup>29</sup> The idea of celestial influence on the development of the embryo was also present in Hermann of Carinthia and Alfred of Sareshel.<sup>30</sup> Then,

<sup>22</sup> See, for example, Bernardus Silvestris 1978 and Alain de Lille 1536.

<sup>23</sup> Nauta 1996, pp. 116-121.

<sup>24</sup> Constantinus Africanus 1541. Actually, the work was written by Haly Abbas.

<sup>25</sup> For discussion, see Burnett 1990.

<sup>26</sup> *De generatione animalium*, II.3, 736b29f.

<sup>27</sup> See Nardi 1958.

<sup>28</sup> Constantinus Africanus 1541, pp. 319-320.

<sup>29</sup> Alubater 1540, fol. b3v.

<sup>30</sup> For references, see Burnett 1990, pp. 108-109.

Albert<sup>31</sup> and Thomas<sup>32</sup> resumed this notion in a Peripatetic context. Also later medieval physicians present detailed astrological accounts of the formation of the fetus.<sup>33</sup>

#### 3.4. ARABIC NOETICS

The massive inflow of Arabic and Greek philosophical and scientific texts in the twelfth and thirteenth century was a source of radical doctrinal innovation for Western psychology. Until the twelfth century, philosophical psychology was mainly based on Augustine; the Bible, Boethius, and patristic sources, possibly supplemented by a rather defective acquaintance with Galen and the *Corpus Hippocraticum*, completed the conceptual horizon of twelfth-century psychological writings. From the twelfth century translations of Galen and Hippocrates became available, and then from the thirteenth century translations of Aristotle and of his Arab commentators.

The Arabs, in particular Alfarabi, Avicenna, and Averroes,<sup>34</sup> drew a sharp distinction between the vegetative and sensible soul, on the one hand, and the intellectual soul, on the other. In general they accepted Aristotle's view of the bodily origin of the sensitive soul, but they integrated the human (potential) intellect into broader cosmic schemes. The physical universe comprises celestial spheres, in which the stars and planets are embedded, and the sublunary world, around which the spheres rotate. A first supreme being consisting in pure thought (*Metaphysics*, XII), and hence an intellect, presides over the entire cosmos. This supreme being is followed by other beings consisting in pure thought; that is, other intellects – or, as they are conventionally termed, intelligences – which have the function of maintaining the celestial spheres in motion. The intelligences, including the active intellect, are brought into existence through a series of eternal emanations initiated by the first cause. The active intellect stands at the end of the chain of supernal intelligences and presides over the world beneath the moon. All three fore-

<sup>31</sup> *De animalibus*, VI, tr. 3, cap. 3, in Albert the Great 1916-1920, pp. 494-495.

<sup>32</sup> Thomas Aquinas, *In III Sent.*, d. 8, q. 1, ad 7; cf. Litt 1963, pp. 143-146.

<sup>33</sup> See, for, example, Gentile da Foligno's reconstruction, analyzed in Hewson 1975, pp. 214-215. For further discussion of the issue of 'spirit' and astrology, in relation to the development of the embryo, see Bono 1984.

<sup>34</sup> Relevant texts are Alfarabi 1929; Avicenna 1968-1972; Averroes 1953.

named philosophers locate the human potential intellect immediately after the active intellect in the descending order of existence.

In Alfarabi (ca. 872-ca. 950), the active intellect confers both forms on the matter of the sublunary world and actual knowledge on all human intellects. When a certain piece of matter has been conveniently prepared by prior forms to receive the form of humanness, an individual human is born. When an intellect has been conveniently prepared and trained to receive the intelligible form of human mind, it conceives the essence of human being.<sup>35</sup>

Avicenna (ca. 980-1037) endorsed Alfarabi's idea of a succession of intellectual emanations. The tenth or active intellect no longer has the strength to generate another unique intellect and thus the chain of emanation ends in the multitude of human beings. Avicenna held that whenever there originates a human body with a temperament suitable to serve as the instrument of a human soul, a human soul suited to its temperament will originate from the active intellect and will attach itself to this body. He established that the rational soul is created and joined to the body of the human fetus when the heart and the brains have been formed.<sup>36</sup>

As is well known, Averroes' (1126-1198) position on the material intellect is essentially different from those of earlier commentators. For present purposes, it can be stated that, following Alexander and Avempace, he set out with a material intellect that is a disposition or preparation of the corporeal forms (not of the body, as Alexander held) and concluded in the Long Commentary on the *De anima*,<sup>37</sup> where both Alexander and Avempace are refuted, with the view of the material intellect as an eternal, unique substance that joins man from without. Averroist psychology was condemned in 1277, but although Averroes' views were accepted and further developed by later followers, his impact on the discussion on the origin of the human soul was marginal.

### 3.5. A NEW SYNTHESIS

All major scholastics held creationism to be certainly true. However, the full availability of Aristotle's works in the second half of the thirteenth cen-

<sup>35</sup> Alfarabi 1929; Netton 1992, pp. 40-48.

<sup>36</sup> Avicenna 1500, f. 50r; for discussion, see Druart 2000 and Marmura 2008.

<sup>37</sup> See Averroes 1953 and 2009; for further discussion, see Taylor 1998 and 2004.

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ture led to a new synthesis between Peripatetic philosophy and Catholic theology. The soul was not any longer seen as primarily a spiritual substance but as the form of the body. Hence the question of the origin of the soul was not formulated in terms of a loss of knowledge on the infusion into a body, but rather in terms of the physiological development from the vegetative via the sensitive to the rational soul.

Aristotle regarded the soul as a vital principle and argued for a gradual animation of the embryo. Initially it was not clear how these views could be made consistent with creationism and the unity of the human person. Further complications were due to the controversy over the plurality of forms.<sup>38</sup>

In a seminal essay on the origin of the human soul in Dante,<sup>39</sup> Bruno Nardi distinguished between nine different positions in medieval discussions: (1) the divine creation of the soul at the moment of conception (defended in the past by Gregory of Nyssa); (2) the embryo possesses *ex traduce* the vegetative soul and receives from the celestial bodies the sensitive soul and from God the rational soul;<sup>40</sup> (3) the doctrine of Averroes who held that man's substantial form was the sensitive soul and that the possible intellect was a unique and separate substance; (4) the theory held by Roger Bacon, John Peckham and Robert Kilwardby: the three vital principles are distinct but subordinated to one and another, and thus the higher soul is the perfection of the lower; (5) the view that the created rational soul introduces its 'own' vegetative and sensitive soul in man, thus leading to 'pairs' of inferior souls; (6) the succession of souls argued for by Thomas Aquinas: at the arrival of a superior soul, the inferior soul is annihilated; (7) the vital operations of the embryo depend upon the soul of the mother (referred by Albert the Great); (8) the vital operations of the embryo depend upon the *virtus formativa* derived from the soul of the father, while the sensitive soul and the rational soul originate in the celestial bodies and God, respectively; (9) finally, the view of the higher soul as act of the lower ones, rejected by Thomas.<sup>41</sup>

Let us now examine some significant early thirteenth-century positions.

<sup>38</sup> See section 6.

<sup>39</sup> Nardi 1960.

<sup>40</sup> Referred by Alexander of Hales 1928, p. 682.

<sup>41</sup> *Summa theologiae*, I, q. 118, a. 2, ad 2.

Alfred of Sareshel's *On the Motion of the Heart* (early 13<sup>th</sup> century) shows a mélange of views derived from Aristotle's biology and natural philosophy with Platonic and Neoplatonic elements. The soul, defined as the perfection of a physical organic body, is linked to the latter through the spirit which resides in the heart. Life is the first effect of the soul on the body, but it does not exist before the essential organs are formed.<sup>42</sup>

In his *Treatise on the Soul* John Blund (1175-1248) attempted to integrate the new Aristotelian teaching on the soul within the traditional Augustinian framework. He argued for the unity of the human soul, but his analysis of the plurality of forms reveals that this view is not yet discussed in the context of contemporary embryology.<sup>43</sup>

Roland of Cremona (1178-1259) presented the genesis of the embryo as the main argument of those who defend a plurality of forms. He argued that until the infusion of the rational soul, the soul of the embryo is a part of the soul of the mother.<sup>44</sup>

By contrast, William of Auvergne (1180/90-1249), who endorsed the unity of the human soul, held that the embryo lives through the animal spirit. After the arrival of the intellectual soul this spirit is absorbed by the latter.<sup>45</sup>

Finally, Philip the Chancellor (1165-1239) claimed that the vegetative soul was generated by the parents, the sensitive soul by the celestial bodies, and the intellectual soul created by God.<sup>46</sup>

The debate on the origin of the soul is reshaped by the works of Albert the Great (1193/1206-1280) and Thomas Aquinas (1225-1274). Albert and Thomas attributed a central role to the *virtus formativa* in the development of the embryo. The conception of a 'formative force' derives from Aristotle,<sup>47</sup> and Galen,<sup>48</sup> and it was also adopted by Avicenna and Averroes. Avicenna held that the fetal development is guided by the vegetative principle, which is given to the sperm by the father. This principle is replaced

<sup>42</sup> Alfred of Sareshel 1923, pp. 30, 62-63.

<sup>43</sup> Blund 1970; Da Cruz 1964, pp. 201-202.

<sup>44</sup> Da Cruz 1964, p. 202.

<sup>45</sup> William of Auvergne 1674, pp. 105-107.

<sup>46</sup> Philip the Chancellor 1937, pp. 28, 32-33; Da Cruz 1964, pp. 201-204.

<sup>47</sup> *De generatione animalium*, II.3, 736b29f.

<sup>48</sup> See ch. 7.1.

by a vegetative soul which is proper to the offspring.<sup>49</sup> Averroes claimed that the active principle of generation comes from the male parent and that the soul of the offspring is actualized in matter by the soul heat.<sup>50</sup>

Later authors saw this force as the agent of generation. With the aid of the celestial bodies it ‘draws’ the vegetative and then the sensitive soul from matter. They did not agree on the origin of the rational soul, however.

Albert the Great located the formative power at the core of his cosmology, considering that it shapes animals, plants and even minerals according to the primordial forms already conceived by the first intellect.<sup>51</sup> He believed that the form of man evolves from a vegetative to a sensitive state, and then reaches an intellectual level. Influenced by the Stoic and Augustine’s doctrine of seminal reasons, he argued that life, perception, and rationality arise one after the other. Albert developed his ideas about the origin of the human soul first in *On Animals* and then in his *On the Nature and the Origin of the Soul*. In *On Animals* he argued that the vital functions of the embryo depend on the formative force contained in the male semen, while the rational soul is infused by the supreme or first Intelligence.<sup>52</sup>

In *On the Nature and the Origin of the Soul*, Albert formulated his view of the «inchoatio formae». The formative force is now seen as an instrumental principle. The vegetative soul is educed from matter by the formative force contained in the male semen.<sup>53</sup> Also the rise of the sensitive soul is due to the formative force of the male semen, which during the conception is transformed in a spirit which molds the female seed. This spirit contains both the virtue of the soul of the father and of the celestial intellect.<sup>54</sup> Vegetative and sensitive souls are not seen as two substances, they are related as potency and act. The moment of animation by the rational soul is when the organs through which the works of the soul and of life are performed, are complete in shape. When the organs have been formed, the rational soul is brought into the fetus by the light of the agent intellect.<sup>55</sup>

<sup>49</sup> Avicenna, *De animalibus*, bk. XVI, ch. 1, in Avicenna 1500.

<sup>50</sup> Aristoteles 1562-1574: VIII, p. 305B-C.

<sup>51</sup> See Takahashi 2008.

<sup>52</sup> Albert the Great 1916-1920, pp. 1085, 1091-94.

<sup>53</sup> Albert the Great 1955, p. 9b (text in Appendix). For discussion, see Takahashi 2008.

<sup>54</sup> Albert the Great 1955, p. 10a (text in Appendix).

<sup>55</sup> Albert the Great 1955, pp. 13a and 14a (text in Appendix). See also earlier works: Albert the Great 1916-1920: XVI, tr. 1, c. 11, p. 1092; *In II. Sent.*, dist. 17, art. 2 (Albert the Great 1890-1899, vol. 27, p. 299); *De anima*, I.13, (Albert the Great 1955, pp. 52-53).

The intellect enters from without, the light of the agent intellect is its root, in such a way that it is sometimes called by philosophers the result of the divine intellect in the physical body that has life.<sup>56</sup>

Thus, Albert saved the gradual development of the embryo and the unicity of substantial form.<sup>57</sup> The human soul derives from an intrinsic (human) and an extrinsic (divine) source.<sup>58</sup>

In his polemical work against Pomponazzi, Agostino Nifo (1469/70-1538) attributed to Siger of Brabant (ca. 1240-ca. 1280s) a view most similar to Albert's. According to 'Suggerius', so Nifo states, the human intellectual soul is 'composed' of two «semi-animae», that is, the intellect, which is unique for the whole mankind, on the one hand, and the nutritive and sensitive soul, which is transmitted through the seed, on the other.<sup>59</sup> Nardi traced this kind of compromise between Averroism and Catholic orthodoxy to Siger's allegedly lost *On the Intellect*, but this view is also present in other works of the Brabantine master, for example, in his commentary on the third book of *On the Soul*.<sup>60</sup>

Thomas Aquinas held that human ensoulment occurred not right at the first instant, but at a time-point removed from the beginning. This, he argued, would enable the matter of the embryo to undergo development and become 'apt' for receiving the immortal soul from God (by passing through simpler initial stages involving vegetative and sensitive souls).

From his comment on the *Sentences* onwards Thomas Aquinas theorized a succession of distinct forms: the vegetative soul disappears when the sensitive soul arises, and the latter is annihilated at the arrival of the intellectual soul. Once infused, the intellectual soul completely replaces the sensitive soul of the embryo and performs all functions previously attributed to the two lower souls.<sup>61</sup> Thomas rejected a gradual evolution between

<sup>56</sup> *De anima*, I, tract. 2, cap. 15.

<sup>57</sup> For Albert's embryological views, see Needham 1959, pp. 86-91. See also Delorme 1931.

<sup>58</sup> For further discussion, see: Da Cruz 1964, p. 222; Craemer-Ruegenberg 1980; Weisheipl 1980, pp. 458-459.

<sup>59</sup> Nifo 2009, ch. 4, p. 24-26. See also Nifo 1554, bk. II, ch. 8, fol. 17v; Nifo 1553, III, t/c 5, fol. 159ra.

<sup>60</sup> Siger of Brabant 1972, pp. 1-3. For discussion, see Nardi 1979.

<sup>61</sup> *In IV Sent.*, dist. 38, q. 1, a. 2, ad 3; *Summa contra Gentiles*, II, c. 89; *Summa theologiae*, I, q. 118, a. 2, ad 2. For discussion of the succession of souls in the embryo, see Huby 1990; Cova 2004.

one soul and the other, as no form may develop into another. Moreover, considering that a corruptible form cannot develop into an incorruptible one, the rational soul would be mortal.<sup>62</sup> Thomas argued that the *virtus formativa*, detached from the paternal semen, is responsible for the formative process of the embryo. Initially, Thomas held that the formative force remained active also after the infusion of the rational soul,<sup>63</sup> but in his later works he limited its activity until the arrival of the sensitive soul.<sup>64</sup> Thus, the human being passes through a series of clearly distinct phases: semen, blood, plant, animal, and rational being. In Thomas' view only Christ was animated immediately.<sup>65</sup>

This view led him into great difficulties, because it was at odds with another important view; that is, man generates an entire man. On the contrary, he could hardly be said to generate more than a sensitive soul which died before birth, and on this view it was difficult to see how the spiritual effects of Adam's fall could be transmitted to the men of each generation. Yet, the majority of schoolmen agreed with Aquinas that the rational soul was not an ordinary form, educed from the potentiality of matter, but rather an *ad hoc* creation.

In his treatise on the formation of the fetus, entitled *On the Formation of the Human Body in the Uterus*, which was essentially a defence of Aristotle's theories of embryology, Giles of Rome (1243-1316) attempted to seek a rationalisation of the extant physiological, philosophical and theological notions.

Giles produced a hypothesis of animation involving a two-fold spirit. The non-organic, immaterial part, conveyed by the semen of the father, pervades the menstrual matter and forms the embryo. The *spiritus informativa*, contained in the male semen, derives its virtue from the soul of the father and displays the presence of intelligence in the work of nature. This quasi-divine nature of the spirit echoes the Augustine theory of the seminal reasons. Giles invoked these principles, which he interpreted as *aptitudines*, to account for the generative virtues in animals. The spirit also includes an organic part, which is derived from the female menstruum,

<sup>62</sup> *Summa contra Gentiles*, II, c. 89.

<sup>63</sup> *De potentia*, q. 3, a. 9, ad 16.

<sup>64</sup> *Summa theologiae*, I, q. 118, a. 1, ad 4 (text in Appendix).

<sup>65</sup> *Summa theologiae*, III, q. 33, a. 2-3. Cf. Caspar 1991, pp. 253-254.

and allows room for the physiological aspect of embryogenesis.<sup>66</sup> The seed acting in virtue of the father's soul, as its instrument or organ, forms the fetus and disposes it to receive the rational soul.

Accepting, like Aquinas, a theory of several levels of animation, Giles avoided the view that life fully begins at the moment of conception. He stated that the human fetus is an animal before receiving the rational soul, but that it is as yet indeterminate, passing through several intermediate 'species'. Developing in his later work the idea of transient imperfect forms, Giles steered a middle course between Aquinas' view of a succession of souls and the doctrine of the plurality of forms.<sup>67</sup>

In his central work *Conciliator* (1303) also Pietro d'Abano (1257-1315) endorsed the idea of a *virtus formativa* governing the formation of the embryo and he identified it with Aristotle's *intellectus vocatus*<sup>68</sup> or separate intellect, mentioned in a medieval translation of *On the Generation of Animals*.<sup>69</sup> On the basis of this text, the Arab scientist Haly argued that this separate intellect should be identified with the formative faculty, that is, the influence from the celestial bodies which through the male semen developed and organized the embryo. Abano's wording, however («ei ascripsit») appears to suggest that he had serious doubts about this interpretation. And yet, the French Jacobites thought that Abano intended to speak about the human soul and thus accused him of the error of Alexander and Galen, who held that the human intellect was material and that the human soul was a *complexio* of the organized body, respectively.<sup>70</sup> Now, Abano held that the formative faculty was separate, but in the sense of not needing a bodily organ to be active, as it is grounded in the spirit which is included in the semen. He distinguished clearly between the rational soul and the formative faculty, however, and he substantially agreed with Aquinas' conception of a succession of souls in the human embryo.<sup>71</sup> Man first receives the form which is produced from the elements through the celestial virtue, then the

<sup>66</sup> Giles of Rome 1515, cap. 9; cf. Hewson 1975, pp. 95-134.

<sup>67</sup> Hewson 1975, pp. 115-116.

<sup>68</sup> A literal translation of *kaloumenos nous*, identified by the 10th-century Persian physician Haly Abbas with the separate intellect, identical with Anaxagoras' *nous*. See Nardi 1958, p. 4.

<sup>69</sup> *De gen. an.*, 737a4-10.

<sup>70</sup> *Conciliator*, diff. 48, in Pietro d'Abano 1520, fol. 68r.

<sup>71</sup> *Conciliator*, diff. 48, in Pietro d'Abano 1520, fol. 68v.

sensitive soul, and finally the rational soul from God.<sup>72</sup> The gift of the rational soul is grounded in the superior complexion of man. Nature always operates through the shortest way: man has only one form, not three.<sup>73</sup>

### 3.6. THE PLURALITY OF FORMS

The metaphysical problem of the number of substantial forms arose in the *Fons vitae* of Avicbron (1021–ca. 1058), who argued that man was informed by a descending series of forms.<sup>74</sup> The issue of a plurality and hierarchy of forms was discussed also by Avicbron's translator Gundisalvi in his *On Unity*.<sup>75</sup> Subsequently, Latin schoolmen who defended a plurality of forms appealed to both philosophical and theological reasons. First, if man is informed by one form only, then after death the body would consist of a bunch of accidents only. Second, if the intellect were the only form, man would be immortal. They also developed reasons with a more theological character. Third, the transmission of original sin does not depend upon matter or accidental dispositions. Finally, in the Eucharist the substance of bread does not change into the intellect of Christ, and thus the latter has also another form.

Several English authors, active in the first half of the thirteenth century, defended the plurality of substantial forms with arguments derived from embryology. The genesis of the embryo as described by Aristotle, suggests that man possesses three different souls or forms, because the vegetative and sensitive soul have an origin that is different from that of the intellectual soul. Richard Fishacre and Richard Rufus of Cornwall are cases in point.<sup>76</sup> The latter also endorsed the quite singular view that man disposed of two vegetative and two sensitive souls, one pair arising from matter and one pair infused with the intellectual soul. Also Jean de la Rochelle held this view.<sup>77</sup> Other authors, among whom Robert Kilwardby, John Pecham, Adam Buckfield, and Peter of Spain claimed that after the infusion of the

<sup>72</sup> *Conciliator*, diff. 71, in Pietro d'Abano 1520, fols. 104v-105v.

<sup>73</sup> For further discussion, see Nardi 1958 and Hasse 2001.

<sup>74</sup> *Fons vitae*, V.

<sup>75</sup> Da Cruz 1964, p. 200, note 97.

<sup>76</sup> Da Cruz 1964, pp. 206-211.

<sup>77</sup> Jean de la Rochelle 1882, p. 137.

rational soul the lower souls continued to exist, although in a relationship of subordination.<sup>78</sup> Roger Bacon defended the view that man has only one soul, which he viewed as one substance with three essences.<sup>79</sup>

Unitarism was condemned at Oxford in 1277 and again in 1284 by successive archbishops of Canterbury. Leading scholastics after Aquinas, including Scotus, and Henry of Ghent, lined up against Aquinas' position. Also William of Ockham argued that man has a substantial form of the body, in addition to two other substantial forms: the organic sensitive soul and the intellective soul.<sup>80</sup> Yet after Aquinas' canonization in 1323 unitarism made a come back. It was defended by Thomists and by influential authors such as Gregory of Rimini, John Buridan, Marsilius of Inghen, and Peter of Ailly.

Subsequently, Paul of Venice (1368-1428/9) tackled the issue whether there can be in the same animal more than one 'total' soul in a quite original way. He rejected several views: (1) that plants, animals and man have, respectively, one, two and three souls; (2) that all living beings have only one soul and that in man the vegetative and sensitive souls pass away at the arrival of the sensitive and intellectual soul; (3) that only man possesses two complete souls, that is, the sensitive and intellectual souls. In Paul's view, plants and lower animals have only a vegetative or a sensitive soul. Perfect animals have a partial vegetative and a complete sensitive soul. Man, beyond the partial (vegetative) forms, has two complete souls: a sensitive, corruptible soul that inheres and informs, and an eternal intellectual soul which informs but does not inhere.<sup>81</sup> During the Renaissance Agostino Nifo, and Jacob Zabarella lined up in favor of pluralism.

Authors arguing for one substantial form only had no way for partial survival: on their account when a substance comes into existence, every part of it comes into existence anew (other than its prime matter) and when it goes out of existence, every part of it goes out of existence (other than prime matter). This means that when an animal ceases to exist, not even its body remains. This seems implausible, but they contended that only their view can account for the special unity of substances. Scholastic pluralists therefore needed an account of what holds their complex sub-

<sup>78</sup> Da Cruz 1964, pp. 214-18; Lugt 2008, p. 247.

<sup>79</sup> Roger Bacon 1905-1940: III, pp. 281-283.

<sup>80</sup> *Quodlibeta*, II, questions 10-11.

<sup>81</sup> Paolo Veneto 1504, fol. 46; for discussion, see Nardi 1958, pp. 77-79; Kuksewicz 1983.

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stances together, and their difficulties in this regard foreshadow the similar difficulties that seventeenth-century authors would have in accounting for substances without any substantial forms at all.<sup>82</sup>

<sup>82</sup> See Pasnau 2011, ch. 25.

## CHAPTER FOUR

### THE RETURN OF NEOPLATONISM

The revival of Platonism and Neoplatonism in the fifteenth century laid the groundwork for a universalist tendency in psychology, linking the human soul to original cosmic principles, such as the world soul and the universal intellect, which are seen as the origin or founding unity of all souls. Main figures in this current are Ficino, Patrizi, Giorgio, Bruno, and Lipsius (section 1). However, not all Neoplatonist philosophers endorsed a universalist psychology, as results from the cases of Pico, Agrippa and Steuco.

Giovanni Pico della Mirandola (1463-1494) did not explicitly analyze the origin of the soul, but merely suggested his own views, when in his *Conclusions* he endorsed or rejected traditional ideas. It is well known that Pico attempted to harmonize Averroism with the immortality of the individual soul.<sup>1</sup> Surprisingly, he apparently maintained man's spontaneous generation, that is, his developing from nonliving matter.<sup>2</sup> This does not entail, however, that also the soul has a material origin. Indeed, with Ammonius he held that the rational soul is not linked immediately to the body.<sup>3</sup> And with Albert the Great, he stated that the vegetative soul is not introduced into the foetus before the sensitive soul, nor the sensitive soul before the rational soul.<sup>4</sup> Thus, it seems reasonable to assume that he rejected Thomas Aquinas' view of a succession of souls in the embryo and endorsed the view that the human soul is essentially a unique power which develops from vegetative to sensitive and to rational.

In his *On the Occult Philosophy* Cornelius Agrippa (1486-1535) argued, that the human soul is a divine light, created in the image of the Verb. It proceeds from God and descends through heavens.<sup>5</sup> He wavered about the precise origin of the soul, as he was not sure whether it is from God or the intelligible world. However, there is no doubt about the immortality

<sup>1</sup> Pico 1973, p. 34.

<sup>2</sup> Pico 1973, p. 36.

<sup>3</sup> Pico 1973, p. 39.

<sup>4</sup> Pico 1973, p. 28.

<sup>5</sup> *De occulta philosophia*, III, c. 37, in Agrippa 1533, p. 289 (text in Appendix).

of the rational soul, and the latter is clearly distinguished from the sensitive soul, which is generated from the womb of corporeal matter and thus perishes after death.<sup>6</sup>

In his exposition of the first three books of Genesis, entitled *Cosmopoeia*, Agostino Steuco (1497-1548) drew a neat distinction between the 'breath of life' («spiraculum vitae») which man has in common with other animals and the human mind created by God. He defined the human mind as a 'divine force of intelligence' («vis divina intelligendi») and as the truly separable soul. In support of this view Steuco extensively referred to Plato, Michael of Ephese, Hermes Trismegistus, and Aristotle.<sup>7</sup> Thus, he proposed an original interpretation of the creation of man and his soul. The mind (also qualified as intelligence) is created directly by God and infused into an organized body. The words in Genesis stating that it was 'blown' or inspired into Adam's nostrils should be interpreted metaphorically, as they translate a philosophical message in wordings accessible to the uneducated people.<sup>8</sup>

Also eclectic authors, such as Paracelsus and Fernel, were strongly influenced by Florentine Neoplatonism, but this did not lead them to endorse a universalist view on the human soul (section 2). The 'long wave' of modern Platonism reaches far into the seventeenth century. The Cambridge Platonists developed views in which Greek philosophy was harmonized with the early Greek Fathers, featuring Origen (section 3).

#### 4.1. UNIVERSALISM: MARSILIO FICINO TO JUSTUS LIPSIUS

Marsilio Ficino (1433-1499) was firmly convinced that the soul is a simple self-subsisting form that comes into being out of nothing, as it is created by God.<sup>9</sup> He underlined the soul's immediate creation, that is, without any intermediation by angels or intelligences.<sup>10</sup> And although on the scale of being the soul is positioned between the animals and divine reality, this does not prejudice the participation of all souls in God. For this view Fi-

<sup>6</sup> *De occulta philosophia*, III, c. 39, in Agrippa 1533, p. 309.

<sup>7</sup> Steuco 1535, pp. 97-101.

<sup>8</sup> Steuco 1535, pp. 120-122.

<sup>9</sup> *Theologia platonica*, V.12; VIII.1.

<sup>10</sup> *Theologia platonica*, V.13; X.7.

cino even referred to Origen's *On the Principles*, then still a suspect book.<sup>11</sup> And indeed, elsewhere he clearly suggested the pre-existence of the soul.<sup>12</sup>

Ficino openly defended the view that the nutritive and sensitive souls are enclosed in the rational soul,<sup>13</sup> and he explicitly rejected that the human soul is partially mortal and partially immortal.<sup>14</sup> Furthermore, he argued that the souls are daily created, contemporarily with the body, that is, at the very moment of conception.<sup>15</sup> This does not mean, however, that the soul is created *in* the body, as the soul descends through the spheres.<sup>16</sup>

It seems reasonable to suppose that it was Ficino's intention to propose an alternative to what had become the settled Catholic understanding of the origin of the soul in later medieval theology, namely, that every individual soul is created immediately out of nothing by God at the moment of its unification with the body. This was the doctrine defended by the most authoritative scholastic theologians, including Aquinas, but it had not in Ficino's day been defined as an orthodox doctrine by any council or pope.<sup>17</sup> Ficino on the other hand was clearly fascinated by the Platonic teaching that the soul has aetherial and celestial vehicles in addition to its gross corporeal one and that the former are temporally prior to the latter.

Principally due to his sources, in Ficino the relation between the human soul and the world soul is rather ambiguous. Without doubting the creation of the individual souls, Ficino endorsed the view of an «animarum generalis idea»<sup>18</sup> and defined the human souls as «sorores» or «collegae» of the world soul.<sup>19</sup> In his comment on Plotinus' *Enneads*, he initially qualified the superior part of the soul as part of the world soul, and the inferior part as part of the world.<sup>20</sup> This is, however, probably just a summary of

<sup>11</sup> *Theologia platonica*, IX.6. For the condemnation of Origen, see ch. 2.3.

<sup>12</sup> *Theologia platonica*, XVII.1.

<sup>13</sup> *Theologia platonica*, XV.3.

<sup>14</sup> *Theologia platonica*, IX.7.

<sup>15</sup> *Theologia platonica*, XVIII.3.

<sup>16</sup> *Theologia platonica*, XVI.8.

<sup>17</sup> See ch. 3 and 9.4.

<sup>18</sup> *In Enneades*, IV.9.5, in Ficino 1976, p. 1756; cf. p. 1668 on the 'ideal' unity of the souls.

<sup>19</sup> *In Enneades*, II.9.20, in Ficino 1976, p. 1673; *ibid.*, III.1.5, p. 1675; *ibid.*, III.3.1, p. 1701; see also *In Phaedrum*, in Ficino 1976, p. 1368.

<sup>20</sup> *In Enneades*, p. 1631.

Plotinus' views, because elsewhere he denied that our soul is a part of the world soul.<sup>21</sup>

In his *Questions in the Holy Scripture*, Francesco Giorgio (1466-1540) developed enigmatic, but significant remarks on the origin of the human soul. Giorgio argued that the modalities of the creation of man must be gleaned from four central biblical phrases in Genesis: «let us make man in our image and likeness», «in the image of God created he him; male and female», «then the Lord God formed man of dust from the ground», and «breathed into his nostrils the breath of life».<sup>22</sup> In Giorgio's view, these words should be interpreted according to the following sequence: «In the first place, God has decreed to make man: and after that He created him in heaven: then, He shaped the body as his garment. Finally, He let him participate in the divinity».<sup>23</sup> Thus, just like unity precedes multiplicity, the human soul was created before the human body, and hence before the distinction of genders.<sup>24</sup>

According to Giorgio, the breath of life (the «spiraculum vitae» in Gen. 1), infused by God, can be compared to the light that illuminates the universe, as described in the Gospel according to John. Hermes Trismegistus called it «mens», Pythagoras «sapientia», Augustine «portio superior», and the Jews «nessamà». This ray of light guarantees a direct illumination and belongs to God, like sun rays belong to the Sun.<sup>25</sup>

In the third section of *Questions*, Giorgio specified «more problematico» his rather controversial, view of the primordial creation of the human soul, suggesting that all souls had been created in the beginning, at the moment of Creation,<sup>26</sup> and that only in time they are infused in individual bodies.<sup>27</sup> The Creation, before materialising in the natural world, consists in a divine act which on a purely ideal level is unique. In Giorgio's view this entails that God created man «in universali» before letting appear sensible men on the surface of the earth. This also holds for the soul: the individual souls are grounded in an archetypal universal soul. This archetype is not

<sup>21</sup> *In Enneades*, p. 1666.

<sup>22</sup> See Genesis 1:26-27; 2: 7.

<sup>23</sup> Giorgio 1574, tom. I, probl. 26, f. 4v.

<sup>24</sup> Giorgio 1574, tom. I, probl. 29, f. 4v.

<sup>25</sup> Giorgio 1574, f. 4v.

<sup>26</sup> Giorgio 1574, tom. III, probl. 492, f. 202r (text in Appendix).

<sup>27</sup> Giorgio 1574, tom. III, probl. 494, f. 202v.

to be confused with the Peripatetical unique intellect, but rather with the mass of glass in the oven from which individual vases are made.<sup>28</sup> The preliminary, spiritual (or ‘verbal’, that is, *in verbo*) creation of all things is confirmed elsewhere in this work by Giorgio.<sup>29</sup>

In the third book of *Nova de universis philosophia* Francesco Patrizi (1529-1597) tackled the issue of the unity and multiplicity of the souls. As all essences derive from one essence and all unities from one first unity, it is necessary, according to Patrizi, that all souls are in one soul.<sup>30</sup> This view is confirmed by Hermes Trismegistus.<sup>31</sup> And against Aristotle, Patrizi openly defended the universal animation.<sup>32</sup> In a series of manuscript notes,<sup>33</sup> he returned to discuss the issue, when the Congregation for the Index had in the meantime placed his work on the Index of forbidden books. Invoking not only Plato, Zoroaster and Augustine, but even Theophrastus and Alexander of Aphrodisias, Patrizi again stressed the universal animation,<sup>34</sup> and argued that all individual souls derive from one universal soul.<sup>35</sup> He again cited Hermes Trismegistus and Plato for his view that all souls originate from the world soul, although he remained ambivalent on the precise origin of the human soul, merely referring Plato’s opinion.<sup>36</sup>

Giordano Bruno (1548-1600) did not pronounce himself explicitly on the issue of the origin of the soul. Yet, his works offer several hints that reveal underlying tendencies of a Neoplatonically orientated, universalist psychology, as it developed from Ficino onwards.

In his early work *The Seal of Seals*, Bruno defined the human soul as ‘third world.’<sup>37</sup> In this same work he rejected the traditional distinction between psychological faculties, and resuming a Pythagorean *adagio* he presents his doctrine of a unique vital force in nature. Through an intricate series of complex terminological and conceptual passages he eventually

<sup>28</sup> Giorgio 1574, fols. 202v-203r.

<sup>29</sup> Giorgio 1574, tom. VI, sectio 3, f. 361v.

<sup>30</sup> Patrizi 1593, f. 53r.

<sup>31</sup> Patrizi 1593, f. 53v.

<sup>32</sup> Patrizi 1593, fols. 54r-56v (text in Appendix).

<sup>33</sup> Now published in Patrizi 1993.

<sup>34</sup> Patrizi 1993, pp. 45-54.

<sup>35</sup> Patrizi 1993, p. 55 (text in Appendix).

<sup>36</sup> Patrizi 1993, pp. 61-62.

<sup>37</sup> *Sigillus sigillorum*, in Bruno 1879-1891: II.2, pp. 164-165.

hypothesized a unique *vis*, viewed as ‘source’ of all vital and psychological activity.<sup>38</sup> Also in the Italian dialogue *On the Cause, Principle and One*, Bruno confirmed the existence of a ‘global’ principle of life, vegetation and sense, that is, the world soul,<sup>39</sup> and he hinted again at a unique soul as constitutive principle of the universe in its totality.<sup>40</sup> This vitalism pushed Bruno in later Italian dialogues to maintain the substantial equality of all souls and the possibility of metempsychosis.<sup>41</sup> Thus, in his first works Bruno stressed that on ‘ideal’ level only one soul exists and that every individual soul is integrated in some sort of cosmic metabolism, as it is linked to inferior and superior universal psychological entities, named world soul, universal intellect, or divine mind.

The qualification of the human mind as third world does away with traditional (Platonic or Aristotelian) definitions of the soul as an autonomously subsistent substance, but at the same time the Neoplatonic framework does not permit a divisibility of (universal) soul or intellect. Thus, exactly as in Plotinus,<sup>42</sup> the unity of all souls explains the origin of the individual souls, but leaves undefined their precise status. Bruno’s vitalism seems to suggest a unity of the souls, which is essentially organic and qualitative, rather than numerical or quantitative. Through the world soul the human soul ‘contacts’ natural reality, through the universal intellect or mind the superior realm of the physically homogeneous universe.

In his later works Bruno reformulated the views of the soul as a third world, universal animism,<sup>43</sup> and the existence of a unique spirit, soul, and/or intellect.<sup>44</sup> And in *Lamp of Thirty Statues*, he endorsed the view that all individual intellects derive from a universal intellect.<sup>45</sup> The differences

<sup>38</sup> *Sigillus*, p. 174. Cf. *Acrotismus camoeracensis*, in Bruno 1879-1891: I.1, p. 177; *De magia*, in Bruno 1879-1891: III, pp. 434 and 436.

<sup>39</sup> *De la causa*, in Bruno 2002: I, pp. 651-652.

<sup>40</sup> *De la causa*, in Bruno 2002: I, pp. 731-732.

<sup>41</sup> *Cabala del cavallo pegaseo*, in Bruno 2002: II, p. 451 (text in Appendix).

<sup>42</sup> See ch. 1.1.

<sup>43</sup> *De rerum principiis*, in Bruno 1879-1891: III, pp. 521-527; *De magia*, in Bruno 1879-1891: III, pp. 408, 413, 432, 463.

<sup>44</sup> *Oratio valedictoria*, in Bruno 1879-1891: I.1, pp. 14-15; *De imaginum compositione*, in Bruno 1879-1891: III, pp. 89-90, 94, 101, 198; *De magia*, in Bruno 1879-1891: III, p. 403; *Theses de magia*, in Bruno 1879-1891, III, pp. 458 and 462; *Lampas triginta statuarum*, in Bruno 1879-1891: III, p. 206; *De minimo*, in Bruno 1879-1891: I.3, p. 136.

<sup>45</sup> *Lampas triginta statuarum*, in Bruno 1879-1891: III, pp. 47-53.

between the individual souls are due to the material dispositions in which they operate, as they are all derived from 'one idea',<sup>46</sup> and eventually are all of 'the same kind.'<sup>47</sup>

A quite particular position was developed by Justus Lipsius (1547-1606),<sup>48</sup> who in his *Physiology of the Stoics* (1604) attempted to harmonize Stoicism with Platonic and Christian notions. Tackling the question of where the human soul originates, Lipsius answered that it comes from heaven, eternal fire, celestial nature and, in a word, from God himself. To reinforce this idea, he relied on Seneca, who affirmed that the human *animus* comes from those beings from which divine beings are established. Lipsius interpreted that these 'divine beings' are heavenly bodies. Then, quoting another passage of Seneca: «The human being is part of the divine *spiritus* as if certain tiny sparks of sacred things were spread over the earth», Lipsius identified these 'tiny sparks of sacred things' with the stars. He explained that the human soul has some kindred with the divine seeds and their essence, that is, the parts of gods. Thus, he showed that the human soul is connected with the nature of gods and, so to speak, with God. In this context Lipsius related the human soul to the world soul, because in his view the Stoics were convinced that the human soul comes from God, that is, the world soul.<sup>49</sup>

Apparently, this means that all souls come from the world soul, but Lipsius warned that some souls are more closely tied to the world soul than the others. Thus, he quoted Apuleius according to whom the world soul is the source of all souls, but he added a stipulation that the rational soul is more closely associated with God. In this way Lipsius called upon the Platonists at crucial moments to justify his interpretation of Stoic doctrines. So he concluded that other souls are also parts of God, that is, of the world soul. But again, as a precaution, he expressed a reservation that it is rather the force and nature which emanates from God.<sup>50</sup>

<sup>46</sup> *Lampas triginta statuarum*, in Bruno 1879-1891: III, pp. 58-60.

<sup>47</sup> *De magia*, in Bruno 1879-1891: III, p. 415.

<sup>48</sup> This subsection is based on Hirai 2011b, pp. 77-79.

<sup>49</sup> Lipsius 1604, III, 8, p. 163.

<sup>50</sup> Lipsius 1604, III, 8, p. 164.

## CHAPTER FOUR

### 4.2. ECLECTIC POSITIONS: PARACELSUS, FERNEL, COMENIUS

Paracelsus's (1493-1541) views on the origin of the human soul are quite puzzling. He claimed that humans have three forms or parts: body, soul and spirit. He distinguished between 'spirit' (sing.), the highest immortal part, and 'spirits' (plur.), vital forces at work in both the world and in human organism. In one of his attempts to explain embryonic development he stated that, upon conception in the womb, a word from God enters the seed and gives the flesh its soul. He also said that it is correct to call the soul a spirit and to call the spirit God's angel in human beings, for we have received both from His hand. The spirit is the highest part of the soul, because elsewhere he stressed that the soul is not the spirit. Surprisingly, he claimed that the soul enters the embryonic body after the spirit has been infused by God's breath – an inversion of the standard sequence. Then the various human faculties result from the process of embryonic formation.<sup>51</sup>

Paracelsus' ideas had a profound and lasting influence on speculative thought about medicine, alchemy and faith. Cases in point are Robert Fludd, Valentin Weigel, Jan Baptiste van Helmont, Joseph du Chesne (alias Quercetanus), and Lazare Rivière.

Jean Fernel's view (1497-1558) on the soul and its origin was inspired to a platonized Aristotelianism *cum* Galenism. Using Ficino's theory of a world spirit, endowed with seminal power, Fernel managed to establish a remarkable concordance between Plato and Aristotle, and between Moses and the Greeks. In the second book of his *On the Hidden Causes of Things* he tried to incorporate Galen in this theater of harmonization.

For Fernel the essential points of Peripatetic philosophy are: the four elements constitute all natural beings; heaven is the fifth element which furnishes them with forms; the circular motion of heaven is the cause of generation and corruption. Interpreting Galen's *On the Formation of the Foetus*, Fernel argued that Galen did not attribute the cause of fetal formation to the seed or a faculty devoid of reason, but to some «very wise and powerful force». Accordingly, the soul is not a material substance, nor can it be reduced to the temperament. Fernel stressed the divine and celestial nature of the soul. In his view the seed contains a formative force and a divine craftsman. The formative force is a cosmic mind, which can be

<sup>51</sup> MacDonald 2007, p. 35.

identified with the Platonic world soul. The seed is not animated, because the soul could not exist in the seed without carrying out any operation. The seed contains spirit and celestial heat, which ground its activity and formative powers.<sup>52</sup>

Galen's *On Semen*, which apparently identifies the molding force as soul, nature or innate heat, is qualified as a merely popular, i.e. unsophisticated discourse. Indeed, on the basis of a suggestive passage in *On the Temperaments*, Fernel concluded that Galen did not consider the formative force of the foetus to be the natural soul or the nature contained in the foetus. Thus, he connected Plato's view of the world soul with Aristotle's doctrine which maintains that forms are sent from heaven, and traced the idea of a divine origin of all forms in Galen.

All forms, including the vegetative and the sensitive soul are 'inspired' by the fifth element.<sup>53</sup> Stone, minerals and 'inferior' animals are generated on the basis of the seed and its properties, while the effects of spontaneous generation receive their soul from the world soul.<sup>54</sup> The 'perfect' animals, man included, are born from the heaven, although through the intervention of the seed.<sup>55</sup> The spirit as vehicle and seat of the soul in specific living beings is governed by and united to the superior spirit of nature.<sup>56</sup>

Fernel interpreted Galen's cosmic mind, derived from the higher bodies, as the divine force that molds the foetus. It is identified as that which regulates life's functions in the human body. What permits this interpretation is the fluid ambiguity of the term *animus*, which in Fernel means mind, soul or spirit. The spirit and its innate heat are supra-elemental, and therefore celestial and divine.

The anthropology of Amos Comenius (1592-1670) exemplifies the particular exchanges between universalist psychology and embryology in the seventeenth century. In Comenius' view Mosaic physics dictates the limits of the possibilities of natural philosophy, but chemical analogies provide actual interpretation.<sup>57</sup> When the Bible states that the soul is breathed into man by God, this does not entail that the soul is made of the same essence

<sup>52</sup> Fernel 1550, II.6, pp. 179-84; for discussion, see Hirai 2011a, pp. 67-78.

<sup>53</sup> Fernel 1550, I.7, pp. 85-100.

<sup>54</sup> Fernel 1550, II.8.

<sup>55</sup> Fernel 1550, II.7, pp. 186-191.

<sup>56</sup> Fernel 1550, II.7, pp. 191-194.

<sup>57</sup> Comenius 1978, p. 92.

as God, because God cannot be divided in particles. Nor is man's soul created as a new being; it is rather the result of a «perfecting process of the animal spirit in man». As the body is formed from pre-existent matter, so the soul is formed from the pre-existent world soul. Both body and soul flow from the substance of the parents. In this way we can avoid many absurdities. However, while the soul's root – vital and animal spirits – derives from the seed, the making of mental spirit (the innermost part of the soul) depends on God, although not in a miraculous manner.<sup>58</sup> Comenius argued that it is God to endow man with an immortal soul, while the body is shaped by the plastic spirit in the seed. The final ensoulment is not a new creative act, but a refinement of the pre-existent vital and animal spirits.<sup>59</sup>

#### 4.3. PRE-EXISTENCE REAFFIRMED<sup>60</sup>

In the political and religious turmoil of the English Civil war, Puritanism, with its fierce Calvinist conceptions of human depravity and suspicion of secular learning, triumphed over more 'liberal' strains of theology. Cambridge became a center of theological resistance to these developments, and several Anglicans there worked to blend the heritage of Plato and Plotinus and the humanism of Ficino into a more expansive oriented Christianity. The Cambridge Platonists denied the dichotomy between faith and reason. A central influence on this group of authors was Origen, whose ideas had been recuperated by Pico and other Florentine Platonists. The Cambridge Platonists rejected the entire Western theological tradition from Augustine through Scholasticism to sixteenth and seventeenth-century Protestantism. They found their heroes in the Greek Fathers and especially in the man Henry More (1614-1687) called «that miracle of the Christian world».

To the Cambridge Platonists deification and pre-existence were mutually reinforcing, if equally heretical, notions. They also found support for their views on natural light in Descartes' conception of innate ideas. More's beliefs in pre-existence actually preceded any formal philosophical treatment, as appears in his *Philosophical Poems* (1647). Then, in *On the Immortality of the Soul* (1659), he devoted two chapters to the subject.

<sup>58</sup> Comenius 1978, p. 163.

<sup>59</sup> This section owes much to Giglioni 1994, pp. 85-86.

<sup>60</sup> This section is largely based on Givens 2010, ch. 7.

More begins by rehearsing the objections to the alternatives. Traducianism cannot work because a spirit is indivisible by definition. Therefore, it cannot derive from parental sources. Creationism entails the charge of injustice if a pure soul is immediately encumbered with a body. Moreover, it would make God complicit in every crime and sin. Finally, the body is made of matters that date back to creation, and, so More suggested, one cannot accord our mortal shell a greater legacy than the soul it houses. Then he revisited the difficulties that Aristotle had first raised and that Origen and the Platonists had tried to resolve: how can a perfect, unchangeable God create anything or otherwise effect change in the universe. Pre-existence does not solve the problem, but in More's view it makes God more benevolent. He invoked the support of Plato, Aristotle, and Cicero, as well of Clement and Origen, Basil, Gregory of Nazianze, Synesius of Cyrene, Arnobius and Prudentius, and, of course, of Augustine. Some of these are doubtful allies.<sup>61</sup>

More's fullest exposition of pre-existence comes to us in his *Divine Dialogues* (1668), devoted to the issue of theodicy. During these years, More's articulation of the theory of pre-existence received a powerful stimulus through his growing interest in and familiarity with Jewish sources. In 1655 the Amsterdam rabbi and author Menasseh ben Israel (1604-1657) visited England and met More and Ralph Cudworth. It is most probable that he discussed with them about the pre-existence of the soul.<sup>62</sup> Menasseh already mentioned the idea in passing in his *Conciliador* (1632), and in *Thirty Questions on Creation* (1635)<sup>63</sup> he gave a broad exposition of pre-existence, maintaining that it can be proved from some places of Holy Scripture,<sup>64</sup> the Jewish tradition and Kabbalistic writings. He stated that without doubt the souls were created on the first day, together with the light. He argued that the souls coincide with the third *sefira*. In *On the Resurrection of the Dead*, the same idea was used by Menasseh as a strong argument in his defence of the doctrine of the resurrection of the dead against the Sadducees.<sup>65</sup>

<sup>61</sup> More 1659, bk. II, chs. 12-13.

<sup>62</sup> Berg 1999, pp. 98-99.

<sup>63</sup> Menasseh ben Israel 1635.

<sup>64</sup> He mentions Deut. 29:14, 15; Isa. 57:16; Eccl. 4:2, 3; Job 38:21.

<sup>65</sup> Menasseh ben Israel 1636.

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Shortly after More's meeting with Menasseh, in 1659, appeared *The Immortality of the Soul*, an issue also discussed in Menasseh's *On the Resurrection*. The two works differ in scope and character. Menasseh's arguments are proposed within the context of traditional Jewish theology, while More's defence of immortality is connected with his belief in the existence of a world of spirits and demons. Menasseh had written his work as an attack against the Sadducees, while More opposed the materialists, featuring Thomas Hobbes. Menasseh's defence of pre-existence triggered a reaction by the Calvinist theologian Johannes Hoornbeeck, who saw this doctrine as a Kabbalist view without any fundament in reason or experiment.<sup>66</sup>

Subsequently More came into contact with Franciscus Mercurius van Helmont (1614-1699) and Christian Knorr von Rosenroth (1636-1689). More and these continental Kabbalists became mutually influential, especially in regard to the question of the soul's origin. Von Rosenroth translated More and in his *Kabbala Denudata* he embraced the doctrine of pre-existence.

Under the influence of van Helmont and others, Anne Conway developed an entire spiritual cosmology in which pre-existence played a key part.<sup>67</sup> Several students came under More's influence. George Rust (c. 1628-1670) and Joseph Glanvill are cases in point.

Rust's apology is largely an argument from definition. If spiritual essence is inherently incorruptible and indivisible, then that very nature makes soul «capable of existing *backward* and *forward*.» One unique twist that Rust gives to his arguments for pre-existence derives from his optimistic assessment of human potential, which is so typical of the Cambridge Platonists. The irrational recalcitrance of those who refuse an early and true instruction is a proof of a spirit already predisposed and shaped beforehand. Then we hear the familiar arguments against alternatives. The soul creation is not a natural process like plant growth, it requires divine participation. Conception under sordid circumstances taints God as an accomplice. Finally, Rust followed More in an allegorical reading of the pre-mortal fall, drawing a parallel between the demotion of «aethereal angels» to the status of «ethereal demons» and the fall of «aerial genii» into «terrestrial men».<sup>68</sup>

<sup>66</sup> Hoornbeeck 1655.

<sup>67</sup> Hutton 1996.

<sup>68</sup> Rust 1661.

Joseph Glanvill presented his *Lux orientalis*<sup>69</sup> as «a full proof, defence, and explication of *Praeexistence*». His critiques of creationism and traducianism reaffirmed and expanded upon the old objections. In the first case, God's participation in sinful intercourse is inconceivable; and God's repeated acts of soul creation violate the words of Gen. 2:2. As for traducianism, if the parent is held to produce another soul, we claim a power unique to that of God; it cannot be fashioned out of bodily material; then, the soul is indivisible, which leaves out the parents' soul as source; finally, the argument from original sin is a travesty, because that would make us guilty of all sins that were ever committed. The reasons of demise of pre-existence are of interest to Glanvill as well: the doctrine is too «deep and mysterious»; after the high Middle Ages Aristotelianism displaced Platonism and thus the more ancient wisdom was sunk and buried.<sup>70</sup>

These resurgent Origenists met with strong opposition. Edward Warren addressed the simple argument that Glanvill, Rust and More had invoked, namely that God's infinite goodness could not accommodate a state in which human souls, for whom it is clearly best to exist, do not yet exist. Rather than begging the question, Warren argued that God's will prevents him from the immediate execution of all the good he could potentially do. Then, he also addressed the argument from justice: only a pre-existence in which humans chose and acted wilfully could explain the apparent injustice of a world population blighted with atheism and superstition. According to Warren, God had no hand in stretching out the cloud of ignorance.

Meanwhile, poets of the era, including Edmund Spenser, Henry Vaughan and Thomas Traherne, explored and celebrated pre-existence in verse.<sup>71</sup>

John Milton was certainly conversant with Origen and his story of pre-existent apostasy, but he explicitly rejected pre-existence because he believed that humans' creation in God's image, recounted in Gen. 1:26, necessarily entailed the creation at that time and place of what most likens us to God – our souls.<sup>72</sup> Later followers, however, identified the rebellious hosts of angels with pre-existent mortals. This reading of the fall of the

<sup>69</sup> Glanvill 1662.

<sup>70</sup> Glanvill 1662, chs. II-IV.

<sup>71</sup> Givens 2010, pp. 170-176.

<sup>72</sup> Milton 1825, p. 189.

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angels as involving mortals in their pre-existent state persisted into the nineteenth century.

The heterodoxy of the Cambridge Platonists left little lasting impact on the course of theological developments. And the introduction of the microscope in biological research, far from buttressing the case for pre-existence, helped to usher in the very scientific revolution that would relegate learned disquisitions on subjects like the nature and origin of the soul to realms far removed from the laboratory. But the subject had not yet exiled from philosophy, and in the seventeenth and eighteenth centuries, pre-existence appeared repeatedly in the efforts of Descartes, Locke, and Leibniz to revisit and improve upon the Platonic inheritance.<sup>73</sup>

<sup>73</sup> Givens 2010, pp. 177-187. See also ch. 8.2-4.

## CHAPTER FIVE

### MODERN ARISTOTELIANISM

Early modern Peripatetic philosophers did not view the issue of the origin of the human soul as particularly problematic. In their psychological works university professors usually commented upon the *On the Soul*, where Aristotle did not discuss the issue. Also in famous controversies, such as those concerning Averroism and the immortality of the individual soul, the issue is usually not touched upon. Averroists held that the organic and sensitive soul of man was transmitted through the seed, while the human intellect is a separate substance that is unique for all human beings. Alexander's psychology, in particular his naturalist view of the human soul, was condemned in 1513 and provoked numerous works demonstrating the immortality of the soul, but in these works, as a rule, the issue was not explicitly addressed. Also in the works of relatively independent authors, among whom Girolamo Fracastoro (1476/8-1553) and Juan Luis Vives (1492/3-1540) the origin is not scrutinized in any detail.

In *Fracastorius or On the Soul* (published after the death of the author), Fracastoro accepted the now canonical doctrine of Thomas Aquinas about the succession of souls in the embryo. Like the vegetative soul is destroyed at the arrival of the sensitive soul, the latter disappears when the intellectual soul is created and infused by God. Fracastoro denied that the coming into being of the intellectual soul is triggered by a bodily disposition already present. It is God himself who predisposes matter.<sup>1</sup>

Vives attempted to reconcile the Aristotelian view of the soul as an organizing and animating principle with the Platonic conception of the soul as an immaterial and immortal substance. Vives mentioned the divine origin of the soul but underlined that he was principally interested in the soul's operations and not in its essence or origin.<sup>2</sup>

Detached from the difficulties concerning the (im)mortality of the soul, an interesting debate developed among the followers of Alexander of Aphrodisias about the origin of the human soul (section 1). Cesare

<sup>1</sup> Fracastoro 1555, fols. 220v-221v.

<sup>2</sup> Vives 1555, pp. 40-42, 130-134.

Cremonini (1550-1631) taught that reason alone cannot demonstrate the immortality of the soul, his adherence to Aristotle implying that he believed in the mortality of the soul. As far as I know, however, he did not touch the issue of the origin of the soul. By contrast, Antonio Rocco, who graduated under Cremonini, devoted an extensive work to the defence of immortality *cum* traducianism (section 2). For the most part pushed by theological reasons, some of the later scholastic manuals and lexica discussed the issue, but without presenting much originality (section 3).

### 5.1. ALEXANDRISM: POMPONAZZI TO ZABARELLA

It is well known that in his *On the Immortality of the Soul* (1516) Pietro Pomponazzi (1462-1525) argued that the intellectual soul is relatively immortal, but unqualifiedly mortal. In this work, he did not address the issue of the origin of the soul. He did instead in a university course on Aristotle's *On the Soul*, probably held in Bologna during the academic year 1517-1518.<sup>3</sup> Discussing *On the Soul*, II, text 59, Pomponazzi first raised the issue whether the sensitive soul is immediately produced by the agent intelligence or else through some instrument. The immediate production of the soul is attributed to John Duns Scotus, who held that God created the soul, and to Avicenna, who thought that the souls were created immediately by the Colcodea or *dator formarum*.<sup>4</sup> According to Pomponazzi both views contradict Aristotle, because the latter rejected creation as impossible. Furthermore, if the production occurs through the mediation of an instrument – such as, the celestial bodies – then God or the intelligence would be the causes of all natural forms. Again, Pomponazzi affirmed that an immediate production by God flies in the face of Aristotle and the theologians. Indeed, Thomas Aquinas argued for the possibility of God producing immediate effects, but actually («de facto») He does not.<sup>5</sup> Then Pomponazzi formulated his final, rather vague, conclusion: «God does not immediately produce the soul itself, but for its production God uses, as His instrument,

<sup>3</sup> The manuscript recordings are in Rome, Biblioteca Angelica, ms. 1317, fols. 192r-247r. The question under scrutiny is published in Nardi 1965, pp. 233-238.

<sup>4</sup> Averroes attributed the term to Avicenna; cf. Aristoteles 1562-1574: VII, f. 304r-v. However, it was Algazel who coined the term; cf. Algazel 1933, pp. 167, 172, and 181.

<sup>5</sup> See *De potentia*, III, a. 7-8.

the celestial bodies, and with God cooperate the inferior intelligences, and in a similar way an individual agent».<sup>6</sup> Finally, he rebutted the objection of those who argued against his treatise *On the Immortality of the Soul* on the basis of Aristotle's text in *On the Generation of Animals* regarding the intellect coming from without. He rejected Alexander's interpretation, who held that the intellect from without was the agent, and not the possible intellect. In Pomponazzi's view the intellect coming from without is the possible intellect, but not because it is created by God or produced by an intelligence: Aristotle established that the intellect comes from without through an 'appropriation' and assimilation, because the possible intellect is not completely material, like the other faculties of the soul, and therefore it does not need the body as 'subject', but as 'object.'<sup>7</sup>

Surprisingly, also in the second half of the sixteenth century participants to the debate on the origin of the soul are found for the most among Alexandrists. They all rejected any form of pre-existence and argued for a celestial origin of the (intellectual) soul. They did so with different argumentations, however.

Simone Porzio (1496-1554) argued that all potencies were contained in the seed, including the possible intellect. Only the agent intellect arrives «ab extrinseco».<sup>8</sup> The divinity of the soul concerns its level of perfection and not its origin. In this case, the seed has a 'divine', that is, celestial virtue capable of generating the sensitive and intellectual soul. This view was (partially) refuted by Giulio Castellani and by Jacopo Zabarella.

Giulio Castellani (1528-1586) endorsed in his *On the Human Intellect* the traditional, Thomistic view of a succession of souls. The seed contains the nutritive soul potentially, which in the embryo becomes an actual «anima altrix». Then the fetus receives the sensitive and the intellectual soul, because man has only one actual soul. The sensitive and intellectual soul are not in the menstrual blood before the arrival of the male seed, as they are generated by an external agent, namely the celestial bodies. On the other hand, the souls cannot exist without a body, nor do they exist in some other body before they arise in the fetus. Castellani explicitly rejected that they exist in the male seed, which is qualified as a «res quaedam redundans et supervacua alimenti mutati.» Souls arise in the body,

<sup>6</sup> Nardi 1965, p. 236.

<sup>7</sup> Nardi 1965, p. 237.

<sup>8</sup> See Porzio 1551, pp. 64-65; cf. Porzio 2012, pp. 42-43.

and therefore it can be stated that they are deduced «e virtute seminis et potentia materiae», but the real causal agent is of celestial origin. In overt polemics with Porzio, Castellani argued that celestial forces act upon the terrestrial matter and actualize the sensitive and intellectual soul. Thus, the triggering cause of the rise of our soul is divine. The seed may be said to contain potentially all souls, as it contains celestial heath. Only in this sense the seed provides to the menstrual blood «the origin and principle of the soul».<sup>9</sup> In line with his Alexandrist convictions, Castellani stressed elsewhere that the intellect which arises in us, is the possible intellect, as the agent intellect should be identified with God.<sup>10</sup>

In his *On the Faculties of the Soul*, Jacopo Zabarella (1533-1589) argued that in generation living beings communicate something of their matter and something of their form. The conception of animals and human beings is similar to the generation of a plant. Once detached from the plant the seed contains something of the matter and something of the form 'with a generating force'. In the strict sense, the human seed consists of male seed and menstrual blood, it is called *conceptus* and it is similar to the seed of a plant, as it contains an active force. This active force originates in the male seed, is capable to generate a new living being that is similar to the parent, and eventually develops into the vegetative soul.<sup>11</sup>

By analyzing Aristotle's texts on the human intellect in *On the Human Mind*, Zabarella argued that Aristotle, speaking about the intellect coming from without, never intended to affirm that the intellectual soul existed and operated before the body. Strictly speaking, every soul has an external productive principle. The soul cannot be educed from matter as the forms of inanimate things, nor is the soul produced by any 'elementary' force. Aristotle clearly stated, in Zabarella's view, that all souls have a celestial and divine productive principle. The animals that arise by propagation and from seed possess a productive force inserted in their seed by the celestial bodies. This force impressed by the heaven is a kind of heat, similar to the fifth element. In this sense all parts of the soul come from without, that is, with respect to their agent principle. However, Zabarella stated that this holds only for the vegetative and sensitive soul, because the rational soul is the only form that is immediately created by God in the body. The rational

<sup>9</sup> Castellani 1568, fols. 62r-65r.

<sup>10</sup> Castellani 1568, fols. 67v-68r.

<sup>11</sup> *De facultatibus animae*, in Zabarella 1590, cols. 649-651 (text in Appendix).

soul only depends upon the celestial principle, as far as this principle prepares the body to receive the rational soul, but the latter is not produced by it.<sup>12</sup>

## 5.2. ARISTOTELIAN TRADUCIANISM: ANTONIO ROCCO

Antonio Rocco (1586-1653), Italian priest and philosophy teacher, was probably the only early modern Italian author to defend the immortality of the rational soul *cum* traducianism. In the third chapter of his treatise on the immortality, published for the first time in Frankfurt in 1644, he stressed that creation is not a sufficient condition for immortality, because then all creatures would be immortal. In turn, that the soul is *generabilis* does not necessarily entail its corruptibility. In his view, creationism contradicts 'experimental' truth, reason and the truth of Catholic faith.<sup>13</sup>

Then, he formulated three conditions for creation: 1. it is presumed to be «ex nihilo»; 2. it is performed by a supernatural agent; 3. it produces something real («terminat ad esse reale»). The first condition does not hold for the soul, because it depends on the body and informs it. If the soul were made from nothing, it could not participate in bodily sufferings and emotions. Rocco rejected the idea that the human soul can be compared with the helmsman on a ship or with the intelligence of a celestial sphere, because the soul is generated from the potentiality of the body. Further, that the soul's creation depends on God almighty does not make sense, because that would entail that the forms of all living beings are created. Rocco admitted that the immortality of the soul depends on a decision by God, but he also stressed that God in the Bible never qualifies the soul as *ingenita* or *ingenerabilis*. By contrast, in the book Genesis mankind is explicitly ordered to be fruitful and to multiply, and the Patriarchs are said to have generated their offspring. Rocco also quoted Augustine<sup>14</sup> for the view that the soul is generated by man through the seed.<sup>15</sup>

<sup>12</sup> *De humana mente*, in Zabarella 1590, cols. 869-870.

<sup>13</sup> Rocco 1644, pp. 13-14.

<sup>14</sup> See *De anima et origine ejus*, I, 8.8: «Neque enim potuit originali peccato esse peccatrix, aut quoquo modo in originali peccato esse, nisi per carnem, si de parente non trahitur»; I, 13.16: «Sed ad hoc peccatum subeundum cur damnata sit, quaerimus, si non ex illa una trahitur, quae in generis humani primo patre peccavit».

<sup>15</sup> Rocco 1644, pp. 15-21.

In the following chapter Rocco demonstrated that man, like all living beings, is generated in its entirety. Indeed, the production of the soul satisfies the principal conditions of generation: 1. it arises out of some subject matter, that is, the seed; 2. it is a substance, which in the case of the soul informs the body; 3. it is performed by a natural agent (man); 4. it depends on due dispositions (when these are lacking the embryo is aborted).<sup>16</sup>

Now, how is the soul present in the seed? Neither as fire in flammable wood, nor as a form in the act. The seed as 'excrement' is an imperfect body, and until it is in the body of the parent, it does not possess a proper soul, but is animated by that of the parent. However, subsequently, when it has left the body of the parent the seed has its own soul, like the apple fallen from the tree. Rocco systematically refuted six objections: 1. the material disposition of the seed (fluid without precise form) does not compromise its animation; 2. although formally an 'excrement', the seed is the principle of life; 3. the seed is not of the same nature as the blood, which is indeed unanimated; 4. the seed nurtures itself with blood, and thus it grows and changes; 5. the seed is subject to generation and corruption, but it survives in virtue of innate heat; and finally 6. - apparently begging the question - the seed is the matter of the soul, and in this sense unanimated, but it possesses a generative force.<sup>17</sup>

In this same, central chapter, Rocco rebutted other objections against the animation of the seed: the soul is the form of an organic body and the seed has no organ, *ergo* (the soul is proportioned to the body); lost seed would entail an abortion (soul is not really man, but like a house under construction); the seed is formally man (*idem*); the rise of more than one embryo out of the same seed (potentially the seed may contain more than one soul); seed detached from the body should continue to live (the seed has a specific aim, it is not comparable with a branch torn away from a tree); the soul in the seed should operate (the soul in the seed structures the embryo); the seed does not have any digestion or physiological structure (the embryo develops in stages); the seed is devoid of any nutritive virtue (it depends on appropriate circumstances); also the putrid matter of spontaneous generation should be animated (these two forms of generation are essentially different); how is it possible that one soul arises from male and female seed (the soul of the embryo is indeed composed; how exactly,

<sup>16</sup> Rocco 1644, pp. 22-29.

<sup>17</sup> Rocco 1644, pp. 30-35.

Rocco is unable to explain); the seed would operate in itself (a quite puzzling reply: the operations of the soul regard individuals).

In the following two chapters Rocco argued that the soul is subject to «magis et minus» and that it is ‘measured’ to the body.

### 5.3. LATER SCHOLASTICISM AND PHILOSOPHICAL LEXICA

Due to their theological interests and education sixteenth and seventeenth-century schoolmen displayed a more keen interest in the origin of soul than their colleagues, mostly laymen, active in the Faculty of Arts. The development of *De anima* comments with questions and the subsequent rise of scholastic manuals favored the discussion of psychological issues that were not explicitly mentioned in Aristotle’s works.<sup>18</sup>

The Jesuit Francisco de Toledo (1532-1596) discussed the issue whether the rational soul is produced from the seminal virtue or else educed from the potency of matter. He stated that both Hieronymus and Augustine seriously wavered about this problem, and then lists four errors: (1) the creation of the soul before the body; (2) a fixed number of (circulating) souls; (3) the creation of souls by the angels; (4) traducianism as formulated by Tertullianus, that is, the soul of the embryo is generated by the soul of the parents. Also the position that Toledo defended, is expressed in four conclusions: (i) the soul does not precede the body (based on the texts of Aristotle; the embodiment is a natural situation; the introduction of the soul cannot be convincingly explained); (ii) the soul is not educed from the seed (the soul is more perfect than matter; the production by matter would turn the soul into a substance that can be split up: the soul would be subsistent); (iii) angels do not have the capability to create; (iv) only God creates the soul. Toledo formulated some doubts about the (moment of) infusion of the soul, but eventually he established that the introduction of the soul coincides with its creation. He thus endorsed the traditional Thomistic position.<sup>19</sup>

<sup>18</sup> Indeed, many ‘traditional’ *De anima* commentaries do not discuss the issue.

<sup>19</sup> Toledo 1575, fols. 160r-161v.

Discussing the issue of the origin of the soul in his commentary on *De anima*, Francisco Suarez (1548-1617) rejected pre-existence as endorsed by the Pythagoreans, Plato and his followers, and some of the Fathers. The (intellectual) soul, being a formal cause, cannot come into being before it executes its goal, that is, 'informing'.<sup>20</sup> Then, he refuted the views that the human soul is of God's substance or educed from matter, and argued that the soul is created because it is immaterial.<sup>21</sup> Finally, he defended the view that the human soul is a unique principle of knowledge, sense and vegetation.<sup>22</sup>

Also in the discussion on the origin of substantial forms in the *Metaphysical Disputations*, the question is only marginally touched upon.<sup>23</sup> Quite unsurprisingly, in the treatise on *Genesis* in his commentary on the First Part of Thomas' *Summa theologiae*, Suarez rejected the view according to which the human soul is made of or by the divine substance (ascribed to the Gnostics and the Manicheans), as well as the creation of the soul before the body (against Origen), arguing for its simultaneous creation and infusion.<sup>24</sup>

In his widely spread *Summa philosophica* Eustachius of Saint Paul (1573-1640) analyzed the origin of the human soul in the fourth disputation devoted to the faculty of generation. From the contemporary medical tradition he accepted that the seed contains a *virtus formatrix*<sup>25</sup> which forms and shapes the fetus. This virtue possesses a vital potency which derives from the parents. It not only shapes the fetus from the seminal matter, but it also draws the nutritive and the sensitive soul out of it.<sup>26</sup> At the end of this disputation Eustachius tackled the issue of the origin of the rational soul and he formulated a fourfold, not particularly original, conclusion: (1) the soul is not, as Tertullianus thought, educed from the seminal virtue; (2) it accepts its being from God; (3) it is not created before the body, as

<sup>20</sup> Suarez 1978-1991: I, pp. 302-310.

<sup>21</sup> Suarez 1978-1991: I, pp. 310-318.

<sup>22</sup> Suarez 1978-1991: I, pp. 318-330.

<sup>23</sup> Suarez 1614: I, disp. XV, pp. 338-339.

<sup>24</sup> Suarez 1622, pp. 135-38.

<sup>25</sup> See ch. 7.1.

<sup>26</sup> Eustachius of Saint Paul 1647, pp. 285-286.

Plato and Origen held; and (4) it is infused into the fetus when the latter is sufficiently developed.<sup>27</sup>

In his philosophical manual Raphael Aversa (1589-1657) devoted a question to the rational soul. He first discussed several positions concerning its essence. He rejected the following definitions: a divine particle, created but situated between God and the angels (a view ascribed to Francesco Giorgio), and an accidental aggregate (as explained by Galen). Then, he confuted the positions of Tertullianus, Zabarella, Pomponazzi, and Jandun, endorsing the traditional definition of the soul as a simple, spiritual substance, which is the form of the body.<sup>28</sup> As to the origin of the soul, he rejected the versions of traducianism held by Tertullianus and Apollinaris, the creation of the soul by the *datrix formarum* (Avicenna), and the creation of all souls at once (Plato, Origen). The soul is a spiritual substance created by God. Remarkably, Aversa argued that the soul's union with the body is caused by the parents with the aid of God's universal assistance.<sup>29</sup>

Analyzing the issue of the moment of production of the soul, Rodrigo Arriaga (1592-1667) first rejected the opinion of Origen, referring to Leo the Great's letter against the Priscillianists and citing the Council of Constantinople that condemned the creation of the soul before its incarnation into the body. The soul is an incomplete entity with an innate appetite for a union with the body. Remarkably, he then proposed the thesis that God is the principal cause of the production of the soul and that the soul of the mother is the instrumental cause. And although he was unable to find any philosophical grounds for this view, he regarded it as true and in conformity with the Catholic doctrine. Thus, that the soul is (at least partially) created by another soul cannot be proved but is true nonetheless. By contrast, it can be demonstrated that the soul is neither created by the angels, nor identified with a divine particle, or a transmigrating entity (Pythagoras).<sup>30</sup>

In their extensive *Philosophical Course* (first edition 1678), the Scotists Bartolomeo Mastri and Bonaventura Belluti analyzed the origin of the soul in a section of their comment upon Aristotle's *On the Soul* (first published

<sup>27</sup> Eustachius of Saint Paul 1647, pp. 326-327.

<sup>28</sup> Aversa 1650, pp. 944-948.

<sup>29</sup> Aversa 1650, p. 951.

<sup>30</sup> Arriaga 1632, pp. 630a-31a.

in 1640). As the majority of their fellow schoolmen they accepted without further argumentation that the vegetative and the sensitive soul are drawn from matter, and then focused on the rational soul. They rejected the view that the rational soul is created by some intelligence (Avicenna) or before the body (Origen). The soul is created by God alone and only in the body, which is in accordance with the teachings of Scotus (*In Sent.*, II, dist. 17, q. 1; IV, dist. 1, q. 1), Aristotle (*Metaph.*, XII.19; *De gen. an.*, II.3), the Council of Braga, and Leo the Great's Letter to Turibius.

Then Mastri and Belluti discussed a number of objections to this view: (1) matter possesses a natural capability to receive and thus to generate the rational soul; (2) man is able to generate dispositions in the soul, and thus the soul itself (based on *Metaphysics*, VII.30); (3) perfect animals generate their own simile; (4) God can produce only one effect; (5) what is perfect is capable to produce its own simile; (6) inferior entities are created by superior ones; (7) God stopped working after the work of six days (Gen. 2: 7).<sup>31</sup> These objections are all solved with philosophical argumentations, for the most based on the unique position of spiritual beings in the creation.

The Jesuit Thomas Compton Carleton (1591-1666) discussed the origin of the soul under the headings of «other questions about the rational soul». It does not come as a surprise that Compton rejected transmigration and Averroism. Moreover, he held against Plato and Origen that the rational soul is neither produced by the parents nor before the body. He then critically discussed Thomas Aquinas' view of the succession of souls in the human embryo. He argued that the contrary seems more probable, because otherwise man would be first a plant and an animal. Furthermore, an infinite series of souls would arise because every stage of embryonic development needs a distinct soul. However, on the other hand, how can the seed produce a rational soul? Compton argued that the development of the human embryo does not require any gradualness. Like death changes man into a corpse, and like at an elder age man might suddenly loose important physical and psychological capabilities, during the first months of a human being these same capabilities may arise at once. The human embryo possesses from the very start the same soul, but due to accidental dispositions it is not capable to exercise all its possible functions.<sup>32</sup>

<sup>31</sup> Mastri-Belluti 1727, pp. 27-28.

<sup>32</sup> Compton Carleton 1698, pp. 501-503.

Many later schoolmen did not analyze the issue concerning the origin of the human soul in any detail. Some of them did not even touch upon the topic, among whom Alonso Peñafiel, Sebastian Izquierdo, and John of Saint Thomas.<sup>33</sup> Aversa's contemporary Pedro Hurtado de Mendoza simply conformed to the ruling doctrine of the seminal origin of the material soul, and the succession of forms during the gestation of the fetus.<sup>34</sup>

By the 1650's criticism of Peripatetic philosophy had grown much sharper, and some of the philosophical manuals became distinctly un-Aristotelian or even anti-Aristotelian in their tone and outlook. This was particularly true of the sections on natural philosophy. The rise of the new science had released a surge of new discoveries, which often clashed with central tenets of Aristotelian physics. A typical example of the rising class of un-Aristotelian courses in philosophy is that of Emanuel Maignan (1601-1676). Unfortunately, however, as for the origin of the human soul, also Emanuel Maignan conformed to the late-scholastic vulgate.<sup>35</sup>

Also the philosophical *lexica* do not provide any significant, original visions. Castanaeus, Scherzer, and Volckmar did not discuss the issue,<sup>36</sup> while Goclenius merely provided a summary of all ancient opinions on the soul.<sup>37</sup> The Cartesian-minded Chauvin (1692) simply stated that the rational soul is a thinking substance which can only come into existence through creation, as it is 'not generable'.<sup>38</sup> By contrast, Micraelius discussed the issue in some detail.

Under the entry «anima», Micraelius first rejected a long series of views on the essence of the human soul, which has been specified as: blood (Empedocles), fire (Hipparchus, Zeno), air (Anaximenes), a mixture of elements (Epicurus), an extended substance sustaining the body (Antonio Rocco), temperament or harmony (Galen), number (Pythagoras), and etherial substance (Heraclitus). Micraelius simply defined the soul as an inner form and he argued that every soul, including the human, arises «per traducem». Matter and all forms have been created by God in the Creation, and subsequently they are both capable of reproducing themselves. Thus,

<sup>33</sup> See Peñafiel 1655; Izquierdo 1659; John of Saint Thomas 1678.

<sup>34</sup> Hurtado de Mendoza 1624, p. 481.

<sup>35</sup> Maignan 1673, p. 523

<sup>36</sup> See Castanaeus 1645, Scherzer 1658, Volckmar 1675.

<sup>37</sup> See Goclenius 1613, pp. 103-105. For Goclenius, see also the chapter 6.2, however.

<sup>38</sup> Chauvin 1692, entry «anima».

## CHAPTER FIVE

the soul is not made of the divine substance, nor is it a particle of the latter, as the Gnostics and Manicheans thought. The soul is neither created daily from nothing, as the Catholics and Calvinists hold, nor educed from the potency of matter or generated before the body. The human soul descends from the soul of the parents in virtue of the reproductive force of the seed.<sup>39</sup>

<sup>39</sup> Micraelius 1662, entry «Anima», cols. 120-124, in particular col. 123: «sed descendit à generantis anima sui multiplicativa beneficio seminis». This line is clearly inspired by Sennert's ideas; see ch. 7.5.

## CHAPTER SIX

### PROTESTANT DISPUTES

The sixteenth-century Protestant Reformation involved a radical reappraisal of the whole of the Western theological tradition. It also left its mark on the understanding of the embryo and its soul. As a rule, in the doctrine of the origin of the human soul Lutheran theologians defended traducianism and rejected creationism,<sup>1</sup> while other reformed theologians, exception made for some old masters, rejected both pre-existence and traducianism.

The reasons for the Lutheran insistence on propagation *per traducem* were various. Lutheran theologians read the biblical command to «be fruitful and multiply» as a clear argument for traducianism. Then, a God who kept busy constantly creating human souls was not readily compatible either with the conviction that God no longer intervened in the orderly workings of his Creation. Lutherans inclined towards a unified view of Creation. Man was God's favourite creature, but he was nevertheless subject to the same rules of nature as animals and plants. The principal drive behind the Lutheran advocacy of traducianism, however, was the interpretation of original sin. How could the human soul be subject to Adam's condemnation if it did not ultimately descend from Adam's soul, but was created anew?

During the sixteenth century the origin of the soul was intensively discussed among Lutherans, leading to very different positions (sections 1-3).<sup>2</sup> And while Calvinists opted usually for creationism (section 4), a variegated group of authors, including Luther, radical Anabaptists and later seventeenth-century English authors, argued for the mortality of the soul, or for a 'soul sleep' in the period running between physical death and resurrection, a position that had significant implications for the issue of the origin of the soul (section 5).

<sup>1</sup> For a detailed, but not very original defence of this thesis, see Thumm 1622; cf. ch. 7.5.

<sup>2</sup> For references on the discussion of the origin of the soul among Lutherans, see Freedman 2004, p. 791, note 1, p. 807, and the bibliography on pp. 819-827.

6.1. PHILIP MELANCHTHON AND GOELENIUS' *PSYCHOLOGIA*

Philip Melanchthon (1497-1560) had a deep knowledge of contemporary anatomy, but met serious difficulties in harmonizing Scripture and philosophy with medicine. In 1534 he wrote to Leonhard Fuchs that he had come to realise that the soul could not be properly understood without a knowledge of the workings of the body.<sup>3</sup> He entertained the view of the tripartite soul known from the works of Plato, Galen and Aristotle, maintaining a strict division between the organic soul (vegetative and sensitive) and the rational soul. The latter is created by God and inserted into the fetus at about forty days after conception, while the vegetative and sensitive soul is formed out of the semen. Melanchthon endorsed the Aristotelian adagio that man generates man, but this is not according to the rational soul. Therefore, it is according to a form of the body, a distinct organic soul.<sup>4</sup> He was agnostic about the precise location of the rational soul, stating that it is effective in every part of the body.<sup>5</sup> Melanchthon's substantial exposition of the human body as a necessary preliminary to understanding the soul reflects the growing reputation of anatomy in the sixteenth century.<sup>6</sup>

In 1590 Rudolph Goelenius (1547-1628) published the first edition of a collection of dissertations and treatises, partially discussed and defended under his direction in the University of Marburg, entitled *Psychologia*.

The first treatise, a dissertation discussed on 30 January 1581 by the later jurist Hermann Vultejus, is centered on the question whether the human soul is transmitted through the semen or created by God. After considering several traditional options, such as, the opinions of Origen and the Pythagoreans, the Stoics, the Manicheans, and the early Fathers who endorsed traducianism, Vultejus concluded that the creation of the soul is 'more probable' than its transmission through the seed. He based this view on the following arguments: (1) the soul is incorruptible; (2) the soul cannot emerge from matter; (3) the soul cannot arise from the body, nor from another soul; (4) no agent is able to act beyond its power; and finally (5) neither an actual nor a potential presence of the soul in the semen is con-

<sup>3</sup> *Epistola* 1182, quoted in Nutton 1990, p. 147.

<sup>4</sup> Melanchthon 1548, fols. 11v-12r.

<sup>5</sup> Melanchthon 1548, fols. 16r-18v.

<sup>6</sup> This was also due to theological reasons, because according to Lutheran theology not just the soul, but the whole man is the subject of grace. For discussion, see Kusukawa 1995.

ceivable. Then the author rebutted several objections, among which the transmission of original sin and the alleged presence of the souls of Jacob's offspring in his limbs (Gen. 46: 26). Furthermore, the likeness between parents and children does not necessarily entail traducianism, because this similitude is based on temperament. The author also defended the essential unity of the vegetative, sensitive, and intellectual souls, as the former two are not proper souls, but rather predispositions.<sup>7</sup>

Also the next text, written by the French reformed theologian Franciscus Junius, regards the transmission of the soul by the parents. After a short introduction where he drew a comparison between the traducianism held by Epicurus and the Luciferiani, on the one hand, and the creationism of Plato, Aristotle, and the Fathers, on the other, Junius formulated some arguments in defence of traducianism: (i) the general law of creation, (ii) the reproduction as it occurs in the other creatures, (iii) the testimony by the Holy Writ, and (iv) the transmission of original sin. After a brief overview of the arguments for creation, he then argued that the semen is not vital by itself, but only in virtue of the divine benediction, through which it participates in life. All living beings may be generated, but not the intellectual soul. The origin of the soul displays only a superficial similitude with the propagation of fire or sparkles, and the alleged end of God's creative activity after the sixth day of Creation (Gen. 2:2-3) is openly undermined by the perpetual activity of God in the New Testament (John 5:17).

The most intricate issues are raised by the transmission of original sin, however. If God can only create perfect souls, whence the 'defect' in our souls? Junius argued that sin regards not only the soul, but man as a composed being. Furthermore, the idea that man reproduces himself according to the species merely entails that the semen is predisposed to receive the rational soul. Thus, human reproduction presumes an interplay between the male and the female, on the one hand, and divine intervention, on the other. This does not mean that God is involved in man's sinful activities, because He is not responsible for the reproduction of the body. Finally, the unity of the human soul is 'ambiguous', as the vegetative and sensitive souls are transmitted by the semen, while the rational soul is infused.<sup>8</sup>

<sup>7</sup> Goclenius 1597, pp. 1-26.

<sup>8</sup> Goclenius 1597, pp. 48-76.

Subsequently, the same issue was tackled by the Swiss theologian Johann Jakob Grynaeus. Without presenting new arguments, also Grynaeus attempted to reconcile creationism with the transmission of original sin.<sup>9</sup>

A very extensive analysis of the issue of the origin of the soul is present in Johann Jakob Colerus' contribution, previously published in 1586.<sup>10</sup> Colerus formulated thirty-two arguments for the creationistic view. He first listed biblical passages sustaining the idea of the immediate creation of the soul: the creation of Adam and Eve, God as the 'father of spirits' (Heb. 12:9), the creation of the soul in later books of the Old Testament (Job 34; Sap. 14). Then, he passed to philosophical and ethical reasons: the Bible does not view early abortion as a crime (the Septuagint version of the only Biblical reference, or at least allusion, to abortion in *Exodus*<sup>11</sup>); the generation of «simile ex simili»; the idea that the cause cannot be inferior to the effect; doubts about the role of male and female seed in the production of the soul; forms are not divisible; generation refers to material entities only; all entities that are generated also perish; the issues raised by the generation of the soul from the souls of the parents; the (accidental) loss of semen would involve a loss of soul; the problematic 'development' of the soul from the male and female ejaculations; the absurd attribution of rational souls to aborted embryo's and monsters; the souls of children would be more or less identical to that of the parents; Jesus Christ would have an incomplete soul; and finally, the soul would possibly 'grow' and evolve with the body. Creationism is confirmed by a host of Fathers and later authors, including several contemporary authors, such as, Levinus Lemnius and Jean Fernel. Colerus concluded his treatise with an extensive reply to more than twenty objections to creationism.<sup>12</sup>

Goclenius' collection also contains a brief excerpt from Julius Caesar Scaliger's (1484-1558) *Exercitationes* against Cardano. In this work, Scaliger attempted to solve the riddle of the relation between the 'biological' and the rational soul, adopting the view of Themistius that the (ra-

<sup>9</sup> Goclenius 1597, pp. 76-87.

<sup>10</sup> See Colerus 1586; in Goclenius 1597, pp. 87-164.

<sup>11</sup> The Septuagint offers the following translation of Ex 21:22-23: «And if two men strive and smite a woman with child, and her child be born imperfectly formed, he shall be forced to pay a penalty: as the woman's husband may lay upon him, he shall pay with a valuation. But if it be perfectly formed, he shall give life for life».

<sup>12</sup> Goclenius 1597, pp. 118-164.

tional) soul is the architect of its own house.<sup>13</sup> Scaliger attributed to the seed an intrinsic plastic force, which enables it to build the fetus' bodily structure and to articulate the organs.<sup>14</sup> In plants and animals the father's soul is divided and imparted to the seed while remaining undamaged.<sup>15</sup> However, this self-multiplication cannot apply to the generation of humans. Scaliger also devoted a specific section to the origin of the (human) soul.<sup>16</sup> He rejected the traditional succession of forms or scale-like actualization, because, so he argued, the annihilation of the (first) form would entail the destruction of the fetus. He did not accept the view that the seed contains the intellect potentially either, because in that case the seed would be a human person already, which is simply absurd. According to Scaliger a newly created soul descends from heaven when the fetus is sufficiently articulated.<sup>17</sup> Thus, the relationship between the soul that shapes the body and the rational soul remains utterly uncertain.<sup>18</sup>

Subsequently, Goclenius presented Girolamo Zanchi's (1516-1590) *On the Origin of the Souls*.<sup>19</sup> After a succinct overview of traditional heterodox views (Origen, Messalians, Stoicism, Apollinaris) Zanchi presented three main theses: (1) the soul does not derive from the angels, God or some celestial substance, nor are all souls created at the Creation; (2) creationism is more probable than traducianism; (3) the souls are created when the body has reached a sufficiently high level of organization. Remarkably, Zanchi frequently invoked not only Catholic authorities (for the most Thomas Aquinas),<sup>20</sup> but his analysis also reveals a more than superficial knowledge of Ficino's *Platonic Theology*.<sup>21</sup>

<sup>13</sup> Scaliger 1576, f. 15v. See also ch. 1.1.

<sup>14</sup> See Giglioni 1999, pp. 318-22; Sakamoto 2012, ch. VI.

<sup>15</sup> Scaliger 1576, f. 16r.

<sup>16</sup> Scaliger 1576, exerc. 290, section 2; for discussion, see Sakamoto 2012, pp. 153-156.

<sup>17</sup> Scaliger 1576, fols. 361v-362r.

<sup>18</sup> For later reactions, among whom Johann Freitag and Francis Glisson, see Sakamoto 2012, pp. 159-160.

<sup>19</sup> Goclenius 1597, pp. 168-268; also in Zanchi 1602, pp. 758-789.

<sup>20</sup> See Donnelly 1976.

<sup>21</sup> See, for example, Goclenius 1597, pp. 202 and 240-241.

Petrus Monedulatus Lascovius's († 1587) note on traducianism for the most shares the arguments in favor of creationism with the treatises discussed earlier in this section.<sup>22</sup>

By contrast, Timothie Bright's (ca. 1551-1615) *Animadversiones de traduce* is a downright defence of traducianism, as only the common origin of all souls in Adam offers a convincing explanation of the transmission of original sin to the entire mankind. Bright explicitly argued for the transmission of a 'seminal soul'. Only Adam's soul had a celestial origin. After his fall, the soul is transmitted through the male and female seed.<sup>23</sup>

Also Johann Havenreuter (1548-1618) embraced traducianism in his contribution to Goclenius' volume: the soul is potentially contained in the seed and it becomes an actual soul in a physically organized body. Of particular interest are his confutations of two main objections against traducianism: (1) the soul has an operation that is independent from the body; (2) if the soul were transmitted through a bodily seed, it would be a mortal nature. As for the first issue, he replied that the separation of body and soul is a consequence of sin. Moreover, if the soul existed in the fetus from the moment of conception, it would be inert for quite a long time. As regards the second objection, Havenreuter stressed the exceptional position of the human soul, being the only form to survive the collapse of the union between matter and form. Aristotle and biblical passages (Gen. 1:28) confirm that man is generated by the entire man.

Havenreuter defended traducianism also in his *De anima* commentary, thus drawing the attention of the Roman Congregation for the Index.<sup>24</sup>

Most interesting for future developments is the brief note on Goclenius' oral teachings on the origin of the soul. Goclenius defended the view that the entire man, including his soul, is contained in the seed, which is defined as its vehicle.<sup>25</sup> However, the arguments are presented in a hypothetical way<sup>26</sup> and eventually Goclenius expressed serious doubts about this doctrine and attempted to steer a middle course between creationism and traducianism.<sup>27</sup> Yet, traducianism will be endorsed without hesitation in

<sup>22</sup> Goclenius 1597, pp. 270-331.

<sup>23</sup> Goclenius 1597, pp. 363-364

<sup>24</sup> Havenreuter 1605; Spruit 2014, section 3.3, under press.

<sup>25</sup> Goclenius 1597, pp. 377-378.

<sup>26</sup> Goclenius 1597: «si mihi pro defensoribus traducis esse pronuntiandum dicerem».

<sup>27</sup> Goclenius 1597, pp. 380-381.

Goclenius' later *Physical Disputations*, and it will trigger Otto Cassmann's confutation in his groundbreaking *Psychologia*.<sup>28</sup>

## 6.2. TRADUCIANISM CHALLENGED: OTTO CASMANN

In his *Psychologia* (1594), Casmann tackled the «thorny and scrupulous» issue (repeating the very words of the first disputation discussed in the previous section) of the animation of the embryo. He formulated the dilemma whether the fully developed embryo is animated by God, or whether the soul is transmitted at the very moment of conception through the seed by the soul of the parents.<sup>29</sup> He then quoted the opinion attributed in the previous section to Rudolph Goclenius. Both soul and body of the parents produce the seed, in such a way that the immortal seed of the soul constitutes the principle of the future soul of the offspring. Thus, from the mixture of male and female seed derives man, made up of body and soul. However, the rational and immortal soul arises from the seed produced by the soul, only in virtue of the divine verb.<sup>30</sup> And yet, although Cassmann held his master Goclenius in high esteem, he cannot accept this view. He formulated five objections.

(1) If the seed is produced by the soul, it must be of the same substance as the spiritual soul or else it is its 'excrement'. The seed cannot be produced by the substance of the soul, because the latter is «simple and indivisible». Obviously, the seed is not an excrement either, as the latter is produced only by entities that are fed with aliments. Now, the soul is not fed by aliments, because it is utterly unclear whether the latter are substantial or accidental, or whether they are bodily or spiritual.

(2) What is indicated as the seed of the soul should be either substantial or accidental, and again this issue cannot be settled. It is not a spiritual substance because the latter cannot be generated by the soul nor arise «ex nihilo». Furthermore, seed thrown out by the uterus would still contain a spiritual, immortal essence, which is utterly absurd. Then, the seed from which the substance arises is related to the fetus as matter. By consequence, seed from the soul cannot be merely a force and faculty («vis ac virtus»),

<sup>28</sup> See the following section.

<sup>29</sup> Casmann 1594, p. 204.

<sup>30</sup> Casmann 1594, p. 205 (texts are in the in Appendix).

lest it is also a substance. Forces and faculties inhere to subjects. Now, the 'seed of the soul' cannot be an immaterial force or faculty without an underlying subject. Thus, being neither substance nor accident, it is nothing at all.

(3) If there is seed of the soul, 'born' from the substance of the soul, it should exist potentially before the spirit or soul itself, because every seed is potentially that which arises out of it. Indeed, the author under scrutiny defines it as «the principle of the future soul of the offspring». This entails that the potential soul in the mother's uterus is actualized by the force of the divine benediction. Indeed, it is inconceivable that a completely perfect soul arises immediately from the seed of the soul. Now, how can the formative faculty (*vis formatrix*) as well as the spirit in the seed both constitute a ready 'home' (*domicilium*) and instrument? In case of an abortion the soul would perish with the body or else survive perpetually without the body. In the latter case, it is excluded from the future resurrection.

(4) If the soul is transferred from the seed of the soul to the offspring, the seed is either corruptible or incorruptible. In the former case, the seed is not immortal and thus the soul will be corruptible. In the latter case, it cannot perish, as instead happens frequently. In other words, the seed would be always fruitful or not always. In the latter case, it necessarily perishes.

(5) If the soul of the offspring arises from the seed of the soul, it arises either from both male and female seed, or else from one or the other. In the former case the soul would be 'bi-sexual', that is, composed from seeds and spirits of both sexes. Apparently, the author (that is, Goclenius) seems to endorse this view, because he not only endorsed the composition of the soul from matter and form, but even from two different matters. The soul cannot originate in the seed of one of the parents, either, because then the offspring would be most similar to the parent, which is contradicted by experience.

### 6.3. TRADUCIANISM ESTABLISHED: GOCLENIUS AND TAURELLUS

In book VI of Goclenius' *Physical Disputations* (1598), the first disputation on the origin of the soul was chaired by Goclenius himself. Rejecting pre-existence, transmigration, and the creation of the soul on the moment of conception, the author formulates his central thesis: when man is generated, also his soul is generated; the latter is potentially contained in the seed, then reaches full actuality. This doctrine is confirmed by the creation of

Eve (Gen. 2:22), but also by Adam's son which was born in his image and similitude (Gen. 5:3). If the soul does not arise with the body, the transmission of original sin cannot be explained. Indeed, a soul created by God would be without sin. And as original sin does not consist in actually contrasting God's will, but in an innate habit, it cannot depend upon the body. That the 'entire' man is the subject of sin, is confirmed in Ps. 51: 5 («Surely I was sinful at birth, sinful from the time my mother conceived me»)<sup>31</sup> As body and soul are the subject of sin, both derive from the parents, because the accident is not transmitted without the subject. Otherwise, God would be the author of sin. Furthermore, Gen. 2:2-3 (God stopped working after the sixth day) and Gen. 46:26 (the sixty-six 'souls' coming out of Jacob's limbs) confirm traducianism. Thus, the intellectual soul is potentially contained in the semen. This view has biblical<sup>32</sup> as well as philosophical grounds, because Aristotle argued that man is generated by man.<sup>33</sup> Thus, neither the body generates the body, nor the soul generates the soul, but the 'entire' man (*totus homo*) generates an entire man. This does not entail that God has no role at all in the production of man; however, His role is not a particular, immediate and new creation, but it consists in an «almighty benediction and a constant and perpetual conservation».<sup>34</sup>

The second disputation, chaired by Nicolaus Taurellus (1547-1606),<sup>35</sup> confirms the traducianist view defended in the first one: the nature of all animals is ordained in such a way by God that they are able to reproduce themselves, according to both their body and their soul. If man were able to produce only his body, his reproduction would be seriously compromised.<sup>36</sup> God gave Adam an entire soul (*integram animam*), and this entire soul is reproduced by the subsequent generations. Once again, this is the only doctrine that guarantees the transmission of original sin, without making God responsible for it. The souls created by God for Adam and Eve were pure and free of all sin. The impurity of our souls is due to the disobedience of the first men and not to the union of the soul with the body, as

<sup>31</sup> Goclenius 1598, pp. 390-392.

<sup>32</sup> Gen. 22:27; Ps. 139: 15-16; Job 20:9, 11, 12; see Goclenius 1598, p. 393.

<sup>33</sup> *Physics*, II.2, textus 26.

<sup>34</sup> Goclenius 1598, p. 395.

<sup>35</sup> See also Freedman 2004, p. 808.

<sup>36</sup> Goclenius 1598, p. 396.

the latter is ‘incapable’ (*non capax*) of sin or virtue.<sup>37</sup> And for this view the author finds numerous confirmations in biblical texts.

With the benediction of God Adam generated his children in his own image and likeness. And also Eve’s seed, that was destined to destroy the head of the serpent,<sup>38</sup> and the seed of Abraham<sup>39</sup> should be interpreted in terms of the entire man. The infusion of the soul into Adam was a unique event, which did not recur in the generation of later men.<sup>40</sup> Paul’s statement that «in him we live and move and have our being» (Acts 17:28) does not mean that man is of God’s substance. The distinction between body and soul in the Letter to the Hebrews is apparent, as flesh (*sarx*) in the Holy Writ usually represents man in his entirety. Also the spirit as a gift of God in Eccl. 12, does not entail that the soul is ‘heavenly’ infused.<sup>41</sup>

Further arguments derive from the generation of animals, as explained in philosophy and science. The immortality of the human soul is not due to its divine creation but to a divine ordination of nature. Also the corruptibility of the body does not entail the creation of the soul, because Adam’s body was immortal before the Fall. That the generation of souls is not completely clear to us in every detail, does not mean that we should plainly reject it. The creationist adversaries do not concord on the moment of infusion, and a precise moment cannot be reasonably established.<sup>42</sup>

Then the author turned to Aristotle’s view that all effects of generation are corruptible and to his famous thesis that only the mind comes from without (*De gen. an.* II.3). Now, first of all, the mind mentioned in this famous text, as well as the mind referred to in *De anima*, should not be detached from the other faculties of the soul. In Aristotle’s view the capabilities of sense and motion do not survive, but he did not reach a definite position on their precise relationship with the superior faculties. This means that we should use different arguments and reach a conclusion by ourselves. First of all, the existence of more than one soul in man (vegetative, sensitive, intellectual) does not have any ground. A separable mind, clearly split from the other faculties, could not persist in the body, and its

<sup>37</sup> Goclenius 1598, p. 397.

<sup>38</sup> Gen. 3:14-15.

<sup>39</sup> Gen. 13:15-16; cf. Gal. 3:16.

<sup>40</sup> Goclenius 1598, pp. 398-400.

<sup>41</sup> Goclenius 1598, pp. 400-402.

<sup>42</sup> Goclenius 1598, pp. 402-404.

union with the body would be utterly inconceivable. In effect, this divine soul would be incapable of intellectual knowledge and moral behavior. The mind is thus to be interpreted as the entire soul of man, which survives with all his capabilities, although several are not active in the period between death and the resurrection. And this comes down to an eventual confirmation that the human soul originates in the seed.<sup>43</sup>

#### 6.4. CALVINIST ORTHODOXY

As a rule, later Calvinist theologians, scientists, and philosophers endorsed creationism and rejected traducianism, pre-existence, and the creation of the soul by the world soul or a celestial intelligence.<sup>44</sup> Amandus Polanus (1561-1610) and Gijsbert Voet (1589-1676) are illustrative examples of the standard view of seventeenth-century orthodox Reformed theology.

Polanus started his discussion of the origin of the soul with the definition of the latter. In his view, the human soul is the biblical «spiritus Dei» (Job 27:3) or *spiraculum vitae* (Gen. 2:7), which has been correctly defined by Aristotle as the first *entelecheia* of an organic body. Thus, it is an immaterial substance (against Tertullianus) and a unitary entity in every individual man (against the plurality of forms and Averroism).<sup>45</sup> As for its origin, Polanus formulated three main theses. (1) The soul is not uncreated (only God creates; the qualification of ‘uncreated’ coincides with that of ‘infinite’), nor does it transmigrate from one body to another (contradicts the Holy Writ and the Fathers; entails a presumed circle of beatitude and misery which is absurd); moreover, it is created by God (Gen. 2; Num. 16:22; 27:16 and other biblical passages), and it is neither created by the angels (man is created in the image of God) nor is it generated by the parents (the soul is indivisible, inorganic, and incorruptible). (2) The soul is neither produced from the divine substance (the soul is a creature and thus finite), nor by the world soul or any celestial substance (the soul has no link at all with the heavens), nor from the souls of the parents or the corporeal semen (no spirit can arise from flesh); it is created «ex nihilo». (3) The soul

<sup>43</sup> Godlenius 1598, pp. 404-408.

<sup>44</sup> See, for example, Deusing 1645, Sand 1671, and Heymelius 1674. See also Freedman 2004, p. 807.

<sup>45</sup> Polanus 1655, pp. 588-594.

is infused into a sufficiently organized body and not created before the body (the soul in the body is more perfect than the separate soul; the body is its ‘tabernaculum’, that is, its dwelling place).<sup>46</sup>

Also Voet rejected pre-existence, the view of the soul as a part of the divine substance, and traducianism. Pre-existence, which he attributes to Plato, Menasseh ben Israel and the ancient followers of Origen, is rejected by means of biblical and philosophical arguments: pre-existent souls would not be acquainted with sin; the union of body and soul would be unnatural; the union of soul and body is more perfect than the separate soul; the status of the pre-existent soul is utterly incomprehensible as it cannot be ‘in via’ (on earth), ‘in patria’ (in heaven), or in any hypothetical ‘third’ state. The soul as part of the divine substance is simply rejected as heretical, while creationism is defended against traducianism: God’s role in the production of the soul is confirmed by the Bible (Gen. 2:7; Eccl. 12:7; Hebr. 12:9; Zach. 12:5); the conception of Jesus Christ excludes traducianism; corporeal forces are incapable to create; a transmitted soul would depend upon the body and die with it. Finally, Voet revealed the uncertainty of Augustine, Luther, and Melanchthon on the origin of the soul, but traducianism, which he attributes to Sennert, Sperling, Havenreuter, Libavius, and Taurellus, clearly contradicts the consensus of both Catholic and Protestant fathers and doctors.<sup>47</sup>

Voet explicitly admitted that creationism raises serious problems for the transmission of original sin. Elsewhere in his disputations, he tackled this issue and defended the thesis that original sin is transmitted ‘through generation’, attributing distinct roles to Adam (as ‘head’ – *caput* – of the entire humanity), individual men (as efficient causes), the parents (as ‘plastic force’), and God (in His providential role). The *causa per se* of sin is neither God as Creator, nor is it the union of man and wife or the soul of the parents. With a remarkably subtle way of reasoning Voet argued that, although the substance of the soul of individual men does not derive from Adam, it is undeniable that the whole man, both his body and his soul, ‘consists’ in Adam, that is: not only morally through the covenant of man with God, but also naturally, as in the root and principle of the origin through generation. Thus, man’s individual soul ‘was’ and ‘is’ in Adam

<sup>46</sup> Polanus 1655, pp. 594-598.

<sup>47</sup> Voet 1648-1649: I, pp. 796-800.

as to its origin. And as God established the union of body and soul as an 'ordinary law of generation', the whole man, as a person made of body and soul, is the subject of sin.<sup>48</sup>

### 6.5. MORTALISM

A strand of Protestant theology denied the soul's natural immortality, claiming that according to Scripture, the whole individual dies or, at least 'sleeps', to be resurrected at the Last Judgment. The theory that the soul is sleeping a 'dreamless sleep' between death and resurrection, arose in reaction to the official consecration of purgatory by the Council of Florence (1439). Martin Luther was the first to embrace this doctrine on the basis of a literal interpretation of certain biblical passages, and in sharp reaction to the practice of indulgences. Luther rejected the traditional doctrine of the immortality of the human soul, in particular he criticized it as a *philosophical* doctrine.<sup>49</sup> Apparently, he fell into contradiction because he rejected the dogmatization of Aristotle's philosophy in Catholic theology, and at the same time he was convinced that Aristotle propagated the mortality of the soul.<sup>50</sup> As a rule, his rejection of the immortality of the soul was not endorsed by his followers.

Aware of how dangerous the theory of sleep or death of souls could prove in the hands of sectarians present within the Reformed Churches, Calvin, in line with his Platonic sympathies and his theory of predestination, decided to take a stand. In the 1536 edition of *Christianae religionis institutio*, he stated that at the time of death, once abandoned the human body, the soul attained to heaven or hell, where it leads an isolated existence of joys or sufferings, being immune to the influence of prayers or suffrages. Calvin returned on the issue in 1545, when he published *Psychopannychia*,<sup>51</sup> a pamphlet directed against the heresy of the sleep or death of the soul, widespread among the Anabaptists and anti-Trinitarians active in Geneva.

<sup>48</sup> Voet 1648: I, pp. 1093-1117.

<sup>49</sup> See Salatowski 2006.

<sup>50</sup> Althaus 1926.

<sup>51</sup> Calvin 1545.

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The doctrine of the mortality of the soul became central in the anthropology of sixteenth-century and early seventeenth-century radical Anabaptists, in particular among the members of the so-called Family of Love.<sup>52</sup> Among the latter, the idea of the death of the soul is frequently linked to the merging of the soul's divine essence with God. In this view, salvation is seen as a mystical union with God in this life, which transformed a man into Christ. Remarkably, the conscious enjoyment of heaven in this life only is similar to the Averroist absorption of the individual in a universal intellect.<sup>53</sup>

Mortalism was also endorsed by several later English philosophers and authors, among whom Thomas Hobbes (1588-1679), Richard Overton (1625-1664) and John Milton (1608-1674). The question of the soul's fate is closely related to that of its origin. Overton preferred traducianism, because he thought that the creationist doctrine makes God the author of sin. Both Milton and Overton argued that the soul is, by the process of natural generation, transmitted from the parents to the child. In Overton's view, God would become a slave if He had to create souls all day. For Milton the origin of the soul was connected with the origin of sin: why should God put a defenseless soul in a corrupt body? As a rule, authors endorsing mortalism reconciled the doctrine of a total death with the traditional Christian eschatology, and stressed the role of the Resurrection at the end of the times. Hobbes argued that mortalism is grounded in the Holy Scripture. In addition, mortalism destroys the foundation of many Roman abuses, among which purgatory, indulgences, ghosts, and the invocation of the saints.<sup>54</sup>

<sup>52</sup> For discussion, see Hamilton 1981.

<sup>53</sup> Burns 1972, pp. 67-68.

<sup>54</sup> Burns 1972, ch. 4.

## CHAPTER SEVEN

### EARLY MODERN MEDICINE AND NATURAL PHILOSOPHY

Many Renaissance anatomists and physicians devoted their attention to questions and debates that owed little to observation and almost all to the citation and balancing of authorities, in particular Galen, Hippocrates, Aristotle, and Avicenna.<sup>1</sup> However, pondering upon ancient notions could lead to new insights, as results from the works of Leonicensio and Schegk on the formative principle in embryogeny (section 1). The precise stages of animation remained uncertain and the status of the human soul continued to be subject of speculation. Let us examine the cases of two highly influential authors.

In his *The Secret Miracles of Nature* the Dutch physician Levinus Lemnius (1505-1568) affirmed that the soul is not transmitted by the parents, but that it has a divine origin, and that it is infused in the embryo in the fourth month of gestation. Man accepts from his Creator the 'spirit of life' and thus is made in His image and likeness. Lemnius rejected the view that the soul originates from the seed, Pythagorean transmigration and Tertullianus' materialism.<sup>2</sup> The rational soul is infused when the embryo starts to show sensorial capabilities. Eventually, however, he maintained that the soul is a spark of the divine mind, rephrasing a Gnostic view.<sup>3</sup>

The Spanish physician and philosopher Francisco Vallés (1524-1592) held that the semen is a living substance, in virtue of which the fetus lives until the development of the sensitive soul.<sup>4</sup> In his *Holy Philosophy*, discussing the creation of man in *Genesis*, Vallés affirmed that the human soul is not generated from the potentiality of matter, but is the *spiraculum vitae* inspired by God. He stressed that the human soul is a unified force of sensing and knowing, which should be distinguished from the vegetative

<sup>1</sup> Nutton 1990, p. 137.

<sup>2</sup> See ch. 2.3.

<sup>3</sup> Lemnius 1581, pp. 54-63; cf. ch. 2.2.

<sup>4</sup> Vallés 1606, lib. II, cap. 9, p. 77.

soul.<sup>5</sup> Thus, the human soul is one and only, and there is no distinct sensitive soul. The inspired spiracle is a sensitive and intellective soul.<sup>6</sup>

Several other outstanding physicians who offered a detailed description of the development of organs and other parts of the body, explicitly professed their ignorance about the issue of animation. Ambroise Paré (1510-1590) is a case in point.<sup>7</sup> Most theologians, philosophers and physicians endorsed delayed ensoulment, but they did not agree on the moment (from day 30/40 to the sixth month)<sup>8</sup>. By contrast, in the seventeenth century at least two authors argued for instantaneous or very early animation (section 3), while other contemporary physicians resumed Neoplatonic notions of universal animation (section 4).

In the beginning of the following century, Liceti developed the notion of an essentially composed soul, consisting in an irrational part, which is derived through multiplication from the soul of the father, and a rational part, created directly by God (section 2). Subsequently, Sennert argued that the entire soul was the final outcome of a process of multiplication of the parental souls (section 5), thus triggering sharp reactions (section 6).

### 7.1. FORMATIVE PRINCIPLE AND PLASTIC FORCE

The idea of a ‘formative virtue’ derives from Galen who held that the molding faculty (*dunamis diplastikê*) was responsible for complex action in the formation of living beings. Through Avicenna and Averroes this view is absorbed in medieval scholastic thought and medicine. Albert the Great, for example, argued that this faculty was active in the generation of minerals and fossils. Against Averroes and Pietro d’Abano, Niccolò Leonicensi (1428-1524) argued that this force was not a divine, but a natural entity.<sup>9</sup>

Leonicensi stated in his seminal work *On the Formative Principle* that Galen identified the formative principle with the vegetative soul. And because Galen suggested elsewhere that the natural heat is the formative principle, Leonicensi argued that this heat was identical with the vegeta-

<sup>5</sup> Vallés 1587, pp. 83-84.

<sup>6</sup> Vallés 1587, p. 92.

<sup>7</sup> Paré 1575, pp. 926-927 (quoted in Dupont 2008, pp. 256-257).

<sup>8</sup> See Nutton 1990, p. 143.

<sup>9</sup> For discussion, see Nutton 1990, pp. 138-40; Hirai 2011a, ch. I.

tive soul.<sup>10</sup> He openly challenged the identification of the innate heat of the seed with the celestial heat, which he found in Averroes and Pietro d'Abano. Indeed, as we saw before, for Pietro d'Abano the formative power is divine, active, and superior to any other generative power. Moreover, due to incorrect ('barbaric') medieval translations, Pietro d'Abano identified the formative power with the so-called *intellectus vocatus*.<sup>11</sup> By contrast, Leoniceno stressed that in Aristotle's *On the Generation of Animals* the innate heat is only *analogous* to the celestial heat, not identical. Now, relying on Aristotle's ancient commentators – Alexander of Aphodisias, Themistius and Simplicius – Leoniceno rejected both the identification of the formative power with the intellect and its divine nature.<sup>12</sup>

Against the Arab and recent Latin commentators, Leoniceno argued that the seed's inner nature is the natural principle for animal generation. He drew a sharp distinction between the intellect and the formative principle. The latter is the seed's inner nature, that is, a principle of movement.<sup>13</sup> Being different from the soul and inferior to it, the formative power is a natural productive force which helps the introduction of the soul into matter for living beings.<sup>14</sup>

In his *On the Plastic Faculty of the Seed*,<sup>15</sup> Jakob Schegk (1511-1587) defined the formative and plastic faculty as the active principle of natural, animated beings. The plastic faculty is present in the male seed, it stands in the middle between the corporeal and the incorporeal. It is neither animate nor inanimate, but has an instrumental nature.<sup>16</sup> Thus, the seed does not contain the corporeal parts of a future animal, but only its «productive actuality» (*energeia poietike*), or: all potentialities of the future body.<sup>17</sup> By this special actuality an animate being can generate another animate being. With respect to the parental soul, which is the first actuality of the body,

<sup>10</sup> Leoniceno 1506, f. 2ra-va.

<sup>11</sup> Leoniceno 1506, f. 3rb-1vb; see chapter 3.5.

<sup>12</sup> Leoniceno 1506, fols. 4rb-5rb.

<sup>13</sup> Leoniceno 1506, fols. 5rb-6ra;

<sup>14</sup> Leoniceno 1506, f. 6rb.

<sup>15</sup> For an extensive analysis, see Hirai 2007 and Hirai 2011a, ch. III.

<sup>16</sup> Schegk 1580, fols. Ar, A2r.

<sup>17</sup> Schegk 1580, f. E7r.

the plastic faculty is a second actuality which resides in an instrumental body, that is, the seed.<sup>18</sup>

Then, Schegk raised the question whether this plastic, allegedly incorporeal, force is able to produce the soul in the organic body. His reply is quite vague and problematic. First, it is not disembodied (*asomatos*), because then it would be a mind, which cannot be the cause of an animate body. Schegk stressed again that the ‘spermatic’ force is something ‘concrete’ linked to the material body, functional in the rise of a new animated body, while the mind and the intellect are separate beings, not only in the natural world but also in the celestial realm.<sup>19</sup> Thus, for the moment he seems to exclude that the rational soul may be transmitted through the seed.

The plastic faculty is tied to a certain «divine body». The soul and the plastic faculty are tied by this spiritual body to the organic body. Schegk argued that Aristotle called this ethereal body an ensouled heat, which is neither fire nor any such force but something that possesses a vital faculty, like the heat of the sun. The divine vehicle as the instrument of the plastic faculty acts upon the matter of a future animate body. Again Schegk touched upon the question of the rise of the soul, and he wondered whether the plastic force is a part of the (future) soul, or else whether it dissolves, once the organic body is completely organized. Now, he argued that once the organic body is generated, the plastic faculty disappears and is replaced by the formal cause, that is, the soul.<sup>20</sup>

As to the origin of the soul, Schegk at this point only rejected the creation of the soul before the body and traducianism. The human soul, endowed with a mind, can only be created.<sup>21</sup> Schegk also rejected the Thomistic view of a succession of souls in man. The soul becomes the form of the body when the plastic force stops functioning, and the psychological faculties appear «simul omnes in corpore organico».<sup>22</sup> The individual organs are generated in time, but they are all informed at the same moment by one soul.<sup>23</sup> Until that moment the embryo does not possess a soul (*psyche*),

<sup>18</sup> Schegk 1580, fols. A7v-A8r.

<sup>19</sup> Schegk 1580, f. B2r-v.

<sup>20</sup> Schegk 1580, fols. B3r-B5v, in particular f. B5r.

<sup>21</sup> Schegk 1580, fols. B6r-B7r.

<sup>22</sup> Schegk 1580, f. C4v.

<sup>23</sup> Schegk 1580, f. C7v.

but merely a vegetative principle (*treptike*),<sup>24</sup> which elsewhere is called the «anima nutricans» or *anima propagatrix*.<sup>25</sup>

In the third book Schegk discussed the origin of the human soul in some more detail. He started listing four possibilities; those are: (1) all souls are eternal (Plato), (2) they are created at the beginning of the world, (3) drawn from the potentiality of the matter, or (4) created by God at the moment when the body is formed. Unsurprisingly, Schegk argued for the last mentioned, that is, each human soul begins to exist thanks to God's creative power at the moment the body is formed by the plastic faculty. The human soul is created by the breath of the Creator and is not produced by the plastic nature.<sup>26</sup>

Schegk's embryological treatise influenced Sennert, Comenius, and Harvey's idea of a plastic force as the organizing agent of the fetus. Later, Henry More and Ralph Cudworth transformed this embryological idea into their doctrine of the plastic nature. Functional in the explanation of the whole organization of the created world itself, this doctrine held metaphysical and theological implications. That is why even Leibniz was interested in it.

## 7.2. MULTIPLICATION AND CREATION: FORTUNIO LICETI

In his *On the Origin of the Human Soul* (1602), the Genoese physician and philosopher Fortunio Liceti (1577-1657) first discussed the opinions of his predecessors (book I), then he developed his own view (book II), and in the end he solved the objections to his doctrine on the origin of the human soul. In book I, Liceti extensively discussed: (1) the classical view of the infusion of the rational soul about forty days after conception; (2) Avicenna's idea that the rational soul arises from a celestial intelligence; (3) the Platonists who maintain that the intellectual soul is created by God and the irrational parts of the soul by inferior gods; (4) Fernel's doctrine of the celestial origin of all forms; (5) Pomponazzi's mortalism; (6) the view that the vegetative and the sensitive soul are generated by the soul of the mother; (7) the idea that during the first forty days of gestation the

<sup>24</sup> Schegk 1580, fols. D6v and D8v.

<sup>25</sup> Schegk 1580, f. E8r.

<sup>26</sup> Schegk 1580, fols. G5r and H7r.

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embryo lives in virtue of the soul of the mother as a part of her body; (8) the presence of the vegetative and sensitive soul in the seed of the father, as defended by Albert the Great; (9) Pernumia's view<sup>27</sup> on the origin of the sensitive soul in the seed; and finally (10) the theory attributed to Aristotle, according to which the vegetative soul springs from the mother, and the sensitive one from the father.<sup>28</sup> Liceti analyzed this latter doctrine in some detail, discussing also the interpretations by John Philoponus, Thomas Aquinas, the followers of Alexander (Pomponazzi and Simone Porzio), Averroes, and in the end, although he admitted that it is closer to the truth than the earlier doctrines, he plainly rejected it, because he argued that there can be no temporal succession between the vegetative and the sensitive soul in the embryo.<sup>29</sup>

The relatively short book II is devoted to Liceti's own idea about whence, how, and when the human soul arises. In the first chapter he formulated his central thesis: the human soul is not a simple substance, but an act composed of the vegetative, sensitive, and intellectual soul. Accordingly, the irrational soul is in potency the rational soul. Thus, man is first of all a rational being, and not a living being that evolves from a plant to an animal, and then into a rational person. Then, if the human soul were not composed, the intellect would be specifically different from the other souls. The human soul is 'generable' as to its irrational part, educed from matter and thus mortal. Its rational part, however, is not generated, but created and immortal. Liceti rejected the view of a succession of souls, because in that case man would eventually dispose only of an intellectual soul, and by consequence he would be unable to reproduce himself. Furthermore, the intellect cannot directly be connected to the body, that is, without the intermediation of the sensitive soul.<sup>30</sup> In the following chapters Liceti argued that the soul cannot be generated by only one agent (ch. 2); that the irrational soul is not received from the parents but arises from the womb of matter (ch. 3); that the female has not an active but a supporting role in the generation of the vegetative and sensitive soul (ch. 4); that the seed possesses a *vis procreatrix*, and thus is animated (ch. 5); that the soul in

<sup>27</sup> Giovanni Paolo Pernumia, physician and philosopher born in Padua and active at the university, there, in the second half of the sixteenth century.

<sup>28</sup> Liceti 1602, pp. 1-165.

<sup>29</sup> Liceti 1602, pp. 165-294.

<sup>30</sup> Liceti 1602, pp. 295-305.

the seed is not merely vegetative, because the formation of the embryo requires a sensitive soul (ch. 6).<sup>31</sup>

In ch. 7 Liceti formulated an original and quite revolutionary thesis, namely that the irrational soul arises from the soul of the father which on the moment of ejaculation is multiplied. Thus, as long as the seed is in the father it is animated by his soul, but once it is ‘detached’, it is animated by its own soul, which is some sort of offspring of the father’s soul. There do not arise ‘new’ souls in the embryo. When the seed remains for seven days in the uterus, the conception is a matter of fact, and from the mixture of seed and menstrual blood an embryo arises.<sup>32</sup> Tackling the issue when and how the rational part of the soul comes about, Liceti simply conformed to the traditional view that the rational part of the soul is created and infused when the body is perfectly organized, and is linked to the latter through the irrational soul.<sup>33</sup>

In Book III Liceti discussed twenty-seven objections to his view on the origin of the soul. A detailed analysis of all objections and replies would lead us far astray, as Liceti in his replies essentially defended his central thesis that the irrational soul arises during the coitus as an offspring of the father’s soul, and grounding the formation of the embryo prepares the arrival of the rational part of the soul.<sup>34</sup>

### 7.3. INSTANTANEOUS ANIMATION: THOMAS FEYENS AND PAOLO ZACCHIA

In his remarkable *On the Formative Principle of the Fetus*, the Flemish physician Thomas Feyens sustained with anatomical and embryological arguments that the divine, rational soul is infused on the third day after conception. In general, he argued that the soul must be present from the outset in order to organize the body. Moreover, in order to avoid an unnecessary multiplicity of explanatory factors, there must be one soul from the beginning that establishes the specific unity and individual continuity of the developing embryo. Feyens first rejected the views of those who attribute the formation of the embryo to the world soul (Plato and Themistius), an

<sup>31</sup> Liceti 1602, pp. 308-326.

<sup>32</sup> Liceti 1602, bk. II, chs. 7-8, pp. 326-334 (text in Appendix).

<sup>33</sup> Liceti 1602, pp. 334-339.

<sup>34</sup> See also the second text reproduced in the Appendix.

intelligence (Averroes and Avicenna), or the vegetative soul (Aristotle).<sup>35</sup> The efficient cause of the formation of the embryo is not in the uterus, in the semen, in the soul of the parents, or in the innate heat, but in the soul infused after conception.<sup>36</sup> He based this conclusion on four arguments: (i) a negative one, namely that the formative force is not in God, in a celestial intelligence, or in the world soul (see above); (ii) the view that the fetus develops through only one principle; (iii) experience, which confirms that the development of the embryo starts after the introduction of the (rational) soul; and finally (iv) the authorities, among whom, surprisingly, Alexander of Aphrodisias, Galen, Themistius, and Marsilio Ficino.<sup>37</sup>

The rational soul is the first and only principle which organizes the body from within, arranging every organ for each of its faculties and preparing a residence for itself, not merely allowing itself to be 'breathed' into a being which has already organised itself. The Thomistic doctrine of a succession of souls (first vegetative, then sentient, and finally rational) made no sense to Feyens. It is rejected on the basis of the following arguments: (1) the vegetative, sensitive and rational soul would differ essentially from each other; (2) man would be first a plant, then an animal, and only in the end a rational being; (3) the organizational capacity of the vegetative soul is insufficient; (4) lower souls cannot transfer their capabilities to superior ones; (5) a succession of souls contradicts the principle «*simile ex simili*»; (6) the generation of plants, preceding that of animals and men, would be superior to the latter; (7) the lower souls would continue to be present in the fully developed embryo; (8) a succession of souls is utterly incomprehensible; (9) the succession of souls should also govern partial (re-) generation.<sup>38</sup>

In Feyens' view the conformation of the fetus is a vital, not a natural action. He developed this idea in the remainder of the book. According to him, the seed first coagulates the menstrual blood into an amorphous lump, taking three days to do so. After this, the rational soul, finding a suitable mass of shapeless material, enters into it and begins to give it a shape. That the soul is introduced on exactly the third day, has a purely anatomi-

<sup>35</sup> Feyens 1620, pp. 1-6.

<sup>36</sup> Feyens 1620, pp. 124-128.

<sup>37</sup> Feyens 1620, pp. 128-131.

<sup>38</sup> Feyens 1620, pp. 161-177.

cal reason, as it is linked to, or better dependent upon the first formation of membranes.<sup>39</sup>

Feyens was attacked by several writers, among whom Louis Dugardin (fl. ca. 1617-1631),<sup>40</sup> and published several defences of his views.<sup>41</sup>

Paolo Zacchia (1584-1659), physician general of the Vatican State, argued for a position remarkably similar to that of Feyens, in his *Medico-Legal Questions* (consisting of nine books; the first volume appearing in 1621, the last in 1661, shortly after his death). He concluded that the rational soul is created and infused at conception. He also maintained that the development of the fetus is a continuous process, rather than a series of distinct stages. Like Feyens, he reasoned that the soul must always organize the body if development is to be determined from within. His rejection of traducianism is substantially based on five arguments: 1. the animation of Adam as explained in *Genesis*; 2. the reproduction of the rational soul through the seed entails the absurd idea that male and female semen contain partial souls which blend together; 3. it is unclear what happens to the rational soul when sexual intercourse does not lead to the formation of an embryo; 4. in twins the rational soul should split; and finally, 5. a soul which arises from the body cannot be immortal.<sup>42</sup>

#### 7.4. ESOTERIC VIEWS: JAN BAPTISTE VAN HELMONT, JAN MAREK MARCI AND BARTOLI

Jan Baptiste van Helmont's (1579-1644) anthropology was developed in a strictly biblical context. Van Helmont rejected the view that forms are created by the heavens or educed from the potentiality of matter. All forms were created by God, the immediate principle of all things.<sup>43</sup> And in the reproduction of living beings, he saw the seed as a purely instrumental,

<sup>39</sup> Feyens 1620, p. 199.

<sup>40</sup> Dugardin 1623.

<sup>41</sup> Feyens 1624 and Feyens 1629. For discussion, see Needham 1959, pp. 119-120.

<sup>42</sup> See «De fetus humani animatione» (= *Quaestiones medico-legales*, IX, cap.1), in Zacchia 1688, pp. 742-749; cf. in the same work bk. VI, tit. 1, q. 7. See also Zacchia 2002, and below, under Sennert.

<sup>43</sup> *Ortus formarum*, § 2-3, in Helmont 1655, p. 81ab; cf. p. 83a.

that is, not as a 'formal' factor.<sup>44</sup> He distinguished between four levels or 'grades' in the 'system of things': 1. the essential forms which hardly show any manifestation of life, such as, celestial bodies, rocks, metals, salt, dry bones; 2. vital forms, capable of growth and feeding, that is, plants; 3. substantial forms, which occur in things that can move and possess sentience; 4. formal substances, endowed with eternal life, the angels and the human minds.<sup>45</sup>

In order to account for the uniqueness of organic phenomena Van Helmont adopted Paracelsus' theory of the *archeus*.<sup>46</sup> Every organ is under the direction of a particular *archeus*, instrument of the sensitive soul, which is different from the immortal soul. He designed a scale of spiritual control: the mind (*mens*) is divine and eternal, the sensitive soul is the mortal life-force, and the *archeus influus* is the interior architect. Man is composed of a body, a sensitive soul, which is located in the stomach,<sup>47</sup> and an immaterial and immortal mind. Exception made for the angels, the human mind is the only substance in the created universe. All other terrestrial forms are something 'inbetween' the substance and the accident.<sup>48</sup> Man's particular position is also due to his being created not out of nothing but «ex limo terrae». This makes man's creation different, as it manifests that our soul, being a formal substance, is unique among all other forms.<sup>49</sup> However, the human mind is the image of God, it is not a part of the divine substance.<sup>50</sup>

Jan Marek Marci (1595-1667), professor of medicine at Prague University, was the author of *Idearum operatricium idea*, published in 1635, which was a mixture of purely scientific contributions to optics, and speculative theories about embryology. He explained the production of manifold complexity from the seed in generation by an analogy with lenses, which produce complicated beams from a simple light-source. The formative force radiates from the geometrical centre of the foetal body, creating complex-

<sup>44</sup> *Ortus formarum*, § 14, in Helmont 1655, p. 83a

<sup>45</sup> *Ortus formarum*, § 67, in Helmont 1655, pp. 89b-90a.

<sup>46</sup> For discussion, see Hirai 2005, pp. 457-459.

<sup>47</sup> *Sedes animae*, § 32, in Helmont 1655, p. 179b.

<sup>48</sup> *Ortus formarum*, § 25, in Helmont 1655, p. 84b.

<sup>49</sup> *Ortus formarum*, § 69-70, in Helmont 1655, p. 90ab.

<sup>50</sup> *Imago mentis*, § 2 and 10, in Helmont 1655, p. 164ab. For discussion, see Giglioli 2000 and Macdonald 2007, pp. 379-384.

ity but losing nothing of its own power. Marci thus linked together the following trends of thought: (1) the old Aristotelian theory of seed and blood, (2) the new rationalistic mathematical attitude to generation as, for example, in Gassendi and Descartes, (3) the new experimental approach, in his contributions to optics, and (4) the kabbalistic mysticism of light as the fountain and origin of things.<sup>51</sup> In the second chapter of this unfinished work,<sup>52</sup> Marci argued that the sensitive soul must be present in the seed *ab origine*, because the embryo cannot develop without the generative force (*vis generandi*) of the soul. Furthermore, sense and motion can only derive from a soul, and the latter is not produced by itself, nor is it deduced from matter. Surprisingly, he held that the rational soul is added at the moment of birth.<sup>53</sup>

The Neapolitan physician Sebastiano Bartoli (1629-1676) formulated a theory of the living organism and its generation that was clearly inspired by the concept of *archeus* as developed by Jan Baptiste van Helmont. Bartoli defined *archeus* as a universal principle of life and sensibility. In the case of animals and man the *archeus* forms the embryo from seminal matter and grounds all organical and sensitive activities. In a sharp polemic with traditional Galenic medicine and Aristotelian natural philosophy, Bartoli argued that the vital principle of living organisms cannot consist of (innate) heat, but rather should be qualified as «a simple light propagated by the fuel of seeds».<sup>54</sup> Conceived in the image of the macrocosm, ruled by the Sun and the Moon, also the microcosm of terrestrial animals is governed by light, present in the seed and making up the sensible forms. Receptivity and speed, the main features of light, also characterize the activity of living beings, in particular for what concerns their freedom and richness of organization and sensitive capabilities. Thus, Bartoli felt authorized to claim the famous expression of 'light being the life of men' in the Gospel of John as a plain confirmation of his psychological views. Indeed, as the most suitable substrate of ideas, the light had been created on the first day.<sup>55</sup>

If the vital *archeus* or plastic force, source of motion and life in living beings, were the innate heat, invoked by Aristotle in his treatise on the

<sup>51</sup> Needham 1959, pp. 80-81.

<sup>52</sup> See Mocchi 1990, p. 74.

<sup>53</sup> Marci 1635, cap. II, f. K3v.

<sup>54</sup> Bartoli 1666, p. 1.

<sup>55</sup> Bartoli 1666, pp. 19-23.

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generation of animals, it would be deprived of freedom, knowledge and will, essential for the generation and organization of living organisms. Also Galen's medicine was wrongly based on the theory of heat, temperaments, elements and qualities, while his psychology, made up of elements derived from Plato, Aristotle, and Zeno, presents a confused view of the human soul. In particular the theory of the four qualities does not provide an adequate explanation of life, because theorized in these terms life would amount to a 'mere accident'.<sup>56</sup> Bartoli also rejected Epicurus' doctrine of the swerve of atoms, because insufficient to explain the rise of complex mental phenomena. However, at this point he felt obliged to point out that he merely intended to speak about the life and soul that man shares with the other animals, and not about his immortal soul, because as far as the latter is concerned he duly accepted the doctrine of the Catholic Church.<sup>57</sup>

Nonetheless, Bartoli's books were placed on the Index of Forbidden Books, because his doctrine of two souls (a mortal sensitive and an immortal intellectual), the view of the creative powers of the *archeus*, and his ideas about a central seat of the soul plainly contradicted traditional Catholic doctrine.<sup>58</sup>

### 7.5. THE RATIONAL SOUL MULTIPLIED: DANIEL SENNERT

Traducianism was widely endorsed among Lutheran theologians.<sup>59</sup> In the 1620s, for example, Theodor Thumm († 1630) defended against Catholic and Calvinist theologians that the soul of the embryo derived from that of the parents. He chose a particular terminology in order to avoid possibly materialistic or mortalist interpretations. He argued that the soul was not 'generated' but 'cogenerated'; that is, transmitted by the semen through the special cooperation of God.<sup>60</sup> Thus, the soul was neither educed from the potentiality of matter nor induced, but conveyed through the semen.<sup>61</sup> A few years later the Lutheran physician Daniel Sennert (1572-1637) de-

<sup>56</sup> Bartoli 1666, pp. 6-11.

<sup>57</sup> Bartoli 1666, pp. 13-18.

<sup>58</sup> III, XI, pp. 109-110.

<sup>59</sup> See chapter 6.3.

<sup>60</sup> Thumm 1622, p. 33.

<sup>61</sup> Thumm 1622, p. 111.

veloped a similar conception, which was better underpinned from a scientific point of view.

In the first chapter of book IV of his *Hypomnemata*,<sup>62</sup> devoted to the discussion of the generation of living beings, Sennert formulated his central thesis: ‘every form multiplies itself’ («Omnis forma sui multiplicativa»)<sup>63</sup> Before developing this thesis he first rejected Avicenna’s «datrix formarum»,<sup>64</sup> Ficino’s and some Middle Platonists’ (Alcinoos) idea that human souls are created by God and the lower souls by the intelligences, traditional creationism, and Fernel’s heavenly origin of all forms. Indeed, the intervention of a superior cause contradicts the axiom of a univocal generation, which would no longer be a process in which «simile ex simili» is produced.<sup>65</sup> Moreover, God created nothing but miracles after the Creation of the world. Also the doctrine of a plastic force (Schegk) and the eduction of forms from the potentiality of matter (attributed to Fonseca, Suarez, Rubio, and Liceti) are confuted.

The eduction from matter contradicts Aristotle’s texts. Sennert asked what is educed from matter’s potentiality and what this potentiality really means. Is it a «disposition of matter to receive a certain form»? Sennert took it as temperament, but can temperament generate a form which is divine and noble? Aquinas’ followers did not solve the puzzle of the immediate agent of eduction. Neither celestial bodies nor external heat are serious candidates as they do not guarantee univocal generation. And the idea of a plastic force is a needless multiplication of beings. According to Sennert the plastic principle can only be the soul itself in the seed, because otherwise we multiply principles without necessity. For Sennert the plastic principle is the soul itself, which is not the instrument but the principal agent of generation.<sup>66</sup> By contrast, he frequently cited Zabarella’s thesis that living beings, when they generate «sibi simile», communicate something of their matter and something of their form.<sup>67</sup>

<sup>62</sup> For discussion of Sennert’s ideas on generation, see Roger 1963, pp. 106-110; and Hirai 2011a, pp. 151-171.

<sup>63</sup> Sennert 1636, p. 150.

<sup>64</sup> For the term, see ch. 5, note 4.

<sup>65</sup> Sennert 1636, pp. 150-158.

<sup>66</sup> Sennert 1636, pp. 159-180.

<sup>67</sup> See, for example, Sennert 1636, p. 216, where he refers to Zabarella, *De facultatibus animae*, c. 11; cf. Zabarella 1590, p. 649 (text in Appendix).

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In chapter VI Sennert argued that the seed is animated and that the soul in the seed shapes the animated body. In support of this idea, Sennert enumerated the author of the Hippocratic treatise *On Regimen*, Plato, Aristotle, Galen, Themistius, Scaliger, Cardano, Zabarella, Piccolomini, and again Liceti. The seed consists of two parts: a thick part and a spiritual part, or *spiritus*. The spirit is not the principal cause of generation but is the instrument of the soul. In a continuous, polemical, dialogue with Feyens, Sennert argued that the soul in the seed guarantees the growth and development of the embryo. It does not skip from one subject to another, rather the soul has a power to multiply itself. Having ordained nature to perpetuate the course of generation and corruption, God stands only as the first and universal cause. However, God gave the second causes the capacities to produce their effects. At the moment of Creation God assigned to the living beings the proper capacity to multiply (Gen. 1:22). If there is something divine in living beings they possess it on their own: animated seed. The seed is the vehicle by which the soul is communicated from the parents to the offspring. A plant produces a seed, which contains a vegetative soul, and this can only be an emanation from the mother plant. Likewise each animal seed, male and female alike, contains a sensitive soul that emanates from the soul of the father or mother. And the souls are united at the moment of conception. Animals and humans do not have three souls but one soul only.<sup>68</sup>

Then, in chapter X, after the analysis of the generation of plants and animals, Sennert tackled the issue of the propagation of the human soul. For him the human soul emerges in the fetus after the first conception when the male seed and the female seed meet and are retained in the womb.<sup>69</sup> Unlike Aquinas, who argued for a succession of souls, Sennert recognized only one single soul endowed with several faculties. In this context, he repeats his objections to creationism, the doctrine of the plastic force,<sup>70</sup> and Feyens' animation by the rational soul on the third day after conception, and he invoked Gregory of Nyssa's doctrine of a direct animation.<sup>71</sup> Human beings have from the beginning only one rational soul which has the veg-

<sup>68</sup> Sennert 1636, pp. 185-250 (see text in Appendix).

<sup>69</sup> Sennert 1636, pp. 289-291.

<sup>70</sup> For a confutation of divine intervention and the theory of the plastic force, see also Sennert 1636, ch. XII, pp. 310-314.

<sup>71</sup> Sennert 1636, pp. 289-307.

etative, sensitive, and intellectual faculties and is transmitted through the seed.<sup>72</sup> This does not compromise the soul's immortality which depends on God alone. Furthermore, when the intellect can spend such a long time in the mortal body, why may it not also be propagated with the seed?<sup>73</sup> The human soul is transmitted through the seed, but it arises at conception. Thus, it is neither a part of the parental soul, nor produced by the latter. It is the product of multiplication.<sup>74</sup>

#### 7.6. POST-SENNERT POLEMICS

Sennert's traducianist views found little support even among Lutheran physicians.<sup>75</sup> After all, Sennert had not found an answer to Feyens' objection that, if the semen were animated with the human rational soul, it would have to be considered as a 'man' already while it was still in the father's or mother's body. As Feyens had argued, in that case not only masturbation would be murder and spilt semen would have to be baptized, but, even much worse, women would be able to procreate without any need for a man.<sup>76</sup>

Sennert took the precaution of quoting Tertullianus and Gregory of Nyssa, but he was attacked immediately by a professor of philosophy at Groningen, Johann Freytag, who denounced him for making the soul of animals immortal.<sup>77</sup> Freitag's attack triggered Sperling's defence.<sup>78</sup> Subsequently, the Spanish Juan Gallego defended traditional scholastic orthodoxy in his invective against Sennert.<sup>79</sup>

Sennert's traducianism was also extensively refuted by the afore-mentioned Paolo Zacchia, who argued for the animation of the fetus by the

<sup>72</sup> See ch. XIII, in Sennert 1636, pp. 314-331.

<sup>73</sup> Sennert 1636, pp. 336-338.

<sup>74</sup> Sennert 1636, p. 345.

<sup>75</sup> Exception made for Johann Sperling (1603-1658); see Sperling 1648, pp. 15-29.

<sup>76</sup> Feyens 1620, pp. 62-63. See also Stolberg 2003, pp. 193-194.

<sup>77</sup> Freytag 1637.

<sup>78</sup> Sperling 1638.

<sup>79</sup> Gallego 1640.

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rational soul on the moment of conception, a view which was destined to replace Aquinas' succession of souls as the official Catholic doctrine.<sup>80</sup>

Remarkably, a form of traducianism most similar to that of Sennert's and apparently inspired by his works, was defended by Domenico Beccoli. This relatively unknown Italian Olivetan monk from Perugia was refused permission to publish a work in which he argued that the human soul was probably not created by God, but multiplied by generation. He was summoned to present himself to the central seat of the Roman Inquisition, which declared his position as erroneous and condemned the author to recant.<sup>81</sup>

<sup>80</sup> Zacchia 1688, pp. 729-749.

<sup>81</sup> See Spruit 2014, section 3.4.2 (under press).

## CHAPTER EIGHT

### MODERN PHILOSOPHY AND EMBRYOLOGY

During the seventeenth century, the issue on the origin of the soul and the animation of the embryo became popular mainly with naturalists and physicians. Their attention shifted from speculation on the formative force or cause to research into the forces that model the embryo. The origin of the soul, as well as the broader issue of animal generation, were largely ignored by the major representatives of seventeenth-century philosophy, exception made for Gassendi and some of his followers (section 1). The majority of seventeenth-century scientists and philosophers was convinced that nature must operate through mechanical laws, but mechanical laws are not sufficient to account for the generation and construction of living organisms.

Thomas Hobbes' materialism implicitly suggests that issues of the origin of the human soul are not worthwhile tackling. He believed that everything that happens is the result of the physical world and that the soul, conceived in traditional terms, simply does not exist. Soul or spirit he defined sometimes as brain action, sometimes as nervous substance. By spirit he understood a physical body refined enough to escape the observation of the senses. An incorporeal spirit does not exist.<sup>1</sup> To say that something possesses a 'soul' is simply to say that it is alive.<sup>2</sup>

Descartes endorsed a dogmatic view of the creation of the human mind in his philosophical works. He held that the mind was completely detached from the body and that it communicated with the body only through the pineal gland. Descartes pondered upon the issue of animal generation, but in his rudimentary sketches of a mechanist embryology he never discussed the origin of the soul. In his posthumously published *Description du corps*

<sup>1</sup> See, for example, *Leviathan*, chap. 12, where Hobbes argues that «the soul of man was of the same substance with that which appeareth in a dream to one that sleepeth; or in a looking-glass to one that is awake; which, men not knowing that such apparitions are nothing else but creatures of the fancy, think to be real and external substances, and therefore call them ghosts».

<sup>2</sup> *Leviathan*, chap. 42.

*humain* he started from the two-seed theory of reproduction and posited a mutual *levain*, whereby the two fluids heated each other. In this way, some particles dilated, increased and started to form the members. However, this hypothesis was scarcely credible, because it was difficult to explain how the heart and other organs could be the product of compressed, highly volatile particles. Descartes's theory of generation failed to account for the specificity, functional adaption, and structural complexity of even lower organisms.<sup>3</sup>

Spinoza, although interested in physics, physiology and anatomy, never devoted too much effort to the issue of the origin of the human soul. In book II of his *Ethics*, entitled «On the nature and origin of the mind», he defined the latter as the idea of the body, regarded it as a mode of the infinite attribute of cogitation, and firmly argued for the total separation between the modes of different attributes (extension and cogitation).

For John Locke the origin of the soul was probably irrelevant, since for him, human memory and not the alleged spiritual or material subsistence is the determining factor in human identity. Locke was agnostic about the immateriality of the soul, which according to him was not needed for the great needs of moral and religion.<sup>4</sup>

Descartes' account of generation, according to which organic forms would emerge part after part from bits of moving matter, established the improbability of an epigenetic account within the confines of a nascent mechanical philosophy. A much easier solution to the problem of life was to assume that the fetus was preformed before conception and had to be fed subsequently in the womb. Moreover, since the Cartesians maintained that God had created the world in such a way that it could work mechanically without divine intervention, it was logical to assume that the preformed fetus had been created from the beginning of time.<sup>5</sup> After the original discoveries concerning the female reproductive organs by Niels Stensen (1638-1686) and Reinier de Graaf (1641-1673), and with the development of the microscope, preformationism rapidly replaced epigenesis as the main model for animal generation (section 2).

<sup>3</sup> Descartes 1982-1987: XI, pp. 223-227; for discussion see Aucante 2006, and Pyle 2006, pp. 197-200.

<sup>4</sup> John Locke, *An Essay Concerning Human Understanding* (1689), bk. IV, 3.6.

<sup>5</sup> Brockliss 1990, p. 172.

On the theory of preformationism, the new organism was always present either in the egg (ovism) or the sperm (animalculism). On the ovist theory, the male provides only the trigger or stimulus for growth and development; whereas, on the animalculist theory, the female provides only protection and nourishment. In an important sense, pre-existence is not a theory of generation at all, since it explicitly denies the very existence of plant and animal generation in nature. Every plant and every animal is the product of the original supernatural act of creation, not of a natural process of generation (section 3).

Preformation bears on the issue of the origin of the soul, because on this theory the new organism is ‘elaborated’ in the testes of the father, or in the ovaries of the mother, in a process governed by the soul of the respective parent. Preformationism became an important element in the philosophical reflections of Malebranche and Leibniz on the origin and status of man and the human soul (section 4).

#### 8.1. MORTAL AND IMMORTAL SOUL: ARCANGELO PICCOLOMINI TO WALTER CHARLETON

Towards the end of the sixteenth century, the idea that each human being is composed of matter and more than one substantial form regained popularity, thus implicitly resuming a controversial medieval position.<sup>6</sup> For example, in his *Anatomical Lectures* dedicated to Sixtus V in 1586, Arcangelo Piccolomini (1525-1586) argued, from Galen’s *On the Formation of the Fetus*, that the human body is formed by God and acting through the *anima naturalis* was contained in the seed of the parents. Surprisingly, Piccolomini theorized a twofold intellectual soul: one eternal added from without and one mortal carried in the potentiality of spermatic matter.<sup>7</sup>

The account of a twofold soul, postulating a mortal corporeal sensitive soul and an incorporeal immortal mind in each human individual, was developed in a materialist context by Telesio, and it was adopted later by Gassendi and Charleton.

<sup>6</sup> See ch. 3.6.

<sup>7</sup> Piccolomini 1586, pp. 11-14, 411. See Nutton 1990, p. 144.

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Bernardino Telesio's (1509-1588) psychology was fuelled by the conviction that the traditional Aristotelian and Galenic schemes were no longer fit to explain the more recent findings of anatomy and physiology.<sup>8</sup> In *On the Nature of Things according to their Own Principles* he therefore sought to construct an empirically more sound alternative to Peripatetic psychology and animal generation. Telesio attributed traditional psychological functions to a material spirit embodied in the nervous system.

He ascribed psychological functions to a bodily entity, the *spiritus*. The spirit is common to man and animals; it constitutes our sensible soul and is understood as an imperceptibly thin and fiery body.<sup>9</sup> It is the substance of the organic soul, and not its instrument, as Ficino and other Neoplatonists thought. The spirit, which Telesio also described as «seed-soul,»<sup>10</sup> is distinguished from the immaterial, rational soul, which is a divine creature added to the spirit as its form.<sup>11</sup>

The introduction of the divine soul is intimately connected with Telesio's methodology. Some psychological functions and acts of man cannot be explained without postulating an immaterial mind. Man aspires not only to sensible and perishable things, but also to divine and immortal objects that belong to his eternal preservation.<sup>12</sup>

Telesio rejected traditional dualist psychologies, replacing them with a more subtle distinction between soul and body. The spirit is a material entity with specifically corporeal characteristics: it is the most powerful combination of heat and matter. These characteristics allow it to perform the traditional 'mental' activities. Sensation, emotion and intelligence are functions of bodily-based capacities.<sup>13</sup> Telesio's theory is actually a sort of inverted Platonism. The soul is a separate entity that uses the body as its

<sup>8</sup> See *Quod animal universum ab unica animae substantia gubernatur. Contra Galenum*, in Telesio 1980.

<sup>9</sup> Telesio 1965-1976, VII.4, p. 12f. See also V.3, p. 216; V.10, p. 260: spirit as «anima sentiens»; V.5, p. 226: the spirit is present principally in the nervous system, and in particular in the brain, in order to guarantee the unity of the perception.

<sup>10</sup> See, for example Telesio 1965-1976, V.34-37, p. 404f.

<sup>11</sup> See Telesio 1965-1976, V.3, 214-220, for the unity of the seed-soul and the divine soul.

<sup>12</sup> Telesio 1965-1976, V.2, 210; VIII.15, pp. 232-236.

<sup>13</sup> See Telesio 1965-1976, V.31-32, pp. 384-392.

organ.<sup>14</sup> Yet, it is as material as is the body itself, and therefore it is not separate as the Peripatetic or Platonic intellect.<sup>15</sup>

Pierre Gassendi (1592-1655) held that the seed was produced by the whole body. But he set out to show that the formation of the fetus could be explained on an atomistic basis. Gassendi indeed examined the Aristotelian and the Epicurean doctrines of embryogeny and rejected them both, the former on the ground that the change from egg to hen is too great for anything so shadowy as a 'form' to accomplish, and the latter because it leaves no room for teleology. He therefore adopted as the basis of his system atomism *cum* preformationism, alleging that the germs of living things were made at the Creation, but that they come to their perfection as atomic congregations.<sup>16</sup>

Gassendi claimed that God created all atoms and corpuscles in the beginning. And while these are being fitted, molecules or small structures are created, from which the actual seeds are constructed and fashioned.<sup>17</sup> Thus, the seeds of organisms, created at the beginning of the world, are dispersed through earth and water, lying dormant everywhere. These small yet undeveloped seeds pre-exist in invisibly small kernels in animals; animal development is accordingly explained in terms of the unfolding of these seeds, organized around a soul that is active in organizing the matter. While this embroidered on the views by Sennert, it also prefigures Leibniz's mature doctrine of transformation.<sup>18</sup>

Gassendi promoted a causal story that locates a special force in seminal matter which determines generation and thus heredity phenomena. The 'little soul' (*animula*) carried by the seminal matter is responsible for the transmission of traits. These *animulae* are an offshoot of the parents' souls, but not a pre-formed miniature. The material soul yields a plan for the development of the new individual's material traits.

Like the larger soul of the parents' organism, the *animula* has an atomic composition. In addition to the inherent motive force found in all atoms, the molecular structure of *animulae* also features a special seminal force or

<sup>14</sup> See Telesio 1965-1976, V.41, p. 452.

<sup>15</sup> Telesio 1965-1976, V.29, p. 376.

<sup>16</sup> Needham 1959, pp. 153-55; Roger 1963, pp. 135-139.

<sup>17</sup> Gassendi 1658: II, pp. 170b-171a; cf. p. 262.

<sup>18</sup> For discussion, see Arthur 2006.

virtue (*vis seminalis*) that guides the development of the offspring.<sup>19</sup> This view has the ring of the latter-day doctrine of vitalism.<sup>20</sup>

The role of the *animula* is to transmit ontogenetic information from the parent to new plant, and it does this by receiving, in concentrated form, «ideas» and «impressions» from all parts of the soul of the parent.<sup>21</sup> The *semina* of the parents that meet in the moment of generation contain complete though folded up and rudimentary forms of the animal offspring. Thus, new souls contain a plan for development.<sup>22</sup> To the new fetus the semen of the two parents contributes the material tissue and the *animula*-soul. Thus, the development of new individuals results from the interaction among atomic amalgams.<sup>23</sup> In a certain sense, Gassendi proposed a weak preformationism, according to which the new individual's parts are brought together – under the direction of the two *animulae* – from among those of the miniatures' parts extant in the two *semina*.

Like Telesio, Gassendi viewed the human soul as a composite substance, made up of a material and a divine part. The former is generated, while the latter is created and does not arise «ex traduce». It is unknown when the rational soul is infused into the body. Scripture or faith are of no help. Apparently, the soul is introduced at birth, at the very moment of the first respiration. However, this contradicts the biblical passage of John the Baptist in Elizabeth's womb who leaped for joy on hearing Mary's voice (Luke 1:41), as well as the ecclesiastical practice to baptize almost full grown, aborted embryos. Therefore, it seems reasonable to assume that at the time the parents' *semina* arrive in the uterus, woven together and conjoined, God creates the soul and transfers it into this seminal molecule. That the fetus at this stage does not possess the suitable instruments for sense and reason, does not make any sense, as rational capabilities are developed at a later age. Furthermore the same rational capabilities may get lost in old age, which does not entail that old men lose their rational soul. The disposition of organs determines the rational soul's activities, not its presence. And yet, according to canonic law and Old Testament prescriptions early abortion does not constitute homicide (the Septuagint version

<sup>19</sup> Gassendi 1658: II, pp. 170b-172a, 260a-b.

<sup>20</sup> See ch. 9.2.

<sup>21</sup> Gassendi 1658: II, p. 275ab.

<sup>22</sup> Gassendi 1658: II, p. 280b (text in Appendix).

<sup>23</sup> Fisher 2006.

of Ex. 21:22-23). And also recent anatomical research (Thomas Feyens) suggests an early, not an immediate animation.

Eventually, Gassendi endorsed Feyens' notion that the rational soul should appear early on after conception, but he does not accept the underlying metaphysics and stressed again man's ignorance about the moment of animation.<sup>24</sup> The intellect owes its global plan to God, but all particular features of the individual owe their global plan to the vegetative soul common to all organisms.<sup>25</sup>

Also Walter Charleton (1619-1707) attempted to reconcile an atomistic view of the generation of human organism with the Christian doctrine of the immortal soul. Charleton endorsed a purely materialistic view of the sensitive soul, but in *The Immortality of the Human Soul* (1659) he worked out arguments for the existence of an immaterial rational soul.<sup>26</sup> In his *On the Origin of the Human Soul*, published in the same year, he first criticized existing theories, among which the scholastic view that the soul is implanted into the embryo at some point in its development. As to the latter doctrine, he distinguished between several versions: the animation of the seed, the soul educed from the potentiality of the seed, and the soul as generated by the soul of the parents. However, he focused on Sennert's theory of the transferring of the soul from the parents to their seeds. Charleton explicitly rejected this theory because in his view the seed is only an instrumental agent in the rise of the soul.<sup>27</sup> He claimed the need of a «higher and more perfect efficient cause,» but he remained rather vague about the nature of this cause, referring to an almighty Numen, divine mind (Aristotle), world soul (Plato), «natura naturans» or agent intelligent (Averroes), or better: *Creator* and *Pater omnium*. He concluded that the only certainty is that the human soul arises from God or the primary *Opifex*, since we have only negative knowledge about it.<sup>28</sup>

<sup>24</sup> Gassendi 1658: II, pp. 280b-281b.

<sup>25</sup> See the letter to Thomas Feyens, in Gassendi 1658: VI, pp. 16b-19b; for discussion, see Osler 1986; Arthur 2006, p. 158; Fisher 2006, pp. 120-123.

<sup>26</sup> Charleton 1659.

<sup>27</sup> Charleton 1678, pp. 5-13

<sup>28</sup> Charleton 1678, pp. 14-19.

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### 8.2. BETWEEN EPIGENESIS AND PREFORMATIONISM

During the first half of the seventeenth century, the constitution of the embryo was still conceived according to the schemes derived from Aristotle, Hippocrates and Galen. The formal and material causes of animal generation were contained in the male and female seed and from a mixture of both arose the living being. The subsequent development of the embryo was seen as the result of either epigenesis or a metamorphosis after a number of days. In the second half of the century this theory was challenged and a new generation of embryologists posited the primacy of either the egg or the sperm, while a post-conception theory of the embryo's development was replaced by preformationism and *emboîtement* (the view that all generations of humans were Chinese-boxed in the sperm of Adam or in the eggs of Eve). Some 'precursors' of this revolution merit to be mentioned.<sup>29</sup>

In 1621 the Roman physician Emilio Parisano (1567-1643) argued that the seed is produced and animated by all parts of the body, and that generation consists just in this production and animation.<sup>30</sup> He compared the seed to grain, suggesting that the seed contains preformed parts.<sup>31</sup> Shortly afterwards Giuseppe degli Aromatari (1586-1660), a Venetian physician, included in his epistle on plants the first definite statement of the preformationist theory since Seneca.<sup>32</sup> He had noted that in bulbs and some seeds the rudiments of many parts of the adult plant can be seen, and this led him to suggest that probably in all animals as well as plants a similar thing was true.<sup>33</sup> This suggestion remained quite marginal and did not begin to bear its fruits till the time of Swammerdam and Malpighi.<sup>34</sup>

In the meantime Aristotelianism and Galenism, although profoundly modified, continued to dominate the discussions on animal generation. The posthumous work of Fabrizio d'Acquapendente and William Harvey, which are based on observations of the development of the chicken egg,

<sup>29</sup> See Roger 1963, pp. 325-384; Brockliss 1990.

<sup>30</sup> Parisano 1621, pp. 44 and 72.

<sup>31</sup> Parisano 1621. See Roger 1963, p. 127.

<sup>32</sup> See Seneca's text in the Appendix.

<sup>33</sup> Aromatari 1625.

<sup>34</sup> Needham 1959, p. 121.

are cases in point.<sup>35</sup> However, their innovative works conceal different orientations, given that Acquapendente was preformationist, whereas Harvey kept defending the theory of epigenesis. The novelty of their embryological research lays in the use of animal models for the human development. According to Harvey, all animals arose from eggs. When the vaporous spirit, released by the male seed, entered the womb it was metamorphosed into an egg-like substance within which the embryo developed.<sup>36</sup>

Harvey's theoretical perspective is Aristotelian, but his research led him to different views. According to Harvey, the living female produces, *in utero*, a very pure fluid. In it all parts of the chick are present, though only *in potentia*, not *in actu*. The first part to appear in actuality is blood, which acts above the power of the elements, serves as the instrument of the great Creator, and is the substance whose act is the soul.<sup>37</sup> In *On Conception*, Harvey argues that the male genitor produces an immaterial idea or appearance in the uterus, which is then fashioned into a material likeness of the form of the genitor. The incorporeal form of the male parent 'supervises' the embryological development, informing the uterus and then the egg, using vital heat as its tool.

William Harvey's influence on embryology was in certain aspects reactionary. He did not break with Aristotelianism, as a few of his predecessors had already done. His opposition to atomism and 'chemistry' precluded any close cooperation between his followers and those of the other traditions, including Descartes and Gassendi. Fabrizio d'Acquapendente had elaborated a vitalistic theory of differentiation, but had allowed growth to be natural or mechanical. Harvey, by contrast, made both growth and differentiation the results of an immanent spirit, a sort of divine legate. Yet, his doctrine «*omne vivum ex ovo*» was an important advance on all preceding thought. His scepticism about spontaneous generation antedated by less than a century the experiments of Francesco Redi. He discussed the question of metamorphosis (preformation) and epigenesis, and decided plainly for the latter. He destroyed once and for all the Aristotelian (semen-blood) and Epicurean (semen-semen) theories of early embryogeny.<sup>38</sup>

<sup>35</sup> Acquapendente 1621 and Harvey 1651.

<sup>36</sup> Lennox 2006.

<sup>37</sup> Harvey 1651, c. 71, p. 382.

<sup>38</sup> Needham 1959, pp. 149-150.

## 8.3. OVISM AND ANIMALCULISM

Epigenesis remained the dominating theory until the systematic use of the microscope revolutionized the discussion on animal generation and triggered the doctrine of pre-existent germs.<sup>39</sup> This doctrine, in its ovist or animalculist version, developed in a decade, based on the observations of Nicolas Stensen, Reinier de Graaf, Antonie van Leeuwenhoek, Jan Swammerdam, and Marcello Malpighi.

In 1667 Stensen claimed to have discovered eggs in the female testicles of the dog-fish, and in 1672 Reinier de Graaf announced that he had located ovarian eggs in several mammals, including man. At the same time Jan Swammerdam, in his study of the procreation of insects, rejected epigenesis and claimed that the ovarian egg contained a perfectly formed miniature animal that would begin to expand once the egg had been penetrated by the male spirit. In his later publications he proposed that God had created every egg of the first female of the species at the beginning of time and implanted in them, in an infinite series of Chinese boxes, the eggs of all later females. Jan Swammerdam also made use of it as an explanation of the doctrine of original sin, and in a remarkably short space of time it was an established piece of biological theory.

This preformationism seemed to find confirmation in the findings of other embryologists, in particular in the work of Marcello Malpighi, who held that embryogeny is not comparable to the building of an artificial machine, in which each part is made after another part, and all parts gradually assembled, but takes place rather by unfolding of what was already there, like a Japanese paper flower in water. Malpighi became an important partisan of the ovist preformationism.<sup>40</sup>

Ovist *emboîtement* was opposed by Antonie van Leeuwenhoek and Nicolaas Hartsoeker, who had discovered spermatozoa. Both claimed that these, not the female eggs, were the germs of animal life. In sum, they believed that all generations of humans were Chinese-boxed in the sperm of Adam rather than in the eggs of Eve. Leeuwenhoek denied the female egg and limited the female's role in reproduction to nurturing the individual sperm. He rejected preformationism and maintained that his *animalcula* were metamorphosed in the womb. Hartsoeker, by contrast, accepted

<sup>39</sup> Pinto-Correia 1997.

<sup>40</sup> Malpighi 1673.

ovist biology and maintained that the egg was penetrated by the *animalculum* in the male seed. He soon was associated with a preformationist spermist theory which mirrored ovist *emboîtement* by insisting that God had created all *animalcula* from the beginning and embedded them in the spermatozoa of the first man.<sup>41</sup>

Later French authors, although accepting that God had created all animal life from the beginning of time, maintained that the deity had not implanted these preformed germs in the sperms of the first male of the species. Rather He had sown them everywhere in the universe. Therefore the germs had been blown around in the atmosphere until consumed by a living (male) creature and quickly turned into the *animalcula* in the male seed. This theory echoes the Paracelsian seed theory of disease and has an affinity with Gassendist embryology, as popularized by his pupil François Bernier.

The theory of the pre-existence of (ovist or spermist) germs encountered several difficulties, among which the most important are the explanation of heredity, hybrid offspring, regeneration, and the birth of monsters. Moreover, the ovists and spermatozoists viewed each other with suspicion. The ovists levelled theological objections. God did nothing in vain, but only one out of thousands of preformed animalcula was destined for fertilization.<sup>42</sup>

The debate of the animation of the fetus also drew the attention of the Catholic bodies of doctrinal control, as emerges from the case of Bartolomeo Corte. In his first scientific work, the *Letter on the Infusion of the Rational Soul* (1702), Bartolomeo Corte (1666-1738), a Milan physician, expressed serious doubt about the common view, developed both by ancient medicine and scholasticism, that the rational soul is infused into the embryo after about forty days.<sup>43</sup> In Corte's view, the spirits, transmitted to the embryo by its parents, link the soul to the body. These spirits, divided in natural, vital and animal spirits, should not be identified with the soul. Corte maintained that the soul is present from the moment of conception, but the rational soul is a *res cogitans*, hence its function and faculties should be distinguished from nutrition, growth and generation

<sup>41</sup> Brockliss 1990, p. 159.

<sup>42</sup> Roger 1963, pp. 385-439; Brockliss 1990, p. 168.

<sup>43</sup> Corte 1702, p. 8.

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of the seed, which are strictly mechanical operations.<sup>44</sup> The particles of the seed form the idea or, as Corte states, the *idoletto*, the simulacrum of the body which through animation and nutrition should grow. These forms in the seed, which are only visible with the microscope, slowly develop into the embryo in virtue of the activity of the spirits.

Invoking the authority of Nehemia Grew and Marcello Malpighi, Corte argued that the seed of all animals contains the idea of the organic body to be formed.<sup>45</sup> Earlier testimonies of this view are recalled, among whom Fernel, Lactantius, and Seneca.<sup>46</sup> In order to explain the inheritance of physical and psychological traits Corte endorsed the two-seeds doctrine and stated that the seed is produced by all parts of the body.<sup>47</sup> But central in his argumentations remains the idea of preformation, and the certainty of the presence of the organs in the fertilized egg does away with the traditional view of an unformed embryo during the first six weeks of gestation. Corte also rejected Feyens' view of animation on the third day. He argued instead that life starts at the moment of conception, that is, when the spirits of the father penetrate the egg. The copulation of male and female spirits triggers movement and life.<sup>48</sup> Now, the spirits which guarantee the animal functions of the embryo, are the *trait-d'union* between the immaterial soul and the body. This is the kind of generation that is described not only in *Genesis*, because animal generation continues the work of divine creation, but also in *Timaeus*, where Plato stated that God gave mind to the soul, and soul to the body. In fact, the rational soul is present from the moment of conception, but it is not involved in the formation of the embryo, which is due to the activity of the spirits who develop the organs already present in the egg.<sup>49</sup>

Corte's work was praised in the «Acta eruditorum»,<sup>50</sup> but condemned as heretical by the Roman Holy Office in 1703.<sup>51</sup>

<sup>44</sup> Corte 1702, p. 24-25.

<sup>45</sup> Corte 1702, pp. 26-29.

<sup>46</sup> Corte refers to *Physiologia* V.1, *Divine Institutions*, II.8, and *Natural Questions*, III.29, respectively.

<sup>47</sup> Corte 1702, pp. 34-39.

<sup>48</sup> Corte 1702, pp. 50-53.

<sup>49</sup> Corte 1702, pp. 58-62.

<sup>50</sup> «Acta eruditorum», XXII (1703), pp. 469-471.

<sup>51</sup> III, XI, p. 248.

## 8.4. PHILOSOPHICAL IMPLICATIONS: MALEBRANCHE AND LEIBNIZ

In 1672 the ovarian egg was enthusiastically promoted in the *Réceuil de mémoires et conférences* by Jean Baptiste Denis and two years later preformationist ovism was championed by Nicolas Malebranche (1638-1715), who realised its philosophical possibilities, and gave it a kind of metaphysical sanction.

In his *Recherche de la vérité* (1674) and *Entretiens sur la métaphysique, sur la religion et sur la mort* (1688) Malebranche set out and defended the central philosophical argument for the theory of pre-existence. There are two pillars of the argument. The first is the mechanical philosophy, which Malebranche endorsed and which requires natural philosophers to provide intelligible accounts of all phenomena of nature and thus to eliminate all references to the mysterious agency of substantial forms, vegetable or animal souls. And there are some deep principles of biology, notably functional complexity and functional interdependency of parts, which are based upon observation but also draw support from the conception of organisms as products of divine design and craft. Malebranche too had a keen interest in the work of microscopists as Swammerdam and Malpighi, and argued that their observations not only refuted earlier accounts of generation, but could serve to provide support for preformationism.<sup>52</sup>

In a chapter of the *Recherche*, where he treated of optical illusions Malebranche emphasized the deceitfulness and inadequacy of our senses, and deduced that all creatures must have pre-existed in the ova of the first females of their species.<sup>53</sup> Reason shows – given the infinite divisibility of matter – that *emboîtement* is at least a possible account of the (apparent) generation of plants and animals. Furthermore, it is impossible that mechanical laws fashion and organize the parts of a living being. The laws of motions are too simple. Thus, Malebranche became an ardent advocate of that idea, referred to sometimes as «encapsulated pre-existence».<sup>54</sup> Malebranche's adherence to preformationism did not have consequences for his psychology. By contrast, in Leibniz it deeply influenced the views on animal generation and the origin of substantial forms.

<sup>52</sup> Pyle 2006, p. 197.

<sup>53</sup> Malebranche 1962-1978: I, pp. 82-83 (text in Appendix).

<sup>54</sup> See also *Entretiens sur la métaphysique et sur la religion*, X, in Malebranche 1962-1978: XII, pp. 229, 253-254.

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The young Leibniz was apparently committed to a Sennert-like form of traducianism:

I thought that the multiplication of souls could be explained through traduc-tion, since many points can be made out of a single point, as the vertices of many triangles can be made through the division from the vertex of one.<sup>55</sup>

Mind, he speculated in a related piece from the same period, can be gener-ated in the place where the actions of stars, and possibly suns, collide.<sup>56</sup> In the early May 1671 Leibniz wrote a letter to Lambert van Velthuysen drawing together these ideas:

I explain [...] that mind can multiply itself, without new creation, per traducem, with no mention of incorporeality [...]. Once this is supposed, it is at least more rational to concede human propagation to be natural than needlessly invoke God to perform the perpetual miracle of new creation, not to speak of other difficulties.<sup>57</sup>

Leibniz repeats similar arguments in contemporary works and letters.<sup>58</sup>

Probably due to his visit to the Dutch microscopists van Leeuwenhoek and Swammerdam in 1676, the later Leibniz abandoned traducianism for a form of innatism and pre-existence. However, the way in which Leibniz circled back to Plato's template of pre-existence and innate ideas took him through the thickets of biology rather than metaphysics. As said before, pre-existence in the days of Leibniz also had the reference to a theory of embryology according to which fetuses are not created individually by the act of sexual procreation but unfold out of a germ that was already complete and developed from the first creation.

Leibniz wedded Plato's attribution of a pre-existent dimension to the human soul to a biological conception of the human body as emerging out of a chain of successive transmissions. The assimilation of these two views vindicates his pet principle of pre-established harmony. Leibniz imagined the pre-existent soul to have not yet acquired the faculty of reason, as he

<sup>55</sup> Letter to Des Bosses, April 30, 1709, quoted in Arthur 2006, p. 155, from Leibniz 1976, p. 599; cf. *Elementa de mente*, in Leibniz 1923-, II.I, p. 114.

<sup>56</sup> Cf. *De conatu et motu, sensu et cogitatione*, in Leibniz 1923-, VI.II, pp. 281-282.

<sup>57</sup> Leibniz 1923-, II.I, pp. 97-98.

<sup>58</sup> For discussion, see Arthur 2006, pp. 155-157.

believed that the souls remained in this state up to the time of the generation of the man to whom they were to belong.<sup>59</sup>

Leibniz had in common with the earlier preformationists the conception of a unit increasing in bulk in order to become another kind of unit. Leibniz held that animal organism is a mechanism that requires a divine preformation.<sup>60</sup> He rehabilitated the substantial forms in the monads. All animal forms existed from the beginning of the world, they are added in time to the bodies that they animate. The souls of the human spermatocyst *animalcula* are not yet rational, they become rational at the moment of conception.<sup>61</sup> This transformation requires divine intervention. The seeds that do not become men, die as seed, not as men.

The root idea of Leibniz's monadology is that soul or form is not a faculty that is material in plants and animals, nor an immaterial substance that is infused into human bodies by God at conception or later; rather, it is an immaterial spirit that governs the development of each organic body and takes it through all its transformations. No primitive entelechy can ever arise or be developed naturally. The *animalcula* discovered by van Leeuwenhoek contain the monadic souls of animals.<sup>62</sup> Or as Leibniz affirmed in 1683:

It is probable that every soul, indeed every corporeal substance, has always existed from the beginning of things. A pile or entity by aggregation such as a heap of stones should not be called a corporeal substance, but only a phenomenon. [...] there are as many souls as there are substantial atoms or corporeal substances. This put an end to the inextricable difficulties concerning the origin of things and forms, because they have no origin and there is no generation of substances.<sup>63</sup>

Thus, Leibniz rejected traduction and multiplication, as each substantial form existed from the Creation.

<sup>59</sup> Givens 2010, pp. 193-198.

<sup>60</sup> Roger 1963, pp. 367-369.

<sup>61</sup> *Principes de la nature et de la grace*, § 6.

<sup>62</sup> See also *Monadologie*, § 74-76.

<sup>63</sup> «Wonders concerning corporeal substance», a 1683 note, in Leibniz 1923-, VI.iv, p. 1465 (quoted in Arthur 2006, p. 170).



## CHAPTER NINE

### THE DEMISE OF AN ISSUE

#### 9.1. BEYOND PREFORMATIONISM

The doctrine of preformationism and pre-existent germs was based on a fairly restricted set of assumptions: nature consists of purely material phenomena; the passivity of matter; and mechanism alone does not suffice to explain the origin of living beings. As said earlier, the doctrine struggled with several unsurmountable difficulties, among which the most serious were: inheritance and hybrids; the partial regeneration and reproduction of plants through cuttings; the origin of monsters. Nonetheless, by 1720 the theory of preformationism was thoroughly established, not only on the erroneous grounds put forward by Malpighi and Swammerdam, but also on the experiments of Andry, Hartsoeker, Dalenpatius and Gautier, who all asserted that they had seen exceedingly minute forms of men, with arms, heads, and legs complete, inside the spermatozoa under the microscope.<sup>1</sup> Yet, starting from the beginning of the new century mechanist embryology came under attack from authors of different theoretical orientation.

In 1703 Jean le Clerc rediscovered Ralph Cudworth (1617-1688), and inserted extracts in a French translation from *The True Intellectual System of the Universe* in his Amsterdam periodical *Bibliothèque choisie*, as an alternative to atheistic mechanicism. Le Clerc highlighted in particular Cudworth's idea of a 'plastic nature', functional in the execution of divine providence as a subordinated second cause. Cudworth had meant by the term substantially what Henry More meant by 'spirit of nature' and what earlier Neoplatonists understood by the world soul. In fact, the mechanicism of nature is not denied, but made subordinate to a spiritual principle.<sup>2</sup>

Then, in 1705 Leibniz issued an article entitled «Considerations on vital principles and plastic natures».<sup>3</sup> In the same period also Nehemia Grew

<sup>1</sup> Needham 1959, p. 205.

<sup>2</sup> Roger 1963, pp. 419-423; see also Hunter 1950.

<sup>3</sup> Leibniz 1875-1890: VI, p. 544.

appealed to a vital world in his *Cosmologia sacra* (1701). And shortly afterwards the German physician Georg Ernst Stahl (1659-1734) published two works, *Paroenesis* (1706) and *Theoria medica vera* (1708), which both argued extensively for the need of a vital principle to generate, shape, and protect living beings.<sup>4</sup> Stahl held that the embryo, once conceived, is slowly nurtured by its own soul, which is thus seen as the architect of the body.<sup>5</sup> Stahl did not develop, however, a precise idea about the origin of the soul. He declared that he did not know whether the soul of the fetus is part of the parents' soul or whether it is created *ex novo*.<sup>6</sup> His ideas had a remarkable success among physicians, while they were refuted by Leibniz, who argued that all bodily events and actions were mechanical,<sup>7</sup> and by the physician Peter Christoph Burgmann (1701-1742), who rejected the soul's power over the human body.<sup>8</sup>

Other authors, among whom the later Hartsoeker and the Italian Francesco Colonna, returned to the Neoplatonic like conception of the origin of all animal souls in the fifth element or the world soul. Nicolaas Hartsoeker (1656-1725) abandoned mechanism and pre-existent germs to embrace the idea of a 'first element'; this first element, though extended, is remarkably similar to the traditional world soul, as well as capable to organize nature.<sup>9</sup> Echoes of this form of Neoplatonism are in the posthumous works of Francesco Colonna (1646-1726), who rejected not only random as an organizing principle, but also mechanism and the pre-existence of germs. Colonna maintained that the male seed contains the spirit of celestial fire, a non-elemental heat, which organizes the development of the embryo. This organizing principle, that is also active in the mineral world, is similar to the traditional world soul, which is explicitly associated to God.<sup>10</sup>

In the second half of the eighteenth century developed the well-known controversy between Albrecht von Haller (1707-1777) and Caspar Friedrich Wolff (1734-1794), working respectively at Göttingen and at

<sup>4</sup> Roger 1963, pp. 427-429.

<sup>5</sup> De Ceglia 2006.

<sup>6</sup> Stahl 1737, p. 374.

<sup>7</sup> Hoffmann 1981; Duchesneau 2000.

<sup>8</sup> De Ceglia 2006, pp. 276-279.

<sup>9</sup> Hartsoeker 1730, pp. 68-69.

<sup>10</sup> Colonna 1731; relevant passages are quoted and discussed in Roger 1963, pp. 436-438.

St. Petersburg. Early in his career, Haller wavered on whether to accept pre-existence or epigenesis; he initially supported animalculist pre-existence, but endorsed the idea of epigenesis in a later phase of his thought. However, he would abandon epigenesis as well to settle on the following idea: the functional organization of living beings seems to require an intelligent builder.<sup>11</sup>

In his 1759 dissertation *The Theory of Generation*, Wolff borrowed from Leibniz the idea of a monad developing into an organism by means of its own inherent force; to this he joined Stahl's notion of a generative supra-physical force in nature, which he defined as *vis essentialis*. The *vis essentialis* is not to be equated with the soul, nor is it to be understood as selective and purposive, capable of accomplishing different things from moment to moment.<sup>12</sup> In his last published treatise,<sup>13</sup> Wolff concluded that the essential force consists in nothing else than in a certain special and definite kind of attractive and repulsive force. However primitive these views, there is no basis for interpreting them either as vitalistic or animistic; and in his last treatise Wolff spoke out categorically against identifying the «essential force» with the *anima* of Stahl.

In his final unpublished writings, Wolff moved on to theories of the meaning of the soul and the way the soul manifests itself within a body. In an unpublished treatise he considered the soul to be «an extract of the brain and of the brain matter». Asserting the material nature of the soul, Wolff held that it «is born together with the body, which it inhabits and with which it is connected, but which it does not pre-exist».<sup>14</sup>

## 9.2. VITALISM: MAUPERTUIS TO BLUMENBACH

Alternatives to preformationism developed in France and Switzerland from the 1740s.<sup>15</sup> In *Vénus physique* (1745), Pierre-Louis Moreau de Maupertuis (1698-1759) demonstrated that neither ovism nor animalcu-

<sup>11</sup> Haller 1758; for discussion: Roe 1981; Detlefsen 2006, pp. 237-238; Dupont 2008, p. 264-268.

<sup>12</sup> Detlefsen 2006, p. 249.

<sup>13</sup> Wolff 1789.

<sup>14</sup> <[http://www.encyclopedia.com/topic/Caspar\\_Friedrich\\_Wolff.aspx#1-1G2:2830904944-full](http://www.encyclopedia.com/topic/Caspar_Friedrich_Wolff.aspx#1-1G2:2830904944-full)>, accessed on 28 October 2013.

<sup>15</sup> For a general discussion, see Rey 2000.

lism could reasonably be accepted. The evidence from heredity and from embryological observation compelled a return to the ancient view that the fetus arose from a mixture of the seminal fluids given off by both sexes. The development of the embryo was due to the fact that the elementary particles present in the seminal fluids were attracted to one another in some naturally lawful manner. This implied a theory of active matter and thus of vital materialism. Indeed, as epigenesis transcends the possibilities of mechanical forces, psychic powers are to be attributed to particles.<sup>16</sup> The original edition of *Vénus physique* went through three printings by 1750. It exercised a major influence on the work of Buffon, and it testimonies the shift in the life sciences confirmed by the work of La Mettrie, and Diderot.<sup>17</sup>

Georges Louis Leclerc, Comte de Buffon (1707-1788), posited a single unit of vegetable-animal life, the organic molecule. He noted the underlying similarity of internal structure in man, quadruped, cetacean, bird, reptile, and fish, suggesting that the Supreme Being, in creating animals, employed only one idea, and at the same time diversified it in every possible manner.<sup>18</sup> In effect, he held that the bodies of animals and of vegetables are composed of an infinite number of organic particles, perfectly similar, both in figure and substance, to the whole animal or plant of which they are the constituent parts. However, the very assemblage of particles does not explain the origin of life. Thus, Buffon argued that an embryo was preformed in its germ because all the parts of the germs were each a model of the animal as a whole. It was also formed by epigenesis, however, because, the sexual organs being first formed, all the rest arose entirely by a succession of new origins.

Buffon's theory of generation, based on the hypotheses of organic molecules and the internal mold (*moule intérieur*), brings together elements of both epigenesis and pre-existence. He resolutely rejected the *emboîtement* aspect of preformationism and completely destroyed the theory which ovists and animalculists had set up in order to explain resemblance to parents, namely, that, although the fetus might originate either from egg or spermatic animalcule originally, it was molded into the form of its parents by the influence of the maternal organism during pregnancy.<sup>19</sup>

<sup>16</sup> Roger 1963, p. 753.

<sup>17</sup> Roger 1963, pp. 468-69; Zammito 2006, pp. 330-331.

<sup>18</sup> Wilson 2006, p. 379.

<sup>19</sup> Needham 1959, pp. 214-215.

John Turberville Needham (1713-1781), English biologist and Roman Catholic priest, spoke in favor of epigenesis. He advanced a theory of spontaneous generation, alleging that tiny eel-like creatures develop in fermenting organic matter, such as flour. Voltaire rejected the theory, but it appealed to Diderot as logically eliminating the necessity for outside (divine) agency. Needham embraced epigenesis, he was explicitly a Leibnizian and postulated a vegetative force in every monad.<sup>20</sup> According to Needham, matter contains an active principle, and the soul arises from the «Fontaine de la vie, la vrai source de toutes les substances spirituelles».<sup>21</sup>

Lorenzo Spallanzani (1729-1799) researched in 1768 Needham's theory of the spontaneous generation of microbes. He thoroughly refuted the view of a life-generating force inherent to certain kinds of inorganic matter that causes living microbes to create themselves if given sufficient time. Spallanzani's experiment showed that it is not an inherent feature of matter, and that it can be destroyed by an hour of boiling. In turn, Needham argued that his experiments destroyed the «vegetative force» that was required for spontaneous generation to occur. Yet, Spallanzani paved the way for research by Louis Pasteur, who defeated the theory of spontaneous generation almost a century later.<sup>22</sup>

The Swiss naturalist Charles Bonnet (1720-1793) strove to establish a coherent theory of generation capable of overturning the epigenetic hypotheses stemming from the natural philosophies of Maupertuis, Buffon, and Needham. In order to achieve this task Bonnet benefitted from the discoveries of von Haller, and he endorsed the Leibnizian model of organized bodies.<sup>23</sup> Bonnet argued that mechanisms suffice to produce the organic bodies, provided that we add to them an already entirely organic preformation in the seed of the bodies in which they are born, up to the primeval seeds.<sup>24</sup> His philosophical position seriously contradicts the generalization that all epigenesists were vitalists and all preformationists mechanists. Needham and Wolff were epigenist-vitalists, and Bonnet was undoubtedly

<sup>20</sup> Needham 1959, p. 218.

<sup>21</sup> Roger 1963, pp. 494-520.

<sup>22</sup> Roger 1963, pp. 725-729.

<sup>23</sup> Duchesneau 2006, pp. 285-286.

<sup>24</sup> Duchesneau 2006, p. 307.

a preformationist-vitalist, but Maupertuis was equally clearly an epigenesist-mechanist.<sup>25</sup>

Subsequently, Johann Friedrich Blumenbach (1752-1840) advocated the existence of a fundamental force – the *Bildungstrieb*, or ‘formative drive’ – in matter that explains reproduction, nutrition, and regeneration.<sup>26</sup> He argued that this force, or tendency, is not to be confused with the *vis plastica* of Needham, which, according to Blumenbach, amounts to an occult quality, or the *vis essentialis* of Wolff or any other purely mechanical forces. Yet, the very idea of a life force borders on animism, something that Blumenbach opposed, for one could suppose that this force is simply due to a soul that exists along with or within a given body. Blumenbach attempted to show that the formative force can be a primitive feature of matter itself. In effect, he thought that it was both an emergent property of matter and a causal principle active in the development of matter.<sup>27</sup>

### 9.3. THE *ENCYCLOPÉDIE* AND FRENCH MATERIALISM

The entry «âme», in the *Encyclopédie*, which appeared under the direction of Diderot and D’Alembert from 1751, is divided in four sections: origin of the soul, its nature, its destiny, and finally the beings in which it resides. In the first section, the author extensively discusses whether it is a substance or quality, an issue agitating both pagan and Christian authors. Epicurus, Dicearchus, Galen and Asclepiades are mentioned among those who defined the soul a quality, but the majority of (ancient) authors regarded it as a substance. To Cicero is attributed the view that the soul is derived from the nature of God (*On Divination*, II.49), or that it is «excerpta mente divina» (*Tusc. Disp.* V.15). This should be interpreted metaphorically, however, that is, the origin of the soul is not on earth.<sup>28</sup> Then ancient thought is split up into four sects: the Pythagoreans, who held that all souls are of the same nature; the Platonists who regarded the soul as part of God; the Peripatetics who argued that the intellect is the only immortal part; and finally, the Stoics who viewed the soul as part of the divinity. According to

<sup>25</sup> Needham 1959, p. 214.

<sup>26</sup> Blumenbach 1789.

<sup>27</sup> Needham 1959, pp. 226-27; Look 2006, pp. 357-361.

<sup>28</sup> *Encyclopédie*: I, p. 327.

the author, after the rise of Christianity Plato is adapted, in the sense that only the animal soul is conceived of as a part of the world soul. But the Manicheans, Gnostics, and Priscillianists clearly deviated from this view, and their opinions did eventually lead to the noetics of the Arabs and to Spinozism.<sup>29</sup> Then, the entry hurries over the centuries. Taking for granted that the Fathers were ‘embarrassed’ about the issue, that is, uncertain between creationism and traducianism, the author jumps to Leibniz and to his view that all souls are contained in seeds which only in human beings develop into rational souls.<sup>30</sup>

Active in the same period and shortly afterwards, the eighteenth-century French materialists only marginally paid attention to the issue of animation and the origin of the soul.

Julien Offray de La Mettrie (1709-1751) claimed that all the mental faculties and processes in the human subject were products of the underlying bodily machine, more precisely, of its cerebral and neural components. This conclusion he worked out in his earliest philosophical works, *Histoire naturelle de l'âme* (1745), and *L'homme machine* (1748). In *Traité de l'ame* (published in 1753) La Mettrie stated that living bodies have two kinds of substantial forms: those that constitute the organs of these bodies and those that are regarded as principles of life. Among the latter La Mettrie counted the vegetative soul, which is made of some material ether, to be found in all bodies, in particular in fire and air. The vegetative soul nourishes itself continuously with ether which is present in the food.<sup>31</sup>

In *L'Homme plante* and *L'Homme machine*, La Mettrie was animalculist, more precisely ovo-vermist. In *Système d'Epicure* (1750), he developed a panspermist system: all living beings arise out of germs present in the air; this also holds for man, but in this case the germs have been intensively elaborated in the testicles, and then they develop in the egg. His thought remained conjectural when the nature, the origin and the transmission of life is at stake. He cited Maupertuis, Diderot, Needham, Buffon and De Maillet, but he never abandoned the mechanism of Boerhaave and remained also an admirer of Descartes. He looked back (Epicurus, Lucretius) rather than looking forward.<sup>32</sup>

<sup>29</sup> *Encyclopédie*: I, p. 328.

<sup>30</sup> *Encyclopédie*: I, pp. 330-331.

<sup>31</sup> La Mettrie 1764: I, pp. 35-38.

<sup>32</sup> Roger 1963, pp. 489-493.

In *De l'esprit* (1758) Helvetius argued that man's faculties may be reduced to physical sensation («sensibilité physique»); this even holds for memory, comparison, and judgment. Our only difference from the lower animals lies in our external organization.<sup>33</sup>

In *Le Système de la nature* (1770), D'Holbach saw the universe as nothing more than matter in motion, bound by inexorable natural laws of cause and effect. Following the tenets of Epicurean atomism, the book derided religion and espoused an atheistic, deterministic materialism: all causation was reduced to patterns of motion. Thus, man became a machine devoid of free will, and religion was excoriated as not just untrue, but dangerous. For Holbach man is purely a physical being, made of thinking matter. How man arises did hardly interest him.<sup>34</sup>

#### 9.4. THE END OF A DISCUSSION?

The traditional conception of the soul as the principle of life (Greek philosophy and Bible to Fathers, medieval schoolmen to early modern authors) slowly eclipses in the seventeenth and eighteenth centuries, mainly due to the rise of mechanist thinking in natural science and Cartesian dualism in philosophy. With the general recognition that whatever the soul might be, it was not a phenomenon, the issue of the origin of the human soul or the animation of the embryo as a subject of philosophical and scientific discussion disappeared. For both philosophy and science, Kant's principled ignorance in the life sciences is emblematic of a changing attitude.

Kant rejected preformationism and in some passages of his early works he apparently leaned towards epigenesis. However, neither in his early nor in his later works, did he accept epigenesis. With epigenesis, the 'order of nature' proved greater than the order of Kant's version of Newtonian physics, and the program for any life science necessarily exceeded the 'Newtonian' constraints Kant wished to impose upon it. Epigenesis involved a fundamental erosion of Kant's boundary between the transcendental and the empirical realms: a naturalism beyond anything Kant could countenance. To be consistent, Kant could have qualified his conception of Newtonian science in order to make room for the ontological actuality

<sup>33</sup> Helvetius 1777: I, pp. 1-5.

<sup>34</sup> Roger 1963, pp. 678-679.

of life.<sup>35</sup> In the *Critique of Judgment*, however, Kant explicitly denied that human beings could obtain knowledge of the generation of living beings.<sup>36</sup>

Kant's mature view on generation can perhaps be summarized as follows. Physico-theology does not provide proofs of a divine creator, and hexameralism (grounded on the Creation account in *Genesis*) is «poetic raving».<sup>37</sup> At the same time, a formative force that molds inert matter to convert it into living beings is unimaginable, and hylozoism, the doctrine that all matter is living, would be the death of natural philosophy. Thus, human beings cannot understand the origins of plants and animals. Either there is an intelligent world soul that builds animal bodies and builds the integrated system of plant and animal bodies, or else there are forces which, though unintelligent, we must conceive on analogy with intelligent agency. In either case, our conception of ourselves is warranted.<sup>38</sup>

With the rise of German idealism, the conceptual framework in which the human soul is discussed changes radically. In his discussions of rational psychology Kant identified the soul as the 'I' in the strictest sense and he argued that the existence of inner experience can neither be proved nor disproved. Subsequently, Fichte's idealism roots the ungrounded assertion of the subjective spontaneity and freedom of the 'I'. Then, Hegel defined the Soul as the immediate form in which the Spirit manifests itself when it emerges from Nature, and describes Soul as the object studied by anthropology. The Subjective Spirit develops from Soul to Consciousness (the object studied by Phenomenology) to Subjectivity or Reason, which «frees itself for objectivity through its activity». Also in English and French philosophy the soul is discussed and analyzed in terms of consciousness, individuality, personhood, that is, as a 'centre' of spiritual activity, not as something that is simply an expression of a substantial entity that lies back behind psychological activities.

With the nineteenth-century progress of embryology (the observation of female eggs) and even more so with the discoveries of modern genetics in the twentieth century, it was fertilisation, and not ensoulment or ani-

<sup>35</sup> Zammito 2006, pp. 353-354.

<sup>36</sup> Look 2006, p. 355.

<sup>37</sup> Kant, *Critique of Judgment*, in Kant 1968: V, p. 410.

<sup>38</sup> Wilson 2006, pp. 394-395, 401.

mation, that came to be regarded as the single most significant biological transition in human reproduction.

By the middle of the nineteenth century philosophical speculation on the soul and the time of its 'entering' the body has become outmoded. Ensoulment ended up as a strictly theological issue, without any clear link with philosophy or the life science. This surfaces in the discussion preceding the proclamation of the Immaculate Conception of Mary (1854), when the Catholic Church established that animation occurred at the moment of conception. The doctrine of the succession of souls was officially abandoned in 1869 by Pope Pius IX. Nevertheless, Catholic authors occasionally examined the issue. For example, Antonio Rosmini (1797-1855), Catholic priest and philosopher, argued that the sensitive soul derives from the parents through generation, which then may be transformed into an intellectual soul through the intellectual intuition of the idea of being. In a certain sense, it does not matter that such a transformation of a sensitive soul – which, coming from a material generation, must also be material – into an intellectual soul is quite hard to conceive.<sup>39</sup>

Nowadays, the issue of animation lives on in theology and bioethics, but it is now intimately linked to more narrowly defined practical issues, such as abortion and in vitro fertilization. As a rule, it is analyzed in terms of 'personhood' or 'human being'. However, also the issue of personhood can be taken back to prenatal life, as it depends upon potentialities, nature and history of the individual.

Now a growing number of Catholic moral theologians do not consider the human embryo in its earliest stages (prior to implantation) to constitute an individual human entity with the inherent potentiality to become a human person. The Roman Catholic tradition is engaged in an ongoing process of discernment, that remains faithful to ethical convictions and that takes into account the best available scientific evidence. Thus, whether to consider the human embryo a living human being is still under discussion.

The Declaration on Procured Abortion from the Congregation for the Doctrine of the Faith in 1974 phrases the matter with considerable precision:

<sup>39</sup> Riva 1956.

## THE DEMISE OF AN ISSUE

There is not a unanimous tradition on this point and authors are as yet in disagreement. For some it dates from the first instant; for others it could not at least precede nidation, that is, implantation in the uterus. It is not within the competence of science to decide between these views, because the existence of an immortal soul is not a question in its field. It is a philosophical problem from which our moral affirmation remains independent.<sup>40</sup>

The Eastern Orthodox tradition holds that the early embryo is a potential human being. The Protestant churches have not adopted one view of the moral significance of the early embryo but tend to take opposite approaches to the issue. Some believe that the human embryo should be treated as a human being from the moment of conception. Other groups articulate a case against such a view.

In fact, the question of immediate or delayed ensoulment of the embryo did not disappear completely, and it continues to be discussed in the context of embryogenic development and moral philosophy. The possibility of twinning and recombination is usually seen as highly significant. Often this phenomenon is invoked to support the view that individual human life is not present until two or three weeks after conception. Furthermore, the concept of personhood has a moral nature and it is usually seen as depending upon the attainment of sentience and rational capabilities. But can sentience be seen as a 'clear' cut-off point? And what do we talk about when we talk about rational capabilities? Again, uncontroversial judgment as to the minimal quantum of the constitution of a human being sufficient to have real potentials of the requisite soul is apparently impossible.

<sup>40</sup> See <<http://www.ewtn.com/library/CURIA/CDFABORT.HTM>>.



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Genesis 1:26-28:

Then God said: 'Let us make man in our image, after our likeness. Let them have dominion over the fish of the sea, the birds of the air, and the cattle, and over all the wild animals and all the creatures that crawl on the ground'. God created man in His image; in the divine image He created him; male and female He created them. God blessed them, saying: 'Be fertile and multiply; fill the earth and subdue it.'

Genesis 2:7:

The LORD God formed man out of the clay of the ground and blew into his nostrils the breath of life, and so man became a living being.

Job 10:9-11:

Remember, I beseech thee, that thou hast fashioned me as the clay; and wilt thou bring me into dust again? Hast thou not poured me out as milk, and curdled me like cheese? Thou hast clothed me with skin and flesh, and hast fenced me with bones and sinews.

Hippocrates, *On regimen*, I, 25 and 29.

25. The soul of man, as I have already said, being a blend of fire and water, and of parts of man, enters into every animal that breathes, and thus into every man, whether young or old. But it does not grow equally in all; in young persons, as the revolution is fast and the body growing, the soul catches fire, becomes thin and is consumed for the growth of the body; whereas in older bodies, the motion being slow and the body cold, it is consumed for the lessening of the body. The bodies that are in their prime and at the procreative age can nourish and make grow. Just as a potentate is strong who can nourish many men, but is weaker when they desert him, even so those bodies are severally strongest that can nourish very many souls, but are weaker when this faculty has departed.

29. [...] If anyone doubts that soul combines with soul, let him consider coals. Let him place lighted coals on unlighted coals, strong on weak, giving them nourishment. They will all present a like substance, and one will not be distinguished from another, but the whole will be like the body in which they are kindled. And when they have consumed the available nourishment, they dissolve into invisibility. So too it is with the soul of man.

Plato, *Timaeus*, 37a:

The Soul partakes in reasoning and harmony, having come into existence by the

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agency of the best of things intelligible and ever-existing as the best of things generated.

Plato, *Timaeus*, 41d-42a:

And when He compounded the whole He divided it into souls equal in number to the stars, and each several soul He assigned to one star, and setting them each as it were in a chariot.

Aristotle, *De generatione animalium*, I.20, 729a5-11:

Hence, too, it is plain that the semen does not come from the whole of the body; for neither would the different parts of the semen already be separated as soon as discharged from the same part, nor could they be separated in the uterus if they once entered it all together; but what does happen is just what one would expect, since what the male contributes to generation is the form and the efficient cause, while the female contributes the material.

Aristotle, *De generatione animalium*, II.1, 734b22-24, 735a8-9:

Now the semen is of such a nature, and has in it such a principle of motion, that when the motion is ceasing each of the parts comes into being, and as a part having life or soul. [...] it is plain therefore that semen both has soul, and is soul, potentially.

Aristotle, *De generatione animalium*, II.3, 736b26-28:

It remains, then, for the reason alone so to enter and alone to be divine, for no bodily activity has any connexion with the activity of reason.

Cicero, *Disputationes Tusculanae*, I, 66:

The origin of the soul of man is not to be found upon earth, for there is nothing in the soul of a mixed or concrete nature, or that has any appearance of being formed or made out of the earth; nothing even humid, or airy, or fiery. For what is there in natures of that kind which has the power of memory, understanding, or thought? which can recollect the past, foresee the future, and comprehend the present? for these capabilities are confined to divine beings; nor can we discover any source from which men could derive them, but from God. There is therefore a peculiar nature and power in the soul, distinct from those natures which are more known and familiar to us. Whatever, then, that is which thinks, and which has understanding, and volition, and a principle of life, is heavenly and divine, and on that account must necessarily be eternal; nor can God himself, who is known to us, be conceived to be anything else except a soul free and unembarrassed, distinct from all mortal concretion, acquainted with everything, and giving motion to everything, and itself endued with perpetual motion.

Seneca, *Quaestiones naturales*, III, 29.3:

Whether the world is a soul, or a body under the government of nature, like trees

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and crops, it embraces in its constitution all that it is destined to experience actively or passively from its beginning right on to its end; it resembles a human being, all whose capacities are wrapped up in the embryo before birth. Ere the child has seen the light the principle of beard and grey hairs is innate. Albeit small and hidden, all the features of the whole body and of every succeeding period of life are there. In like manner the creation of the world embraces sun and moon, stars with their successive phases, and the birth of all sentient life; and no less the methods of change in all earthly things.

Tertullianus, *De anima*, c. 22:

The soul, then, we define to be sprung from the breath of God, immortal, possessing body, having form, simple in its substance, intelligent in its own nature, developing its power in various ways, free in its determinations, subject to the changes of accident, in its faculties mutable, rational, supreme, endued with an instinct of presentiment, evolved out of one (archetypal soul). It remains for us now to consider how it is developed out of this one original source; in other words, whence, and when, and how it is produced.

Tertullianus, *De anima*, c. 27:

We indeed maintain that both [i.e. body and soul] are conceived, and formed, and perfectly simultaneously, as well as born together; and that not a moment's interval occurs in their conception, so that, a prior place can be assigned to either. [...]

Accordingly from the one (primeval) man comes the entire outflow and redundancy of men's souls—nature proving herself true to the commandment of God, 'Be fruitful, and multiply.'

Origen, *De principiis*, I, Praef. 5:

But with respect to the soul, whether it is derived from the seed by a process of transferring, so that the reason or substance of it may be considered as placed in the seminal particles of the body themselves, or whether it has any other beginning; and this beginning, itself, whether it be by birth or not, or whether bestowed upon the body from without or no, is not distinguished with sufficient clarity in the teaching of the Church.

Origen, *De principiis*, II.9, 1:

But let us now return to the order of our proposed discussion, and behold the commencement of creation, so far as the understanding can behold the beginning of the creation of God. In that commencement, then, we are to suppose that God created so great a number of rational or intellectual creatures (or by whatever name they are to be called), which we have formerly termed understandings, as He foresaw would be sufficient. It is certain that He made them according to some definite number, predetermined by Himself: for it is not to be imagined, as some

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would have it, that creatures have not a limit, because where there is no limit there can neither be any comprehension nor any limitation.

Arnobius, *Adversus nationes*, II, c. 36:

For if by chance you knew it not, and because of its novelty it was unknown to you before, now, though late, receive and learn from Him who knows and has made it known, Christ, that souls are not the children of the Supreme Ruler, and did not begin to be self-conscious, and to be spoken of in their own special character after being created by Him; but that some other is their parent, far enough removed from the chief in rank and power, of His court, however, and distinguished by His high and exalted birthright.

Themistius, *On Aristotle On the Soul*, bk. I, ch. 3 [Themistius 1996, p. 40]:

So if bodies are the instruments for souls, each soul should migrate into the [body] belonging to it, but not really migrate so much as make the body belong to it and be adapted to it. For [the soul] moulds the body, and does not take it over ready-made, as lyre-playing does the lyre.

Augustine, *To Jerome, on the origin of the soul*, 5.12:

When, however, these things are brought forward by persons who advance them as conclusive against the opinion that God now creates new souls as He created the soul of the first man, and who hold either that He forms them from that one soul which existed before He rested from creation, or that He now sends them forth into bodies from some reservoir or storehouse of souls which He then created, it is easy to turn aside their argument by answering, that even in the six days God formed many things out of those natures which He had already created, as, for example, the birds and fishes were formed from the waters, and the trees, the grass, and the animals from the earth, and yet it is undeniable that He was then making things which did not exist before. For there existed previously no bird, no fish, no tree, no animal, and it is clearly understood that He rested from creating those things which previously were not, and were then created, that is to say, He ceased in this sense, that, after that, nothing was made by Him which did not already exist. But if, rejecting the opinions of all who believe either that God sends forth into men souls existing already in some incomprehensible reservoir, or that He makes souls emanate like drops of dew from Himself as particles of His own substance, or that He brings them forth from that one soul of the first man, or that He binds them in the fetters of the bodily members because of sins committed in a prior state of existence, if, I say, rejecting these, we affirm that for each individual He creates separately a new soul when he is born, we do not herein affirm that He makes anything which He had not already made. For He had already made man after His own image on the sixth day; and this work of His is unquestionably to be understood with reference to the rational soul of man. The same work He still does, not in creating what did not exist,

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but in multiplying what already existed. Wherefore it is true, on the one hand, that He rested from creating things which previously did not exist, and equally true, on the other hand, that He continues still to work, not only in governing what He has made, but also in making (not anything which did not previously exist, but) a larger number of those creatures which He had already made. Wherefore, either by such an explanation, or by any other which may seem better, we escape from the objection advanced by those who would make the fact that God rested from His works a conclusive argument against our believing that new souls are still being daily created, not from the first soul, but in the same manner as it was made.

Albert the Great, *De natura et origine animae*, I, cap. 3 [Opera, XII, p. 9b]:

From these said things we conclude, then, that the vegetative soul is brought out of matter by the forming power and that it is immersed in matter like the substance in which is the formative power of the same, and that it does not work save as some natural and material instrument, which is the heat or cold, dryness or moisture, and these three make that it is not a perfect soul, but that it is called a part of the soul.

Albert the Great, *De natura et origine animae*, I, cap. 4 [Opera, XII, p. 10a]:

And because the power of the father's soul and of the heavenly intellect is in this spirit, the sensitive soul is brought out of its matter.

Albert the Great, *De natura et origine animae*, I, cap. 6 [Opera, XII, p. 14a]:

Because of this, not even from something material already existing it is said that God creates the rational soul; and in this sense the mind enters the embryo from an extrinsic source, yet it is not from an extrinsic agent, because the intellect, who is the author of nature, it is not outside of nature.

Thomas Aquinas, *Summa theologiae*, I, q. 118, a. 1, ad 4um:

In perfect animals, generated by coition, the active force is in the semen of the male, as the Philosopher says (*De gen. anim.* II.3); but the fetal matter is provided by the female. In this matter, the vegetative soul exists from the very beginning, not as to the second act, but as to the first act, as the sensitive soul is in one who sleeps. But as soon as it begins to attract nourishment, then it already operates in act. This matter therefore is transmuted by the power which is in the semen of the male, until it is actually informed by the sensitive soul; not as though the force itself which was in the semen became the sensitive soul; for thus, indeed, the generator and generated would be identical; moreover, this would be more like nourishment and growth than generation, as the Philosopher says. And after the sensitive soul, by the power of the active principle in the semen, has been produced in one of the principal parts of the thing generated, then it is that the sensitive soul of the offspring begins to work towards the perfection of its own body, by nourishment and growth.

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Henricus Cornelius Agrippa, *De occulta philosophia*, III, c. 37 [Agrippa 1533, p. 289]:  
Such, then, the human soul, which according to the opinion of the Platonists proceeds immediately from God, through suitable media is connected to this thicker body; hence, before its very descent, the soul is wrapped in a heavenly and aerial body, which they call the ethereal vehicle of the soul.

Francesco Giorgio, *In Sacram Scripturam problemata*, tom. III, probl. 492 [Giorgio 1574, f. 202r]:

Why, how and when was created the rational creature, which is called the soul? Not because it was due to the boundless goodness of divine liberality, which not only enjoys being at rest in itself, but spreads itself in many beings? Since, by its very nature, the Good expands itself, as Dionysius, Hierocles, and Boethius with other wise men, argue. God was not satisfied with a variety of creatures, until he reached the supreme level, that is, man, whom He entrusted with His very image. And He did it through one command only, according to that saying of the Prophet, He spoke, and they were made. At which time that was done, it is difficult to know. Was it, then, by infusing that He created [souls] for the disposition of the body of each one, as Augustine seems to believe, and with him the common school of theologians? Was the soul created from the beginning? according to that saying of the Wise [Sirach 18:1]: He that liveth for ever created all things at the same time. But if all the souls were created in the beginning, where do they reside until they are infused in the bodies? Or was a mass of souls created at the same time, in such a way that God cannot create any soul? as it is written: The Lord God hath ceased from all His work which He had created to do, if it is lawful for the time, according to that saying, My Father worketh hitherto, and I work, that is, by infusing by preserving, feeding, and doing all other things. [...]

Whence do all the souls come that have to be infused? Perhaps from the mouth of God? as it is written: And the Lord God breathed into his nostrils the breath of lives, because man, which the Scripture calls the universal Adam, was created first, and placed (as the more secret theologians say) on the seat or the throne of God. For the Scripture says, the creation of man will be talked about later. And there was no man on the earth, who might have worshiped her. Later follows: And God formed man of the dust of the earth, that is, as far as his body is concerned, and breathed into his nostrils the soul or the breath of lives: It is not said, He created. Although most of the wise men say that He has created through breathing. But these things cannot be made up from Scripture.

Jacopo Zabarella, *De facultatibus animae*, c. 11 [Zabarella 1590, cols. 649-650]:

We say that the difference lies in the fact, that the fire generates fire, by acting on some other matter outside of itself, and by bringing forth another form of the fire; but a living being does generate another living being in such a way, acting on any other matter outside of itself, and it grants to another part something of its own matter, and something of its own form with an active force, while displaying seed for generation. Because the seed, as long as it is in the plant, is animated by a liv-

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ing [*vegetans*] soul, through which also the whole plant is animated, and from this soul it obtains a reproductive force [...] for the human seed is properly called that which is made of the seed of the male, and the menstrual blood of the female, and it is usually called embryo [*conceptus*], and it is similar to the seeds of plants, as it has implanted an active force, which, as Aristotle says in 2. *Phys.*, is human nature not as a form, but as a craftsman, and an immediate agent.

Francesco Patrizi, *Nova philosophia. Materiali* [Patrizi 1993, p. 55]:

We do not hesitate to affirm that also its principal parts have souls of their own, propagated, as it were, and assigned to them by the Creator, in accordance with that divine word of Moses: 'Let the Earth, and the waters bring forth a living soul.'

Giordano Bruno, *Cabala del cavallo pegaseo* [Bruno 2002: II, p. 451]:

[...] in the bosom of spiritual matter the human soul is indifferent to those of the mules, and to the soul which constitutes the afore-named animals, from the one that is in all things [...] All spirits are from the Amphitrite of a spirit, and to that all return [...]. That of man is the same in specific and generic essence as that of the flies, oysters and marine plants.

Otto Casmann, *Psychologia* [Casmann 1594-1596, pp. 204-205]:

Thorny and complicated is this question, namely whether the embryo once formed in its members, and developed in appropriate disposition, is animated by God, or else whether the soul in virtue of the status and concept of seed is transmitted 'per traducem' to the first conceived, so that at the very moment of conception the soul of the fetus is propagated by the parents' soul through the seed's transplantation. [...] The sentence of the Philosopher [i.e. Rudolph Goclenius] is this: the seed is equally detached from the soul, and from the body, and so the immortal seed of the soul is the principle of the soul of the future offspring, detached from the soul of the parents, in such a way, that the entire seed of the human might arise from a mixture of both paternal and maternal seed, both of the body and of the soul, and in order that the whole man eventually arises. But from the seed which is detached from the soul, in virtue of the Word of God, the immortal rational soul is produced.

Fortunio Liceti, *De ortu animae humanae* [Liceti 1602, pp. 333-334]:

So, then, the sensual soul was present in the seed as if it were asleep, and sleeping was latent in the first act. Then, from the matter of the woman first it wakes up, and is moved from the first to the second act, that is, to undertake the preparation of the materials needed for receiving the soul and establishing conception. Once established the conception, it then is moved to a more perfect, and more laborious operation, namely, to the formation of the parts necessary to the future animal for carrying out the actions of life. For the most part that work is completed within forty days from the moment of conception.

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Fortunio Liceti, *De ortu animae humanae* [Liceti 1602, pp. 428-429]:

On the basis of what has been delivered to us, it can be certainly established that the human soul as to its parts that lack reason, I say, vegetative and sensitive, comes forth completely from the father by means of the seed; of course on condition that the soul of the father as to its vegetative and sensitive part, which is divided in sexual intercourse to the partition of the subject, is multiplied and remains in the gush of the seed. And this numerically identical soul is communicated to the female seed and blood on about the ninth day from sexual intercourse, at the time conception occurs. But with respect to the rational part, this is immediately created by God at the same instant, and infused into the organized body, not before the fortieth day after the conception.

Pierre Gassendi, *Syntagma*, II [Gassendi 1658: II, pp. 279b-280b]:

But it seems that with respect to animation the matter has been almost settled with what has been said about the soul of the semen. For, of course, if the semen has been endowed with soul, we need not seek for the moment of time at which the fetus begins to have a soul, since it is never without one and is like a branch or fruit plucked from a tree [...] Whatever may be true of these [...], it will therefore, if we may make the distinction [...] be permissible to say that the vegetative and sensitive part of the soul is present in man's body or his material just as it is in other animals right from the moment of conception [...].

Daniel Sennert, *Hypomnemata*, IV, cap. 6 [Sennert 1636, p. 230]:

The souls are propagated in virtue of this blessing, by means of the seed, *per traducem*, that is, the soul is not drawn from the semen, but it is transmitted by the semen and with the semen to the parts to be generated from the semen, just as light lit by another light. And, wherever the souls have met with favorable matter, in which they are able to subsist by themselves, such as, the body of the semen, they are able to transmit themselves into it, and, as Scaliger says, they are able to put it on, in such a way that that part – if we choose to call it in such a way (for it is not properly a part) – of the form retains the same essence of the whole form, which was in the whole, from which it is lopped off, and which afterwards also starts to perform the same operations. And so this same essence of the soul, which is in the tall walnut trees, is in the nut and in that seed, which afterwards sprouts from the nut. And later when it also meets fit matter, by which it may grow, it performs the same activities, and each year produces new branches, and generates nuts.

Nicolas Malebranche, *Recherche* [Malebranche 1962-1978: I, pp. 82-83]:

Likewise, a chicken that is perhaps entirely formed is seen in the seed of a fresh egg that has not been hatched. Frogs can be seen in frogs' eggs, and still other animals will be seen in their seed when we have sufficient skill and experience to discover them. But the mind need not stop with the eyes, for the mind's vision is much

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more extended than the body's. We ought to accept, in addition, that the body of every man and animal which will be born until the consummation of time, was perhaps produced at the creation of the world. My thought is that the females of the original animals may have been created along with all those of the same species that they have begotten and that are to be begotten in the future.



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