Studies in the History of Philosophy of Mind 30

Giouli Korobili

Aristotle. *On Youth and Old Age, Life and Death, and Respiration* 1-6

With Translation, Introduction and Interpretation

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Studies in the History of Philosophy of Mind

Volume 30

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For Christine

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Contents

Abbreviations

ALEXANDER of Aphrodisias

in Mete. *In Aristotelis meteorologicorum libros commentaria*

ARISTOTLE

APo.	*Analytica posteriora*
APr.	*Analytica priora*
Cael.	*De caelo*
de An.	*De anima*
Div. Somn.	*De divinatione per somnum*
EE	*Ethica Eudemia*
EN	*Ethica Nicomachea*
GA	*De generatione animalium*
GC	*De generatione et corruptione*
HA	*Historia animalium*
IA	*De incessu animalium*
Insomn.	*De insomniis*
JSVMR	*De juventute et senectute, de vita et morte, de respiratione*
Juv.	*De juventute et senectute*
Long.	*De longitudine et brevitate vitae*
MA	*De motu animalium*
Metaph.	*Metaphysica*
Mete.	*Meteorologica*
MM	*Magna moralia*
PA	*De partibus animalium*
Ph.	*Physica*
Pol.	*Politica*

Pr.	*Problemata*
Protr.	*Protrepticus*
Resp.	*De respiratione*
Rh.	*Rhetorica*
Sens.	*De sensu et sensibilibus*
Somn.Vig.	*De somno et vigilia*
Top.	*Topica*
PN	*Parva Naturalia*

ARISTOPHANES (Ar.)

Ach.	*Acharnenses*
Eq.	*Equites*
Lys.	*Lysistrata*
Nu.	*Nubes*
Ra.	*Ranae*
Th.	*Thesmophoriazusae*

ARISTOXENUS (Aristox.)

Harm.	*Elementa harmonica*

DIOSCORIDES (Dsc.)

De Mat. Med.	*De materia medica*

EURIPIDES (E.)

Andr.	*Andromacha*
Supp.	*Supplices*

GALEN

Nat.Fac.	*De naturalibus facultatibus*
UP	*De usu partium*

HERODOTUS (Hdt.)

Hist.	*Historiae*

[HIPPOCRATES] (Hipp.)

Acut.	*De victu acutorum*
Aer.	*De aere, aquis, locis*
Aphor.	*Aphorismi*
Coac. praenot.	*Coacae praenotiones*
Ep.	*Epistulae*
Epid.	*Epidemiarum*
De flat.	*De flatibus*
De fract.	*De fracturis*
De gland.	*De glandulis*
De hum.	*De humoribus*
De locis in hom.	*De locis in homine*
Morb. Sacr.	*De morbo sacro*
De mul. affect.	*De mulierum affectionibus*
De nat. hom.	*De natura hominis*
De Nat. Pueri	*De natura pueri*
Oss.	*De ossium natura*
Vict.	*De victu*
VM	*De vetere medicina*

[HOMER] (Hom.)

Il.	*Ilias*
Od.	*Odyssea*

MICHAEL PSELLUS	J. M. Duffy, *Michaelis Pselli philosophica minora*, vol. 1, Leipzig 1992
MICHAEL OF EPHESUS	P. Wendland, *Commentaria in Aristotelem Graeca*, xxii *pars* I, Berlin 1903

PLATO (Pl.)

Cra.	*Cratylus*
Grg.	*Gorgias*
Lg.	*Leges*
Phd.	*Phaedo*
Phdr.	*Phaedrus*
R.	*Respublica*
Ti.	*Timaeus*

THEOPHRASTUS (Thphr.)

CP	*De causis plantarum*
HP	*Historia plantarum*
Lap.	*De lapidibus*

Other Abbreviations

Bonitz	H. Bonitz, *Index Aristotelicus*, Berlin 1870.
DK	H. Diels and W. Kranz, *Die Fragmente der Vorsokratiker*, 3 vols, 6th edition, Berlin 1951.
K.	C. G. Kühn, *Claudii Galeni opera omnia*, 22 vols, Leipzig 1821–1833, repr. Hildesheim 1964–1965.
L.	E. Littré, *OEuvres complètes d'Hippocrate*, 10 vols, Paris 1839–1861.
LSJ	H. G. Liddell, R. Scott and H. S. Jones, *A Greek English Lexicon*, 9th edition, Oxford 1996.
Smyth	H. W. Smyth, *Greek Grammar*, rev. by Gordon M. Messing, Cambridge, Mass. 1956.

Chapter 1
Introduction

1.1 The Topic of the *JSVMR*[1]

The *JSVMR*, the last among the short treatises on nature gathered under the collective title *Parva Naturalia*, addresses four main topics: life, death, the stages of life and respiration. Presented in this way, and without further specification, its content admittedly seems incoherent and unspecified; yet, in this work, Aristotle is careful to provide us with all necessary conceptual links to tie all of these topics together. A close examination reveals that its main topic is 'Life', addressed in terms of a soul-body compound which passes through different life-stages before reaching death, and fulfils its needs through a variety of physiological processes carried out by several organic parts.

Knowledge of the basic principles of Aristotle's theory of the soul is a prerequisite for investigating the topic of life, as is made clear in the very first lines of the text. For Aristotle, the variety of functions that different kinds of living things perform is an indication that they do not possess the same kind of soul. Plants possess only the nutritive part of the soul which is responsible for nutrition, growth, cooling and reproduction. Animals, on the other hand, must also possess the perceptive part of the soul, as they exhibit the capacity for perception. The *JSVMR* limits itself to inquiring into the physiology of the nutritive soul, given that perception is dealt with in a distinct treatise in the *PN*, the *Sens*.

The central question which *JSVMR* 1–6 address and seek to answer has to do with the location of the principle of the soul in a specific place within the living

[1] In this book I adopt the – admittedly not so reader-friendly – abbreviation *JSVMR* to refer to the work as a whole consisting of twenty seven chapters. At the same time, at those places where I actually argue in favour of the unity of the so-called *De Juventute* and *De Respiratione*, I find it more convenient to use two distinct abbreviations, *Juv*. and *Resp*., to refer specifically to Bekker pages 467b10–470b5 and 470b6–480b30 respectively.

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body. Although for Aristotle the soul is not a magnitude and it thus cannot be said to reside in a body part in the same way as, for instance, Utrecht is said to lie south-east of Amsterdam, still when the same question is raised in the *JSVMR*, Aristotle is seen to employ the language of necessity, admitting that: "Therefore, in blooded animals it is necessary that the principle of both the perceptive and the nutritive soul lies (εἶναι) in the heart (ἐν τῇ καρδίᾳ)" (4.469a5–7). And while elsewhere he maintains that there is no part of the living body that does not possess soul (*GA* I 19.726b22–24; II 1.734b24–27), in the *JSVMR* he deems it very important to identify that particular organ which serves as the seat of the principle of the soul in a living thing: "it is manifest that the soul exists (ὑπάρχει) in some part of the body (ἔν τινι του σῶματος μορίῳ) and exactly in this one among those parts possessing power" (1.467b15–16). Yet, Aristotle seems to be aware of the danger lurking behind this admission when, at the beginning of his treatment, he hastens to underline that the incorporeality of the soul is to be taken for granted here as it has already been subjected to examination elsewhere (1.467b13–14). Hence, using vocabulary of such sort appears as perfectly justifiable.

1.2 The *JSVMR* as Part of Aristotle's Inquiry into Living Things

Any attempt to date the *JSVMR* faces significant difficulties and is rather speculative in nature. This is unfortunately the case with most of Aristotle's writings. Notably the *JSVMR* contains both straightforward and less direct references to some of Aristotle's other works, such as the *de An.*, *PA* and *Pr.* Nevertheless, if we assume that Aristotle repeatedly revised his works, passing through various stages of philosophical reflection and wavering between different modes of philosophical instruction, such references furnish no reliable guide for establishing the exact date or order of composition of these treatises. They are, however, particularly telling in regard to, on the one hand, Aristotle's view of the order in which the main topic under investigation should be taught and learned, and, on the other hand, the tight bond that links these works together as well as the important place that the *JSVMR* seems to occupy among his biological writings.

Let me linger a bit longer on the more or less clear references to other works of Aristotle contained in *JSVMR* 1–6. *JSVMR* 1 alludes to the *de An.* (467b13);[2] *JSVMR* 3 refers directly to the *PA* (468b32), as does *JSVMR* 5 to the now lost *Pr.* (470a18). Judging from the context of these references, we may conclude that Aristotle's analysis here presupposes background knowledge of: (i) the basic principles of his psychological doctrine (including the relevant treatments in *de An.* I and II, especially the places where he critisises materialistic and dualistic accounts of the soul); (ii) his views concerning the 'divisibility' of the soul into parts or with

[2] In contrast to the utterly explicit reference found at *JSVMR* 14.474b12.

respect to its capacities; (iii) the *PA* account of the heart and the blood; and (iv) a number of ideas that are discussed in the *Pr.* and relate to the causes of the different reactions of fire depending on the quality and quantity of the air supplied. From another reference (3.469a20–23) to an unspecified work (or perhaps a lecture) we further learn that the reader of the *JSVMR* was expected to be aware of Aristotle's views on the connection of the senses and sense-organs to the brain and the heart. Other intertextual references found scattered throughout the rest of the *JSVMR* seem to necessitate some prior familiarity with Aristotle's anatomical experiments and diagrams, and ideas put forward in the *HA*.[3]

All the above considerations suggest that the *JSVMR* is primarily not a text for beginners in Aristotle's natural philosophy (although he does not exclude them from his target audience, as explained in Essay 3). Rather, it seems to interact with nearly all the biological writings of Aristotle, plus his *de An*. To follow the train of thought brought forward in this text, readers need to be already familiar with Aristotle's ideas about the soul, heat and the senses, and equipped with prior knowledge of the anatomy of the animal and human body. Judging from the high frequency with which pointers to background knowledge appear in this text and the variety of subjects to which they appeal, we can also conclude not only that projection of presupposed knowledge must have been one of the principal features of Aristotle's lectures on natural philosophy, but also that he is deeply concerned with instructing his readers properly on the relevant material. At the same time such pointers serve to highlight particular features of Aristotle's method of inquiry into living things, part of which is the treatment in the *JSVMR*, as Aristotle himself states at the end of the *Long*.[4]

A reconstruction of the method of inquiry into living things proposed in the *JSVMR* reveals that it is mainly characterised by the following features:

(i) It is comprehensive and all-encompassing in scope, taking into account all relevant material – all kinds of living thing, viewed as compounds of body and soul.
(ii) It considers the examination of existing views on the subject a prerequisite for arriving at original outcomes.
(iii) It regards the investigation of causes as an indispensable part of it.
(iv) It analyses the research material from a double perspective, i.e. on the basis of both empirical observation and rational argumentation.
(v) It is partly didactic in nature, giving its addressee plenty of guidance about how to handle the material most effectively; it thus goes beyond the confines of doing research in isolation.
(vi) It pursues the goal of interdisciplinarity, but only when deemed necessary and under certain conditions.

[3] See e.g. 14.474b9, 22.478a26–28 and 478a35–478b1.

[4] μέθοδος, *Long*. 6.467b5–9.

More will be said about these and similar methodological issues in Essay 1 and Essay 2.

1.3 *JSVMR*: A Significant Contribution to the History of Natural Philosophy and Science. The Problem of Its Unity

As far as we know, Aristotle neither compiled nor did he give any title to the collection of short writings on nature, now known as his *Parva Naturalia*. This title was first used in the thirteenth century by Aegidius Romanus (Gilles de Rome) and has often been deemed disappointing since then due to its being rather uninformative.[5] Aristotle's opening remarks in the *Sens.* (1.436a6–15) seem to elucidate the main connecting link between the works comprising the collection: they all have assumed the task of investigating phenomena that are "common to soul and body" – a phrase also occurring in *de An.* III 10.433b19 with reference to 'functions'. Hence, these largely self-standing treatises can be qualified as 'biological' in the sense that they address issues and tackle questions that have everything to do with factors relating to or affecting life in ensouled bodies.

This explains why the *PN*, and the *JSVMR* in particular, sets out to open up a dialogue with the *de An.* and the major biological treatises, such as the *PA* and the *GA*.[6] Indeed, the *JSVMR* figures prominently as a necessary supplement to these works. Its most important contribution consists in providing the most complete account of Aristotle's cardiocentric theory in the extant *corpus* of his writings as well as a detailed discussion of respiration. At the same time, it serves as a useful 'index' of the vital functions and organs of living bodies but also of the factors ensuring life, which otherwise would have been looked for in passages scattered throughout the *corpus*.

At the same time, the *JSVMR* is a representative example of a natural-philosophical treatise which has profoundly benefited from the circulation of ideas pertaining to what we would call 'science' of its time, in particular advances in medical knowledge. Although Chapters 1–6 are less medically coloured than the rest of the treatise, they still manage to prepare the ground for what is to follow. They do so by referring more or less directly to essential organic parts, such as the heart, the blood-vessels, the mouth, the belly and the brain, and by stressing their contribution to the overall functioning of the organism. Chapters 7–27, on their part, adapt a topic of obvious medical interest, respiration and the anatomy of the organs assisting it, to a treatment pertinent to natural philosophy, culminating in Aristotle's methodological instructions found in the epilogue of the treatise. In this last part of the work, Aristotle notoriously sets forth the view that medicine and natural

[5] Ross (1955) p. 1; King (2001) pp. 35–36.

[6] For an excellent introduction to the *PN* and its reception, see Bydén and Radovic (2018).

philosophy have properly demarcated boundaries which however can be transgressed if both physicians and natural philosophers practice their disciplines on the basis of certain 'deontological' rules. In bringing together seemingly distinct disciplines by showcasing how assimilation of the principles of one discipline can induce a reorientation of the main objectives of the other, Aristotle's treatment of the topic of life in the *JSVMR* exemplifies, in and of itself, the kind of cross-disciplinary enquiry he envisages for natural philosophers.

There are several reasons for why this text deserves to be studied on its own merits. Let me mention only a few:

(i) It devotes itself to a novel topic – inasmuch as for the first time in Greek literature, as far as we know, the topics of youth, old age, life, death and respiration receive independent treatment.

(ii) It is also the first to examine life and death (and, by extension, the other topics mentioned above) primarily from the perspective of biology. Contemporary reflections on the 'metaphysical' aspects of life and death aside, Aristotle introduces a fresh perspective from which to approach the stages of life (and death as the terminal point of life), as he insists that they can be reasonably explained by appeal to the various types of change the vital organ responsible for cooling undergoes during life. The body, thus, receives proper attention as a separate and useful object of study.

(iii) It advances the view that all living things are governed by the same biological principles, and proves by its own exposition in what way even the humblest creatures can be philosophically interesting (thus putting into practice the exhortation of *PA* I 5).

(iv) It is an important witness to previous and contemporary views on the topics discussed – in fact in some cases the unique only witness, as for instance the section preserving Empedocles' poem containing the simile of the clepsydra in Chapter 13.

(v) It forms part of Aristotle's account of the nutritive soul, which is the first elaborate, philosophical attempt to highlight the importance and indispensability of the lower part of the soul. Apart from establishing Aristotle's cardiocentric theory by proceeding through a series of methodological steps to bring out the advantages of locating the soul in the middle of the body, the *JSVMR* provides explanations for the functions and co-operation of the basic – albeit primarily responsible for keeping a thing alive – capacities of the soul, i.e. generation, nutrition, growth, maintenance, and cooling.

(vi) It reflects brilliantly Aristotle's interdisciplinary interests. It brings together medicine, biology and natural philosophy to optimally account for complex compounds, i.e. living things as body-soul entities, thus proposing that a multifocal inquiry is required when the topic of investigation pertains to more than one field of expertise. At the same time it does not miss the opportunity to emphasise that a good deal of caution is needed in dealing with an interdisciplinary object of study, and that natural philosophers as well as other experts should pursue innovative practices only to the extent that such practices do not

pose serious problems to their attempts to construct truthful and sound accounts.

Nevertheless, the merits of this text and the significant place it occupies in the history of natural philosophy and science have not received the attention they deserve in modern scholarship. A major reason for this is tied to the seemingly ill-organised exposition of the relevant material which sets out to answer very specific, restricted-in-scope questions in and through comparatively short essays. Specifically in the second part of the *PN* (Bekker pages 464b–480b) we find a discussion of topics comprising the following pairs of opposites (or συζυγίαι according to *Sens*. 1.436a13): longevity and shortness of life (464b19–467b9), youth and old age (467b10–470b5), respiration as inhalation and exhalation (470b6–478b21), life and death (478b22–480b30).[7] Although Aristotle treats these topics as belonging to the same inquiry,[8] nevertheless nowhere in his writings does he justify this division into topics or explain his criteria for dealing with them separately, in a series of shorter sub-inquiries, rather than addressing all of them in a single work. For example, why should longevity receive separate treatment, instead of being subsumed under the broader topic of youth and old age? Why should respiration enjoy special attention at the expense of other forms of cooling exhibited by living things? Since the answer to such questions does not become immediately obvious once one has gone through the text, it seems a still more difficult task to respond to more demanding questions, for instance to the ways in which readers of the *PA* or the *GA* might benefit from concentrating their attention on the *JSVMR*.

Given that length and shortness of life is a pair of topics to which a single treatise within the collection is exclusively devoted, it might be reasonable to treat the accounts of youth and old age, respiration, and life and death that follow after them as belonging to three distinct smaller works. Although in recent years no substantial objection against the unity of the *JSVMR* has been made, the problem whether it is a single text, a question which originates in Bekker's division of the text into two separate treatises, the *De Juventute* and the *De Respiratione*, still cannot but figure at the forefront of virtually every modern discussion of the *JSVMR*. In the two most recent annotated translations of Bekker pages 464b–480b, Repici (2017) and Miller (2018) divide the text into three[9] and two sections respectively, although they both admit that these sections should comprise a single treatise.[10] On the other hand, the

[7] *Sens*. 1.436a15 mentions "respiration (i.e. inhalation) and exhalation" (ἀναπνοὴ καὶ ἐκπνοή) but contains no reference to longevity and shortness of life.

[8] See p. 3 above.

[9] Similarly Carbone (2002) and Siwek (1963).

[10] See Repici (2017) p. 121 and Miller (2018) p. 242, n. on the title. Still this admission seems not to prevent Repici from speaking of a "relativa autonomia" (p. 121, n. 1) among the treatises. Such a splitting approach, to be sure, has also its practical consequences: some confusion has arisen as to how these texts should be cited and to what extent a particular title corresponds to the content to which it refers. Take the following simple example: the TLG online database, apart from dividing the text into two distinct sections, the *Juv*. and the *Resp*., presents the former under the title "De juventute et senectute De vita et morte", thus raising the reasonable question as to why the second

problem of the unity does not seem to worry the Byzantine scholiast Michael of Ephesus (twelfth century CE), who is the first to have commented on the *JSVMR* as a whole. Similarly his master, Michael Psellus (eleventh century CE) seems to have written, among others, a short treatise discussing certain philosophical issues that arise directly from the *JSVMR*.[11] Because of the partial form in which it has come down to us, we can only conjecture that Psellus, too, might have considered the twenty seven chapters as one treatise. In the commentary below, the views put forth in both works are discussed in some detail when they are deemed necessary to facilitate a better understanding of Aristotle's text.

1.4 Structure and Aim of This Book

In the past, the *JSVMR* has always been examined and considered as part of the *PN*, that is, almost exclusively in connection with its place in this collection of short treatises on nature. While such a methodological approach is certainly justified inasmuch as it integrates the subject of a particular treatise into the broader context in which it originates, it is, by nature, bound to a limited examination of the ideas set forth in this treatise, inevitably redirecting the focus away from the individual texts of the collection and towards the collection as a cluster of kindred texts. Hence the studies by Ross (1955), Siwek (1963) and Carbone (2002), although still useful on many points, do not enter into any detailed discussion of the *JSVMR* and in many respects refrain from touching upon major problems to which this text gives rise. The same holds for the recent study by Repici (2017), who examines the second half of the *PN* but engages with its subject non-exhaustively in her interpretative effort to cover a large part of the collection. However, she should be credited with reorienting for the first time the focus towards each of the treatises contained in this part of the collection separately.

One might say that the present study falls into the opposite pitfall, restricting its scope of investigation only to one section of the *JSVMR*. However, this book does not limit itself exclusively to this aim; rather, it sets out to provide a comprehensive discussion of the first six chapters of the *JSVMR* with the ultimate objective of elucidating the very argument they develop and proving that they form an

"De" is capitalised. What is more, when one browses through this online text, one finds only the section 467b10–470b5 but not the section 478b22–480b30, to which scholars who prefer to split the work into three parts refer. Allow me to mention one more example of this confusion among the many encountered in modern scholarly literature: in the table of contents of the monumental and insightful volume by Lanza and Vegetti (1971), which provides an Italian annotated translation of Aristotle's biological works, our text is entitled merely "La respirazione" (p. 1314). But when one turns to the relevant page, one finds the whole of all twenty seven chapters comprehended under the title "La respirazione", which is accompanied by the subtitle "La giovinezza e la vecchiezza La respirazione – La vita e la morte". Cf. the online version of the List of Abbreviations used in the OCD, 4th edition, in which only *Resp*. is mentioned.

[11] See Trizio (2018) pp. 161–163.

indispensable part of the text that follows: a close analysis of these chapters illuminates their role as an introduction to the subsequent discussion of respiration, life and death, thus removing any doubt raised by non-unitarian readings of the treatise. This objective is pursued in a threefold way: (i) through a fresh English translation of Chapters 1–6 which remains faithful to the Greek original and has been made as literal as possible to enable both the reader with fluency in Greek to become acquainted with Aristotle's manner of expression, and the reader with no good command of Greek to follow Aristotle's train of thought; (ii) through a detailed commentary on Chapters 1–6 which offers a thorough line-by-line discussion of the topics addressed in these chapters, focusing on both their content and context from a philological and philosophical point of view, and contextualising them in relation to the rest of the Aristotelian *corpus* as well as to ideas found in earlier and contemporary texts; and (iii) through four interpretive essays which are meant to broaden the scope of interpretation by tackling problems related to the treatise more generally, including questions about the structure and the unity of the work, the organisation of the material, Aristotle's methodological principles, his aims and target audience as well as the relevance of his selected themes to the thematic agenda of certain Hippocratic writings.

Specifically, Essay 1 and Essay 2 offer a critical examination of the methodological approach adopted in the *Juv*. and the *Resp*. respectively through an extensive discussion of the polymorphic pair *phainomena* (appearances) - *logos* (reasoning; theory); in doing so, they show that any attempt at dividing the text into smaller portions with separate titles does not do justice to the unity of the argument. Both Essays 1 and 2 follow Aristotle's line of argument very closely, taking the form of a running commentary on the *Juv*. and the *Resp*. Essay 3 and Essay 4 focus again on Chapters 1–6. Essay 3 keeps pace with a major strand of recent scholarship working on natural philosophy and ancient scientific writing, one that shows a keen interest in examining the authorial voice, the persuasiveness of the author's argument and the characteristic features of his style of writing. Among others, it considers Aristotle's use of the first-person plural, cross references, implicit instructions for his readers, and the use of examples, and analyses the logical coherence and persuasiveness of a number of arguments used in the text. The overall impression one gets from *JSVMR* 1–6 is that of a well-structured natural-philosophical discourse that reflects much greater care on the author's part than is usually attributed to Aristotle's *pragmateiai*. Essay 4 depicts Aristotle's lively engagement with earlier and contemporary medical ideas by exploring the relevance of the views advanced in *JSVMR* 1–6 to the thematic agenda of certain Hippocratic writings, such as the *Aer.*, *De Nat. Pueri*, and *De locis in hom.* While it is difficult to argue in favour of a catalytic influence exerted upon Aristotle's text, in this essay it is shown that certain views held by the author of the *De Nat. Pueri* could constitute the source material upon which Aristotle draws for his own treatment in *JSVMR* 1–6.

While all four essays stand as independent units addressing particular topics, when they are viewed together and are examined as mutually complementing each other, they clarify aspects of the *Juv*. and the *Resp.* which prompt us to regard them as a single, unified work. Certain methodological features highlighted in Essays 1

and 2 testify to the close affinity between Aristotle's argument in the *Juv*. (in support of his cardiocentric theory) and the one he advances in the *Resp*. (in support of a more general account of life); at the same time they reveal his unceasing concern with conducting well-grounded natural-philosophical inquiries that ensure both the integrity and credibility of the evidence adduced and the validity of the theoretical conclusions reached. Such inquiries cannot but recognise and observe the appropriate boundaries of natural philosophy separating it from other fields of expertise in terms of topics addressed, methodology and communication of research findings (Essay 2, Part III). Especially in cases where there is a clear need for interdisciplinary study, they guarantee careful selection, use and discussion of research material, thus constantly reminding researchers that interdisciplinarity aims at facilitating investigation on matters pertaining to the core field of expertise, rather than replacing its authority (Essay 2, Part III and Essay 4); at the same time, they display a constant concern with the dissemination of research findings and so with Aristotle's target addressee. While for Aristotle adopting the appropriate 'scientific' methodology remains the main criterion for evaluating the effectiveness of an investigative process, rhetorical, persuasive and other communicative strategies should not be left out from the natural philosopher's agenda but be considered as significantly contributing to the achievement of his goal(s) (Essay 3).

1.5 A Note on the Editions and Translations Used

The translation is based on Siwek's edition of 1963. Departures from his text are discussed in the commentary. For the reader's convenience, Chapters 1–6 of the *JSVMR* are given titles. Translations of Aristotle's works, apart from *JSVMR* 1–6, follow the translation edited by Barnes (1984), unless otherwise noted. Translations of Plato's works are taken from Cooper and Hutchinson (eds.) (1997). Translations of Michael Psellus' and Michael of Ephesus' texts are my own. All other translations are explicitly stated. As to other works of Aristotle, the following editions have been used: Balme (2002); Drossaart Lulofs (1965); Falcon and Stavrianeas (2021); Leggatt (1995); Louis (1957); Ross (1924); Ross (1936); Ross (1956); Ross (1957a); Ross (1957b); Ross (1959); and Walzer and Mingay (1991).

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Chapter 2
Translation

2.1 Suggesting the Middle as the Optimal Bodily Location of the Soul

[**467b10**] We have now to discuss youth and old age and life and death; and at the same time, too, it is equally necessary to speak of the causes of respiration; for it is due to respiration that in some living things living and not living takes place.

Since what concerns the soul has been determined in other works, and it is clear that its substance cannot be corporeal, but [**467b15**] even so it is manifest that the soul exists in some part of the body, and exactly in this one among those parts possessing power, then, let the rest of the soul be put aside for now, whether parts or faculties – in whichever way one should call them. But as for those things which are said to be animals and live, in those that happen to have both of these (and by 'both' I mean [**467b20**] being an animal and living) it is necessary that there be one and the same part according to which the thing lives and according to which we call it an animal. For the animal *qua* animal cannot fail to live; but insofar as something lives, in that respect it is not necessary for it to exist as an animal. Plants, for example, live, but do not have perception, yet it is by means of perception [**467b25**] that we distinguish an animal from a non-animal.

In number, therefore, it is necessary that this part be one and the same, but in being it is necessary that it be more than one and different. For in animals, being an animal and living are not identical. Since, then, the special sense-organs have one common sense-organ in which the actualised senses necessarily meet, and this [**467b30**] can be in between of what is called front and back (for front is called that in the direction of which our perception arises, while back is called the opposite), and further if the body of all living things is divided by reference to the up and the

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down (for all living things have an 'upper' and 'lower', and so, then, do plants as well), it is clear that [all living things] can have their [**468a1**] nutritive principle in the middle of these regions. For we call upper that part in the region of which food enters, looking to it and not to the surrounding universe, while we call lower that part to the region of which living things emit the primary residue. This [arrangement] in plants stands in opposition [**468a5**] to that in animals. On the one hand, among the animals, human beings, on account of their upright posture, possess in the greatest degree this arrangement, namely to have the upper part in accordance with the upper part of the universe, while the other animals have it in an intermediate position. For plants on the other hand, due to the fact that they are immobile and receive food from the ground, it is necessary always to have this part below. For roots in plants are analogous [**468a10**] to what is called the mouth in animals, by means of which the former receive the food from the ground, the latter [receive the food] by their own efforts.

2.2 Life-Securing Factor 1: The Presence of the (Nutritive and Perceptive) Soul in the Middle of the Body

[**468a13**] Since, then, there are three sections into which all complete animals are divided, namely one by which they receive the food, one by which [**468a15**] they emit the residue, and the third intermediate between these – in the largest animals this section is called the chest but in other animals it is the analogous part – these [i.e. the three sections] are more clearly articulated in some animals than in others. But regarding those animals that are locomotive, they have additional parts designed for that service, by means of which they will bear the whole trunk, namely legs [**468a20**] and feet, as well as parts which have the same power as these. But at any rate the principle of the nutritive soul is evidently in the middle of the three parts, both according to perception and according to reasoning. For, many animals, when either of the parts, namely what is called the head and the recipient of food, is cut off, [**468a25**] [continue to] live with whatever part the middle is attached to. This clearly happens in the case of insects, such as wasps and bees; but also many animals which are not insects can live, when divided, by means of the nutritive part. In them the part of such a sort is one in actuality but more in potentiality; that is to say, they have been constituted in the same way as plants, [**468a30**] for plants also, when divided, continue to live separately, and many trees come-to-be from a single source. There will be another discussion as to why some plants cannot retain life when divided whereas others are propagated by the taking of cuttings. [**468b1**] In this respect, however, plants and insects are alike.

It is necessary, then, that the nutritive soul is actually one in those living things possessing it, but potentially more than one; and likewise also the perceptive soul, for the separated parts of these animals clearly [**468b5**] have perception. However, in order to preserve their nature, plants are indeed able [to continue to live when