

See also Atom; *Discourse on Method*; Element; Explanation; Jesuit; Optics; Physics; Regius, Henricus; Subtle Matter

FOR FURTHER READING

Rodis-Lewis, Geneviève. 1988. "L'accueil fait aux Météores," in *Problématique et réception du Discours de la méthode et des Essais*, ed. H. Méchoulan. Paris: Vrin, 99-108.

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METHOD

"The Plan of a Universal Science [*Le projet d'une Science universelle*] which is capable of raising our Nature to its Highest Degree of Perfection, together with the *Dioptrics*, the *Meteors* and the *Geometry*, in which the Author, in order to give proof of his universal Science, explains the most abstruse Topics he could choose, and does so in such a way that even persons who have never studied can understand them" (AT I 339, CSMK 51). This long and cumbersome original title of Descartes' *Discourse on Method* (1637) conveys the highly ambitious yet elusive nature of Descartes' method. He sometimes seems to present it as an epistemological panacea, claiming that it can "solve all the problems that have never yet been solved" in *geometry* (AT I 340, CSMK 51) and that it even "extends to topics of *all kinds*" (AT I 349, CSMK 53). Employing this wonderful method, Descartes claims, we could "make ourselves, as it were, the lords and masters of nature" (AT VI 62, CSM I 142-43). Indeed, in one of his most conspicuous expressions of his appreciation for his own method, Descartes boasts that it is far superior to that of his critic, **Hobbes**, even though the latter never claimed to have any method (AT VII 174, CSM II 123).

The two main texts in which Descartes discusses his method are the posthumously published *Rules for the Direction of the Mind* and the *Discourse*. Unfortunately, neither of the two works provides a complete presentation of the method. The *Rules* is an unfinished work; it was intended to contain thirty-six rules, but the extant versions of the work include only twenty-one (and the last three of these do not have the detailed elaboration that accompanied the others). Descartes worked on the *Rules* throughout the 1620s but had deserted it by 1628 (Garber 1992, 31). In the *Discourse*, he explains his reason for offering a minimalistic new presentation of the method: "A multiplicity of laws often provides an excuse for vices, so that a state is much better governed when it has but few laws which are strictly observed; in the same way, I thought, in place of the large number of rules that make

up logic, I would find the following four sufficient, provided that I made a strong and unswerving resolution never to fail to observe them" (AT VI 18, CSM I 120). These four rules, however, cannot be considered a complete presentation of the method; in a letter to **Mersenne**, Descartes stresses that his choice of the title "*Discourse on Method*" – rather than "*Treatise on Method*" – indicates that the work is supposed to be merely a *preface* to the method (AT I 349, CSMK 53). Thus, it seems that neither the long but incomplete *Rules* nor the complete but merely prefatory *Discourse* can provide us with a full exposition of Descartes' method. One might be tempted to consider the three treatises (*Dioptrics*, *Meteors*, and *Geometry*) that Descartes attached to the *Discourse* as authoritative demonstrations of the method (indeed, the title of the 1637 book describes the three works as "essays" in the method). Yet, such a conclusion seems premature; in a 1638 letter, Descartes insists that the three works follow a certain "order of exposition" that is distinct from the order of discovery prescribed by the method (see **analysis versus synthesis**). Thus, the three works are supposed to show the achievements of Descartes' method, but they do not demonstrate its use (AT I 559, CSMK 85).

Since the four concise rules of the *Discourse* give us an authoritative outline of the method of the mature Descartes, we quote them *in extenso*:

The *first* was never to accept anything as true if I did not have evident **knowledge** of its **truth**: that is, carefully to avoid precipitate conclusions and preconceptions, and to include nothing more in my **judgments** than what presented itself to my **mind** so clearly and so distinctly that I had no occasion to **doubt** it. The *second*, to divide each of the difficulties I examined into as many parts as may be required in order to resolve them better. The *third*, to direct my thoughts in an orderly manner, by beginning with the simplest and most easily known objects in order to ascend little by little, step by step, to knowledge of the most complex, and by supposing some order even among objects that have no natural order of precedence. And the *last*, throughout to make **enumerations** so complete, and reviews so comprehensive, that I could be sure of leaving nothing out. (AT VI 18–19, CSM I 120)

The concise and simple formulation of the four rules may appear attractive, but it led to charges that Descartes was asserting only trivial platitudes. **Leibniz** noted that these rules seem like the advice of some chemists: "Take what is needed; do as you ought; and you will get what you wanted" (Leibniz 1875–90, 4:329; cf. Broughton 2002, 3–4). Indeed, one may wonder whether Descartes' method, the rules of which were supposed to extend beyond **mathematics** and cover the practice of **philosophy** and the sciences, did not culminate in prescriptions that could just as well apply to more mundane activities like shopkeeping. Perhaps one way to mitigate this worry would be to observe the strength of the first rule of the *Discourse*, which is not likely

to be helpful in casual practices (such as shopkeeping): "to include nothing more in my judgments than what presented itself to my mind so clearly and so distinctly that I had no occasion to doubt it." Similarly, Descartes prescribed in the early *Rules* that one should "believe only what is perfectly known and is incapable of being doubted" (AT X 371, CSM I 10).

Doubt has an important role in Descartes' method, though we should keep in mind that it is only one element of it (see Williams 1990, 33–34, and Broughton 2002, 2–7). The use of the procedure of doubt is evident in the *Meditations on First Philosophy* (1641), Descartes' most famous work, but the *Meditations* also clearly exhibits the application of the other three rules of the *Discourse*. The main argument of the book – a proof of the existence of God and the survival of the soul – is split into a series of well-defined steps (second rule). The order of discovery begins with the knowledge that is most simple and accessible to the mediator (i.e., the existence of the I) and proceeds from there step by step (third rule). Each meditation begins with a recapitulation of the previous moves (fourth rule).

When we compare the rules of the *Discourse* with those of the *Rules*, it is evident that each of the four rules of the former has one or more counterparts among the first twelve rules of the latter. The *Rules*' second (and incomplete) set of twelve rules focuses on method in mathematics, and specifically on the thorny issue of mathematical symbolism. Inspired by his outstanding success in algebraic geometry, Descartes considered mathematics a paradigmatic science, whose fruitful methods should be extended to the other sciences (AT VI 21, CSM I 121).

The unity of the sciences is a topic stressed in both the *Rules* and the *Discourse*. Thus, elaborating on the first rule of the *Rules*, Descartes writes: "The sciences as a whole are nothing other than human wisdom, which always remains one and the same, however different the subjects to which it is applied" (AT X 360, CSM I 9). Within this unified view of the sciences, Descartes suggests a certain hierarchy, observing in the second part of the *Discourse* that the principles of the sciences "must all be derived from philosophy" (AT VI 21–22, CSM I 121–22). He enshrined this hierarchical view in the preface to the *Principles of Philosophy*, with the famous image of the "tree of knowledge," of which "the roots are metaphysics, the trunk is physics, and the branches emerging from the trunk are all the other sciences" (AT IXB 14, CSM I 186).

Interestingly, Descartes presents his method of discovery as quite flexible on crucial issues, such as whether to begin an inquiry from causes (and deduce the effects) or from effects (and trace the causes). In the sixth part of the *Discourse*, Descartes writes: "First I tried to discover in general the principles or first causes of everything that exists or can exist in the world. To this end I considered nothing but God alone, who created the world.... Next I examined the first and most ordinary effects deducible from these causes. In this way, it seems to me, I discovered the heavens, the stars, and an earth; and, on the earth, water, air, fire, minerals, and other

such things which, being the most common of all and the simplest, are consequently the easiest to know." After he had "deduced" the first effects of God, this method of progressing from causes to effects ceased to be useful. Subsequently, Descartes *reversed* the order of inquiry:

Then, when I sought to descend to more particular things, I encountered such a variety that I did not think the human mind could possibly distinguish the forms or species of **bodies** that are on the earth from an infinity of others that might be there if it had been God's will to put them there. Consequently I thought the only way of making these bodies useful to us was to progress to the causes by way of the effects.

At this point, Descartes employs the fourth rule of the *Discourse*: "And now, reviewing in my mind all the objects that have ever been present to my senses, I venture to say that I have never noticed anything in them which I could not explain quite easily by the principles I had discovered" (AT VI 63-64, CSM I 143-44). It seems that Descartes allows the third rule of the *Discourse* to be interpreted in different, even opposite, ways. While the idea of God is most simple and accessible to the human mind, the immediate effects of God might be less accessible to our minds than particular things that we encounter in our intimate experience.

Another issue that is closely related to Descartes' method is the distinction he develops (in the *Second Replies*) between analysis and synthesis as manners of demonstration (see **analysis versus synthesis**). In the Synopsis of the *Meditations*, Descartes presents the work as written in the order "normally employed by the geometers" (AT VII 13, CSM II 9). Yet, when Mersenne asks Descartes to fully abide by this statement and prove the chief thesis of the *Meditations* "in geometrical fashion, starting from a number of definitions, postulates, and axioms" (AT VII 128, CSM II 92) (see **geometrical exposition**), Descartes expresses serious reservations about the employment of such method of demonstration - which he terms "synthetic" - in metaphysics. The alternative method of demonstration - analysis - "shows the true way by means of which the thing in question was discovered," that is, it is far closer to the Cartesian method of discovery. The analytic method is far more appropriate for metaphysical inquiry because metaphysics - unlike geometry, whose primary notions "are readily accepted by anyone" - requires "so much effort [to make] our **perception** of the primary notion clear and distinct" (AT VII 155-57, CSM II 110-11).

The early modern reception of Descartes' method was somewhat mixed (see Méchoulan 1988). The fourth part of the *Port Royal Logic* is heavily indebted to Descartes' discussion of method and may contain a paraphrase of missing material from the *Rules* (AT X 471-72, CSM I 77-78). Many of Descartes' contemporaries and immediate successors considered his method as encouraging skepticism. Of

those, some (e.g., Voetius and Martin Schook) brought the charge of encouraging skepticism in order to argue that his philosophy leads to heresy, while others (e.g., Foucher and Huet), being more sympathetic to skepticism, attempted to explain away Descartes' claim that he used the procedure of doubt for mere methodical purposes (see Lennon 2008, 59–62). Of Spinoza's works, the closest in spirit and content to Descartes' discussions of method is the *Treatise on the Emendation of the Intellect*, which is likely his earliest extant work. The Cartesian method might have influenced Spinoza's "method for interpreting scripture" in the *Theological Political Treatise* (ch. 7, G III/98–100), though Spinoza's stress on the construction of the natural history of the text goes beyond anything in Descartes. In his mature *Ethics*, Spinoza has far less sympathy for the Cartesian method, which seems to be one of the main targets of his scathing critique of the gravely misleading "order of philosophizing" employed by his predecessors (see E2pros2; cf. Melamed 2009).

See also Analysis versus Synthesis, Cause, Clarity and Distinctness, *Discourse on Method*, Doubt, Enumeration, Geometry, Knowledge, *Mathesis Universalis*, *Rules for the Directions of the Mind*

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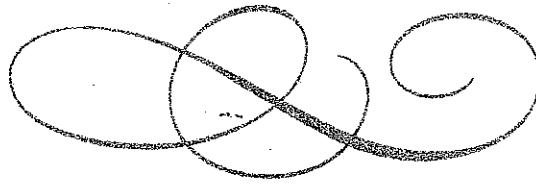
YITZHAK MELAMED

MEYSSONNIER, LAZARE (1611–1673)

Meyssonnier was physician to King Louis XIII and professor of surgery in Lyon. The main body of his work can be found in the *Pentagonum philosophico médico* and, in particular, in the republication of the *Miroir de beauté et de santé corporelle* by Louis Guyon de la Nauche (1625), after 1633. Following successive rewording and expansion, this work became the leading practical and theoretical medical course in French. It was published the same year as the posthumous edition of Descartes' *Treatise on Man* (1664) and contains numerous references to *Dioptrics*, *Passions of the Soul*, and the letters exchanged with Descartes at the beginning of the 1640s.

Meyssonnier was introduced to Descartes by Mersenne, to whom he had sent *Pentagonum* on February 25, 1639. In a letter to Mersenne dated January 29, 1640, Descartes reports that he had received him in person. He also expresses reservations regarding the mix of "astrology, palmistry, and other such nonsense" that he believes punctuates the volume (AT III 15). In a brief letter to Meyssonnier of this same date and another more detailed one that was addressed to him care of Mersenne, Descartes responds to this royal physician's apparent inquiries concerning the function of the **pineal gland** (or *conarium*) and whether corporeal memories are stored there exclusively (see **memory**). First, he explains that the function of the pineal gland, given its unity, mobility, and unique position near the center of the brain, is to unite (but not preserve) the innumerable impressions that are received by the two eyes, two ears, and other senses before they are perceived by the soul. Second, he notes that while some species of memory can be found there, especially in people with "course minds" and in **animals**, memories are typically found in the brain as a whole. Third, he notes that memories can even be found in the nerves, muscles, and, for someone skilled in using his body such as a lute player, in the hands. "You

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