

## Kennington's Descartes and Eddington's "Two Tables"

Joseph Gonda

SIR ARTHUR EDDINGTON'S "Two Tables"—the first dense with the qualities of everyday life, solidity, color, texture, the other a congener of invisible, untouchable particles of energy—points to a fundamental feature of contemporary life: the belief that only modern natural science gives us access to the underlying reality of things.<sup>1</sup> It is, as well, almost a commonplace of present scholarship that the *Meditations* are representative of the foundational arguments at the historical roots of this aspect of our day. In a letter Descartes characterized the complex rhetorical strategy which animates this element of the *Meditations*.

These six meditations contain all the foundations of my physics. But that must not be spread abroad, if you please; for those who follow Aristotle will find it more difficult to approve them. I hope that [they] will accustom themselves insensibly to my principles, and will come to recognize their truth, before perceiving that they destroy those of Aristotle. (AT.V.178)<sup>2</sup>

Whereas Aristotle's *Physics* is based on a view of the world which takes its bearings by the evidence that underlies the trust of Eddington's naïve observer, its substitute, the thesis that physical reality is at once homogeneous and describable in terms of quantifiable predicates such as mass, length and time, is a cornerstone of modern natural science. To use the language of the *Meditations*, the proposition that "body is extension" catches the essence of this thought.

In Richard Kennington's perspective on these issues, "Cartesian doubt in the *Meditations* I–II is . . . the conflict of the natural attitude ('the teaching of nature') and scientific reason ('the light of nature')."³ The "teaching of nature" is practical and theoretical. It is the latter which is undermined in *Meditations* I–II. Its conceptual nerve is embodied in two beliefs: that "bodies exist" and that they are "similar to those images of them which are derived from the senses."<sup>4</sup> The latter includes the ascription of secondary qualities to bodies. This aspect of the "teaching of nature" encapsulates some of the fundamental opinions of our pre-philosophic, pre-reflective attitude to the world common to Eddington's naïve observer and Aristotelian physics. The first thesis, that bodies exist, Kennington calls the "existence thesis," the second, the "similarity thesis."<sup>5</sup> "The light of nature" or "scientific reason," among other things, denies the "similarity thesis." As Kennington puts it,

What must be doubted and transcended is the theoretical teaching of the natural attitude, or that truth about the world which begins with the natural deliverance of the senses.<sup>6</sup>

This paper begins by noting an obvious feature of *Meditation* I, the caesura at paragraph 7 where Descartes names the real properties of "corporeal nature." It will display the logical structure of paragraphs 3–7 in light of Kennington's work. This part of the doubt, it will show, forms a valid hypothetical syllogism whose conclusion is that the ultimate *ratio dubitanti* for the doubt of the senses is the thesis that only scientific universals or determinants, extension and its modes, may be ascribed to the material world.

This paper will thus add to the case for rejecting interpretations of Cartesian doubt as a form of radical scepticism. Rather, the doubt presupposes a quasi-ontological claim at the methodological core of Descartes' science of nature, that body is extension. The foundations of the new structure housing Descartes' scientific project are not only given prior to the doubt but both guide and provide key premisses for it. Accordingly, an aim of this paper is to illuminate one of the rhetorical-logical means whereby Descartes contributed to the supplanting of Aristotelian physics by its modern counterpart. This is a deductively valid argument whose apparent soundness depends on the reader's acceptance of the ontological thesis at the core of Descartes' science of nature. In short, the argument examined in this paper points to a *sub rosa*

Cartesian circle which argues from the truth of the thesis that body is extension to the foundations of a science at whose center is the very thesis.

In what follows, positive beliefs which derive from Descartes' "former opinions," that is to say, "the teaching of nature," will be labelled P1, P2 . . . Pn. The corresponding *ratio dubitandi* (or thesis requiring *ratio dubitandi*) will be labelled Q1, Q2 . . . Qn. This paper takes it for granted that for this passage of the *Meditations*, at the least, the mere logical possibility of conceiving the contradictory of, say, Pn is not a sufficient ground for putting it into doubt.

The first stage of doubt is the belief of ordinary experience that the knowledge derived from the senses is true.<sup>7</sup>

All that up to the present time I have accepted as most true and certain I have learned . . . from the senses . . . (MM.I.3)

This is P1.

P1: Sense Knowledge is veridical.

In the same paragraph P1 is made dubitable.

But it is sometimes proved to me that these senses are deceptive . . . (MM.I.3)

Descartes here asserts the first antithesis to a foundational belief. It is

Q1: There are relevant instances of sensation deceiving, i.e., instances which disconfirm *in toto* the veracious character of sense-knowledge.

Or, if Q1 is true, then P1 is false,

Q1  $\supset$   $\sim$ P1, or  
Stage I: P1  $\supset$   $\sim$ Q1.

What is the evidence, the *ratio dubitandi*, for Q1? In *Meditation VI* Descartes recapitulates the doubt and states some experiences which provide evidence for Q1.

I from time to time observed that those towers which from afar appeared to me to be round, more closely observed seemed square,

and that colossal statues raised on the summit of these towers, appeared quite tiny when viewed from the bottom . . . . (MM.VI.7)

This disconfirming evidence is atypical of everyday experience, not that it cannot occur in our everyday experience. Something intervenes, here distance, between sense organ and object. Other instances of sense deception mentioned by Descartes can be adduced as evidence for Q1, e.g. the apparent break of a stick partially immersed in water, or the apparent size of the sun.

The next stage of the doubt confirms that these are the kind of experiences which are the evidence for Q1 and, at the same time, it restores a corrected P1 which takes into account these disconfirming data.

But it may be that the senses deceive us concerning things which are *hardly perceptible* or *very far away*, there are yet many others to be met with as to which we cannot reasonably have any doubt . . . . (MM.I.4, my emphasis)

Sense-knowledge is restored as qualifiedly trustworthy, i.e. P2, since the doubt of P1, i.e. Q1, is based on things which are “hardly perceptible or very far away.”

P2: Sense-knowledge about things nearby and/or easily perceived is veridical.

Descartes' example illustrative of P2, “the fact that I am here, seated by the fire, attired in a dressing gown, having this paper in my hands” (MM.I.4), confirms this reading of P1, Q1, and corrected P1, i.e. P2. What could be nearer or more easily perceptible than “my hands,” a part of my body?

Thus if Q1 is false, then P2 is true,

$\sim Q1 \supset P2$ ,

and so,

Stage I:  $P1 \supset \sim Q1$

Stage II:  $\sim Q1 \supset P2$ .

The doubt is embarked on a dialectical process. Each thesis or antithesis has a clear logical connection to all the others and

altogether there is a discernible pattern of answer and response reminiscent of the ancient sceptical authors. Thus as each successive step of the doubt arises, it brings in a different aspect of the foundations of Descartes' "former opinions," or, in alternation, a new *ratio dubitandi* which undermines the foundational belief, both of which also correct their corresponding theses (or antitheses) so as to take into account an intervening step, e.g. P2 restores P1 but in a way which takes into account Q1. And Q2 will restore Q1 by taking into account P2.

Hobbes's objection (HR.II.60) to the hoary old examples of sense deception used by Descartes, that their antiquity attests to their flimsiness, confirms that MM.VI provides evidence for Q1 and, as well, points to the need to strengthen the grounds for doubting P1. Descartes in his response concedes the point. Sextus's round-square tower, and other like cases, are not by themselves meant to cast genuine doubt on P1. Q1 and its evidence, Descartes thus suggests, is propaedeutic to the proper *ratio dubitandi* of P1 (HR.II.61).

So far Descartes' doubt is traditional. Trust in the senses requires normal conditions for sensing, e.g. no intrusive medium between organ and object. But his trust in P2 is dubitable.

And how could I deny that *these* hands and *this* body are mine, were it not perhaps that I compare myself to certain persons, devoid of sense, whose cerebella are so troubled and clouded by the violent vapours of black bile, that they constantly assure us that they think they are kings when they are really without covering or who imagine that they have an earthenware head or are nothing but pumpkins or are made out of glass. (MM.I.4, my emphasis)

Or,

Q2: Even our experience of the nearby and easily perceptible, e.g. "my hands," is not trustworthy.

Q2 corrects Q1. It takes into account P2. It is "my hands" which are in question, not the sun or some far off tower.

That "these" hands "are mine" can mean either that I do not have hands thinking that I do, or that these hands as I perceive them are not mine but quite possibly are mine under some more veracious, e.g. scientific, description. The former interpretation raises the

issue of the existence thesis; the latter, the similarity thesis. The madmen *aporia* includes evidence for Q2 which, as we will see, implies that it is the latter issue which is the focus of attention of this *aporia*.

In bringing up madness, Descartes need not be thought to suggest that we have no indices for deciding whether we are sane or not. Descartes is making a distinction. Q1 implies that the operation of the senses depends upon favorable external conditions. Q2 implies that veridical sensations also depend on internal conditions, e.g. the organs of sense must be normal, not deranged or disoriented as e.g. a function of a breakdown of a more central organ such as the brain.

Hence if Q2 is true, then P2 is false, or

Stage III:  $P2 \supset \sim Q2$ .

The details of the madmen *aporia* also suggest that it is the similarity thesis rather than the existence thesis which is at stake at this point in the *Meditations*. The assertions produced by the mad are not equally relevant. They can be ordered by rank in terms of their concreteness and hence, relevance. To suppose oneself king when poor is not in any straightforward way the result of a failure of the senses. It is consistent with veridical sensing. The second example is more relevant not only because it concerns sensation but also because it locates the failure of sensing in what is nearby, next to one's skin, one's clothes. Descartes' choice of nakedness over homespun as the reality behind the royal purple of the mad prepares the reader for the truly relevant example. These are madmen who imagine some part of their body, e.g. the head, to be composed of something other than its actual substance, i.e. who ascribe to some *nearby* item perceptible properties which do not belong to it *in re*. The madman who imagines his head to be glass can, on recovery, say with accuracy, "when I was mad my head was not mine *as I perceived it* because I imagined it to be glass."

This distinction between internal and external conditions of veridical sensing prepares the reader for the non-traditional Cartesian contention, "even or especially the normal and natural human organism distorts our perception of the sensible." This contention is the burden of the next *aporia*, the dream *aporia*.

Before turning to this *aporia* Descartes restores the credibility of the senses.

But they are mad, and I should not be any less insane were I to follow examples so extravagant. (MM.I.4)

Or,

P3: If normal conditions (internal and external) obtain then sense-knowledge is trustworthy.

P3 is stated as a conditional. If it is to speak to practice, it must suggest an implicit argument or rule which allows for determining "whether one is capable of distinguishing between reasonable and unreasonable judgements."<sup>8</sup> This rule, logically speaking, would serve as evidence for affirming the antecedent. Practically speaking, without such a rule, P3 can ground no trust in the senses. Why is it not stated?

The examination of such a rule would seem to be a precondition for pursuing any form of radical scepticism. But as Frankfurt suggests, although not for the reason he adduces, it is not necessary to suppose that by not mounting a full-scale attack on Q2 (i.e. defense of P3) Descartes fails to meet an obligation to a radical scepticism.<sup>9</sup> One can plausibly argue that Descartes is not a radical sceptic.

First, "absolute scepticism," as Hume calls it, has always had to bow before some version of Hume's objection that it is limited to the philosopher's closet; in short, even in the absence of a priori justifications for (or in the presence of a priori arguments against) a belief, doubt is suspended once practice takes over and reflection stops. Descartes takes scepticism out of the closet. He implies (MM.I.4) a conceptually weaker, i.e. not a priori, but practically stronger justification for not following the "extravagant" example of the mad and then snatches it right back with the next step, the dream *aporia*. The point can be put another way. Grant Descartes a practical rule which, when invoked (and it is a feature of its being invoked that it is properly invoked), affirms the antecedent of P3, the next step makes it nugatory: it too is dubitable.<sup>10</sup>

Second, Descartes is not a radical sceptic. His scepticism has an end for the sake of which it is argued, i.e. to establish a "firm and permanent structure in the sciences" (MM.I.1), and hence cannot be an example of radical scepticism which, presumably, has no other *telos* save the traditional phylactic one of protecting the sceptic from false judgements. As for Descartes' science, it is meant

to make men “masters and possessors of nature,” (DM.VI.2), quite a leap from merely seeking assurances that falsity is not a part of one’s beliefs.

Hence if Q2 is false, then P3 is true.

Stage IV:  $\sim Q2 \supset P3$

The next stage of the doubt introduces the innovative aspect of these paragraphs.

At the same time I must remember that I am a man, and that consequently I am in the habit of sleeping, and in my dreams representing to myself the same things or sometimes even less probable things, than those who are insane in their waking moments. How often has it happened to me that in the night I dreamt that I found myself in this particular place, that I was dressed and seated near the fire . . . ? And my astonishment is such that it is almost capable of persuading that I now dream. (MM.I.5)

Or,

Q3: Even the normal state deceives since it leads one to ascribe to things properties which do not belong to them *in re*.

The dream *aporia* need not be literally understood. If it is, then it would no longer be, in any straightforward way, relevant to the preceding step of the doubt. P3 states that a sufficient condition for trusting the senses is the normal state of the perceiver. Q3, if it is to be relevant, must put this into doubt. Here is how Kennington argues for understanding the dream *aporia* metaphorically.

[Descartes] is not concerned with literal dreaming . . . . If he were . . . he would not discuss in the context the creative limits of the imagination of the painter—who is obviously not asleep. If dreaming were a genuine *aporia*, he would not postpone the resolution of the difficulty until the last page of the *Meditations*, and thereby imply that all the demonstrations of the book, including those of the *cogito* and of God, could be performed while asleep. This Homeric jest is sometimes missed . . . . Dreaming . . . is a metaphor for our trust in the images that derive from sensation, as presenting the truth of the things sensed. The original suggestion that trust in the natural deliverance of the



senses is madness, has been replaced by a new version of an old philosophic thesis, that in our ordinary waking experiences "life is a dream." "It may be that all these images and, speaking generally, all things that relate to the nature of body, are nothing but a dream." (HR.I.152)<sup>11</sup>

If Q3 is true, P3 is false, or

Stage V:  $P3 \supset \sim Q3$ .

The next step of the doubt unequivocally addresses Q3. It puts forward a thesis about the imagination which restores, in principle, trust in the senses.

We must . . . confess that things which are represented to us in sleep are like painted representations which only can have been formed as the counterparts of something real and true, and that in this way those general things at least, i.e. eyes, a head, hands, and a whole body, are not imaginary things, but things really existent. (MM.I.6)

Descartes' argument is analogical. Painters are to their works as dreamers to their dreams. The point of comparison lies in the similarity between the second and fourth terms: they are both the products of a composition out of more basic elements. The fact that a dreamer may be asleep is, strictly speaking, irrelevant.

Or,

P4: The normal state of sensing does not deceive as long as it ascribes to things only those qualities which belong *in re*.

But, if Q3 is false, P4 is true,

Stage VI:  $\sim Q3 \supset P4$ .

The next step replaces the elements out of which painters paint and, a fortiori, out of which a normal sensing subject composes a picture of the world. P4 is false because it does not correctly identify the elements out of which we get a trustworthy account of the world. Descartes imports this thought with the modal assertion that though the predicates of everyday experience "may be imaginary" there are "yet more simple and more universal" elements. This turns out to be a barely disguised—disguised only by

the pretence that “extension” is but a property, maybe even a proper accident, of “corporeal nature”—assertion of the methodological (ontological) heart of Cartesian science, body is extension. This doctrine enters the pages of the *Meditations* under the guise of the Aristotelian substance doctrine it is intended to dethrone. From the perspective of the order of discovery, it antedated the composition of the *Meditations* by decades.

Or,

Q4: The real qualities of things are extension and its various modes, e.g. figure.

If Q4 is true, P4 is false,

Stage VII:  $P4 \supset \sim Q4$ .

Recapitulating:

Stage I:  $P1 \supset \sim Q1$

Stage II:  $\sim Q1 \supset P2$

Stage III:  $P2 \supset \sim Q2$

Stage IV:  $\sim Q2 \supset P3$

Stage V:  $P3 \supset \sim Q3$

Stage VI:  $\sim Q3 \supset P4$

Stage VII:  $P4 \supset \sim Q4$

$\therefore P1 \supset \sim Q4$

Or,

$Q4 \supset \sim P1$

Q4 is the true *ratio dubitandi* for P1. As Kennington says,

True awakenedness is scientific knowing alone. More precisely, it is doubt of the “existence” and “similarity” theses which are rooted in our pragmatic nature. At the end of the stage of “dreaming,” i.e. imaging, the true *ratio dubitandi* for the imageable and sensible is “the simpler and more universal things” of Cartesian science . . . “extension” . . . From these universal things “all these images are formed.”<sup>12</sup>

## NOTES

1. Arthur Eddington, *The Nature of Physical Reality* (Cambridge, 1928), p. xi.
2. The following abbreviations have been used throughout this essay:  
AT = Rene Descartes, *Oeuvres*, ed. C. Adam and P. Tannery (Paris, 1910),

followed by volume and page numbers (e.g. AT.V.159). The translations from AT are my own.

MM= Rene Descartes, *Meditations on First Philosophy*, followed by the Meditation and paragraph numbers (e.g. MM.I.3).

HR= Rene Descartes, *Philosophical Works*, ed. E.S. Haldane and G.R. Ross (Cambridge, 1967), followed by volume and page numbers (e.g. HR.I.73).

DM= *Discourse on Method for Rightly Conducting Reason and Seeking Truth in the Sciences*, followed by part and paragraph numbers (e.g. DM.VI.2).

3. Richard Kennington, "The 'Teaching of Nature' in Descartes' Soul Doctrine," *The Review of Metaphysics*, vol. 26, no. 1 (1972), p. 88.
4. Kennington, "Teaching of Nature," p. 99.
5. Kennington, "Teaching of Nature," p. 103.
6. Kennington, "Teaching of Nature," p. 99.
7. Richard Kennington, "Descartes and Mastery of Nature," *Organism, Medicine and Metaphysics*, ed. S.F. Spicker (Dordrecht, 1978), pp. 201–233, esp. p. 209.
8. Harry Frankfurt, *Demons, Dreamers and Madmen* (New York, 1970), p.38.
9. Frankfurt (*Demons, Dreamers and Madmen*, p. 38) offers this as Descartes' reason for dismissing without reason insanity as a real ground for doubt. "If he were to begin by suspending judgement that he is reasonable, he would be unable ever to re-establish his confidence in his own ability to carry out his task. For if he were to entertain doubts about his own rationality, he would naturally be bound to suspect any reasoning by which he might attempt to establish his sanity." If Frankfurt is right, then the madmen *aporia* as a sign Descartes' faith in reason should precede the doubt altogether, i.e. the doubt is a methodological cripple in terms of the order of reasons. For example, P1–P2 were not entertained under the warrant of the madmen *aporia* as Frankfurt reads it.
10. I take it that the word "extravagant" is a clue to the practical character of the implicit rule required which disallows the example of the mad as a bar to trusting the senses. See also Frederic Godefroy, *Dictionnaire de L'Ancienne Langue Francaise*, vol. 3 (Paris, 1884), p. 630. Seventeenth century usage of "extravagant" refers to examples of immoderate behavior with respect to practice rather than thought. The practical character of the implicit rule is also shown by the madmen's utterances. The first, apparently most abstract, supposing oneself king when poor, infects all the others and this explains why Descartes includes it in spite of its apparent irrelevance. It is the ability of the insane to judge correctly about practical matters which undercuts logically possible but unsound judgements of a theoretical cast, e.g. my head is made of glass. Logically speaking, the cerebrations of the mad illustrated by Descartes' examples are only incoherent if taken in conjunction from the perspective of practical behavior. As Kennington plausibly argues Cartesian doubt never undermines the practical part of the "teaching of nature," i.e. man's innate directedness toward his own good. Cartesian science is founded on it both in form, i.e. mode of presentation, and substance, i.e. the problems it sets itself.
11. Kennington, "Teaching of Nature," p. 102.
12. Kennington, "Teaching of Nature," p. 102.