The contributions gathered in this volume endeavour to evaluate the role played by medical empiricism in the emergence of a philosophy of human nature in the 17th century and the role played by philosophical anthropology in the 18th century. Divided into three parts, "I. The Dispute between Metaphysics and Empiricism", "II. Arts of Empirical Research," and "III. Relevance of Case Studies," the volume questions the position of medicine within so-called "natural philosophy", which encompasses physiology and anatomy, as well as physics, astronomy and chemistry. One of its aims is to understand the tension between the goals pursued by the "natural philosopher" and the objectives set by the "physician". Within natural philosophy, the primary goal is to know nature, the body and the living, and this knowledge implies an effort to understand the causes of natural phenomena. For the physician, on the other hand, the primary goal is to cure the patients' bodies that are presented to him.

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BRILL

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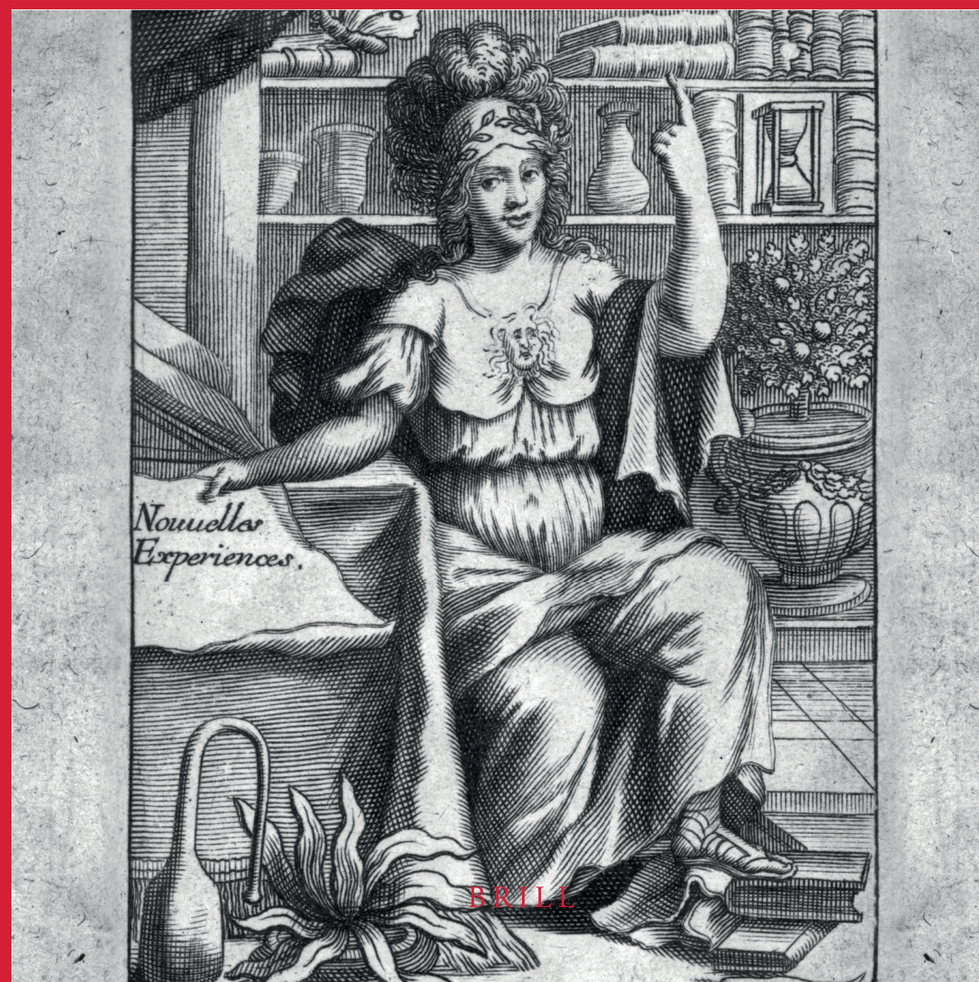
EDITED BY CLAIRE CRIGNON, CARSTEN ZELLE & NUNZIO ALLOCCA



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Introduction

Claire Crignon, Carsten Zelle, Nunzio Allocca

It may seem surprising to devote an entire book to the question of empiricism and, more specifically, its relation to medicine and philosophy with a special focus on the seventeenth and eighteenth centuries.

The adjective 'empirical' is used to denote a medical school that flourished over the course of the late Hellenistic period and at the beginning of the Roman Empire along with the 'dogmatic' and 'methodic' schools.[1] The school of the 'empirics' was characterised by a rejection of looking for causes, giving precedence instead to the treatment of illnesses based on the observation of symptoms. Refusing the assistance of reason in aiming to discover hidden causes, practitioners trusted only those things that are obvious to senses. Indeed, as Pierre Pellegrin stresses, their position is often seen as a critical interrogation of the metaphysical pretensions of reason.[2]

At the beginning of the modern period, the term was used in a pejorative way. In Bacon's works, for example, the adjective refers more broadly to a blind practice of science: the science of the 'empiricists'," who behave like ants ("the manner of the ant"), as they content themselves with gathering empirical data without any effort towards rationalism. This practice lies in opposition to philosophy which, according to the

1) Heinrich von Staden, "Hairesis and Heresy: The Case of the *haireseis iatrikai*," in Ben F. Meyer, ed., *Jewish and Christian Self-Definition*, vol. 3. *Self-Definition in the Graeco-Roman World* (London, 1982), 76-100. See also Jackie Pigeaud, "Les écoles médicales à Rome," in Pigeaud, ed., *Actes du 2^{e} colloque international sur les textes médicaux latins antiques* (Geneva, 1991).

2) See Pierre Pellegrin, "Le débat des écoles médicales sur la médecine et le savoir médical," in Galien, *Traités philosophiques & logiques*, transl. Pellegrin et al. (Paris, 1998), Introduction, 32-62, esp. 37.

author of the *Novum Organum* (1620), must be founded on an alliance between experience and reason ("the manner of the bee").[3]

The emergence of the term 'empiricism' as a noun denoting a philosophical school of thought occurs much later. We may recall that it was in fact Kant who gave birth to this notion in the *Critique of Pure Reason* in 1781.[4] Kant considers the attitude of the "empiricist philosopher" as fecund insofar as it dismisses "the indiscrete curiosity and presumption of reason" and prohibits that one should "permit himself to seek a cause beyond nature."[5] Kant thus gives Hume credit for demonstrating the need for a complete study of the claims of pure reason but at the same time deplores the fact that his empiricism has led to a "scepticism" which has impinged on "any theoretical use of reason."[6] In contrast to rationalism, empiricism was from that point onwards also associated with scepticism and considered a form of the renunciation of knowledge.

This characterisation of empiricism by Kant has played an important role in the creation of a certain number of fixed ideas or 'myths' about empiricism.[7] As Guido Giglioni notes about Bacon ("Learning to Read Nature: Francis Bacon's Notion of Experiential Literacy"), empiricism was often mistaken for an epistemological position and at the same time as an ontological affirmation. The position that the whole of our knowledge has a sensible starting point, however, does not necessarily lead us to claim that reality is in itself unknowable. Widely divergent philosophies have thus been grouped under the same heading. Indeed, what is the common link between Bacon's position in the *Novum Organum*—that it is possible to acquire knowledge of "latent schematism in bodies," of the "forms" of natural things[8]—and Locke's position when he shares,

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3) Francis Bacon, *Novum Organum* I, 95, in *The Oxford Francis Bacon*, Graham Rees and Maria Wakely eds., vol. XI (Oxford, 2004), 153.

4) Cf. [Art.] "Empirismus," in Joachim Ritter et al., eds., *Historisches Wörterbuch der Philosophie*, vol. 2 (Darmstadt, 1972), 477–78.

5) Immanuel Kant, *Kritik der reinen Vernunft*, Transcendental Dialectic, Bk. II, chap. II, 3 (= Akademieausgabe, vol. 3, 326-27).

6) Immanuel Kant, *Kritik der praktischen Vernunft*, Ist part, bk. II, ch. I, 2 (= Akademieausgabe, vol. 5, 52).

7) David Fate Norton, "The Myth of British Empiricism," *History of European Ideas*, vol. I (1981), 331-44.

8) Francis Bacon, *Novum Organum*, bk. II, aph. 7, in Graham Rees & Maria Wakely, eds., *The Oxford Francis Bacon*, vol. XI (Oxford, 2004), 211.

in his medical texts, his doubts about the possibility of acquiring a knowledge of the operations through which nature accomplishes its operations in the body via anatomy? As Locke writes, "Now it is certain and beyond controversy that nature perform all her operations in the body by parts so minute and insensible that I think no body will ever hope or pretend, even by the assistance of glasses or any other invention to come to a sight of them (…)."[9]

Kant cannot of course be considered the sole person responsible for the excessively uniform view we have of empiricism or for the sometimes over-simplistic opposition between a 'rationalist' philosophical school of thought (of which Descartes or Leibniz would be eminent representatives) and an 'empirical' philosophical school of thought (from Bacon to Hume).[10] This opposition influences how we read the texts from the modern period in question, a reading that the contributions gathered here invite us to challenge. In particular, the tendency to read metaphysical texts relating to the status of body, to the living or to the relations between spirit and body separate from the medical treatises, manuscripts and letters exchanged between philosophers and physicians in the seventeenth and eighteenth centuries is called into question. This is what, in our eyes, has justified the need to return to the close relations established between medicine and natural philosophy at the beginning of the modern period in order to question anew the relations between reason and experience and to demonstrate to a broader degree how the debates between the authors, presented as 'rationalists' or 'empiricists', are essential for recounting the birth of the concept of empiricism itself.

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The contributions gathered in this volume endeavour to evaluate the role played by medical empiricism in the emergence of a philosophy of human nature in the seventeenth century and the role played by philosophical anthropology in the eighteenth century. They question the position of medicine within so-called "natural philosophy," which encompasses physiology and anatomy, as well as physics, astronomy and chemistry.

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9) John Locke, *Anatomia*, PRO, 30/24/47/2, f. 31r.

10) See Hans Jürgen Engfer, *Empirismus versus Rationalismus. Kritik eines philosophischen Schemas* (Paderborn, 1996).

There is tension, however, specifically between the goals pursued by the "natural philosopher" and the objectives set by the physician. Within natural philosophy, the primary goal is to know nature, the body and the living, and this knowledge implies an effort to understand the causes of natural phenomena. For the physician, on the other hand, the primary goal is to cure the patients' bodies as they are presented to him. These activities are initially guided by a pragmatic objective. The empiricist physician, as described by Galen, does not categorically reject the aim of discovering the causes of illnesses, but instead gives priority to curing the sick, subordinating the theoretical search for causes to this practical goal. If empiricist physicians do not advocate dissection, it is because they consider that it is not "necessary to the medical art."[11] The physicians' competences should not be judged by theoretical reasoning but instead by their ability to restore their patients to health:

> Why, then, should anyone believe rather in Hippocrates than in Herophilus, why in him rather than in Asclepiades? If one wants to be guided by reasoning, they go on, the reasoning of all of them can appear not improbable; if by method of treatment, all of them have restored sick folk to health: therefore one ought not to derogate from anyone's credit, either in argument or in authority. Even philosophers would have become the greatest of medical practitioners, if reasoning from theory could have made them so.[12]

This tension between natural philosophy and medicine is present throughout the modern period (see our first section: "The Dispute between Metaphysics and Empiricism"). How should we evaluate the interest accorded by some philosophers to medical observations and experiments? Should we place metaphysical considerations about the nature of the body and practical observations about particular bodies on opposing sides? As Anne-Lise Rey shows ("The Status of Leibniz's Medical Experiments: A Provisional Empiricism?"), we should rather try to articulate and think about these various aspects together, through one philosophical understanding. This allows us to understand how empiricism may be sometimes thought of as something "provisional" and al-

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11) Galen, *On the Sects for Beginners*, in Richard Walzer & Michael Frede, transl., *Three Treatises on the Nature of Science* (Indianapolis, 1985), ch. 5.

12) Celsus, *De Medicina*, transl. Walter George Spencer (London, 1935), Preamble.

lowing for the discovery of a "foretaste of knowledge to come." But the tension may be stronger. Empiricism can be used within opposing metaphysical strategies: to demonstrate empirically the action of the spirit (cf. the article by Claire Etchegaray on Whytt) or to show the necessity of materialism. Besides, as Claire Crignon highlights, some "Modern philosophical readings of classical medical empiricism" renew the critical interrogation of a metaphysical use of reason. Medicine plays here a very important role in the distinction established between natural philosophy in its *speculative* manifestation (the aim of reason is to know things, to discover the causes of phenomena) and in its *experimental* manifestation (the aim of medicine is to cure patients, even if we ignore the causes of the disease).[13]

The argument of therapeutic efficacy, however, is a double-edged sword. Those who promise patients miraculous recoveries and dispense with any attempt to gain knowledge of nature are, in fact, considered to be charlatans and impostors. In his *Advancement of Learning* of 1605, Bacon already condemned the "weakness and credulity of men" that led them to "preferre a montabanke or Witch, before a learned Physitian."[14] In his *Cyclopedia*, published in 1728, Ephraim Chambers notes that "(…) the word empiric is now more odious than ever, being confounded with that of a charlatan or quack, and applied to persons who practise physic at random, or understanding any thing of the principles of the art."[15] Before the emergence of the term as a noun, the adjective 'empiric' was used to qualify a non-methodical and non-scientific form of medical practice. In Friedrich Hoffmann's view, for example, unreflective empiricism has pejorative connotations. According to him, a "reasonable physician" should have the ability to observe and to analyse; i.e. "not to proceed *empirice*, but *methodice*."[16]

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13) Peter Anstey, "Experimental versus Speculative Natural Philosophy," in Peter Anstey & John A. Schuster, eds., *The Science of Nature in Seventeenth Century. Patterns of Change in Early Natural Philosophy* (Dordrecht, 2005), 215-42.

14) Francis Bacon, *The Advancement of Learning,* in Michael Kiernan, ed., *The Oxford Francis Bacon*, vol. IV, 97 (Oxford, 2000).

15) Ephraim Chambers, *Cyclopedia, or, An universal dictionary of arts and sciences*, vol. II (London, 1728), 303.

16) Friedrich Hoffmann, *Medicina Consultatoria: Worinnen unterschiedliche über einige schwehre Casus ausgearbeitete Consilia, auch Responsa Facultatis Medicæ enthalten* […], 12 vols. (Halle, 1721-1739), vol. 9, 1732, Preface, fol. 3r.

It is precisely to distinguish themselves from this pejorative meaning of empiricism that modern physicians returned to the ancient meaning of medical empiricism as it had been defined since Celsus and Galen. James Primerose recalls in his *De vulgi in medicina erroribus* (1638) that the "Empyricks in times past were very learned and skilfull men," who were not content to offer remedies haphazardly and in keeping with past successes, but instead based their practice on rules and a method: "they followed a certain method, or rather an order in curing (…)."[17]

This explains why authors such as Bacon, Boyle, Sydenham and Hoffmann explicitly refer to the Hippocratic method of observation to demonstrate how it is possible to infer a certain number of principles or theorems based on the "visible" or "obvious" causes offered by experience. Contrary to this, the Galen tradition was judged in a very harsh light. Hoffmann wrote in his case collection:

> Der *Hippocrates* hat gewiß hierinnen sehr klüglich gehandelt und ist sonderlich zu rühmen, daß er sich mehr um *observationes* bekümmert, als sich auf *raisonnements* geleget. *Galenus* hingegen war ein *raisonneur*, und sahe sich wenig nach *observationibus* um, sondern bemühete sich vielmehr die Wirckungen der Natur in seine *speculationes* einzuschliessen, und aus seinem eigenen Kopffe eine *theorie* zu schmieden.[18]

The observation and classification of illnesses, then, takes precedence over the search for causes (see section III: "Relevance of Case Studies"). As Gianna Pomata and Nancy Siraisi have shown, case histories and autopsy narratives belong to *historia*, a genre which is not only characteristic of civil history but also used to refer to practices of descriptions and observation in natural history and medicine: "When Fabricius of Acquapadente or William Harvey, for instance, wrote the results of their anatomical investigations, they regularly started with what they called a *historia*, meaning a thorough description of the structure of bodily parts preliminary to the understanding of their function or use."[19] As Peter

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17) James Primerose, Robert Wittie, transl., *Populars Errours. Or the Errours of the People in Physick* (London, 1651), ch. VI, "Of Mountibanks," 22-23.

18) Hoffmann, *Medicina Consultatoria*, vol. 3, 1723, Preface „Von dem Nutzen guter *Observationum* und Schaden der falschen *Theorie in praxi medica*," fol. 4v.

19) See *Historia, Empiricism and Erudition in Early Modern Europe*, Gianna Pomata & Nancy G. Siraisi, eds. (Cambridge, MA, 2005), Introduction, 2-3.

Dear points out, "a generally Baconian sense of natural history remained particularly important in English natural philosophy, including that of the early Royal Society, for the rest of the century."[20] But this trend is limited neither to England nor to the seventeenth century. We may, for example, follow during the eighteenth century, in Germany, the emergence of new forms of observation that were turned towards the physicians themselves (the "self-observation" of the "reasonable physicians" suggested by Carsten Zelle in section III). Observation also played a crucial role in the birth of a very specific genre of medical writing, medical periodicals, which consisted of collections of cases and observations (cf. Yvonne Wübben, "Writing Case Studies" in section III).

Modern medical empiricism, however, adopts a very different face, both practical and methodical, and the reference to ancient empiricism often works in a critical way. On the one hand, anatomists reproach the observation practiced by Hippocrates for remaining too passive and not really serving to cure the sick. The argument of therapeutic efficacy begins to be used to advocate a more active form of empiricism, authorizing a shift towards dissection and experimentation as the only ways of investigating the knowledge passed on by the ancients in a critical manner and examining things themselves instead of referring to the ancients' books: "And hence it is, that without the due admonition of the senses, without frequent observation and reiterated experiment, our mind goes astray after phantoms and appearances."[21] On the other hand, the revival of anatomy which began at the end of the Renaissance and the resulting discussions about method moved the debate onto an epistemological level and not just a therapeutic one. In the tradition of Vesalius and then Harvey, the new anatomists proposed a genetic model of knowledge,[22] insisting on the necessity of questioning things themselves, beginning with the perception of individual things offered to the

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20) Peter Dear, "The Meanings of Experience," in Katherine Park & Lorraine Daston,eds., *The Cambridge History of Science,* vol. 3: *Early Modern Science* (Cambridge, 2006), 116.

21) William Harvey, *Anatomical Exercises on the Generation of Animals*, in R, Maynard Hutchins, ed., *Great Books of the Western World, Gilbert, Galileo, Harvey* (Chicago, 1952), Introduction, 333.

22) André Charrak, *Empirisme et Théorie de la Connaissance. Réflexion et fondement des sciences au XVIII^e siècle* (Paris, 2009).

senses ("embracing nature with our own eyes"[23]), in order to progress towards knowledge of universal matters. At the same time, the tension between the diversity of natural phenomena observed by means of comparative anatomy and the uniformity of nature's rules makes it difficult to generalise knowledge, as shown in Domenico Bertoloni Meli's article on the anatomy of plants and insects by Malpighi ("Of Snails and Horsetails" in section II).

Ultimately, it is the specificity of modern empiricism compared with ancient empiricism that is at the heart of the reciprocal exchanges between anatomical research, observation and classification on the one hand, and philosophical reflection on the knowledge of causes, on the diversity and unity of nature and the passing from the particular to the universal on the other. In fact, it is in no way certain that a common denominator between all the authors and all the doctrines that identify with the empiricism of the seventeenth and eighteenth centuries can be found. As Bas Van Fraassen notes, empiricism is characterised not by defending "theses" but instead by adopting attitudes or "stances."[24] We do not have here a theoretical position or body of knowledge, but instead different kinds of "arts of empirical research" (Section II) or different kinds of "empirical gestures." Empiricism has many different faces: it may be decried as a non-scientific practice or advocated as a method requiring an alliance with reason; it may claim to be affiliated with Hippocrates' observation method and take the form of a phenomenalistic rendering of empiricism, or recommend that things themselves be put to the test by turning to experience as "peira," a trial or test, a critical instance of sharing and decision. As Philippe Hamou suggested in his summary of the debates proposed at the end of the trilateral workshop which assembled a joint German, Italian and French team at Villa Vigoni in May 2011, it is less about an "essence" of medical and philosophical empiricism and more a series of specifically modern "acts."

The first such act involves abandoning books in order to dedicate oneself to dissecting nature, advocated by Harvey in the *epistle dedicatory* on

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23) "(…) the comprehension of universals by understanding is based upon the perception of individual things by the senses." Harvey, *Anatomical Exercises*, 332; Harvey, *An Anatomical Disputation concerning the Movement of the Heart and Blood in Living Creatures* (1628), transl. Gweneth Whitteridge (Oxford, 1976), 29

24) Bas C. Van Fraassen, *The Empirical Stance* (New Haven, 2002).

the treatise on blood circulation: "(…) I do not profess either to learn or teach anatomy from books or from the maxims of philosophers, but from dissections and from the fabric of Nature herself."[25] This is an act that assumes recognition of the diversity of phenomena observed and invites us to make comparisons (comparative anatomy). It is an act that also implies the recognition of nature as more subtle than our senses and, thus, of the need to turn to instruments: the microscope of nature (Domenico Bertoloni Meli), the real microscope or a virtual microscope.

The second is the affirmation of the superior and independent authority of the senses which implies an acceptance of what they show us, even if it is contrary to what understanding suggests and leads to an act of breaking away from the ancients.

The third act means turning attention towards the particular and the individual (the diversity of species and individuals, the particularity of cases) which, in this case, for the physician, concerns treating a *sick person* rather than an illness and reinforces the legitimacy of these acts. As Thomas Willis explains in his preface to *Of Fevers* (1659), it is in "sitting oftentimes by the Sick," in endeavouring to "weigh all the symptoms, and to put them, with exact Diaries of the Diseases, into Writing" that he "began to adapt general Notions from particular Events." The observation of "accidents and courses of fevers" and the taking into consideration of the mortality rate caused by the illness ("a disease by which the third part of Mortals have still Fallen to this day") forbid physicians "to shut their Eyes and remain blind in the Light it self."[26]

The fourth and final act is the priority given to a clinical description of the patient's nature, the history of the illness, an indication of the treatments used and the outcome of the illness over explanation. This is an act which leads the physician to refer to the art of portraiture, as was demonstrated at our conference with regard to Sydenham, who could brush aside hypotheses in order to concentrate on observing more particular details:

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25) William Harvey, *Anatomical Disputation Concerning the Movement of the Heart and Blood in Living Creatures*, Epistle Dedicatory to Dr. Argent, transl. Gweneth Whitteridge (Oxford, 1976) 7, see also ch. 1, 29.

26) Thomas Willis, The Preface to the *Treatise of Fevers* (1659), in *Dr. Willis's Practice of Physick, Being the Whole Works*, transl. Samuel Pordage (London, 1684), 45.

> In writing the history of a disease, every philosophical hypothesis whatsoever, that has previously occupied the mind of the author, should lie in abeyance. This being done, the clear and natural phenomena of the disease should be noted—these, and these only. They should be noted accurately, and in all their minuteness; in imitation of the exquisite industry of those painters who represent in their portraits the smallest moles and the faintest spots.[27]

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This volume is based on talks given during the first (May 2011, 9-12) of a series of three workshops devoted to "Reshaping Man: Medical Discoveries and Philosophies of Human Nature, German Empire, Italy, France, Great Britain, seventeenth and eighteenth Centuries." The aim of this research project, which brings together German, Italian and French researchers, was to understand the constitution of a modern image of man and to study its transformations, starting from the debate between physicians and philosophers, which was revived in the new human and animal anatomy and physiology according to Vesalius.

Villa Vigoni (Centro Italo-Tedesco per l'Eccellenza Europea / Deutsch-Italienisches Zentrum für Europäische Excellenz in Loveno di Menaggio, Italy) is an institution devoted to the promotion of European research. It offers a unique and beautiful location for research as well as the time and leisure, which are too often missing, to establish ties and develop collaborative research projects between different teams and schools of thought. Carsten Zelle (Ruhr-Universität Bochum), Nunzio Allocca (Roma, Sapienza—Università di Roma), Claire Crignon (Paris IV, Sorbonne), Stefanie Buchenau (Paris VIII, Saint-Denis) and Anne-Lise Rey (Lille I) played an active role in the organisation of the conference. It was supported by the Deutsche Forschungsgemeinschaft, Villa Vigoni, the Fondation Maison des Sciences de l'Homme, the ANR Jeune Chercheur Philomed (Université Paris VIII) and the French Embassy in Italy. We are very grateful for the support received and the material assistance provided by Villa Vigoni.

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27) Thomas Sydenham, *Medical Observations Concerning the History and Cure of Acute Diseases*, in Robert Gordon Latham, ed., *The Works of Thomas Sydenham* (London, 1850), vol. 1, Preface to the third edition (1666), § 9.