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The Lost *Dictata* of Henricus Regius*

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1. Introduction

Henricus Regius (1698-1679) was the first expert who systematically adopted the contents of the *Discours de la méthode* and *Essais* (1637) by René Descartes (1596-1650) for university lectures, using such texts for his teaching of medicine and natural philosophy at Utrecht from 1638 onwards, as well as in his first lengthy series of disputations in medicine, the *Physiologia sive Cognitio sanitatis* (1641-1643). While his and Descartes's friend Henricus Reneri (1593-1639) only sporadically inserted Cartesian ideas into his disputations,¹ Regius became at first associated with Descartes's 'new philosophy'. Later (1645), however, he entered into a quarrel with Descartes over the nature and functioning of the mind, about which Regius held a materialist and 'radically empiricist' standpoint, and over his own originality and plagiarisms with respect to Descartes. While most of the secondary literature has focused on such topics, as well as on the 'pre-Cartesian' influences on Regius,² little attention has been devoted to the contents of his early lectures at Utrecht, embodying not only a medical physiology (i.e. the first part of medicine, devoted to the explanation of the conditions of health) but also natural-philosophical theories as such (though intertwined with physiology itself),³ and taking place before the appearance of Descartes's complete treatise in natural philosophy, namely his *Principia philosophiae* (1644). In what follows, I will provide a reconstruction and discussion of the contents of Regius's early teaching, by considering some fragments of his now lost academic *dictata*, namely the contents he dictated during his lectures, constituting a textbook in natural philosophy. After having presented some indirect evidence on the contents of his teaching (section 2), in section 3, I provide a discussion of the extant fragments of Regius's lectures, which have survived in the *Admiranda methodus* (1643) by Martin Schoock (1614-1669). In section 4, I then focus on Regius's most original theory extant from such fragments, namely his theory of magnetism, pre-dating the one Descartes put into his *Principia philosophiae* and being kindred to that developed by Isaac Beeckman (1588-1637). Eventually (section 5) I reconstruct the overall contents and originality of Regius's early teaching, showing the

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¹ Robin BUNING, *Henricus Reneri (1593-1639): Descartes's Quartermaster in Aristotelian Territory*, Utrecht, Zenon: The Leiden-Utrecht Research Institute of Philosophy, 2013.

² THEO VERBEEK, "Regius's *Fundamenta Physices*," *Journal of the History of Ideas*, LV (1994), p. 533-551; DELPHINE BELLIS, "Empiricism without Metaphysics: Regius' Cartesian Natural Philosophy," in *Cartesian Empiricisms*, ed. by Mihnea Dobre and Tammy Nyden, Dordrecht-Heidelberg-New York-London, Springer, 2013, p. 169-172; ANDREA STRAZZONI, "How Did Regius Become Regius? The Early Doctrinal Evolution of a Heterodox Cartesian," *Early Science and Medicine*, XXIII/4 (2018), p. 362-412.

³ On the different concepts of physiology in the early modern age, see VIVIAN NUTTON, "Physiologia from Galen to Jacob Bording," in *Blood, Sweat, and Tears: The Changing Concepts of Physiology from Antiquity into Early Modern Europe*, ed. by Manfred Horstmanshoff, Helen King, and Claus Zittel, Leiden-Boston, Brill, p. 27-40.

importance of his theory of plants in it, and how he developed his theory of medical physiology on its grounds.

2. Early Evidence for Regius's Textbook (1637-1642)

In his *Epistola ad Patrem Dinet* (May 1642) Descartes reported that

a certain doctor of medicine [...] read my *Dioptrique* and *Météores*, when they were first brought to light. [...] Diligently studying them, and deducing other [things] from them, [he] was [of] such a sagacity, that within a few months [he] thence prepared a complete physiology, which, having been seen privately by some [students], [it] pleased them so [much], that [...] they asked the magistrate for a post in medicine for him.⁴

Descartes refers to the years 1637-1638, when Regius was appointed as extraordinary professor of theoretical medicine and botany at Utrecht (11/21 July 1638), after the creation of a second chair in medicine at the University: a position which was assigned to him thanks to two supporters of Descartes, namely Reneri and of one of the mayors of Utrecht, Gijsbert van der Hoolck (1598-1680), curator of the University.⁵ In fact, according also to a letter of Regius to Descartes of 8/18 August 1638 and to a letter of Descartes to Marin Mersenne (1588-1648) of 23 August 1638, Regius was appointed as he had already successfully lectured to private students in Cartesian philosophy, which he learnt from Reneri and, upon their publication in June 1637, from Descartes's own *Discours de la méthode* and *Essais*.⁶ So that his appointment to a medical chair was undoubtedly related to his being a Cartesian. Moreover, at that time (8/18 August 1638) Regius sent to Descartes some *Essais de Médecine* or "very short notes" of his on Vittore Trincavelli (1496-1588), now lost, in order to show Descartes that he was a follower of his ideas,⁷ while earlier that year he imparted private teaching to Antonius Mudenus (c. 1618-1675), who was to dedicate to him, in March 1638, a disputation with a notably physiological i.e. medical character (which I discuss in section 5). So that we can suppose (even if Descartes's judgment as given in his *Epistola ad Dinet* might have been based on later writings by Regius, as I discuss in section 5), that at the time of his appointment, Regius was privately teaching both natural philosophy and medicine: if not all the parts of medicine, at least physiology.

⁴ "Doctor quidam medicinae [...] legit Dioptricam meam et Meteora, cum primum edita sunt in lucem [...]. Quae colligendo diligentius, et alia ex iis deducendo, ea fuit sagacitate, ut intra paucos menses integram inde physiologiam concinnarit, quae, cum privatim a nonnullis visa esset, eis sic placuit, ut professionem medicinae [...] pro illo [...] a magistratu petierint," RENÉ DESCARTES, *Epistola ad Patrem Dinet*, in AT VII 582-583; BO 1450. [All translations are mine.]

⁵ As discussed in Bos 8-9.

⁶ "Afin de ne pas rendre sa modestie ou sa timidité suspecte d'ingratitude, il prit la liberté de lui écrire le XVIII d'Août [*i.m.*: Lettre I de Regius MS.] pour le remercier d'un service qu'il lui avait rendu sans le savoir. Il lui demanda la grâce d'être reçu au nombre de ses serviteurs, avantage qu'il avait recherché et qu'il croyait avoir mérité depuis qu'il s'était rendu son disciple. Et pour ne lui point faire un mystère d'une chose qu'il ne pouvait savoir, c'est-à-dire de la manière dont il prétendait que M. Descartes l'avait fait Professeur dans l'Université, il lui fit un détail de la connaissance qu'il avait acquise de sa méthode et de sa philosophie, premièrement par la bouche de M. Reneri, qui l'avait amplement informé des qualités héroïques de son esprit, et ensuite par la lecture des *Essais* qu'il avait publiés l'année précédente. Il lui marqua ensuite comment il s'était heureusement servi de cette méthode pour enseigner sa philosophie à quelques particuliers suivant ses principes; et il lui apprit que le grand succès de cette entreprise avait porté les Magistrats de la ville et les Professeurs de l'Université à le choisir pour remplir la chaire de nouvelle érection," Regius to Descartes, 8/18 August 1638, in Bos 5; AT II 305-306; B 818 and 820; Descartes to Mersenne, 23 August 1638, in AT II 334; B 850-852.

⁷ "Il lui protesta que de son côté il ferait tout ce qui dépendrait de lui pour ne rien faire qui fût indigne de la qualité de son disciple qu'il préférerait à tous les autres avantages de sa vie; et qu'il suivrait les pas de M. Reneri le plus près qu'il lui serait possible. Pour se mettre d'abord en possession des droits attachés à cette qualité, il prit la liberté de lui envoyer ses *Essais de Médecine*, qui n'étaient autre chose que des notes assez courtes sur Trincavel, et le pria de les examiner avec toute la sévérité d'un maître," Regius to Descartes, 8/18 August 1638, in Bos 5-6; AT II 306; B 820. The medical works of Trincavelli were posthumously published in 1586, 1592, and 1599, and included commentaries on Galen and Avicenna.

References to such teachings and manuscripts (the chronology of which is somewhat tentative, I summarize in the following table) recur in the next years.

June 1637-August 1638	Physiology
August 1638	<i>Essais de Médecine</i> or short notes on Trincavelli
May 1639	Short propositions touching physiology (unfinished)
May 1640	Physics
May 1639-March 1641	<i>Compendium physicum</i>
May 1641	<i>Novae philosophiae prodromus</i>
May 1641-February 1642	<i>Physica fundamenta</i>
August 1638-May 1642	<i>Cogitata physica</i>
May 1641-July 1642	<i>Dictata physica</i> ⁸

In May 1639, indeed, Regius was finishing some “short propositions [...] touching physiology” and asked Descartes to review them when they were completed,⁹ while in May 1640 he reported that his students pressed him to publish his “physics,” having in the meantime started to publicly lecture on physical topics as such, being allowed to teach Aristotle’s *Problemata* since April.¹⁰ Eventually, in April 1641 Descartes wrote to Regius that

I remember that I read many things, in your *Compendium physicum*, completely alien to the common opinion, which are barely proposed there, without any reasoning added [to them], by which they can be made probable to the reader. I deemed that these can be tolerated in theses, where often paradoxes are gathered in order to give a broader matter of disputing to the adversaries. However, in a book, which you seem to want to propose as a *Novae philosophiae prodromus*, I deem that is to be done completely the opposite: namely reasons have to be provided, by which you persuade the reader of those [things] you want to conclude are true, before you expound such things, in order that [they] do not offend him with their novelty.¹¹

⁸ On Regius’s *Cogitata physica* and *Dictata physica* see, respectively, sections 5 and 3.

⁹ “Après s’être assuré des bontés de M. Descartes, il continua le dessein qu’il avait entrepris de renfermer dans des propositions courtes tout ce qu’il croyait savoir touchant la physiologie. Il était presque sur la fin de cet ouvrage, lorsqu’il en écrivit à M. Descartes [...] pour lui communiquer les difficultés qu’il y trouvait; [...] Il le pria par avance [...] de prendre la peine de le revoir quand il l’aurait achevé,” Regius to Descartes, 17 May 1639, in Bos 20; AT II 548-549; B 1024.

¹⁰ “Ses écoliers le pressaient, dit-il, [*i.m.*: Lettr. XI de Regius, MS.] incessamment de faire imprimer sa physique, afin d’exposer aux yeux de tout l’univers une philosophie qui ne faisait encore bruit que dans quelques provinces,” Regius to Descartes, 5/15 May 1640, in Bos 38; AT III 61; B 1180. Around April 1640 Regius asked Gysbertus Voetius and other professors to be allowed to teach physics as such, or at least that part of physics more kindred to medicine (“ad professionem physicam vel totam, vel saltem partem eius specialem (quae maxime affinis esset medicinae),” GYSBERTUS VOETIUS *et al.*, *Testimonium Academiae Ultraiectinae, et Narratio historica qua defensae, qua exterminatae novae philosophiae*, Utrecht, Ex typographia Wilhelmi Strickii, 1643, p. 12), albeit without success. Hence, he asked Voetius to be allowed to teach, once a week, on Pseudo-Aristotle’s *Problemata*, namely on topics such as optics or mechanics. This was granted him on 17/27 April 1640, when the Utrecht Vroedschap increased Regius’s salary (VOETIUS *et al.*, *Testimonium*, p. 12-13; Bos 39-40). In any case, he imparted this kind of teaching, privately, well before April 1640. He was forbidden to teach on physical topics in March 1642, during the *querelle d’Utrecht*, given the heterodox contents of his disputations, *dictata*, and lectures. See VOETIUS *et al.*, *Testimonium*, p. 12-18; ARNOLDUS C. DUKER, *Gisbertus Voetius*, Leiden, Brill, 1897-1915, vol. II, p. 141 and 146-147, and appendices LV-LVI.

Indeed, Regius had in the meantime (from 17/27 April 1641) started to preside over his series of disputations *Physiologia sive Cognitio sanitatis*, taking place until December 1641, and then completed in March-June 1643.¹² As reconstructed by Theo Verbeek, Regius held these kind of disputations in partial fulfillment of the *desiderata* of Gysbertus Voetius (1589-1676), who became rector on 11 March 1641. At the time of his rectorship Voetius suggested that Regius publish a book — or textbook — on natural philosophy instead of giving disputations (preferred by Descartes, as seen above, and by Regius himself accordingly), which could give rise to problems within the University, given the fact that Regius was professor of medicine, and not of natural philosophy. Upon Regius's insistence, Voetius allowed him to preside over disputations on medical topics, with the occasional insertion of natural-philosophical considerations concerning physiology, allowed by the fact that this was intertwined with physics, if not synonymous with it.¹³

Moreover, besides sending to Descartes a *Compendium physicum* (certainly after May 1639, when he announced to Descartes to be still preparing some “short propositions [...] touching physiology,” and probably before meeting Voetius in March 1641, Descartes's preference for theses being a likely reason motivating Regius to insist on presiding over disputations), and announcing to him a *Novae philosophiae prodromus* before or during May 1641 (when Regius apparently reverted to his idea of publishing a textbook), in February 1642 Regius published a *Responsio* against the criticisms Voetius and his student Lambertus vanden Waterlaet (c. 1619-1678) moved against the ‘new philosophy’, during the so-called *querelle d’Utrecht*.¹⁴ In his *Responsio*, Regius refers both to Descartes's *Le monde* (the manuscript of which was received by Regius in May 1641 c.,¹⁵ and about which he could nevertheless have had insights from Reneri even earlier),¹⁶ and to his own *Physica fundamenta* (which has to be dated after the *Prodromus*, namely to May 1641-February 1642) as

¹¹ “[...] meminerim me multa legisse in tuo compendio Physico, a vulgari opinione plane aliena, quae nuda ibi proponuntur, nullis additis rationibus, quibus lectori probabilia reddi possint, toleranda quidem illa esse putavi in Thesibus, ubi saepe paradoxa colliguntur, ad ampliorem disputandi materiam adversariis dandam; sed in libro, quem tanquam novae Philosophiae Prodromum videbaris velle proponere, plane contrarium iudico esse faciendum: nempe rationes esse afferendas, quibus lectori persuadeas quae vis concludere vera esse, priusquam ipsa exponas, ne novitate sua illum offendant,” Descartes to Regius, April 1641, in Bos 57; AT IV 239-240; B 2036.

¹² Regius's *Physiologia* was preceded by the *Disputatio medico-physiologica pro sanguinis circulatione* (1640), the defensive booklet *Spongia* (1640) against the criticisms of James Primrose (1598-1659) of the *Disputatio*, and concomitant with his *De illustribus aliquot quaestionibus physiologicis* (November-December 1641), a short series of disputations with a more notable natural-philosophical and metaphysical character, notoriously prompting the *querelle d’Utrecht*: see René DESCARTES and Martin SCHOOCK, *La Querelle d’Utrecht*, ed. by Theo Verbeek, Paris, Les Impressions nouvelles, 1988.

¹³ “Paulo post cum ab inelyto urbis Senatu munus Rectoris Theologo impositum esset, 16. Martii anno 1641, aliquot post diebus convenit eum Medicus et praemisso proemio de benevolentia et favore eius erga se, de eiusdem in Academia auctoritate, et quae istius erant farinae, aperuit nunc demum sub ipsius Rectoratu affulgere pulcherrimam occasionem Academiae huic industriam suam probandi, eamque pro virili illustrandi: quod ille fore putabat evulgatione suae philosophiae. In quem finem postulabat consilium et auxilium Theologi, tunc Rectoris, sine cuius auctoritate nihil se tentaturum dicebat. Consultabat vero utrum satius esset sententiam suam libro edito, an thesibus academicis in lucem proferre. Cumque posterius libi potissimum arridere ostenderet, Theologus conabatur persuadere, li omnino statuisset, meditationes suas in publicum edere, priorem modum potius amplecteretur neque enim posse collegium disputationum, praesertim paradoxarum, de tota physica ordine proponi a Professore Medicinae, sine praeiudicio Professorum Philosophiae, atque [...] academicae perturbatione. Cumque Medicus obtenderet partim auctoritatem Rectoris, partim lectionem problematicam, cuius respectu, etiam esset Professor Philosophiae, Theologus utrumque diluebat, additis rationibus rei et tempori tunc convenientibus. Tandem cum videret Theologus eum a proposito dimoveri non posse, consilium suggestit, ut totam medicinam disputationibus publicis ventilandam proponeret, quaeque haberet [...] paradoxa primae parti sc. physiologiae sive per appendices et corollaria (quod maxime suadebat) sive ipsis thesibus insereret,” VOETIUS *et al.*, *Testimonium*, p. 17-18. See VERBEEK, “Regius's *Fundamenta Physices*,” p. 538-539; DUKER, *Gisbertus Voetius*, vol. II, p. 144-145.

¹⁴ The *Responsio* was written with the supervision of Descartes and was directed against Voetius's *Appendix ad Corollaria theologico philosophica nuperae Disputationi de Iubilaeo Romano, de rerum naturis et formis substantialibus*, held with Vanden Waterlaet as *respondens* on 23-24 December 1641 (Julian calendar). Voetius and Vanden Waterlaet reacted (mostly) to Regius's *De illustribus aliquot quaestionibus physiologicis*.

¹⁵ As demonstrated in VERBEEK, “Regius's *Fundamenta Physices*,” p. 543-544. See also BOS 67.

¹⁶ See *infra*, n. 104.

sources of explanations in a broad number of natural-philosophical topics, largely exceeding physiology intended as the first part of medicine:

[...] even if we cannot yet specifically explain all the mysteries of nature with our principles, the matter is however as such (as is manifest to those who saw the *Monde* of the prince of our philosophy, or who are acquainted with our *Physica fundamenta*) that heaven and earth, fixed stars, planets, comets, tides, salt, meteors, the magnet, the operations of plants and animals, light, luminary, colors and innumerable other qualities of natural things are already perfectly understood by us.¹⁷

Notably, this list includes topics not dealt with in Descartes's at that time published texts, as in his *Discours de la méthode* and *Essais* he treated (with regard to the topics of this list) the nature of salt, meteors, light and colors, as well as a theory of blood circulation. Moreover, if Descartes treated in his *Le monde* the topics of the heavens, planets, stars, comets, tides, and light (and in fact Regius used this text in preparing his lectures, as he deals with the cosmological theories presented in it in his *De illustribus aliquot quaestionibus physiologicis*, November-December 1641), he did not deal with magnetism or plants, which therefore have to be traced only to Regius's *Physica fundamenta*, and are absent even from his *Physiologia*, while they return in his *Fundamenta physices*, clearly an evolution of his *Physica fundamenta*. In particular, the explanation of magnetism was at the center of Regius's teaching natural-philosophical theories between the late 1630s and early 1640s, as I show in the next sections, where I also provide some remarks on Regius's theory of plants.

3. Direct Insights on Regius's *dictata* (1642)

The only direct insights on the contents of Regius's handwritten treatise are to be found in the *Admiranda methodus novae philosophiae Renati Des Cartes* (1643), in which some extracts from Regius's *Dictata physica* dating — as I clarify below — to c. May 1641-July 1642 (so that we can presume that the contents of these *dictata* were roughly the same as his *Physica fundamenta*) are reported and commented. The book had a complex genesis: its first part was written, under the pressure of Voetius and Vanden Waterlaet, by Schoock (professor at Groningen) in July-August 1642, during the Summer holidays which he spent at Utrecht. Upon his return to Groningen, he interrupted his work: after a reminder by Vanden Waterlaet to supply the rest of the book, such a part had nonetheless begun to be printed in October-November. Probably after having been completed also by Voetius and Vanden Waterlaet, eventually, the whole book was published, without reporting the name of any author, in March 1643, causing Descartes to request, through the French Ambassador (Gaspar de Coignet de La Thuillerie, 1594-1653), the prosecution of Schoock by the States of Groningen. Being then summoned by the Groningen academic senate, in April 1645 Schoock eventually claimed that the actual author of the book was Voetius.¹⁸ At that point, a lengthy intellectual and legal quarrel arose between Schoock, Voetius and Carlous de Maets (1597-1651), taking place in Utrecht: first at the council of Aldermen (1645-1649), and afterwards at the

¹⁷ "Etiam si omnia naturae arcana nondum specificè ex nostris principiis [...] possimus explicare, eo tamen res iam pervenit (ut iis constat, qui principis nostrae philosophiae Mundum viderunt, aut Physica nostra Fundamenta sunt edocti) ut coelum et Terra, stellae fixae, planetae, cometae, aestus maris, sal, meteora, magnes, stirpium et animalium operationes, lux, lumen, colores, et innumerae aliae rerum naturalium qualitates a nobis iam perfecte intelligantur," HENRICUS REGIUS, *Responsio, sive Notae in Appendicem ad Corollaria theologico-philosophica [...] Gisberti Voetii*, Utrecht, Apud Joannem a Doorn, 1642, p. 20.

¹⁸ As reconstructed in THEO VERBEEK, *Descartes and the Dutch: Early Reactions to Cartesian Philosophy, 1637-1650*, Carbondale, Southern Illinois University Press, 1992, p. 30-31; RENÉ DESCARTES, *The Correspondence of René Descartes 1643*, ed. by Erik-Jan Bos, Theo Verbeek, and Jeroen van de Ven, Utrecht, Zeno: The Leiden-Utrecht Research Institute of Philosophy, 2003, p. 185-189.

higher provincial court (c. 1649-1652) — apparently with a settlement between the parties (as no documents of the latter trial are extant).¹⁹

It was Vanden Waterlaet who, in the morning of 18 July 1642 (the day after a dinner during which Voetius and Vanden Waterlaet himself pressed Schoock for the first time to prepare a refutation of Cartesian philosophy), personally handed to Schoock the “excerpts from the [...] *dictata* and theses of Regius, [...] written by Waterlaet’s hand,” and afterwards kept by Schoock, namely “*dictata* from his lectures, of someone addicted to Cartesian philosophy” (i.e. an unknown private student of Regius, as I show below) — according to a *Corte memorie* given by Schoock to the Utrecht major Johan van Weede (1584-1658) in July 1645 in an attempt to defend himself against the forthcoming lawsuit by Voetius, and to his *Necessaria et modesta defensio* (1646).²⁰ Unfortunately, such *dictata* are now irretrievable. Probably, Schoock produced them to the Utrecht Aldermen in May 1647, together with the letters of Voetius (both Gysbertus and his son Paul, 1619-1667) and Vanden Waterlaet as evidence that Voetius was the real author of the *Admiranda methodus*.²¹ However, of such a trial only the proceedings are extant.²² Later, Schoock probably used these *dictata* in his appeal to the higher provincial court: but the proceedings of the trials from the years 1641-1657 are missing from the Utrecht city archives,²³ which, besides the proceedings of the first trial, preserve today only the *Corte memorie* and some letters of Gysbertus and Paul Voet (probably acquired by the archives at the end of the nineteenth century).²⁴ Therefore, we can rely today only on the excerpts from his *Dictata physica* provided by Schoock in his *Admiranda methodus*, and tracing to Regius’s private lectures taking place no later than July 1642.²⁵

In the following tables, I compare the fragments of Regius’s *dictata*, as they are extant in Schoock’s *Admiranda methodus*, with Regius’s printed texts up to his *Fundamenta physices*, by highlighting in bold their textual agreements. The tables reveal that most of the extant contents of Regius’s *dictata* were also used in his printed texts, and that their *terminus post quem* was May 1641, given the fact that they present (fragment 9) a theory of tides developed upon Descartes’s *Le*

¹⁹ DUKER, *Gisbertus Voetius*, vol. III, p. 243-244 and appendices XXXII-XXXIII; vol. II, appendix LVII; DESCARTES, *The Correspondence 1643*, p. 295-296.

²⁰ “V. Seijt dat Waeterlaet hem uijt raet van Voetius heeft gebracht versceijden excerpten uijt de boecken Cartesii, dictatis et thesibus Regii, om in sijne boecken te gebruijcken: Sulx blijct uijt diergelicke papieren Waterlaets handt beschreven, bij Schoockium wel bewaert,” and in margin, by Voetius’s hand: “Ambiguum, et ex parte mendacium,” ERIK-JAN BOS, “Epistolarium Voetianum II,” *Nederlandsch Archief voor Kerkgeschiedenis*, LXXIX/1 (1999), p. 39-73: p. 70. See also ERIK-JAN BOS, “Epistolarium Voetianum I,” *Nederlandsch Archief voor Kerkgeschiedenis*, LXXVIII/2 (1998), p. 184-215. This passage is absent in the Latin version of Schoock’s *Corte memorie*, dating to c. 1646: SAMUEL DESMARETS, *Bonae fidei sacrum, sive Documenta omni exceptione maiora veracitatis et innocentiae Samuelis Maresii theologi, in causa Schoockio-Voetiana*, Groningen, Apud Iohannem Nicolai, 1646, p. 26-28. “Waterlaet, qui suppeditaturus esset praeter dictata cuiusdam ex suis collegis Cartesianae philosophiae addicti, varia personalia [...],” MARTIN SCHOOCK, *Necessaria et modesta defensio pro veritate ac innocentia sua, in caussa inter eum ac rever doctorem voetium controversa*, Groningen, Typis Iohannis Nicolai, 1646, p. 28 (it is unclear whether Schoock uses the Julian or Gregorian calendar in his account). See also DESMARETS, *Bonae fidei sacrum*, p. 4-5. In turn, in his disputations Voetius attacked the ‘new philosophy’ at a more general level, without directly criticizing Regius’s *dictata*: GYSBERTUS VOETIUS, *Selectarum disputationum theologiarum pars prima*, Utrecht, Apud Joannem a Waesberge, 1648, *Praefatio*, p. 13-14 (unnumbered).

²¹ BOS, “Epistolarium Voetianum II,” p. 47-49.

²² DUKER, *Gisbertus Voetius*, vol. III, appendices XXXII-XXXIII.

²³ DUKER, *Gisbertus Voetius*, vol. III, p. 244, n. 3.

²⁴ BOS, “Epistolarium Voetianum II,” p. 48-49. A copy of a letter by Vanden Waterlaet to Schoock of 13 June 1643, which was one of the attachments of Schoock’s *Corte memorie* and was certainly used during the trial(s), is now extant in Schoock’s *Commercium epistolicum*, preserved at the University Library of Tartu, which however does not contain any reference to Regius’s *dictata*: Tartu, University Library, Mscr 51, *Commercium epistolicum Martini Schoockii, professoris Groningensis*, fol. 260. A transcription of the letter can be found in DESMARETS, *Bonae fidei sacrum*, p. 31-33.

²⁵ VOETIUS *et al.*, *Testimonium*, p. 18. See also Schoock’s text accompanying fragment 1, quoted below. Dictations usually took place during private lectures, rather than during the often noisy public ones: GERHARD WIESENFELDT, “Academic Writings and the Rituals of Early Modern Universities,” *Intellectual History Review*, XXVI/4 (2016), p. 1-14.

monde, to which Regius had direct access around that month (while of course the *terminus ante quem* is July 1642, when they fell in Schoock's hands). Moreover, even if it is unclear whether the texts already put into print before July 1642 (i.e. fragments 2, 3, 5, 6, and 7) were first conceived for his *dictata*, and then re-used in his printed texts or vice-versa, we can in any case assume that the overall contents of his *dictata* can be inferred from those of his published texts, in particular, from his *Fundamenta physices*. In other words, the backbone of the latter treatise was most probably constituted by Regius's *Dictata physica*, which in turn coincided, in content, with Regius's *Physica fundamenta*. Not surprisingly, indeed, Descartes himself was to note, in commenting upon a draft of Regius's *Fundamenta physices* in July 1645, that such a text was circulating among Regius's students.²⁶

Fragment 1

<i>Dictata physica (May 1641-July 1642)</i>	<i>Fundamenta physices (1646)</i>
<p>[...] redivivum Pythagoram suspicit, ut non dubitarit lepidae physiologiae, quam privatim adolescentibus aliquibus dictavit ac praelegit, carmen hoc Academico professore indignissimum, mox pag. 1, post laudes scientiae naturalis propriasque, praescribere: <i>si vestigiis et principiis nobilissimi viri Renati des Cartes libere insistens, hic plusculum a receptis quorundam opinionibus recessero, amor antiquae et charissimae veritatis, qua haec a me extorquet, apud aequos rerum aestimatores, me, ut spero, a calumniis vindicabit.</i>²⁷</p>	<p>Si vero vestigiis viri nobilissimi et vere incomparabilis philosophi, Renati des Cartes, insistens, vel propria sectans, vel alia via procedens, a vulgaribus quorundam opinionibus, eam solam ob causam, quod principiis, quae occulta et a se non intellecta fatentur, ac proinde nil nisi cimmerias tenebras, loco quaesitae lucis, exhibere possunt, tamquam ruinosis tibicinibus innitantur, hic pro libertate philosophica, quae iubet, ut</p> <p style="text-align: center;"><i>Nullius addictus iurare in verba magistri, Quid verum atque decens curem, et rogem, et omnis in hoc sim,</i></p> <p>nonnihil recessero. Antiquissimae et charissimae veritatis amor, aliosque iuvandi studium, mihi iustam, apud aequos rerum aestimatores, excusationem, ut spero, invenient. [...] [H]anc votivam tabellam [...] itaque, ut benignus accipias, et a malignis livoris et calumniarum morsibus tutam vindices, supplex rogat, Illustrissimae Celsitudini tuae devotissimus Henricus Regius.²⁸</p>

Fragment 2

<i>De illustribus aliquot quaestionibus physiologicis (November-December 1641)</i>	<i>Dictata physica (May 1641-July 1642)</i>	<i>Fundamenta physices (1646)</i>
<p>III. Constitutio autem coeli secundum dogmata Ptolomaei</p>	<p>Ita [...] Cartesianus medicus in dictatis physicis, sub finem</p>	<p>[...] ita ut non opus sit fingere incredibilem coeli stelliferi ab</p>

²⁶ "Si scripta ista in malevolorum manus incidant (ut facile incident cum ab aliquot discipulis tuis habeantur) [...]," Descartes to Regius, July 1645, in Bos 188; AT IV 249; B 2038; CSMK 255.

²⁷ MARTIN SCHOOCK, *Admiranda methodus novae philosophiae Renati Des Cartes*, Utrecht, Ex officina Joannis van Waesberge, 1643, p. 36-37. Italics by Schoock.

²⁸ HENRICUS REGIUS, *Fundamenta physices*, Amsterdam, Apud Lodovicum Elzevirium, 1646, *Frederico Henrico dedicatio*, p. 2-4 (unnumbered); HORACE, *Epistulae*, book 1, epistle 1, verses 11 and 14.

<p>et Tychonis, adversatur mechanicae, quae est verum et fere unicum physicae fundamentum.²⁹</p>	<p>capitis De mundo: <i>caeli Ptolemaici et Tychonici constitutio adversatur mechanicae, quae sola est physica nostra.</i>³⁰</p>	<p>ortu in occasum, 24 horarum spacio, raptum [...] innumeraque alia non intelligibilia com comminisci, quae in Ptolomaica et Tychonica mundi constitutione fingi solent.³¹</p>
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Fragment 3

<p><i>De illustribus aliquot quaestionibus physiologicis</i> (November-December 1641)</p>	<p>Responsio (February 1642)</p>	<p>Dictata physica (May 1641-July 1642)</p>	<p><i>Fundamenta physices</i> (1646)</p>
<p>Unde iam constat veram formarum materialium originem natura sua quam maxime esse manifestam: dum dicimus materiam varie moveri et per motum illum certam magnitudinem, figuram et situm partium rebus naturalibus convenientes resultare, in quibus forma earum consistit. Eductione vero formarum substantialium e potentia materiae, quae excogitata est ab iis, qui veras formas ignorarunt, nos non amplius indigere.³²</p>	<p>Reiicimus [...] omnes formas substantiales, [...] ac quamvis statuantur incognitae et inexplicabiles, dicuntur tamen omnium actionum et proprietatum atque affectionum esse causae. Quandoquidem haec omnia ex eo collabuntur, quod alia dentur rerum naturalium principia, clara ac facilia, et quam maxime intelligibilis formarum materialium iam suppetat origo: contra vero materia ista prima et forma substantialis omnium rerum per illas explicandarum tenebras inducant.³³</p>	<p>[I]n dictatis physicis sub finem doctrinae de principiis: <i>haec principia a me iam explicata, quam maxime sunt intelligibilia, quae vero ab aliis statuuntur, captum humanum superare videntur.</i> [...] [I]deam philosophus in dictatis physicis habet, sub quorum vestibulum ita pro loquitur: <i>haec principia a me iam explicata, quam maxime sunt intelligibilia, quae vero ab aliis statuuntur, captum humanum superare videntur.</i>³⁴</p>	<p>Videntur etiam reiici posse omnes formas substantiales, [...] ac quamvis statuantur incognitae et inexplicabiles, dicuntur tamen omnium actionum et proprietatum atque affectionum esse causae. Quoniam haec omnia ex eo collabuntur, quod alia, quae iam explicuimus, dentur rerum naturalium principia, clara ac facilia, et quammaxime intelligibilis formarum materialium iam suppetat origo: contra vero materia ista prima, et forma substantialis, omnium rerum per istas explicandarum tenebras, sua obscuritate, inducant.³⁵</p>

²⁹ HENRICUS REGIUS, *De illustribus aliquot quaestionibus physiologicis*, Utrecht, Ex officina Aegidii Roman, 1641, disputation 3, thesis 16.

³⁰ SCHOOCK, *Admiranda methodus*, p. 132-133. Regius's *dictata* are also briefly mentioned at p. 139 and 244.

³¹ REGIUS, *Fundamenta physices*, p. 76.

³² REGIUS, *De illustribus aliquot quaestionibus physiologicis*, disputation 3, thesis 7.

³³ REGIUS, *Responsio*, p. 10-11.

³⁴ SCHOOCK, *Admiranda methodus*, p. 142 and 199.

³⁵ REGIUS, *Fundamenta physices*, p. 30.

Fragment 4

<i>Dictata physica (May 1641-July 1642)</i>	<i>Fundamenta physices (1646)</i>
<i>Positura</i> , per quam intelligunt situm, qui a medico in dictatis definitur: <i>ipsa corporis inter corpora positio</i> . [...] Ex principiis per somnium excogitatis sola <i>figura</i> superest, quae, medico in dictatis teste, nihil aliud est, quam <i>ipsius extensionis terminatio</i> . [...] Medicus [...] dicit: <i>magos figuras considerare sine materia, se vero cum materia</i> . ³⁶	Figura est extensionis terminatio . Haec quam sit efficax, docet vel solum ferrum, in gladium vel cultrum figuratum, quibus durissima corpora discinduntur. Situs est ipsa corporis inter corpora positio . Huius efficacia patet ex sola aequipondii in statera positione varia. ³⁷

Fragment 5

<i>Physiologia (1641)</i>	<i>De illustribus aliquot quaestionibus physiologicis (November-December 1641)</i>	<i>Responsio (February 1642)</i>	<i>Dictata physica (May 1641-July 1642)</i>	<i>Fundamenta physices (1646)</i>
Omnes enim formae, praeter animam rationalem , sunt tantum accidentariae, vel potius modales quaedam qualitates. [...]. Ab omni enim absurditatis metu nos liberamur etiamsi ipsius formae e nihilo productionem, et annihilationem statuamus: cum forma nihil aliud revera sit, quam comprehensio motus vel quietis, item magnitudinis, situs et figurae partium materiae seu corporis, rebus naturalibus conveniens; in qua	Formae itaque nihil aliud sunt quam accidentariae quaedam qualitates. Quicquid autem, praeter mentem, substantiale in rebus naturalibus invenitur, est a materia; quae est substantia corporea , in longum, latum, et profundum se extendens. ³⁹	Quicquid autem substantiale praeter mentem humanam in rebus naturalibus existit, totum illud a materia seu substantia corporea originem ducere existimamus . ⁴⁰	[I]nter alia oracula medicus in vestibulo dictatorum physicorum hariolatur: <i>quicquid in rebus naturalibus praeter mentem humanam est substantiale, totum illud a materia, sive substantia corporea originem ducit</i> . [...] Reclamus vero medici verba modo ad partes vocata: <i>quicquid in rebus naturalibus praeter mentem humanam est substantiale, totum illud a materia sive substantia</i>	[...] intelligimus, illam in corporibus coelestibus et terrestribus esse unam eandemque: nam in omnibus est una eademque extensio. Estque substantia: per se enim potest subsistere, et quicquid praeter mentem in rebus naturalibus est substantiale, illud totum , non aliunde, sed hinc originem ducit , cum nihil substantiale praeter haec in rerum natura dari possit. ⁴²

³⁶ SCHOOCK, *Admiranda methodus*, p. 209-211.

³⁷ REGIUS, *Fundamenta physices*, p. 28-29.

nihil substantiale seclusa ingenerabili et incompactibili materia continetur. ³⁸			<i>corporea originem trahit.</i> ⁴¹	
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Fragment 6

<i>Physiologia (1641)</i>	<i>De illustribus aliquot quaestionibus physiologicis (November-December 1641)</i>	<i>Dictata physica (May 1641-July 1642)</i>	<i>Fundamenta physices (1646)</i>
[...] Estque vel insensibilis vel sensibilis . Insensibilis est, quae ob suam exiguitatem, vel motus sui celeritatem sensum fugit . Haec non est indivisibilis, nec semper eiusdem magnitudinis aut figurae sed, quantum ad talia, idem de ipsa, quod de reliquis corporibus est putandum . Et quamvis ad istas insensibiles particulas alii medici vel philosophi non multum attendere consueverint; nos tamen ex illis innumera naturae mysteria pendere arbitramur . Quia sine his nec acrimoniae, nec lenitatis, nec subtilitatis, nec crassitiei, nec infinitarum aliarum qualitatatum ratio reddi	IX. Dividitur autem haec materia in partes, tum sensibiles, tum insensibiles . X. Partes insensibiles, ob exiguitatem vel motus celeritatem sensus fugiunt . XI. Hae non sunt atomi , sed indefinite divisibiles, nec semper eiusdem sunt magnitudinis aut figurae, sed quantum ad talia, idem de ipsis, quod de reliquis corporibus, est dicendum . XII. Quamvis autem ad illas particulas alii philosophi non multum attendere soleant, nos tamen ex illis plurima naturae mysteria pendere arbitramur: sine his enim nec acrimoniae, nec lenitatis, nec subtilitatis, nec crassitiei, nec	Medicus in dictatis physicis pergit: <i>materia haec divisa est in partes insensibiles et sensibiles: partes insensibiles sunt, vel [ob] motus sui celeritatem fugiunt sensus. Hae itaque non sunt atomi, verum indefinite divisibiles: nec semper eiusdem sunt magnitudinis aut figurae, sed quantum ad talia, idem de ipsis, quod de reliquis corporibus est dicendum. Quamvis autem ad illas particulas alii philosophi non multum attendere soleant, nos tamen ex illis plurima naturae mysteria pendere arbitramur: quia sine his nec acrimoniae, nec lenitatis, nec subtilitatis, nec crassitiei, nec infinitarum aliarum</i>	Haec divisa est in partes, tum insensibiles, tum sensibiles. Insensibiles sunt , quae, propter exiguitatem aut parvitatem sensus fugientes , solo intellectu in omnibus rebus naturalibus observantur. [...] Hae ex subtilitate, crassitie, acrimonia, lenitate, fluiditate, oleaginositate, aquositate, salsadine, aliisque innumeris corporum qualitatibus, postea explicandis, manifeste colliguntur. Nam his positis, clara et distincta illarum est explicatio ; quae iis negatis est obscura, vel confusa. Hae non sunt atomi, sed indefinite divisibiles , utpote extensae: nec semper eiusdem sunt figurae, vel magnitudinis . Cum enim ipsis semper

³⁸ HENRICUS REGIUS, *Physiologia, sive Cognitio sanitatis. Tribus disputationibus in Academia Ultraiectina publice proposita*, Utrecht, Ex officina Aegidii Roman, 1641-1643, p. 18-19.

⁴² REGIUS, *Fundamenta physices*, p. 3.

⁴⁰ REGIUS, *Responsio*, p. 10.

³⁹ REGIUS, *De illustribus aliquot quaestionibus physiologicis*, disputation 1, thesis 3.

⁴¹ SCHOOCK, *Admiranda methodus*, p. 213 and 214.

potest: his autem positis, omnium intelligibilis est explicatio. ⁴³	infinitarum aliarum qualitatum ratio reddi potest. His autem positis, omnium intelligibilis est explicatio. ⁴⁴	<i>qualitatum ratio reddi potest: his autem positis, omnium intelligibilis est explicatio. [...] Si dicant crassitiem oriri ex magnitudine insensilium partium (ut innuit idem medicus in iisdem dictatis) ridiculos se praebent.</i> ⁴⁵	aliquid addi vel detrahi, vel quidpiam aliter in iis disponi queat, idem de ipsarum, quod de reliquorum corporum magnitudine et figura, est dicendum. ⁴⁶
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Fragment 7

<i>Spongia</i> (1640)	<i>Physiologia</i> (1641)	<i>Dictata physica</i> (May 1641-July 1642)	<i>Fundamenta physices</i> (1646)
Quod vero ex insensibilibus , fiant sensibilia , apparet in filis sericis , quorum singula filamenta seorsim visa non apparent ullius coloris , simul autem iuncta componunt filum aut flavum , aut album , aut alio colore tinctum. ⁴⁷	Quod vero ex insensibilibus , fiant sensibilia , apparet in filis sericis ; quorum singula filamenta seorsim visa non apparent illius coloris , simul autem iuncta componunt filum aut album , aut flavum , aut alio colore tinctum. ⁴⁸	[D]ocet medicus ita philosophans in dictatis suis physicis: <i>partes sensibiles, quae ex multis insensibilibus compositae sub sensum cadunt, quemadmodum ex. gr. ex filamentis pluribus sericis, quae nullum colorem singula habere videntur, componitur filum, albo, flavo, vel alio colore tinctum.</i> ⁴⁹	Quomodo autem sensibiles partes ab insensibilibus constitui possint, apparet in filamentis sericis, quae quamvis singula nullum colorem habere videantur, multa tamen coniuncta componunt filum album, aut alio colore tinctum. ⁵⁰

Fragment 8

<i>Dictata physica</i> (May 1641-July 1642)	<i>Fundamenta physices</i> (1646)
Medico teste, qui in dictatis physicis ita de admiranda illius attractione philosophatur: <i>inter lapides opacos admirandus est magnes, cuius operationes non fiunt per attractionem, sed circumpulsione corporum magneticorum vi exhalationis magneticae e tellure versus septentrionem vel austrum exhalantis.</i> ⁵¹	Inter omnes lapides, tam opacos, quam alios, viribus praecellit magnes; quae ut recte intelligantur, ante omnia partium eius constitutio, unde eae profluunt, explicanda venit. Is itaque constat plurimis particulis ramosis et crassis, nec tamen, ad transitum impediendum, nimis solidis; quae ab interiore Terra , maximam partem

⁴³ REGIUS, *Physiologia*, p. 1.

⁴⁴ REGIUS, *De illustribus aliquot quaestionibus physiologicis*, disputation 2, theses 9-12.

⁴⁵ SCHOOCK, *Admiranda methodus*, p. 215-216 and 218.

⁴⁶ REGIUS, *Fundamenta physices*, p. 3-4.

⁴⁷ HENRICUS REGIUS, *Spongia qua eluuntur sordes Animadversionum quas Jacobus Primirosius [...] adversus Theses pro circulatione sanguinis in Academia Ultraiectina disputatas nuper edidit*, Leiden, Ex officina Wilhelmi Christiani, 1640, p. 7.

⁴⁸ REGIUS, *Physiologia*, p. 30.

⁴⁹ SCHOOCK, *Admiranda methodus*, p. 222.

⁵⁰ REGIUS, *Fundamenta physices*, p. 4.

⁵¹ SCHOOCK, *Admiranda methodus*, p. 228.

	<p>magnetica, in superiorem evectae, dum cum reliqua eius materia miscebantur, a gemina et diversimode contorta materia striata, Terram a septentrione in austrum, et ab austro in septentrionem circa eius polos perpetuo ingrediente, et, post vorticem in superiore Terra factum, eam rursus transeunte.⁵²</p>
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Fragment 9

<i>Dictata physica (May 1641-July 1642)</i>	<i>Fundamenta physices (1646)</i>
<p>[...] in dictatis aperto capite hunc in modum philosophatur: <i>quantum ad aestum maris attinet, hic oritur ex eo, quod coelum nostrum peculiare (clauso illo circulo quem Luna singulis mensibus peramit [sic] circumraptu suo circum Terram et interfluxu inter Terram et Lunam ipsam Terram ad aliquot pedes extra centrum sui caeli deturbat. Hinc enim oriuntur duae angustiae in illo caelo sibi mutuo diametraliter oppositae, una inter Lunam et Terram, altera inter Terram et illam peculiaris caeli extremitatis partem, versus quam ipsa Terra ab interfluxu subtilis materiae sive caeli fuit propulsa. Dum itaque torrens peculiaris nostri caeli istas angustias interfluit, aquas maris in istis partibus premit et versus littora attollit. Cum autem ob diurnum Terrae motum illa pars maris, quae Lunae erat obversa, a Luna paulatim avertatur, sensim etiam cessat in illis partibus aëris et maris pressio, quo a littoribus versus altum relabentes refluxum maris efficiunt.</i>⁵³</p>	<p>[Q]uantum ad aestum maris attinet, hic oritur ex eo, quod caelum nostrum peculiare, (clausum illo circulo ABCD, quem Luna L singulis mensibus percurrit) suo, circum Terram T, raptu, et inter Lunam et Terram celeriori, quam alibi, interfluxu, Terram ad aliquod spatium extra centrum sui caeli deturbet. Hinc enim oriuntur duae angustiae, in illo coelo seu vortice sibi mutuo diametraliter oppositae, una inter Lunam et tellurem, altera inter tellurem et illam oppositam peculiaris caeli extremitatis partem, versus quam tellus, ab interfluxu subtilis materiae, sive caeli, celeriori, fuit propulsa. Dum itaque torrens nostri caeli, utrasque illas angustias celerius, quam alibi, interfluit, premit ille vehementius aërem et aquas maris in istis partibus exsistentes, easque inde abigit, et versus littora attollit, fluxumque facit. Cum autem ob diurnum Terrae motum, qui 24 horis peragitur, illa pars maris, quae Lunae erat obversa, a Luna paulatim avertatur, sensim etiam cessat, in illis partibus, aëris et maris pressio, quo aquae, a littoribus versus altum relabentes, refluxum maris faciunt.⁵⁴</p>

⁵² REGIUS, *Fundamenta physices*, p. 130-131.

⁵³ SCHOOCK, *Admiranda methodus*, p. 234-235.

⁵⁴ The references are to the figure used by Descartes in his *Principia philosophiae* (RENÉ DESCARTES, *Principia philosophiae*, Amsterdam, Apud Ludovicum Elzevirium, 1644, p. 185; AT VIII-1 197; BO 2006) and by Regius in his *Fundamenta physices* (REGIUS, *Fundamenta physices*, p. 91): in fact, Regius's *Fundamenta physices* was printed by re-using the same woodcuts already used for the printing of Regius's treatise.

Let us now concentrate on the fragments.⁵⁵ Fragment 1 was to be re-used by Regius in his preface to his *Fundamenta physices*: in particular, Regius used, with some variants, the text already included at the beginning of his *dictata* (as reported by Schoock), instead of a text, planned to be used as a preface, which is extant to us in an extract from a letter of Regius to Descartes of 6 July 1645. Such a letter is a reply to a now lost first, negative judgment of Descartes on a draft version of Regius's *Fundamenta physices*. In his letter to Descartes, Regius, not willing to change the contents of his book, nonetheless submitted to him the text of a preface announcing that his *Fundamenta physices* did not just reflect Descartes's ideas, and asked him to suggest further contents for the preface itself.⁵⁶ However, in two subsequent letters of his to Regius, Descartes, criticizing both Regius's order of exposition and his very theories, just warned him not to publish his book.⁵⁷ Probably as a consequence of such a reaction, in his published 1646 preface Regius reverted to the text of his *dictata*, just adding the following words to it: "[by] following my way, or proceeding by another [one]" ("[...] vel propria sectans, vel alia via procedens"), probably in the attempt not to discontent too much, if not Descartes, the *desiderata* of the Dutch Cartesian faction, with which he certainly shared his initial intention to provide a preface substantially recognizing his debts to Descartes.⁵⁸

⁵⁵ Moreover, other fragments from Regius's sayings are reported by Schoock, even if he does not ascribes them to Regius's *dictata*: (A) "[Regius] saepissime publice privatimque discipulis suis inculcarit, *terminos metaphysicae* (quorum in omnibus prope dogmatibus antiquae philosophiae maximus usus est) *corruptelam esse omnium disciplinarum*"; (B) "[...] possitque citra ruborem de cathedra proclamare (audita in Academia vox est): *audeo meam experientiam omnium mathematicorum experientiae opponere*"; (C) "dato insensibilium particularum variae agitationi quid circa caloris negotium deferendum esse, non tamen agitatio illa formaliter ipsa calor erit, sed potius efficiens caloris caussa. Iutphasiana mola (quam medicus aliquando pro exemplo adducit) agitatione sua aëra frangit, non tamen aut ipse aër, aut illius fractio est," SCHOOCK, *Admiranda methodus*, p. 102, 115-116, and 226. Fragment A embodies an overt attack on Scholastic metaphysics as a source of error in philosophy: a topic which was a leitmotiv among Dutch Cartesians (and deriving from the criticism of Scholastic philosophy by Francis Bacon, 1561-1626), but which in Regius's case can barely be found (see, for instance, REGIUS, *Responsio*, p. 9). As to fragment B, it is absent from Regius's extant texts, even if it is somehow in line with his overall empirical approach to natural philosophy (see BELLIS, "Empiricism without Metaphysics"). Fragment C, concerning Regius's explanation of heat (on this, see HAN VAN RULER, *The Crisis of Causality. Voetius and Descartes on God, Nature and Change*, Leiden-New York-Cologne, Brill, 1995, p. 117-129), reports a sample not given by Regius in his extant texts, but used to scorn him by his enemies at Utrecht, in some now lost pamphlet appearing after his *Pro circulatione sanguinis* (1640): LAMBERTUS VAN VELTHUYSEN, *Bewys dat noch de leere van der sonne stilstant, en des aertryx bewegingh*, Utrecht, Gedruckt by Dirck van Ackersdijck, en Gijsbert van Zijll, 1656, *Voor-reden*, p. 9 (unnumbered); LAMBERTUS VAN VELTHUYSEN, *Opera omnia*, Rotterdam, Typis Reineri Leers, 1680, p. 1043 (unnumbered); CASPAR BURMAN, *Traiectum eruditum, virorum doctrina inlustrum, qui in urbe Traiecto, et regione Traiectensi nati sunt, sive ibi habitaverunt, vitas, fata et scripta exhibens*, Utrecht, Apud Jurianum a Paddenburg, 1738, p. 290. Also Schoock uses elsewhere the sample of the mill of Jutphaas (which no longer exists: Molen Database, Ten Bruggencate-nr. 15359, <https://www.molendatabase.org/molendb.php?step=details&tbnnummer=15359> (accessed on 24 December 2021)), in order to criticize Regius's idea that the source of movement of clocks is internal to them (this being in fact a straw-man thesis): SCHOOCK, *Admiranda methodus*, p. 138. Moreover, Schoock reports a fragment from a poem allegedly adorning the first disputation on physiology (it being unclear if Schoock refers to Regius's *Physiologia* or *De illustribus aliquot quaestionibus physiologicis*): SCHOOCK, *Admiranda methodus*, p. 58. Such a poem could not be found in the printed text of this series of disputations.

⁵⁶ "[...] pour éviter les inconvénients dont M. Descartes l'avait averti, il lui envoya ce modèle d'avertissement au lecteur, pour être mis au bout de sa préface: «Pour détromper ceux qui s'imagineraient que les choses qui sont contenues dans cet ouvrage seraient les sentiments purs de M. Descartes, je suis bien aise d'avertir le public qu'il y a effectivement plusieurs endroits où je fais profession de suivre les opinions de cet excellent homme; mais qu'il y en a aussi d'autres où je suis d'une opinion contraire, et d'autres encore sur lesquels il n'a pas jugé à propos de s'expliquer jusqu'ici. C'est ce qu'il sera aisé de remarquer à tous ceux qui prendront la peine de lire les écrits de ce grand homme, et de les confronter avec les miens.» Pour tâcher de prévenir le désaveu public dont il croyait que M. Descartes le menaçait, il lui fit offre d'ajouter encore, dans sa préface, tout ce qu'il jugerait à propos [...]. Mais il ne parla point de retoucher au fond de son ouvrage," Regius to Descartes, 6 July 1645, in Bos 185; AT IV 241; B 2042.

⁵⁷ Descartes to Regius, July 1645, in Bos 187-188 AT IV 248-250; B 2038-2041; CSMK, 254-255; Descartes to Regius, late July or early August 1645, in Bos 192-193; AT IV 256-258; B 2040-2043. See also *supra*, n. 11, and *infra*, n. 93.

⁵⁸ As evident from a letter of Constantijn Huygens to Mersenne of 21 August 1646: MARIN MERSENNE, *Correspondance*, ed. by Cornelis de Waard, René Pintard, Bernard Rochot, and Armand Beaulieu, Paris, PUF/CNRS, 1933-1988, vol. xiv, p. 413. Later, Huygens was in any case displeased that Regius omitted such a preface from his book; contrary to Descartes's judgment, in any case, he deemed Regius's *Fundamenta physices* as a book generally

Fragment 2, in turn, also appears in the third of Regius's disputations *De illustribus aliquot quaestionibus physiologicis*, and anticipates Regius's foundation of natural philosophy on mechanics as it is presented in chapter 1 of his *Fundamenta physices*. Such a fragment was probably taught by Regius for the first time in the Summer, after having read Descartes's *Le monde*, which he received in May 1641 (though he might have had some access to its contents even before), as it deals with cosmological topics. Moreover, such topics were also included in his *Physica fundamenta*, dating to May 1641-February 1642.

Fragment 3 is echoed in many printed texts by Regius, while fragment 4, concerning Regius's first explanatory principles (the subject also of fragment 3), partially recurs in his *Fundamenta physices*. Regius's first principles were nothing but those expressed in his *Physiologia*, in his famous distich "Mens, mensura, quies, motus positura, figura / Sunt cum materia cunctarum exordia rerum." But while in his *Physiologia* Regius only defines measure (*mensura*) intended as any quantity, and movement (*motus*) as local motion,⁵⁹ in his *dictata* he also deals with the idea of *situs* or *positura*, which was nothing but Aristotle's category of being-in-a-position, or κείσθαι, usually intended, however, not as the reciprocal position of a body with respect to other ones, but rather as the position of a part of a body with respect to its other parts.⁶⁰ A re-interpretation of this category probably derived from the idea that, in a Cartesian framework, there are not individual bodies, but rather parts of the one material substance. Moreover, Regius defines figure in quite traditional terms,⁶¹ and remarks that he considers it as a quality of matter, while the 'magi' considered figure without matter.⁶² A remark which disappears in his *Fundamenta physices*, where nonetheless Regius defends the causal role of figure and *situs*, which was in fact criticized by Schoock in his *Admiranda methodus*, where these notions are deprived of the status of causal principles, as *situs* is merely an accident, and figure has no role in the substantial alterations of bodies.⁶³

Fragments 5, 6 and 7 widely recur in Regius's works: indeed, they concern the most basic ideas in Regius's natural philosophy, namely his Cartesian idea of material substance, as well as the differentiation between perceptible and imperceptible particles, which had a medical origin and has been widely discussed by historians.⁶⁴ Eventually, fragments 8 and 9 concern two more advanced natural-philosophical topics, namely magnetism and tides, and were put into print for the first time only in his *Fundamenta physices*. Nonetheless, these two topics were discussed, during the *querelle d'Utrecht*, also before the appearance of Schoock's *Admiranda methodus*, as they are variously mentioned in Voetius's *Appendix ad Corollaria theologico philosophica nuperae Disputationi de Iubilaeo Romano, de rerum naturis et formis substantialibus* (discussed on 23-24 December 1641, Julian calendar),⁶⁵ in Regius's *Responsio* (February 1642), where Regius used them as examples of

faithful to Descartes's philosophy: Huygens to Samuel Johnson Johnson (1603-1661), 27 September 1646, in CONSTANTIJN HUYGENS, *De briefwisseling van Constantijn Huygens, 1608-1697*, ed. by Jacob Adolf Worp, The Hague, M. Nijhoff, 1911-1917, vol. IV, p. 354.

⁵⁹ REGIUS, *Physiologia*, p. 5.

⁶⁰ Cf. the definition given by Franco Burgersdijk (1590-1635): "situs est ordo partium corporis inter se," FRANCO BURGERSDIJK, *Institutionum logicarum libri duo*, Leiden, Apud Abrahamum Commelinum, 1634 (first edition 1626), p. 48.

⁶¹ Cf. BURGERSDIJK, *Institutionum logicarum libri*, p. 34: "figura est qualitas orta ex terminatione magnitudinis."

⁶² The reference is to the so-called 'image magic' typical of Renaissance authors like Marsilio Ficino (1433-1499) and Cornelius Agrippa (1486-1535): see FRANK F. KLAASSEN, *The Transformations of Magic: Illicit Learned Magic in the Later Middle Ages and Renaissance*, University Park, The Pennsylvania State University Press, 2013.

⁶³ SCHOOCK, *Admiranda methodus*, p. 209-211. On Regius's principles, see STRAZZONI, "How Did Regius Become Regius?"

⁶⁴ BELLIS, "Empiricism without Metaphysics," p. 172-173.

⁶⁵ Mentioning magnetism: VOETIUS *et al.*, *Testimonium*, p. 46 (see thesis 5). As reported later by Schoock, the *opponens* in the discussion of the *Appendix*, namely a student of Regius whose identity could not be ascertained, was dared by Vanden Waterlaet to provide an explanation of magnetism and tides without recurring to substantial forms: at that point, the *opponens* could do nothing but to claim that an explanation was forthcoming with the publication of Descartes's physics: SCHOOCK, *Admiranda methodus*, p. 70 (unnumbered). See also REGIUS, *Fundamenta physices*,

his rejection of occult qualities in natural philosophy,⁶⁶ in Vanden Waterlaet's *Prodromus sive Examen tutelare orthodoxae philosophiae principiorum* (April 1642),⁶⁷ in Descartes's *Epistola ad Voetium* (May 1643),⁶⁸ and in the correspondence of Mersenne and Constantijn Huygens (1596-1687).⁶⁹ In fact, they were not dealt with by Descartes in his published texts until the appearance of his *Principia philosophiae* (1644) — as I discuss in the following section.

4. Regius's Theory of Magnetism: Pre-Dating Descartes

Concerning the explanation of tides, Regius's theory is evidently based on Descartes's *Le monde* — either on its very text or on the insights on it Reneri might have provided Regius before May 1641. Such an explanation reveals above all Regius's eagerness to incorporate Cartesian ideas into his own teaching: indeed, the theory proposed by Regius relies on a vortex theory of planetary motion, and perfectly matches Descartes's explanation.⁷⁰ The explanation of magnetism, however, was devised by Regius in a way certainly independent from Descartes, who before 1643 did not put his theory on paper, and made it public only in his *Principia philosophiae*. Regius, on the contrary, had probably developed and taught a theory of magnetism at least since 1639. Indeed, on 3/13 or 9/19 July 1639 he was the protagonist in a clash which occurred during the *pro gradu* disputation of Florentius Schuyl (1619-1669) — at that time a student of the Aristotelian professor Arnold Senguerd (1610-1667) at Utrecht. The text of the disputation is now lost; however, the *Narratio historica* (1643) of the *querelle d'Utrecht* reports that during the disputation the *opponens* attacked Schuyl's explanation of magnetism as reverting to an occult quality. The *opponens*, certainly a student of Regius, did so on the basis of the "new philosophy." At that point Regius himself attacked Senguerd, and declared the triumph of the *opponens* even before Schuyl's reply. Yet — according to all the professors — Schuyl then successfully rebutted all the objections.⁷¹ Hence, in May 1641 Descartes expressed his disagreement with an explanation he found in the now lost

p. 97.

⁶⁶ Mentioning both topics: REGIUS, *Responsio*, p. 29.

⁶⁷ Mentioning magnetism: LAMBERTUS VANDEN WATERLAET, *Prodromus sive Examen tutelare orthodoxae philosophiae principiorum*, Leiden, Excudebat W. Christiani, 1642, part 2, p. 31-34.

⁶⁸ "[...] transitus ad physica, de quibus nullum vel minimum verbum ex meis scriptis profertis; sed pauca tantum ex Regii dictatis desumpta: 1. de principiis; 2. de particulis insensibilibus; 3. de calore; 4. de magnete; 5. de aestu maris. Atque in illa tanquam Andabatae nugamini, adeo ut non opus sit ut quidquam respondeam, nisi quod insignis impudentia calumniae vestrae in eo possit notari, quod prolixè de magnete ac de aestu maris tanquam contra me disputetis, quamvis nullum plane verbum de istis quaestionibus in meis scriptis hactenus editis reperiatur," AT VIII-2 168; BO 1664.

⁶⁹ Mersenne was eager to read Regius's *Fundamenta physices*: "[q]uand vous me demandez des a cest heure comment il explique le flux et reflux, l'Aymant et que vous faictes proprement le françois qui a accoustumé, disons nous, de demander quelle heure va sonner à l'Horologe, sans vouloir avoir la patience de le compter. Attendez donq; dans peu vos desirs seront satisfaits," Constantijn Huygens to Mersenne, 12 September 1646, in CHRISTIAAN HUYGENS, *Œuvres complètes*, ed. by Johan Adriaan Vollgraff *et al.*, The Hague, Martinus Nijhoff, 1888-1950, vol. II, p. 548. No previous mentioning of tides and magnetism could be found in their extant correspondence.

⁷⁰ Cf. the text of fragment 9, quoted above, and ch. 12 of Descartes's *Le monde*. Regius aimed at providing or mentioning an explanation of tides in a corollary to his *De illustribus aliquot quaestionibus physiologicis*, as revealed in a letter of Descartes to him of November 1641, where he was discouraged to do so: "[i]n his autem adiungis corollarium de maris aestu, quod non probo; non enim rem satis explicas, ut intelligatur, nec quidem ut aliquo modo probabilis fiat," Bos 88; AT III 445; B 1534.

⁷¹ "Problematum vero praelectionem ita instituebat D. Regius, ut in explicarcanorum philosophiae liberius evagaretur, et in receptae ac communis philosophiae principia nimis quam acerbe grassaretur, eaque contem[p]tui haberet et exploderet. [...] Quae hactenus semina contentionum sub glebis delituisse videbantur, primum erumpere coeperunt, occasione disputationis D. Florentii Schuillii, pro obtinendo philosophiae magisterio publice institutae 9 Jul. anno 1639, ubi cum opponens, secundum sententiam novae philosophiae, omnes qualitates attractrices et qualitatem occultam magnetis oppugnaret, medicus stans in subselliis D. Senguerdio, ordinario philosophiae professori et promotori, satis indecore insultavit, et contra doctiss. candidatum, D. Senguerdii discipulum, triumphum ante victoriam cecinit; cum tamen, omnium professorum iudicio, candidatus perquam solide et dextre omnia obiecta dilueret, et non inconcinne opponentem perstringeret, atque ad terminos revocaret," VOETIUS *et al.*, *Testimonium*, p. 13-14. For a discussion, see BOS 24. See also DUKER, *Gisbertus Voetius*, vol. II, p. 142-143.

manuscript draft of the disputation *De actionibus naturalibus, Pars prior* of Regius's *Physiologia* (discussed in May-June of the same year), labelling it as "still not fully certain" and discouraged Regius to include it in the final, printed text,⁷² where Regius rejects the idea that the parts of the human body 'attract', by a magnetic force, the parts of the blood capable of restoring their substance.⁷³ A magnetic force the explanation of which Regius, in his *De morborum signis* (15/25 December 1641), was to announce as forthcoming.⁷⁴ Eventually, his explanation of magnetism was made public in fragment 8 published by Schoock (quoted above in Latin), according to which

among opaque stones the magnet is admirable, the operations of which do not take place by attraction, but by the circular thrust of magnetic bodies, due to the force of a magnetic exhalation, which exhales from the earth towards north or south.

A source of such an explanation, as revealed by Regius himself in his *Fundamenta physices*, was Plato's *Timaeus*, which Regius read via Galen's commentary. In chapter 7 of this treatise, Regius proposes a more complete Cartesian theory of magnetism, viz. one at that point certainly indebted to Descartes's *Principia philosophiae*, based on the idea of screwed particles flowing from one pole to the other.⁷⁵ In presenting it, Regius nonetheless vindicates his overall originality on this topic, by remarking that

[...] from these it is evident, that it is true that [theory] of Plato, saying, according to our Galen on the *Timaeus*, that the magnet does not act by attraction but by circular thrust. This, to say things as they are, first gave me the occasion to investigate and to propose the cause of magnetic operations, already many years ago.⁷⁶

Actually, in his *Timaeus* Plato does not provide a theory of magnetism as such. Rather, he claims that the phenomena of magnetism and attraction can be explained through the principle of circular thrust. Such a principle is chiefly used by Plato — shortly before his discussion of magnetism — to explain respiration: according to this theory, when we dilate the thorax, we push some external air which cannot move but towards our lungs though mouth and nose, as every external place is a plenum.⁷⁷ Notably, such an explanation was employed by Regius as well, in his account of respiration given in his *Pro circulatione sanguinis* (1640),⁷⁸ so that Plato could have been Regius's source also in this regard.⁷⁹ The same idea of circular thrust, in any case, had also been expressed by

⁷² "In chartulis quas misisti [...] [p]agina 5, quae habes de magnete, mallem omitti; neque enim adhuc plane sunt certa," Descartes to Regius, second half of May 1641, in Bos 72-73; AT III 455; B 1542. In his *Epistola ad Voetium* (1643), Descartes was to claim that he had not published anything on magnetism and tides, therefore Regius's ideas on these topics had not to be attributed to him himself: AT VIII-2 168 (quoted *supra*, n. 68) (BO 1664-1665).

⁷³ "Hepar itaque alias partes non alit, quia vim alimentum in illas impellendi non habet; nec partes alendae quidquam possunt attrahere per vim magneticam, vel aliam quamlibet, qualis dicitur esse fuga vacui, similitudo substantiae, calor, dolor, etc.; nec partes habent intellectum bonum a malo discernendi," REGIUS, *Physiologia*, p. 17. See also p. 30.

⁷⁴ "Interim moneo ne quis inani labore hic se fatiget, magnetica enim operatio non est tractoria, sed pulsoria: quod data occasione evidenter demonstrabitur," REGIUS, *Physiologia*, p. 98.

⁷⁵ See fragment 8 (quoted above), and below in this section, where I discuss Descartes's theory. Notably, in his *Fundamenta physices* Regius presented his explanation with some of the woodcuts already used by the Amsterdam Elzeviers (who also published Regius's treatise) for the printing of Descartes's *Principia philosophiae*.

⁷⁶ "[...] ex his patet, verum esse illud Platonis, apud Galenum nostrum in *Timaeo* dicentis, magnetem non per attractionem sed circumpulsionem agere, quod, ut dicam quod res est, mihi iam ante multos annos occasionem, veram magneticarum operationum causam investigandi et proponendi, primum dedit," REGIUS, *Fundamenta physices*, p. 141-142.

⁷⁷ PLATO, *Timaeus*, 79a-80c.

⁷⁸ HENRICUS REGIUS, *Disputatio medico-physiologica pro sanguinis circulatione*, Utrecht, Ex officina Aegidii Roman, 1640, theses 9-10.

⁷⁹ A partial commentary of Galen on the *Timaeus* can be found in the works of Galen published by the Giunti in nine editions between 1641 and 1625, namely, the *Fragmentum ex quatuor commentariis de iis quae medice dicta sunt in Platonis Timaeo*. In it, nineteen *textus* from Plato's *Timaeus* are reported: the last three *textus* are devoted to respiration (on which Galen provides a discussion of the idea of circular thrust), and to magnetism (on which Galen rejects Plato's explanation). Plato's treatment of magnetism is not dealt with in any other place of the *Corpus*

another key source of Regius, namely Lucretius,⁸⁰ according to whom when a magnet is close to a piece of iron the magnetic exhalations emanated from it expel the air in between the two bodies: this generates a circular thrust of air, and the two bodies come close to each other.⁸¹

However, neither Plato nor Lucretius provided an explanation of terrestrial magnetism based on the idea of particles exhaling from the body of the Earth. Back to Regius's times, William Gilbert (1544-1603), who availed himself of the idea that the whole Earth is a magnet, criticized Plato's idea of circular thrust in the second book of his *De magnete* (1600), and explained magnetism in terms of animation of nature.⁸² The idea of circular thrust was also rejected by Niccolò Cabeo (1586-1650) in his *Philosophia magnetica* (1629),⁸³ and by Athanasius Kircher (1602-1680) in his *Ars magnetica* (1631), namely, in the chief works on magnetism which appeared in the early seventeenth-century.⁸⁴ In fact, in order to find a theory of magnetism kindred to Regius's and Descartes's in the early seventeenth century we need to revert to Beeckman. In entries of his *Journal* dating to 1614-1627 he repeatedly avails himself of the explanation of magnetic 'attraction' by the idea of circular thrust, in discussing which he overtly refers to Lucretius.⁸⁵ Moreover, in an entry dating to 1623 he explains the orientation of a magnet towards north (or south) by assuming that the particles or spirits causing the phenomena of magnetism exhale from the body of the Earth — which is a "big magnet" — and impact on a magnet: as soon as such particles do not fit its pores unless it is disposed in a certain direction, they move the magnet until it reaches the right position, i.e. heading towards north. At that point, the pores of the magnet are disposed exactly as the pores of the Earth, through which the magnetic particles pass.⁸⁶ This account is consistent with the essential explanation given in the *dictata* of Regius — who had no demonstrable relation with Beeckman, and certainly developed his theory independently from him — as well as with Descartes's one, traces of the development of which date to 1643 at the earliest.

Descartes's theory of magnetism, expounded in articles 133-183 of the fourth part of his *Principia philosophiae*, is based on the idea of screwed particles (*particulae striatae*) coming from

Galenicum, so that the *Fragmentum* was certainly Regius's source. The fact that Galen discusses here both respiration and magnetism (following the order of Plato's discussion), makes probable the idea that the *Timaeus* (via Galen's commentary) was also the source of Regius as to respiration. See GALEN, *Prima classis naturam corporis humani: hoc est elementa, temperaturas, humores, structurae habitudinis[ue] modos, partium dissectionem, usum, facultates et actiones*, Venice, Apud Iuntas, 1550 (first edition 1541), fols 289^v-290^r, reporting the text from PLATO, *Timaeus*, 79a-80c.

⁸⁰ STRAZZONI, "How Did Regius Become Regius?" p. 378.

⁸¹ LUCRETIUS, *De rerum natura*, book 6, verses 1002-1009.

⁸² WILLIAM GILBERT, *De magnete, magneticisque corporibus, et de magno magnete tellure*, London, Excudebat Petrus Short, 1600, p. 30; CHRISTOPH SANDER, *Magnes: der Magnetstein und der Magnetismus in den Wissenschaften der Frühen Neuzeit*, Leiden-Boston, Brill, 2020, p. 662-663.

⁸³ NICCOLÒ CABEO, *Philosophia magnetica, in qua magnetis natura penitus explicatur et omnium quae hoc lapide cernuntur causae propriae afferuntur*, Ferrara, Apud Franciscum Succium, 1629, p. 103 (see *infra*, n. 88). Cabeo adopts an Aristotelian-inspired theory of magnetism, according to which it is a primary quality of bodies, besides hot, cold, wet, dry, heavy and light: MARK A. WADDELL, *Jesuit Science and the End of Nature's Secrets*, Farnham, Ashgate, 2015, p. 66-75.

⁸⁴ ATHANASIIUS KIRCHER, *Ars magnetica, hoc est Disquisitio bipartita-empirica seu experimentalis, physico-mathematica de natura, viribus, et prodigiosis effectibus magnetis*, Würzburg, Typis Eliae Michaelis Zinck, 1631, p. 3. Kircher then presented his theory of magnetism in his *Magnes sive De arte magnetica* (1641).

⁸⁵ ISAAC BEECKMAN, *Journal tenu par Isaac Beeckman de 1604 à 1634*, ed. by Cornelis de Waard, The Hague, Martinus Nijhoff, 1939-1953, vol. I, p. 36 (April 1614-January 1615), 101-102 (6 February-23 December 1616), and 309 (4-10 June 1619); vol. II, p. 119 (26-31 August 1620), 229 (22 January-21 February 1623), and 387 (18 December 1626-1624 March 1627); vol. III, p. 26 (30 October-4 November 1627).

⁸⁶ "Magnetis polus semper spectat polum mundi, quia spiritus ex magno magnete Terrae ascendens et occurrens partibus ejus circa polum, non respondet poris qui ibi sunt, Unde fit ut illas partes repellat à se seque insinuando intra proximos poros, unâ sui parte nihil tangit. Atque ita removet id latus quod tangitur, non aliter ac si baculum obliquè in foramen immittamus; id enim foramen jam obliquè baculo respondens, mox directè ei opponetur. Tam diù igitur spiritus à se repellit ac movet mobilem magnetem, donec ei pori magnetis respondeant atque is eundem situm obtineat quem magnus ille magnes obtinet sub Terrâ," BEECKMAN, *Journal*, vol. II, p. 231 (22 January-21 February 1623); see also vol. III, p. 17-18 (8 October 1627).

the heavens, entering into the body of the Earth through a pole, following the direction of its pores, exiting from another one, and then coming back through the atmosphere to the first pole — forming a sort of vortex. As these particles pass through magnets, they can orient them to the north or to the south in accordance with the disposition of their pores. Also, these particles can make magnets apparently attract each other or other bodies, like pieces of iron. They do so by expelling the air between magnets and other bodies, so that these are pushed towards each other by the surrounding air — namely by a process of circular thrust, given the *plenum*.⁸⁷ Such a theory was put on paper by Descartes from January to December 1643, and was communicated by him for the first time in a letter to Huygens of 24 May 1643.⁸⁸ Descartes had consulted Beeckman's *Journal* as early as in 1628-1629, though, he never acknowledged any debt towards him, and discouraged him from publishing his writings (as he planned around the same years),⁸⁹ as he did with Regius both with regard to magnetism and to his textbook, which for him lacked the due demonstrations.⁹⁰ For sure, Descartes had theoretical reasons in dissuading Regius from his publishing plans — which he did also in 1645, after the publication of his *Principia philosophiae* — and he published his *Principia* well after 1641 (when Regius's *Compendium physicum* was ready, and when he announced to Descartes his plan to publish a *Novae philosophiae prodromus*).⁹¹ So we can exclude that Descartes engaged in a 'race' with Regius in publishing a treatise in natural philosophy. And yet, as suggested by Verbeek, "Descartes's main reason for opposing Regius's plans [...] was probably because, if they had come to pass, Regius would have cut the ground from under Descartes's feet,"⁹² as he had already done with Beeckman. The very case of magnetism — a topic absent from Descartes's *Le monde* — shows in fact that Regius, too, and not only Beeckman could have exerted a certain influence on Descartes.

⁸⁷ See especially articles 133, 149-150, 170, and 171. On Descartes's explanation of magnetism, which is built upon his vortex theory of planetary motion (as the *particulae striatae* are a sub-set of Descartes's first matter, i.e. the subtlest one, shaped by its passing through the globular particles of second matter), see JOHN SCHUSTER, *Descartes-Agonistes. Physico-mathematics, Method & Corpuscular-Mechanism 1618-1633*, Dordrecht-Heidelberg-New York-London, Springer, 2013, ch. 12. For a discussion of the similarities and differences between Descartes's and Beeckman's accounts, see KLAAS VAN BERKEL, "Descartes' Debt to Beeckman," in *Descartes' Natural Philosophy*, ed. by Stephen Gaukroger, John Schuster, and John Sutton, London-New York, Routledge, 2000, p. 46-59; RICHARD ARTHUR, "Beeckman, Descartes and the Force of Motion," *Journal of the History of Philosophy*, XLI/1 (2007), p. 1-28.

⁸⁸ Descartes declared that he had started to work on the articles of the *Principia philosophiae* concerning magnetism in a letter to Huygens of 5 January 1643 (AT III 799-801; B 1694-1697); he completed its treatment only one year later, as stated in a letter to Pollot of 1 January 1644, where he declares: "[j]e n'ai jamais fait de traité de l'aimant; mais la troisième partie de ma philosophie, que j'écris en latin, en contient les principes, et j'en explique les propriétés à la fin de la quatrième, laquelle j'achève maintenant, en sorte que j'en suis à cet endroit-là," AT IV 76-77; B 1874. See, moreover, his letter to Huygens of 24 May 1643 (AT III 669-672; B 1754-1757; CSMK 220), and his letter to Mersenne of 30 May 1643 (AT III 673; B 1756-1759). Descartes already considered the problem of magnetism in his *Regulae ad directionem ingenii* (without providing any explanation: AT X 427 and 430-431; BOp 766-767 and 770-773; CSM I 52), as well as in his correspondence prior to 1643. See, for instance, his letter to Mersenne of 4 November 1630, where he declares that the experiences with the magnet are consistent with the theories of his *Le monde*, but no insights are provided (AT I 176; B 172-173), and his subsequent letter to him of 25 November 1630, where Descartes declares not to be interested in reading the *Philosophia magnetica* (1629) by Niccolò Cabeo (AT I 180; B 176-177; CSMK 29; see also *supra*, n. 83). Ten years later, he was to repeat the same sort of statements, still without providing more insights: "[j]'ai su, il y a longtemps, toutes les Expériences de l'Aimant dont vous m'écrivez, et puis aisément donner raison de toutes dans mon Monde; mais je tiens que c'est une extravagance de vouloir expliquer toute la Physique par l'Aimant," Descartes to Mersenne, 29 January 1640, in AT III 8; B 1136-1137; "[p]our l'aimant, ce ne peut être que la seule matière subtile qui lui donne ses qualités, et je ne les puis bien expliquer l'une sans l'autre, ni toutes dans une lettre," Descartes to Mersenne, 15 September 1640, in AT III 177; B 1278-1279. The genesis of Descartes's *Principia philosophiae* is reconstructed in Desmond M. Clarke, *Descartes: A Biography*, New York, Cambridge University Press, 2007, ch. 10.

⁸⁹ This publication plan was eventually accomplished by Beeckman's brother Abraham in 1644, when he published Isaac's *Mathematico-physicarum meditationum, quaestionum, solutionum centuria*, containing a theory of magnetism. For a thorough discussion, see VAN BERKEL, "Descartes' Debt to Beeckman."

⁹⁰ See *supra*, n. 11.

⁹¹ See *supra*, nn. 11 and 57.

⁹² VERBEEK, "Regius's *Fundamenta Physices*," p. 542.

5. The Contents and Structure of Regius's *dictata*

In the light of this evidence, it is worth attempting a possible reconstruction of the overall contents and structure of Regius's *dictata* across time, and to provide some remarks on Regius's originality with respect to Descartes. This issue at the center of the quarrel between Descartes and Regius, which started once Regius shared with Descartes a draft of his *Fundamenta physices* in 1645, and exploded with its publication in 1646, when Descartes accused Regius of having appropriated the contents of his works (including his still unpublished *Traité de l'homme*, from which Regius plagiarized Descartes's theory of muscular movement) and of having misused them, ignoring their correct order of exposition and providing them without the due demonstrations.⁹³ In the midst of this quarrel, the contents of Regius's early lectures at Utrecht became important to vindicate his originality.

In the following table, I compare the contents of (1) Regius's *Physica fundamenta* (provided in his *Responsio*),⁹⁴ (2) his *dictata* (as revealed by the fragments provided by Schoock), (3) his *Fundamenta physices* (on whose succession of chapters the table itself is structured), and (4) the contents of Regius's lectures expounded by Petrus Wassenaer (d. 1680) in his introductory letter opening Regius's *Brevis explicatio mentis humanae* (1648), referring to the overall contents of Regius's lectures in the years 1637-1641, but probably tracing to a later period (as discussed after the table).

Regius, <i>Physica fundamenta</i> (May 1641-February 1642)	Regius, <i>Dictata physica</i> (May 1641-July 1642)	Regius, <i>Fundamenta physices</i> (1646) - order of chapters	Regius, lectures (1637-1641/1644-1648)
	<i>Laudes scientiae naturalis</i> (fragment 1)	Preface	
	<i>Vestibulum</i> (fragment 5)	1. <i>De principiis rerum naturalium</i>	"Formam et materiam rerum naturalium in extensione motu quiete situ figura et magnitudine partium consistentem, [...] leges motus, [...] vires machinarum."
	<i>De principiis</i> (fragments 3, 4, and probably 6 and 7)		
"Coelum et Terra, stellae fixae, planetae, cometae."	<i>De mundo</i> (fragment 2)	2. <i>De aspectabilis mundi fabrica</i>	"Coelorum vortices; solem; stellas fixas; planetarum annum et diurnum motum, [...] cometas."
		3. <i>De aqua, terra, aëre et igne</i>	"[Naturam] mineralium."
"Aestus maris."	Fragment 9.	4. <i>De aestu maris, et motu aëris et aquae ab oriente versus occasum</i>	"Aestum maris."

⁹³ Descartes to Elisabeth of Bohemia, March 1647, in AT IV 625-626; B 2402-2405; CSMK 314-315.

⁹⁴ See *supra*, n. 17.

		5. <i>De generatione, corruptione, mixtione, temperamentis et qualitatibus</i>	
“Sal, meteora.”		6. <i>De meteoris</i>	“Naturam meteorum.”
“Magnes.”	Fragment 8.	7. <i>De fossilibus</i>	“Magnetis directionem, coniunctionem et excitationem per geminos et diversos halitus vorticosos factam.”
		8. <i>De corporibus vivis</i>	
“Stirpium et		9. <i>De stirpibus</i>	[Naturam] stirpium.”
Animalium		10. <i>De animalibus</i>	“Motus animalium.”
operationes.”		11. <i>De bestia</i>	“[Naturam] bestiarum.”
“Lux, lumen, colores.”		12. <i>De homine</i>	“Mentem humanam [...]; [naturam] hominis.”

Wassenaer, addressing Descartes, wrote indeed that

since already many years, when nothing was yet brought to the public by you besides the *Discours de la méthode*, the *Météores*, and the *Dioptrique*, [Regius] taught, as is evident to many followers of his, the form and matter of natural things, the human mind, the laws of movement, the movements of animals, the forces of machines, the vortices of the heavens, the sun and fixed stars, the yearly and daily movement of planets, tides, the comets, the excitation of the magnet by vortical exhalations; the nature of meteors, minerals, plants, beasts, man, and many other physiological and medical things, both theoretical and practical [...], not read in any author.⁹⁵

This is a list of topics basically matching the contents of Regius’s *Fundamenta physices* and *Fundamenta medica* (1647), and, even if these topics could have been taught by Regius before their appearance, the presence of a theory of magnetism based on a vortex theory suggests that Wassenaer was probably also relying on Regius’s *Fundamenta physices* (in turn influenced by Descartes’s *Principia philosophiae*), or on lectures taking place after 1644. In fact, if we compare Wassenaer’s list with other lists of topics taught by Regius, and ascribed by him to his teachings of the late 1630s, we get a more essential picture of the possible contents of his *dictata*, and a confirmation that the list provided by Wassenaer probably traced to later years (i.e. after 1644).

⁹⁵ “Tam ante multos annos, cum a te nondum quicquam praeter Methodum, Meteora, et Dioptricam, in publicam lucem prodiiisset, docuit, ut plurimis eius auditoribus constat, formam et materiam rerum naturalium in extensione motu quiete situ figura et magnitudine partium consistentem; mentem humanam; leges motus; motus animalium; vires machinarum; coelorum vortices; solem; stellas fixas; planetarum annum et diurnum motum; aestum maris; cometas; magnetis directionem, coniunctionem et excitationem per geminos et diversos halitus vorticosos factam; naturam meteorum, mineralium, stirpium, bestiarum, hominis, aliaque multam physiologica et medica, tum theoretica tum practica dicta, in nullis authoribus lecta,” HENRICUS REGIUS, *Brevis explicatio mentis humanae*, Utrecht, Ex officina Theodori Ackersdicii, 1648, p. 48.

Such lists are proposed in Regius's letter to the reader given — with a notable variant — in his *Praxis medica* (1657)⁹⁶ and *Medicina et Praxis medica* (1668).⁹⁷ According to the 1657 version,

Descartes himself, [having] seen my *Cogitata physica*, by which I had even then described by true, clear, intelligible, always observable, and unique principles the magnet, tides, and all the remaining universality of things, publicly testified in his *Epistola ad Patrem Dinet* that “as [I, Regius] saw his *Dioptrique* and *Météores*,” at the time, around the year 1637, when only [these] were published together with the *Discours de la méthode*, “[I] was [of] such a sagacity, that within a few months [I] thence prepared a complete physiology.”⁹⁸

In the 1668, in turn, a reference to the explanation of man (i.e. physiology) is added:

Descartes himself, [having] seen my *Cogitata physica*, by which I had even then described by true, clear, intelligible, always observable, and unique principles man, the magnet, tides, and all the remaining universality of things, publicly testified [...].⁹⁹

In other words, according to the 1657 version Regius's *Cogitata physica* concerned only natural philosophy, without a physiological or medically-oriented part. In the 1668 version, in turn, there is a clear reference to a theory of man.

In the light of all this, we can advance some hypotheses. First, that Descartes's judgment given in his *Epistola ad Dinet* concerned physiology rather than natural philosophy, i.e. it was decidedly medically-oriented and was based only on his *Essais de Médecine* or notes on Trincavelli sent by Regius to Descartes in August 1638.¹⁰⁰ These, in fact, might have contained an essential but at the same time complete theory of man, regardless of the fact that in May 1639 Regius was still finishing his “short propositions [...] touching physiology,”¹⁰¹ and that in 1657 he omitted the reference to man in his list of topics: either because he was referring to later writings concerning more natural philosophy than physiology, or because he just wanted to emphasize his having developed as early as 1638 a theory of magnetism and tides, usually assumed as samples, by Regius, of his capacity of getting rid of traditional explanations based on substantial forms and occult qualities.¹⁰² This might have been possible: indeed, in 1639 Regius had already developed a theory of magnetism.¹⁰³ Moreover, even if his theory of tides was clearly inspired by Descartes, who expounded it for the first time in his *Le monde* (which Regius read only in 1641), Regius could have insights on Descartes's theory through Reneri, who assisted Descartes at Deventer from May 1632, while he was writing his treatise (preparation of which took place in 1630-1634 c.).¹⁰⁴

⁹⁶ Bound at the end of the book and dated 20/30 November 1656.

⁹⁷ Bound at the beginning of the book and dated 20/30 January 1668.

⁹⁸ “[...] ipse Cartesius, visis meis Physicis cogitatis, quibus magnetem, aestum maris, totamque reliquam rerum universitatem, per principia vera, clara, intelligibilia, ubivis observabilia, et unica, iam tum discipseram, publice in Epistola ad P. Dinetum testatus fuerit *me visa sua Dioptrica et Meteorologia*, quo tempore illae, circa annum 1637 solae, cum Dissertatione de methodo, in lucem primum prodierant, *ea fuisse sagacitate, ut intra paucos menses integram physiologiam concinnarim*,” HENRICUS REGIUS, *Praxis medica*, Utrecht, Typis Theodori ab Ackersdijck, et Gisberti a Zijl, 1657, *Lectori benevolo*, p. 2 (unnumbered).

⁹⁹ “[...] ipse Cartesius, visis meis Physicis cogitatis, quibus hominem, magnetem, aestum maris, totamque reliquam rerum universitatem, per principia vera, clara, intelligibilia, ubivis observabilia, et unica, iam tum discipseram, publice in Epistola ad P. Dinetum testatus fuerit *me visa sua Dioptrica et Meteorologia*, quo tempore illae, circa annum 1637 solae, cum Dissertatione de methodo, in lucem primum prodierant, *ea fuisse sagacitate, ut intra paucos menses integram physiologiam concinnarim*,” HENRICUS REGIUS, *Medicina et praxis medica, medicationum exemplis demonstrata*, Utrecht, Ex officina Theodori ab Ackersdijck, 1668, *Lectori benevolo*, p. 2 (unnumbered).

¹⁰⁰ See *supra*, n. 7.

¹⁰¹ See *supra*, n. 9.

¹⁰² See *supra*, nn. 65 and 66.

¹⁰³ See *supra*, n. 71.

¹⁰⁴ MATTHIJS VAN OTEGEM, *A Bibliography of the Works of Descartes (1637-1704)*, Utrecht, Zeno: The Leiden-Utrecht Research Institute of Philosophy, 2002, p. 538-540; BUNING, *Henricus Reneri*, p. 47-49 and 143-144. In any case, cogent evidence of an explanation, by Regius, of tides emerged only in late 1641: see *supra*, n. 70.

Second, we can hypothesize that Descartes's 1642 judgment was based on later writings by Regius (who, to his own advantage, did not correct Descartes's statement that he had completed his physiology already in 1638): either concerning natural philosophy only (in accordance with Regius's 1657 statement), or both natural philosophy and physiology (in accordance with the 1668 statement). Such later writings could be his *Compendium physicum*, *Novae philosophiae prodromus*, *Physica fundamenta*, *Dictata physica*, or a further text submitted to him by Regius between August 1638 and May 1642 (when Descartes's *Epistola ad Dinet* appeared), labelled by Regius as *Cogitata physica* in 1657 and 1668.

Third, and more probably, we can suppose that in 1642 Descartes was referring to a text submitted to him by Regius in 1638 (viz. his *Essais de Médecine*) and that in 1657 and 1668 Regius, with the aim of vindicating his own originality, claimed that Descartes based his judgment on a text including also a theory of tides — which, however, was probably discussed in a later text by Regius: in fact, it is unlikely that Regius inserted such a theory in a short medical commentary like the one he sent to Descartes in August 1638.

Nonetheless, Regius most probably developed the physiological ideas he expounded in his later texts, such as his *Physica fundamenta*, as early as in 1638, in particular, in the case of his treatment of plants. Such a topic was notably absent from Descartes's *Principia philosophiae* — and from his other printed texts, being a discussion of plants and animals foreseen as the fifth section of his *Principia*, while a sixth was to be devoted to man, which however were never completed.¹⁰⁵ In turn, it was probably part of Regius's private teaching, which he gave at Utrecht in 1638, before his assuming his post at the University, which included the teaching of botany (which from April 1639 could take place also in the Utrecht *hortus*).¹⁰⁶ Indeed, we do find an explanation of the powers of plants consistent with Regius's later positions in two theses of a *Disputatio physica continens theses aliquot illustriores* taking place at Utrecht on 17/27 March 1638, presided over by Reneri and in which the student Antonius Mudenus (Anthony van Muyden, mentioned in section 2) figured as *respondens*. In fact, the disputation is dedicated — besides Reneri and the professor of medicine Gulielmus Stratenus (Wilhelm van der Straten, 1593-1681) — to Regius himself, who therefore was most probably a private teacher of Mudenus, and taking part in its preparation.¹⁰⁷ According to these two theses,

¹⁰⁵ For a reconstruction of Descartes's botanical study, see FABRIZIO BALDASSARRI, "The Mechanical Life of Plants: Descartes on Botany," *British Journal for the History of Science*, 52/1 (2019), p. 41-63; for thorough discussion of these collaborations, see FABRIZIO BALDASSARRI, "Descartes and the Dutch: Botanical Experimentation in the Early Modern Period," *Perspectives on Science*, 28/6 (2020), p. 657-683.

¹⁰⁶ BOS 21; BALDASSARRI, "Descartes and the Dutch," p. 672. According to the *Narratio historica* and to Schoock, Regius was attacked as being ignorant in botanics in some corollaries of a now lost disputation *De scorbuto* presided over by Stratenus on 22 December 1641 (Julian calendar, apparently): "13. Cochlearia non est Britannica, nec Telephium veterum. 14. Flos Armenius non est Saponaria. 15. Helleboraster non est Helleborus verus niger. 16. Helleborus ferulaceus non est Doronicum Americanum. 17. Filipendula ita dicta est, quod radices quasi filis pendere videantur, non quod flores. 18. Solanum Hortense non est Amara dulcis: nisi plantarum nomina ignorantibus liceat aliena nomina ignotis plantis indere," VOETIUS *et al.*, *Testimonium*, p. 24-25; cf. SCHOOCK, *Admiranda methodus, Praefatio*, p. 53 (unnumbered), and 9, 37-38, and 43. In his *Epistola ad Voetium*, Descartes was to defend Regius's characterization of *Helleboraster* as 'Helleborus verus niger' as having been drawn from the *Stirpium historiae pemptades sex* (1583) by Rembert Dodoens (1517-1585), where *Helleboraster* is identified with the *Veratrum nigrum*, and the *Helleborum* with the *Veratrum album*: AT VIII-2 15-16; BO 1504-1506; cf. REMBERT DODOENS, *Stirpium historiae pemptades sex, sive libri XXX*, Antwerp, Ex officina Christophori Plantini, 1583, p. 261 and 379-382. Regius seems nonetheless to have corrected his classification of plants, as in his *Hortus academicus Ultraiectinus* (1650) he identifies the *Helleboraster* with the *Elleborus niger spurius* (rather than with 'verus'): "Elleborus niger spurius alter s. Elleboraster," HENRICUS REGIUS, *Hortus academicus Ultraiectinus*, Utrecht, Typis Theodori ab Ackersdijck, et Gisberti a Zijl, 1650, p. 6 (unnumbered) — a more blunt differentiation between *Helleborus albus* and *Helleborus niger* is in any case kept by Regius across his *Fundamenta medica* (1647). Moreover, in his *Catalogus* Regius identifies the *Dulcamara* with the *Solanum lignosum* white flowers, and not with the *Solanum hortense*: "Dulcamara s. Solanum lignosum fl. alb. [...] Solanum hortens. fl. alb.," REGIUS, *Hortus*, p. 6 and 14 (unnumbered). Such a differentiation by Regius matches the one provided in DODOENS, *Stirpium historiae pemptades sex*, p. 397-398 and 450-451. The criticisms contained in the other corollaries do not match the characterization of plants given in the *Catalogus*.

I. In plants, besides matter and its various accidental dispositions, and nutritive juice, it is not necessary to pose any substantial form, which is the principle of the operations of the plant. [...] VII. Plants have no faculty attracting the aliment, even less an appetite, by which [they] are attracted to this or to that aliment.¹⁰⁸

Starting from thesis 7: in his *Physiologia, De actionibus naturalibus, Pars prior*, Regius was to provide a criticism of the idea that any attractive force (including a magnetic one) is at work in the human body,¹⁰⁹ even if Descartes suggested to him to drop the explanation of magnetism, which Regius was certainly providing in his private lectures, and which was discussed during Schuyt's inaugural disputation of 1639. In turn, the rationale of thesis 1 was to later recur in Regius's *Physiologia*, the text of which also saw the intervention of Descartes. Regius, following Descartes's commentary on a first version of the text he proposed him (which Descartes deemed linguistically inappropriate), claimed that (1) one can attribute to animals and plants a vegetative and a sensitive soul — intended as a first principle of their operations. In turn, (2) one cannot legitimately attribute a vegetative or sensitive *soul* to man, given the fact that the first principle of operations, in man, is the rational only: more properly, man has a vegetative *force* (*vis vegetativa*) which is nothing but a certain disposition of the parts of the body “by which the dissipation of bodily substance and heat is prevented by means of a juice prepared in the heart and thrust into the parts [of the body],” while the sensitive force (*vis sensitiva*), similarly, is a conformation of the parts of the body enabling sense reception and movement. Together, the two *vires* constitute the *temperies* of the human body, “by which all their operations can be performed, as in a clock and in other automata many admirable operations are accomplished by the conformation of parts only: so that there is no need to feign any substantial and occult form [...] and [...] multiply entities beyond necessity.”¹¹⁰ If we compare the 1638 disputation with Regius's final text, we do find the recurrence

¹⁰⁷ As discussed in BUNING, *Henricus Reneri*, p. 163-164, noting how this disputation has a more marked Cartesian character than Reneri's other disputations. See also BALDASSARRI, “Descartes and the Dutch,” p. 668-669. Regius is listed among Mudenus's “[s]tudiorum suorum promotoribus ac fautoribus summis,” HENRICUS RENERI (*praeses*) and ANTONIUS MUDENUS (*respondens*), *Disputatio physica continens theses aliquot illustriores*, Utrecht, Ex officina Aegidii Roman, 1638, dedicatees's page. Mudenus, from Utrecht, later enrolled at Leiden as a student of medicine (21 October 1639), while in 1640 he acted as *respondens*, at Utrecht, in four disputations *De febribus* presided over by Stratenus. He eventually graduated in medicine at Utrecht with a disputation *De phthisi* (22 December 1640) and a disputation *De peste et febribus pestilentibus* (February 1641). He was certainly a friend of Schuyt, who enrolled at Leiden as a student of philosophy on the same day as him. See the database geni.com, entry “Anthony van Muyden,” <https://www.geni.com/people/Anthony-van-Muyden/6000000021002536887> (accessed on 24 December 2021); GULIELMUS STRATENUS, *Disputationum medicarum prima[-septima] de febribus*, Utrecht, Ex officina Aegidii Roman, 1640, reprinted as *Causae, signa et medela febrium, comprehensa et proposita septem disputationibus*, Utrecht, Ex officina Aegidii Roman, 1641 (1640 on the frontispiece): Mudenus acted as *respondens* in disputations 1-3 and 6; ANTONIUS MUDENUS, *Disputatio inauguralis medica prima de phthisi*, Utrecht, Ex officina Aegidii Roman, 1640; *Album studiosorum Academiae Lugduno Batavae MDLXXV-MDCCCLXXV*, ed. by Willem Nicolaas du Rieu, The Hague, Apud Martinum Nijhoff, 1875, p. 309; *Album promotorum, qui inde ab anno 1636o usque annum 1815um in Academia Rheno-Trajectina gradum doctoratus adepti sunt*, ed. by Frans Ketner, Utrecht, Broekhoff, 1936, p. 2; ANTOON KERKHOFF, *IJsbrand van Diemerbroeck: verhandeling over de pest: ingeleid, vertaald en van aantekeningen voorzien*, Enschede, University of Twente, 2013, p. 36, n. 37.

¹⁰⁸ “I. In plantis praeter materiam et eius varias dispositiones accidentarias, et succum alimentarium nullam formam substantialem ponere est necesse, quae sit principium operationum plantae. [...] VII. Plantae nullam habent facultatem alimenti attractricem, multo minus appetitum, quo in hoc potius quam illud alimentum ferantur,” RENERI, *Disputatio*, theses 1 and 7.

¹⁰⁹ See *supra*, n. 73.

¹¹⁰ “16. Vis autem vegetativa in homine nihil aliud est, quam certa partium corporis constitutio, qua substantiae corporeae calorisque perpetuam dissipationem per succum a corde praeparatum, et in partes impulsam, conservamus. 17. Vis autem sensitiva est partium humani corporis in spiritus, nervos et alia sensoria: item fibras, musculos, et artus talis conformatio, qua homo ab obiectis, tum internis, tum externis, variis motibus citra cogitationem, affici, totoque corpore se de loco in locum movere potest. 18. Hae duae itaque (quae natura corporis appellari possunt) nihil aliud sunt, quam corporis humani apte conformati apta temperies: quandoquidem omnes illarum operationes ab hac ita fieri queunt, ut in horologio et aliis automatis plurimae actiones admirandae a sola partium conformatione peraguntur: ita ut non opus sit aliquam substantialem incognitamque formam hic vel alibi in similibus fingere, entiaque contra verissimum philosophiae dictatum, multiplicare absque necessitate,” REGIUS, *Physiologia*, p. 15-16; cf. Descartes to Regius, early

of the same concepts: the idea of a principle of operations in the body which is nothing but the disposition of the parts of matter, the centrality of the alimentary juice, the rejection of substantial forms on the basis of a principle of economy, and the negation of attraction. In other words, Regius developed a theory of man out of a theory of plants, and started to do so as early as in 1638-1639, when he was teaching a theory of plants and had already developed a theory of magnetism. This move from plants to animals can be noted also in his *Fundamenta physices*, where Regius devoted chapter 9 to plants, which is preceded by a chapter on living bodies as such (chapter 8), and followed by chapters on animals (10-11), and man (12)), thereby fulfilling the same plan expounded by Descartes in his *Principia philosophiae*. A fulfillment made possible not only by Regius's well-known longstanding focus on the physiology of animals and man, but also on plants, which was at the center of his teaching well before the appearance of his *Fundamenta physices*.

Abstract

In this chapter, I discuss the contents of the now lost academic *dictata* of Henricus Regius, embodying one of the first comprehensive teachings of natural philosophy inspired by René Descartes at a university. These contents are partially extant in Martin Schoock's *Admiranda methodus* (1643), and can be reconstructed from Regius's early texts and correspondence with Descartes. They reveal that Regius was original with respect to Descartes especially in his account of magnetism, which was functional to his medical physiology, and discussion of the powers of plants, out of which he developed such a physiology.

Keywords

René Descartes, Henricus Regius, *dictata*, Magnetism, Plants

May 1641, in Bos 63-65; AT 369-372; B 1456-1459; CSMK 181-182. See also FABRIZIO BALDASSARRI, "Failures of Mechanization: Vegetative Powers and the Early Cartesians, Regius, La Forge, and Schuyt," in *Vegetative Powers: The Roots of Life in Ancient, Medieval, and Early Modern Natural Philosophy*, ed. by Fabrizio Baldassarri and Andreas Blank, Cham, Springer, 2021, p. 255-275.