

# Conversation with Burman

René Descartes

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Brackets enclose editorial explanations. Small ·dots· enclose material that has been added, but can be read as though it were part of the original text. Occasional •bullets, and also indenting of passages that are not quotations, are meant as aids to grasping the structure of a sentence or a thought. Every four-point ellipsis . . . . indicates the omission of a brief passage that seems to present more difficulty than it is worth. Every three-point ellipsis . . . is in the original.

Headings of the type [17] follow the numbering in the splendid edition by John Cottingham (OUP 1976).

References such as VII 64 are to volume and page of AT [see Glossary]. These are given in the margins of CSM [see Glossary].

In Burman's notes each passage from Descartes's writings that he asks about is indicated by a mere phrase. The present version provides as much of the surrounding text as is needed.

In items [5] and [28] the opening Descartes-Burman exchange is presented in AT as purely Burman. These mistakes are corrected here, as by Cottingham in his edition of the Conversation.

References to Descartes as 'the author' are replaced by 'you' (Burman speaking) and 'I' (Descartes). The phrase 'the character in the meditation' in five of the items refers to Descartes in his role of cautious step-by-step seeker in the *Meditations*.

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## Glossary

**accident:** A thing's 'accidents' were thought of as its non-essential properties: the accidents of a pebble might include its being ovoid in shape and green in colour; but its being extended—i.e. taking up space—is not an accident of it because the pebble couldn't possibly lose its extendedness,

**analytic:** Before Kant, 'analytic' and 'synthetic' were the names of two ways of *ordering* a presentation of intellectual material. Analytic: start with what you knew first, and from that develop an account of results you reached from that start. Synthetic: start with the fundamental principles of your subject-matter and use logic to infer consequences from them. As Descartes implies in [17], the analytic order of exposition is also the order of discovery. He is right that the Meditations are in the analytic order, but the *Principles of Philosophy*, though not ordered analytically, aren't ordered synthetically either.

**a priori, a posteriori:** Before Kant, these phrases seldom marked the difference between •'independently of experience' and •'on the basis of experience'. They usually marked the difference between •seeing something happen and working out what will follow from it and •seeing something happen and working out what must have caused it, i.e. •causally arguing forward and •causally arguing backwards.

**art:** As used in [82] 'art' means something like 'rule-governed skill' or 'disciplined technique'.

**AT:** The *Œuvres de Descartes* edited by Charles Adam and Paul Tannery.

**clear:** See **vivid**.

**common principles/notions/axioms:** These phrases all refer to obvious necessary truths, basic folk logic.

**CSM:** This is the standard label for the three-volume English-language edition of Descartes's principal works, by John Cottingham, Robert Stoothoff and Dugald Murdoch. This gives excerpts from the Conversation with Burman, but for an English rendering of the whole work we have to go to the 1976 edition by Cottingham.

**image:** As Descartes says at the end of [24], to 'bear the image of God' is just to *resemble* God in some way. It's not clear why he uses phrases such 'image and likeness'.

**indifferent:** To say that someone is 'indifferent to' right motives is to say that his belief that a certain motive would be morally right has no effect on his behaviour. To say that some kind of conduct is 'indifferent' is to say that it is neither praiseworthy nor wrong; and to say that a particular action is 'indifferent' is to say that the agent was under no external pressure either to perform the action or not to perform it. (See especially [32]. Burman's statement in [50] that God's decision to create the world was *plane indifferens* = flat-out indifferent means that so far as God's nature was concerned the decision could have gone either way. When Descartes says the same thing in his reply, it's not clear what he means.

**intellect:** This always translates *ingenium*, which in other contexts often means 'basic nature', 'natural temperament' or the like.

**prejudice:** This is the inevitable translation of *præjudicium*; but the meaning of that is broader—it covers *any* long-held, confident, and little-examined belief, not only the ones that

we would call ‘prejudices’. Descartes uses it here in that broader meaning.

**synthetic:** See **analytic:**

**vivid:** This translates the Latin *clarus* (or *clara* for feminine nouns). The adjectives *clarus* and *distinctus* have usually been lazily translated into English as ‘clear’ and ‘distinct’ in that order, but this is demonstrably wrong. *Clarus* can mean ‘clear’ in our sense, and when Descartes uses it **outside** the *clarus et distinctus* phrase—for example in [5] and [34] on page 12—it seems usually to be in that sense. But **in** that phrase he uses *clarus* in its other meaning—the more common one in Latin—of ‘bright’ or ‘vivid’ or the like, as in *clara lux* = ‘broad daylight’. If in the phrase *clarus et distinctus* Descartes meant *clarus* in its lesser meaning of ‘clear’, then what is there left for ‘distinctus’ to mean? The only place where Descartes explains the two terms separately is his *Principles of Philosophy* 1:45–6, and his explanation completely condemns the lazy translation. He writes:

‘I call a perception *claram* when it is present and accessible to the attentive mind—just as we say that

we see something *clare* when it is present to the eye’s gaze and stimulates it with a sufficient degree of strength and accessibility. I call a perception *distinctam* if, as well as being *clara*, it is so sharply separated from all other perceptions that every part of it is *clarum*. . . The example of pain shows that a perception can be *clara* without being *distincta* but not vice versa. When for example someone feels an intense pain, his perception of it is *clarissima*, but it isn’t always *distincta*, because people often get this perception muddled with an obscure judgment they make about something that they think exists in the painful spot. . . .’ and so on.

Of course he is not saying anything as stupid as that intense pain is always *clear*! His point is that pain is vivid, up-front, not shady or obscure. And for an idea to be *distincta* is for every nook and cranny of it to be vivid; which is not a bad way of saying that it is in our sense ‘clear’. All of this applies equally to the French adjectives *clair* and *distinct*.—In the very first item of the present text, Descartes says that certain things are *clare* in us from birth though we think about them *confuse* (= ‘confusedly’).

## Meditations

### Meditation 1

**[1]** ‘Whatever I have up till now accepted as true I have acquired either from the senses or through the senses. (VII 18)

**[Descartes]** *From the senses: i.e. from sight, by which I have perceived colours, shapes, and such like. Apart from sight, everything else I have accepted has reached me through the senses, i.e. through hearing—being told things by my parents, teachers, and others. [Descartes is thinking of visual input as direct and auditory input as indirect—the difference between ‘I saw him start the fire’ and ‘I’m told that he started the fire’. There’s a good distinction there, though it doesn’t perfectly correspond with the line between those two senses.]*

You may want to object:

This leaves out the common principles [see Glossary] and ideas of God and of ourselves, which were never in the senses,

but that is wrong for three reasons. **(a)** I acquired these in the same way, *through* the senses, i.e. through hearing. **(b)** At this point in the Meditation I am thinking of the man who is just beginning to philosophize and is attending only to what he knows he is aware of. So he won’t be paying any attention to common principles and axioms such as ‘It is impossible for something to be and not be’. Men who are creatures of the senses—as we all are before we come to philosophy—don’t give any thought to such things. On the contrary, since they are so vividly [see Glossary] *in* us from birth, and since we experience them within ourselves, we neglect them; our only thoughts about them are confused—we never think of them in the abstract, sifted out from material things and particular instances. Indeed, if people thought about these principles

in the abstract, no-one would have any doubt about them; and if the sceptics had done this they wouldn’t have *been* sceptics; for these principles can’t be denied by anyone who carefully focuses on them. **(c)** Thirdly, our main topic here is the question of whether anything has real existence, and common principles are irrelevant to that.

**[2]** I will suppose therefore that. . . some malicious demon of the utmost power has done his best to deceive me. (VII 22)

**[Descartes]** I am here making the character in the meditation as doubtful as I can, dumping on him as many doubts as possible. That’s why I raise not only •the standard sceptical difficulties but •every difficulty that can possibly be raised, because I want to demolish completely every single doubt. That’s why I introduced the demon, which some might criticize as a needless addition.

**[3]** . . . malignant demon of the utmost power. . .

**[Descartes]** What I said there is self-contradictory, because malice is incompatible with supreme power. [See **[10]** below.]

**[4]** When we become aware that we are thinking beings, this is a primary notion that isn’t *derived from any syllogism*. (Second Replies,<sup>1</sup> VII 140)

**[Burman]** But don’t you assert the opposite of this at *Principles* 1:10?

**[Descartes]** Before the inference from ‘am thinking’ to ‘I exist’, •the premise ‘Whatever thinks exists’ can be known, because it is *prior* to the inference, which depends on it. That’s why I say in *Principles* 1:10 that •this premise comes first—because it is always implicitly *there* and taken for granted. But it doesn’t follow that I am always expressly and explicitly aware of its coming first, or that I know it before conducting the

<sup>1</sup> This refers to the *Objections to the Meditations and Descartes’s Replies*, in the second volume of CSM [see Glossary].

inference. I'm attending only to what I experience within myself—e.g. that 'I am thinking, therefore I exist'. I don't pay the same attention to the general thought that 'Whatever thinks exists'. As I have explained before, we don't separate these general propositions from the particular instances; when we think of them, it is *in* the particular instances. So that is the sense in which the quoted words should be taken.

**[5]** As for the assertion that it is self-contradictory that men should be deceived by God, this is clearly demonstrated from the fact that the form of deception is non-being, and *the supreme being can't incline in that direction*. (Sixth Replies: VII 428)

**[Descartes]** As for us: we are composed partly of •nothingness and partly of •being, so we are inclined partly towards being and partly towards nothingness—unlike God, who can't incline to nothingness because he is supreme and pure being. This is a metaphysical truth that is perfectly clear to those who think about it. Thus, if I use my God-given faculty of perception *correctly*—assenting only to what I clearly perceive—I can't be deceived or tricked by it. If I were, that would have to be because God inclines towards nothingness. . . .

**[Burman]** But someone may object:

'After I have proved that God exists and is not a deceiver, I can say that my •intellect—God's gift—doesn't deceive me; but my •memory may still deceive me, making me think I remember something that I don't in fact remember. Memory is *weak*.'

**[Descartes]** I can't say anything about memory. Everyone should test his own memory; and if he has doubts about it he should get help from written notes and the like.

**[6]** I wasn't guilty of circularity when I said that •God's existence is our only reason for being sure that what we vividly and clearly

perceive is true, and that •we are sure that God exists only because we perceive this clearly. (Fourth Replies: VII 245)

**[Burman]** There does seem to be a circle. In the third meditation ·the character in the meditations· tries to prove the existence of God using axioms that he doesn't yet know he can trust.

**[Descartes]** He does use such axioms in the proof, but he knows that he isn't deceived regarding them, because he is actually paying attention to them. As long he attends to them he is •certain that he is not being deceived about them and is *compelled* to assent to them.

**[Burman]** But that proof is quite long, with several axioms; and our mind can't think of several things at a time. Each thought occurs instantaneously, and many of them come to mind in the proof; you can't focus on all the axioms, because any one thought will block another.

**[Descartes]** (i) It's not true that the mind can think of only one thing at a time. It can't think of •many, but it can manage •more than one. I am aware right now that I am talking and that I am eating; those are two thoughts that I am having at the same time. (ii) It's false that thought occurs instantaneously; everything I do takes up time, and you could say that I continue having the same thought during a period of time.

·INTERLUDE ON DIVISIBILITY·

**[Burman]** So our thought is extended and divisible?

**[Descartes]** Absolutely not! Thought is indeed extended and divisible with respect to its duration, because *that* can be divided into parts. But it isn't extended and divisible with respect to its nature, because its nature remains unextended. Similarly with God: we can divide his duration into an infinitely many parts, but that doesn't make God divisible.

**[Burman]** But eternity is *all at once* and *just once*—[*simul et semel*, a phrase that was commonly used in theology and law.]

**[Descartes]** That is impossible to conceive of. It is ‘all at once and just once’ in the sense that •nothing is ever added to or removed from *God’s* nature, but not in the sense that •it—eternity—exists all at once. Eternity has coexisted with created things since the creation of the world, •a part of it occupying those (say) 5000 years; and •another part of it could have occupied the 5000 years immediately before the creation, if we had had some standard to measure it by.

•BACK TO THE MAIN POINT•

Thus, since our thought can grasp more than one item at once, and since it doesn’t occur instantaneously, it’s obvious that we *can* grasp the whole proof of God’s existence. *While* we are doing this we are certain that we aren’t being deceived, and every difficulty is thus removed.

**[7]** It seems to me self-evident that the mind, considered as a thinking thing, can’t contain anything of which it isn’t aware. (Fourth Replies: VII 246)

**[Burman]** But how can it be aware, given that being-aware is itself a thought, •a mental event•? If you have a thought at a given moment, to be aware of it you’ll have to move on to a slightly later thought; so you won’t have an awareness of the form ‘I’m aware that I am now thinking x’ but only one of the form ‘I’m aware that I was thinking x a moment ago’.

**[Descartes]** It’s true that this awareness involves •a thought and •a reflection on that thought. But it’s false that this reflection can’t occur while the previous thought is still there. That’s because (as I’ve just said) the soul

- can think of more than one thing at a time,
- can keep a particular thought going, and
- can reflect on its thoughts as often as it likes,

and thus can be aware of its own thoughts.

**[8]** We can’t conceive of anything in the mind, looked at in this way, that isn’t a thought or *dependent on a thought*. (ibid.)

**[Descartes]** An example •of something dependent on a thought?—raising your arm.

**[9]** In view of this I don’t doubt that the mind begins to think as soon as it is implanted in the body of an infant. (ibid.)

**[Burman]** The author of those objections—Arnauld—thought it would follow from this that the mind must always be thinking, even in infants.

**[Descartes]** I accept •this conclusion•.

**[Burman]** But since our idea of God is innate, doesn’t this imply that the mind of an infant has an actual idea of God?

**[Descartes]** That would be a rash thing to say, because we have no relevant evidence. But it doesn’t seem likely, because the infant mind is so *immersed* in the body that its only thoughts are about the states of its body.

**[Burman]** But it can think of more than one thing at once!

**[Descartes]** It can, if the thoughts don’t get in one another’s way, which is what happens in the mind of an infant. The body pushes the soul around; we feel it doing so in our own case when we are jabbed with a needle and can’t think of anything but the pain. It’s the same with people who are half-asleep: they can scarcely think of more than one thing. . . . The body is always a hindrance to the mind in its thinking, and this was especially true when we were young.

As to the fact that we have no memory of the thoughts we had in infancy, this is because no traces of these thoughts have been imprinted on the brain. . . . Come to that, we can’t now remember many of the thoughts we had only yesterday. But the mind can’t ever be without thought—i.e. without *any*

•thought—just as the body can't ever, even for a moment, be without •extension.

**[Burman]** But even if no traces are imprinted on the brain creating •bodily memory, the mind could remember its thoughts by •intellectual memory; there must *be* such a thing, because it must be what angels and disembodied souls have.

**[Descartes]** I don't rule out intellectual memory; there is such a thing. Here's an example of it at work:

I am told that the word 'K-I-N-G' signifies supreme power; I commit this to my memory, which enables me to recall the word's meaning later on.

It must be *intellectual* memory that does this, because those four letters don't relate to their meaning in a way that would let me read off their meaning from the letters. It's my intellectual memory that enables me to recall what the letters stand for. [Descartes seems to imply that if I were shown a picture of falling rocks and told that it meant *falling rocks* I could remember that by my bodily memory. It's not clear what the underlying thought is here.] But this intellectual memory records universals rather than particulars, so we can't use it to recall every single thing we have done.

## Meditation 2

**[10]** But what am I to say now, when I am supposing that there is some deceiver who is supremely powerful and, *if it is permissible to say so*, malicious? (VII:26)

**[Descartes]** The restriction is added because in using the phrase 'supremely powerful and malicious' I am contradicting myself: supreme power can't coexist with malice. [See **[3]** above.] That's why I said 'if it is permissible to say so'.

**[11]** Isn't all this just as true as the fact that I exist, even if I am in a perpetual dream, and even if my creator is doing his best to deceive me? VII 153)

**[Descartes]** •You might think that last supposition to be absurd•, but I don't know whether it is *God* who created me. For all I know, I was created by that demon who deceived me. At this stage the character in the meditation doesn't know anything about such things, and is speaking of them only in a confused manner. (VII 29)

**[12]** Don't I perceive the nature of the wax better now that I have enquired more carefully into the wax's nature and into how it is known? (VII 32)

**[Descartes]** I conducted this enquiry in the preceding section, where I examined all the wax's attributes and accidents [see Glossary]. I saw all these attributes leave the wax, and others take their places.

**[13]** Here, as often elsewhere, all you show is that you don't have a proper grasp of what you're trying to criticize. I didn't abstract the concept of the wax from the concept of its accidents. (Fifth replies: VII 359)

**[Burman]** But you do seem to have done just that in this very Meditation, when you showed that the accidents leave the wax, leaving behind the actual body or substance of the wax.

**[Descartes]** No I didn't! I didn't deny—indeed I *said*—that accidents such as hardness, cold, etc. leave the wax; but I also said and constantly kept in mind that others always replace them, so that the wax is never without accidents. So I didn't ever abstract the wax from its accidents.

**[14]** It isn't hard to *have* adequate knowledge of x: all you need is an intellect whose power of knowing is adequate for x. But for the intellect to know for sure •that it has such knowledge, i.e. •that God put nothing into x beyond what

the intellect is aware of, its power of knowing would have to equal the infinite power of God. . . (Fourth replies: VII 220)

**[Burman]** Why should this be necessary? Didn't God choose to limit this power in his creatures precisely so that we wouldn't need to equal his infinite power?

**[Descartes]** We don't know this. For example, let us take a triangle. This seems to be extremely simple, and you'd think we could very easily come to know *all* about it. But we can't! Even if we prove that it possesses all the attributes we can conceive of, some other mathematician—perhaps 1000 years into the future—may detect further properties in it; so we'll never know for sure that we have grasped everything that there is to grasp about the triangle. And this holds also for bodies, for their extension—for everything! I have never credited myself with adequate knowledge of *anything*: but I'm sure that in many cases, and perhaps in all, I have the sort of knowledge and the sort of foundations from which adequate knowledge could be derived. And perhaps *has been* derived—who's to say?

### Meditation 3

**[15]** Of course, if I considered the ideas themselves simply as aspects of my thought and not as connected to anything else, they could hardly give me any material for error. (VII 37)

**[Burman]** You say 'hardly any', but all error in ideas comes from how they fit with external things, so there seems to be *no* material for error if they aren't referred to externals.

**[Descartes]** Even if I don't relate my ideas to anything outside myself, there's still a possibility of error, because I can go wrong concerning the nature of the ideas themselves. For example, in thinking about the idea of colour I might say that it is a thing or a quality; or rather I might say that the colour represented by this idea is a thing or quality. For

example, I might think that whiteness is a quality; and even if I don't refer this idea to anything outside myself—even if I don't say or suppose that there are any white things out there—I might still make a mistake in the abstract, concerning whiteness itself and the nature or idea of it.

**[16]** Perhaps these ideas of external things come from some other faculty of mine—one that I don't fully know about—which produces these ideas without help from external things. (VII 39)

**[Burman]** But I have already come to know that I am a thinking thing; and I know that these ideas can't come from a thinking thing.

**[Descartes]** (i) I wasn't asserting that there *could* be such a faculty; I was only presenting an objection and a doubt that might occur to someone. (ii) Also, at this stage in his intellectual development, the character in the meditation isn't focusing on his own nature as intensely as he does later when he reflects on it. And he doesn't do this in either of the first two meditations; but a bit further on in this third meditation he does reflect more carefully on himself—and solves this problem.

**[17]** If no such idea is to be found in me, I shall have no argument to show that anything exists apart from myself; for, despite a most careful and wide-ranging survey, this is the only argument I have so far been able to find. (VII 42)

**[Burman]** But isn't there another argument in the fifth meditation?

**[Descartes]** At this point in the third meditation the character in the meditation is speaking of the sort of argument in which the existence of God, the supreme cause, is inferred from some *effect* of God; and after a careful survey of all the effects he has found only one that could prove God's existence, namely the idea of God. The argument in the

fifth meditation proceeds *a priori* [see Glossary], and doesn't start from any effect. Why does it come later in *Meditations* than the argument from the idea of God? Because that is the order in which I—or anyway the character in the meditations—discovered the two proofs. In the *Principles* I reverse the order; for the method and order of discovery is one thing, and that of exposition another. In the *Principles* my purpose is exposition, and my procedure is synthetic [see Glossary].

**[18]** And since there can be no ideas which are not, as it were, of something real. . . ' (VII 44)

**[Burman]** But we have an idea of *nothing*, and this isn't an idea of anything real.

**[Descartes]** That idea is purely negative, and hardly counts as an idea at all. In the passage you are quoting from I'm taking the word 'idea' in its strict and narrow sense. We do also have ideas of common notions [see Glossary], which are not strictly speaking ideas of *real things*. But that's a stretched use of the word 'idea'.

**[19]** I clearly understand. . . that my perception of the infinite, i.e. of God, is in some way prior to my perception of the finite, i.e. of myself. Whenever I know that I •doubt something or •want something, I understand that I •lack something and am therefore not wholly perfect. How could I grasp this unless I had an idea of a more perfect being that enabled me to recognize my own defects by comparison? (VII 45)

**[Burman]** But in the *Discourse on the Method* you say that you have seen most clearly that knowledge is a greater sign of perfection than doubt. So you must have known this without reference to the perfect being; so your knowledge of God was not prior to your knowledge of yourself.

**[Descartes]** That part of the *Discourse* presents a summary of these *Meditations*, and it must be understood in terms of

them. In that part of the *Discourse*, then, I recognized my own imperfection by recognizing the perfection of God; but I did this implicitly and not on the surface of what I wrote, i.e. not explicitly. In terms of what happens out in the open, we can recognize our own imperfection before we recognize God's perfection, because we can direct our attention to ourselves before we direct it to God—e.g. inferring our finiteness before arriving at his infiniteness. But implicitly the knowledge of God and his perfection must always come before the knowledge of ourselves and our imperfections, because in reality God's infinite perfection is prior to our imperfection, which is a defect and a negation of the perfection of God. Every defect and negation presupposes that of which it falls short and which it negates.

**[Burman]** But in that case nothingness would have to presuppose being, wouldn't it?

**[Descartes]** Yes. In metaphysics the only understanding of nothingness that we have comes through our understanding of being.

**[20]** My knowledge is gradually increasing, and I see no reason why . . . through its help I shouldn't be able to acquire all the other perfections of God. (VII 47)

**[Burman]** What can knowledge contribute to the acquiring of all the other perfections of God?

**[Descartes]** It can contribute a lot. It makes us wiser and more prudent, and gives us a clearer view of the other perfections. Knowing them clearly will make it easier for us to acquire them, because wisdom and prudence will provide us with the means to do that.

**[21]** If I had derived my existence from myself. . . I certainly wouldn't have denied myself •the knowledge in question (acquiring *that* would be much easier •than causing my own existence•!),

or indeed •any of the attributes that I perceive to be contained in the idea of God; for none of them seem any harder to achieve. (VII 48)

**[Descartes]** We need here to distinguish carefully between •understanding, •conception and •imagination—a distinction of great value. We don't •imagine or •conceive God's perfections, but we •understand them. For example,

- how God understands all things in a single mental act, and

- how his decrees are identical with himself

—we understand these things but we don't conceive of them because we can't *represent them to ourselves*, so to speak. Thus, we understand God's perfections and attributes but we don't conceive of them—or anyway we conceive of them in an indefinite way. Now, if I had given myself my own nature—had made me what I am—I would have given myself all God's perfections in accordance with my indefinite conception of them. For example, I would have given myself greater knowledge than I now have, and then more still, and so on. When indefinites are multiplied in this way they become. . . *the infinite*. . . And along with increasing my knowledge in this way I would also be increasing my other attributes (these wouldn't be harder to get than knowledge, because it's precisely through knowledge that they are to be attained), and I would end up as God. As things stand, however, I know from experience that I can't do this—can't increase my knowledge as I would like to—so it follows that I am not the source of my own existence, etc.

**[22]** It is a greater thing to create or conserve a substance than to create or conserve the attributes or properties of a substance. (Second replies: VII 166)

**[Descartes]** Meaning ' . . . than to create or conserve the attributes of *that same* substance'. One mustn't here start

comparing one substance with the attributes of another.

**[Burman]** But the attributes are the same as the substance, so it *can't* be 'a greater thing' to . . . etc.

**[Descartes]** It's true that the attributes all taken together are the same as the substance, but not the attributes taken individually, one by one. So it's a greater thing to produce a substance than to produce all of its attributes serially, one by one.

**[23]** Here is a thought that might seem to undercut that argument. Perhaps I have always existed as I do now. Then wouldn't it follow that there need be no cause for my existence? No, it does not follow. VII 48

**[Burman]** But it *does* follow, in the opinion of those who say that nothing can be created from all eternity because that would make it independent—not dependent on *anything*—like God himself.

**[Descartes]** Well, that's their view. Speaking for myself, I don't see why God couldn't have created something from eternity. Since God possessed his power from all eternity, I don't see why he couldn't have exercised it from all eternity.

**[Burman]** But a free cause is conceived of as prior to its effects and its purposes, but nothing can have existed or happened *prior* to something that existed from all eternity.

**[Descartes]** That implies that God's decrees didn't exist from eternity. [His point seems to be: If God's decrees existed from eternity then he—their cause—couldn't be prior to them.] The making of decrees is as much something God *does* as is his. . . creation of the universe. Decrees are acts of will; and so is the creation, because it *is* merely God's will. If it were anything else, it would be an act that God performs at a particular time, in which case the creation would involve something new happening to God—something making him decide to create the universe *just then*.

·A DETOUR INTO INFINITY·

**[Burman] [second objection]** But ·if anything has existed from all eternity·, there would be an infinite number—·e.g. an infinite number of elapsed years·.

**[Descartes]** What's wrong with that? Don't we get the same in the *division* of a quantity? People try to make a distinction here, ·finding difficulty in 'infinitely many past years' but not in 'infinite division'·; but that is worthless. And if there's an infinite number ·of years· in future eternity, which is what we believe as an article of faith, why can't the same hold for past eternity?

**[Burman]** But in past eternity the divisions are all at once and actual [*simul et actu*]; whereas in future eternity they are only potential—they are never actual all at once.

**[Descartes]** The divisions in past eternity are *not* actual all at once; the only part that is actual<sup>1</sup> is *the present*. All the other infinities are on a par with ·the infinite involved in· future eternity; and if that can exist, so can any of the others.

·BACK TO THE ORIGINAL OBJECTION·

If I existed from eternity, the parts of my lifespan would be separated, and ·even though they had come from eternity· they would nevertheless depend on God. So my argument still holds good. But I took care to keep questions like this out of the *Meditations*, so as to avoid upsetting the professors!

**[24]** The mere fact that God created me makes it very believable that I am somehow made in his image [see Glossary] and likeness. (VII 51).<sup>2</sup>

<sup>1</sup> Taking it that *simul* (= simultaneous) is a slip for *actu* (= 'actual').

<sup>2</sup> Burman's notes also point to a passage in the Fifth replies at VII 373 where Descartes likens parental procreation to divine creation, saying that it is at any rate *more* like divine creation than artificial production (manufacture) is. This isn't explicitly referred to in the ensuing discussion.

**[Burman]** Why do you say that? Couldn't God have created you without creating you in his image?

**[Descartes]** No. *The effect is like the cause*—that is a common axiom [see Glossary] and a true one. So: God is the cause of me, and I am an effect of him, and therefore I am like him.

**[Burman]** But a builder is the cause of a house, which isn't *like* him!

**[Descartes]** He isn't its 'cause' in the sense of the word that is relevant here. We're talking about a thing's *total* cause, the cause of the thing's *existing*. A house doesn't have to resemble its builder, because all he does is to apply active forces to passive materials. A thing's total cause *does* have to resemble it: the cause is a real substance, so that what it brings into existence—i.e. creates out of nothing—must at the very least be real and a substance. To this extent at least it will resemble God and bear his image. (Creation out of nothing is of course a method of production that only God can employ.)

**[Burman]** But in that case even stones and their like must bear the image of God.

**[Descartes]** And so they do, but the resemblance or image is very remote and skimpy and confused. In my case, it's different: God's creation has given me many more ·attributes than he ever gave to a pebble·, and I have correspondingly more of an image of him. I'm not using 'image' here in the ordinary sense of 'effigy' or 'picture', but in the broader sense in which to have an image of something is just to resemble it somewhat. I chose this terminology in the *Meditations* because the Scriptures often speak of us as created 'in the image of God'.

**[25]** When we perceive—have a real idea of—some property, quality or attribute, anything that this perceived item is immediately in (as in a subject), anything by means of which this item exists, is a substance. (definition of ‘substance’ in Second replies: VII 161)

**[Descartes]** As well as the attribute through which we specify the substance we must think of the substance that supports or *has* that attribute. For example, the mind is a *thinking thing*; so in addition to the *thinking* there is also the *thing* or substance that does the thinking, and so on.

**[26]** Some people deny that they have an idea of God, but in this denial they are substituting some idol or the like. They reject the name, but they concede the reality. (Second replies: VII 139)

**[Descartes]** ‘Idol’ is in fact their equivalent of our ‘idea’. In forming the idol, therefore, they are in a way forming a real idea; but it’s a materially false idea. [In Descartes’s usage ‘Idea x is materially false’ means *something like* ‘Idea x misrepresents what it purports to represent’. There’s controversy over what if anything it *exactly* means.]

**[27]** It follows that this power I have of conceiving that there’s a thinkable number larger than any number that I can ever think of is something I have received not from myself but from some other more perfect being. (Second replies: VII 139)

**[Burman]** This argument couldn’t persuade an atheist, who wouldn’t allow himself to be convinced by it.

**[Descartes]** It is indeed not suitable for that purpose, and that’s not what I wanted it for. The argument must rather be taken in conjunction with other arguments about God, arguments that it assumes have already proved God’s existence. I had already proved the existence of God from the idea of God in this part of the *Replies*, so the passage you have mentioned should be understood as saying:

I know God exists and have proved it. I notice that in counting I can never reach a highest number; there’s

always a thinkable number that is too large for me to think of. It follows that this power—i.e. the power to have the thought *a number bigger than any I can think of*—has come not from myself but from some entity more perfect than I am. And this entity is God, whose existence I have proved. . . .

**[28]** As for your further point that, although we are less perfect than angels, our idea of an angel doesn’t have to be produced in us by an angel: I entirely agree. (VII 138)

**[Descartes]** We form our idea of an angel from the idea of our own mind; we don’t get our knowledge of angels from anywhere else. We can’t think of anything in an angel *qua* angel that we can’t be aware of in ourselves.

**[Burman]** But this makes an angel identical with our mind, because each is something that merely thinks.

**[Descartes]** It is true that both are thinking things. But that still allows an angel to surpass our mind in •the number of its perfections or in •their degree. And there could even be a difference of kind between men and angels. Saint Thomas Aquinas held that every angel is of a different kind from every other, and he described each angel in such detail that it’s almost as though he had been living among them. (That’s how he got the honorific title ‘the Angelic Doctor’.) This topic occupied more of his time than any other, almost, but this was wasted labour, because (I repeat) we can’t get knowledge of angels except from what we know about our own minds. The standard questions about them—such as

•Can they be united with a body?

•What sorts of bodies did the Old Testament angels have?

—are ones we can’t answer. As regards the second of those: it’s best for us to follow Scripture and believe that they were, or appeared as, young men.

## Meditation 4

**[29]** God can do countless things whose reasons I can't know. That alone is reason enough to give up, as totally useless, the attempt that physicists make to understand the world in terms of what things are *for*. (VII 55; see also Fifth Replies: VII 373)

**[Descartes]** This rule—that we must never argue from ends—should be carefully heeded, for *two* reasons. **(a)** The knowledge of a thing's •purpose never leads us to knowledge of its •nature, which remains just as obscure to us. (Aristotle's greatest fault is that he is always arguing from *ends*.) **(b)** God's purposes are all hidden from us, and it's rash to want to plunge into them. I'm not speaking here of *revealed* purposes; I am considering them purely as a philosopher [here = 'scientist']. It's in science that we go completely astray. We think of God as a mighty *man* who aims to produce such-and-such and adopts so-and-so as his means to it. This is clearly quite unworthy of God.

**[30]** My faculty of understanding is finite; and I immediately conceive of a much greater understanding—indeed, of a supremely great and infinite one; and my ability to do this shows me that God actually has such an understanding. (VII 57)

**[Descartes]** I know from my idea of God that he is the most perfect being who has all absolute perfections; so I must attribute to him only what I know is absolutely perfect. Now, if I can form an idea of attribute A as an absolutely perfect perfection, the very fact that I can form an idea of it shows me that A belongs to God's nature.

**[31]** God's will is incomparably greater than mine in •the knowledge and power that backs it up and •the range of its objects;... But those differences concern the will's relations to other things; when the will is considered in itself, God's will does not seem any greater than mine. (VII 57)

**[Burman]** But when looked at in this abstract way, understanding is understanding! And our understanding won't differ from God's *in itself*, though God's understanding ranges over a greater number of objects.

**[Descartes]** But understanding depends on its object and cannot be separated from it; so your slogan 'understanding is understanding' is wrong. And anyway our understanding doesn't merely range over fewer objects than God's does; it is also extremely imperfect *in itself*, being obscure, mingled with ignorance, and so on.

**[Burman]** But in that case our will is also imperfect. We *will* one moment, and not the next; one moment we have a volition, the next merely a slight inclination.

**[Descartes]** That doesn't show any imperfection in our will, merely inconstancy in •our use of• it. Each act of the will is as perfect as the next: the fluctuation you speak of comes from our judgement; it happens because we don't judge well.

**[Burman]** But judgement itself is an operation of the will.

**[Descartes]** It is indeed an operation of the will, and as such it is perfect. The imperfections that beset our judgment come from intellectual ignorance. If this were removed, the fluctuation would disappear along with it, and our judgement would be stable and perfect. But there's no point in arguing like this on these matters. Go down deep into yourself and find out whether you have a perfect and absolute will, and whether you can conceive of anything that surpasses you in freedom of the will. I am sure that you will—that *everyone* will—find that it is as I say. And that is what makes our will greater than the intellect and more like God's.

**[32]** Even if I have no power to avoid error by •having an evident perception of everything I have to think about, I can avoid it simply by •remembering to withhold judgment on anything whose truth isn't obvious. (VII 61)

**[Burman]** But in that case why shouldn't I also have this ability in the pursuit of good and evil, or again with regard to supernatural matters, since these things too depend on the will, and the will is always autonomous and indifferent [see Glossary]?

**[Descartes]** We must leave the 'supernatural matters' for the theologians to explain. For the philosopher, it is enough to study man as he is now in his natural condition. I have written my philosophy so as to make it acceptable anywhere—even among the Moslems—and to avoid offending anyone. Now, we are aware within ourselves of our freedom; we know that we can withhold our assent when we wish. But if someone's will is indifferent—·evenly balanced·—between good and evil, that is a fault in it, because it ought to seek the good alone without the 'balance' that is appropriate in non-moral matters. As for 'supernatural matters'—·taking this to mean questions about what we must believe in order to be saved·—the theologians teach that in this area we are corrupted through original sin: to enable us to recognize and pursue the good in this sphere, we need *grace*. Indeed, most sins arise from ignorance, because no-one can pursue evil *qua* evil. (It's through God's grace that we are promised eternal life as a reward for our good works. No-one would have aspired to—no-one would have *thought of*—such a reward for good works which we were obliged to perform anyway.) But our will is corrupted by the emotions.

**[33]** We can't make up any ·coherent· story according to which something is thought of in God's intellect as good or true, or worthy of belief or action or omission, in advance of his *deciding* to make it so. . . It's not true that **(i)** God willed the creation of the world *in time* because he saw that **(ii)** it would be better this way than if he had created it *from eternity*; what *is* true is that **(ii)** it is better this way than if he had created it from eternity because **(i)** this is what he willed to do. (Sixth replies: VII 432)

**[Burman]** What about God's ideas of possible things? Surely these are prior to his will.

**[Descartes]** They depend on God, like everything else. His will is the cause not only of things that are or will be actual, but also of •what is possible and of •the simple natures. There is *nothing* we can or should think of that doesn't depend on God.

**[Burman]** Does this imply that God could have commanded a creature to hate him, and thereby made this a good thing to do?

**[Descartes]** He can't do that now; but we don't know what he *could have* done. In any case, why should he not have been able to give this command to one of his creatures?

### Meditation 5

**[34]** Even if there are not and never were any triangles outside my thought, still, when I imagine a triangle ·I am constrained in how I do this, because· there is a determinate nature or essence or form of *triangle* that is eternal, unchanging, and independent of my mind. This is shown by the things that I can prove about the triangle. (VII 64)

**[Burman]** So not even a chimera will be a fictitious entity because I can demonstrate many of its properties.

**[Descartes]** Everything in a chimera that can be clearly and vividly [see Glossary] conceived is a true entity. It isn't fictitious, because it has a true and immutable essence, which comes from God just as much as the actual essence of other things. An entity is said to be 'fictitious', on the other hand, when we are merely *supposing* that it exists. So

- all the demonstrations of mathematicians concern true entities and objects, and
- the complete and entire object of mathematics—everything it deals with, taken as a whole—is a true and real entity.

This object has a true and real nature, just as much as does the object of physics. The only difference is that physics considers its object not just as a •true and real entity, but also as something •actually and specifically existing; whereas mathematics considers *its* object merely as possible, i.e. as something that doesn't actually exist in space but could do so. Do understand that we're talking of clear perception, not of imagination. We can with utter clarity imagine the head of a lion joined to the body of a goat, or some such thing, but that doesn't imply that the imagined thing exists, because we don't clearly perceive anything that joins its parts together. For example, I clearly see Peter standing, but I don't clearly see that •standing is contained in and conjoined with •Peter. If we're accustomed to clear •perceptions we'll never have a false •conception. Is a given perception of yours clear? You'll know the answer to that from your own inner awareness. That was the point of all the very useful explanations I went through in *Principles* 1.

**[35]** My idea of God isn't a fiction, a creature of my thought, but rather an image of a true and unchanging nature; and I have several indications that this is so. •God is the only thing I can think of whose existence necessarily belongs to its essence. •I can't make sense of there being two or more Gods of this kind. (VII 68)

**[Burman]** Why not? They would still be Gods.

**[Descartes]** They would *not* be Gods, because 'God' means something that includes absolutely every perfection.

**[Burman]** But that is true of God taken as a •kind of thing, so to speak, not as an •individual; so that one God wouldn't rule out another; just as the existence of a mind with all the mental perfections wouldn't rule out there being another mind.

**[Descartes]** But that's not a parallel argument. 'Mind' doesn't

signify absolutely every perfection, as 'God' does. Which is why these perfections can only be in one being. If there were several beings, they would not be supreme, so they wouldn't be *God*, on pain of contradiction. But there's no inconsistency in their being *three Persons*—the Father, the Son, and the Holy Spirit—because they all have the same essence and are therefore *one God*.

**[36]** We have become so used to distinguishing existence from essence in the case of everything else that we fail to notice that the essence of God—unlike every other essence—has existence unbreakably attached to it. (First replies VII 116)

**[Burman]** But are we right to make the distinction? Is essence then prior to existence? And, in creating things did God merely give them existence?

**[Descartes]** We are right to separate the two in our thought, for we can conceive of essence without actual existence—e.g. conceiving of a rose in winter. However, the two cannot be really *separated*, understanding this in its ordinary sense; for there was no essence prior to existence, because existence is just existing essence. So neither is really prior to, separate from, or distinct from the other.

**[37]** Self-contradictoriness or impossibility resides solely in our thought, when we wrongly join together mutually inconsistent ideas; it can't occur in anything outside the intellect. (Second replies VII 152)

**[Burman]** But our ideas depend on real things. So if there's a contradiction in our ideas, there will also be one in the things

**[Descartes]** Our ideas do depend on things in that they represent them. But there's no contradiction in things—only in our ideas. It occurs when we combine ideas that are inconsistent with one another. But *things* are never

inconsistent with other, because all of them can exist; so no one thing is inconsistent with any other. With ideas, on the other hand, we combine separate things which are not inconsistent taken individually but yield a contradiction when they are put together.

**[38]** Self-contradictoriness in our concepts arises merely from their obscurity and confusion; it can't occur in vivid and clear concepts. (VII 152)

**[Burman]** But why can't there be a contradiction when we combine two vivid ideas that are inconsistent one with another?—for example the combination of the idea of a finite being with that of an infinite one.

**[Descartes]** Those ideas may be brightly lit when considered separately, but the light fades when they are joined together. Your idea of something at once finite and infinite is thus very obscure—your conception of the combination and unity of the two ideas is dark indeed.

**[39]** We never see or feel a really straight line: when we examine the best candidates through a magnifying glass, we find they are irregular, with wavy curves the whole way along. Thus, when as children we first saw a triangular figure drawn on paper, *that* can't have been what showed us how the true triangle studied by geometers should be conceived. (Fifth replies: VII 381)

**[Burman]** But when you form the idea of the perfect triangle, you do this on the basis of the imperfect triangle.

**[Descartes]** If that is right, why does the imperfect triangle provide me with the idea of a perfect triangle rather than an idea of itself?

**[Burman]** It provides both: firstly an idea of itself, and then on the basis of that the idea of the perfect triangle. You derive the perfect triangle from the imperfect one.

**[Descartes]** That can't be what happens. I could not conceive of an imperfect triangle unless I already had the idea of

a perfect one, of which the imperfect one is the negation. When I see a triangle, I come to realize that it is imperfect by comparing it with the conception of a perfect triangle which I already have.

### Meditation 6

**[40]** My faculty of imagination, which I am aware of using when I turn my mind to material things, also suggests that they really exist. For when I think harder about what imagination is, it seems to be simply an application of the cognitive faculty to a body that is intimately present to it—and that has to be a body that exists. (VII 71)

**[Descartes]** That is, *my* body, which I make use of in the course of my imagining.

**[41]** Even if I had no power of imagination I would still be the same individual that I am. (VII 73)

**[Descartes]** I would then be like the angels, who do not imagine.

**[42]** If my mind is joined to a certain body in such a way that it can contemplate that body whenever it wants to—then it *might* be this very body that enables me to imagine corporeal things. (VII 73)

**[Burman]** What does 'contemplate it' mean? Does it mean the same as 'understand it'? If so, why do you use a different word? If not, then there is more to the mind—apart from the body—than its being an understanding or thinking thing, because has this ability to 'contemplate' a body. Or is this ability of the mind an effect of its union with the body?

**[Descartes]** It's a special mode of thinking which goes like this: When external objects act on my senses, they print on them an idea—or rather a *figure*—of themselves; and when the mind attends to these images imprinted on the pineal gland in this way, it is said to *sense* the external objects.

But when the images on the gland are imprinted not by external objects but by the mind itself, which makes and shapes them in the brain in the absence of external objects, then we have *imagination*. So sense-perception differs from imagination in this:

- in sense-perception the images are imprinted by external objects that are actually present, whereas
- in imagination the images are imprinted by the mind without any external objects, as though with the windows shut.

This shows why I can imagine a triangle, a pentagon and their like, but not a chiliagon. Since my mind can easily trace out three lines in the brain, it can then easily contemplate them, thereby imagining a triangle, pentagon, etc. But it can't trace out a thousand lines in the brain except in a confused manner, which is why it imagines a chiliagon not clearly but confusedly. We're so limited in this way that we find it hard to imagine even a heptagon or an octagon. As a fairly imaginative man who has trained his mind in this field for some time, I can imagine those figures clearly enough, but others can't. So now you can see why •we see the lines as if they were physically present to us, and why •we need so much mental concentration for imagining the body in this way, and for contemplating it. . . .

**[43]** I know that if I have a vivid and clear thought of something, God could have created it in a way that exactly fits my thought. So the fact that I can vividly and clearly think of one thing apart from another assures me that they really are *two*, since they can be separated by God. (VII 78)

**[Descartes]** You can't ask

'Is the mind a substance or rather a mode?'

and you can't say

'Perhaps it is both';

because that is a contradiction—if it is one it can't be the other. But you *can* properly ask:

Given that the power of thinking and actual thought are attributes, what substance *has* them? Corporeal substance? or incorporeal and spiritual substance?

The answer is clear. You have a clear conception of corporeal substance and a clear conception of thinking substance as •other than corporeal substance and •incompatible with it. . . . So you would be defying your own intellect in the most absurd fashion if you said the two were one and the same substance. You have a clear conception of them as two substances which don't imply one another and aren't even compatible.

**[44]** Nature teaches me—through these sensations of pain, hunger, thirst and so on—that I am not merely *in* my body as a sailor is in a ship. Rather, I am *closely joined to it*—intermingled with it, so to speak—so that it and I form a unit. (VII 81)

**[Burman]** But how can this be? How can the soul affect and be affected by the body when their natures are completely different?

**[Descartes]** This is hard to explain; but here our experience is sufficient, because it declares the fact so loudly that we simply can't deny it. This is evident in the case of the passions, and so on.

**[45]** It is much better that dryness of the throat should mislead on the rare occasion when the person has dropsy—so that drinking water will harm him—than that it should always mislead when the body is in good health. (VII 89)

**[Burman]** But if that's how our senses are naturally constituted, why didn't God compensate for this defect by giving the soul awareness of the errors of the senses, so that it could be on its guard against them?

**[Descartes]** God made our body to work as a machine, wanting it to function as a universal instrument that would always act uniformly under its own laws. Thus, when the body is in good health it gives the soul a correct awareness; but when it is ill its effect on the soul is still governed by its own laws, which generate a state of awareness that will deceive the soul. If the body didn't do this it wouldn't be behaving uniformly and in accordance with its universal laws; and God's allowing *that* would be a defect in his constancy.

**[46]** Mathematicians sometimes use the term 'surface' to refer to a •mode of a body, which isn't a part of it; and they sometimes use it in a different sense, to refer to a •body whose length and breadth they are studying, not considering any depth it may have, though not denying that it *has* some degree of depth. (Sixth replies: VII 433)

**[Descartes]** The mathematicians conceive of a surface as consisting of lines without depth, just as we call this table-top, for example, *flat* when we don't see any depth in it.

**[47]** I didn't deny that the surface is the boundary of a body; on the contrary it can quite properly be called the boundary of the contained body as much as of the containing one—for example, when a ball is immersed in water—in the sense in which bodies are said to be contiguous when their boundaries coincide. (Sixth replies: VII 433)

**[Burman]** That formulation doesn't fit with the truth of the matter, because ·in the kind of case you have in mind· there is really only one boundary, and both bodies have it. When scholastics say that two bodies are contiguous 'when their boundaries coincide', this is merely ordinary language ·as distinct from technical precision·. In such a case, where  
     [ordinary language] the boundaries are together  
 —or rather where  
     [technical precision] there is one boundary and both bodies have it

—are the bodies contiguous or continuous? They seem to be continuous: their sharing a single boundary seems quite sufficient for continuity. But if they are continuous, what are contiguous bodies going to be like? Do they have a third body between them? Well, no.

**[Descartes]** I don't care how other people define these things. I call two bodies •continuous when their surfaces are joined so immediately that when either of them starts or stops moving the other starts or stops with it. Bodies that ·are right up against each other but· don't behave like this are •contiguous.

·NOT STARTING BY QUOTING FROM DESCARTES'S WRITINGS·

**[48] [Descartes]** [Looking back over the conversation up to here:] No-one should devote much effort to the *Meditations* and metaphysical questions, trying to polish and improve them in commentaries and the like. Still less should anyone try, as some have, to retrace my steps and then get more deeply into these questions than I have. I have dealt with them quite deeply enough. All you need is to grasp them once in a general way, and then remember the conclusion. If you go beyond that your mind will •be drawn too far away from physical and observable things, and •become unfit to study them; yet these physical studies matter most to us because they can yield abundant benefits for life. I pursued metaphysical issues pretty thoroughly in the *Meditations*, confronting the sceptics and securing the certainty of my metaphysical results; so there's no need for anyone else to do this for himself, spending time and trouble meditating on these things. All you need is *Principles* 1, which presents all the parts of metaphysics that need to be known for physics.

·RELATING TO ONE OF DESCARTES'S MINOR WORKS·

**[49] [Burman]** In the *Comments on a Certain Broadsheet* you say that no ideas of things, in the form in which we think of them, are provided by the senses, but that they are all innate. Does it then follow that the mystery of the Trinity, for example, is innate? [The passage referred to is at VIII<sup>B</sup> 358. All subsequent references to VIII are to VIII<sup>A</sup>.]

**[Descartes]** (a) I didn't say that all my ideas are innate; some are certainly adventitious [= 'caused from the outside'], for example my idea of the town of Leiden. (b) Although the idea of the Trinity is not innate in us to the extent of giving us an explicit representation of the Trinity, the elements and rudiments—the raw materials for the construction—of that idea *are* innate in us because we have innate ideas of God, of the number 3, and so on. It is from these rudiments, supplemented by revelation from the Scriptures, that we easily form a full idea of the mystery of the Trinity. . . .

## Principles of Philosophy

### Part 1

**[50]** *Our* understanding and willing involve operations that are, in a way, distinct one from another; but in God there is always a single unitary and perfectly simple act by means of which he understands, wills and accomplishes everything all at once. (*Principles* 1:23, VIII 14)

**[Descartes]** We can't •conceive of how this happens; all we can do is to •understand it [meaning '... understand *that* it happens]. If we have a different conception •of God's activity• that will be because we are thinking of God as a *man* who does everything in the way *we* would—by means of many different

acts. But if we attend carefully to God's nature we'll see that we can only understand him as doing everything by means of a single act.

**[Burman]** It seems that this can't be right, because we can conceive of some of God's decrees as not having been enacted and as alterable. These decrees, then, don't constitute a single act of God's; and they aren't •identical with• God because they *could have been separated from him*, •which you rightly regard as proof positive of non-identity•. I mean decrees like God's decree concerning the creation of the world, with respect to which God was quite indifferent [see Glossary]. [We aren't told here that Descartes has said anything about God's acts' being identical with God; but Burman may be picking up on some unreported bit of the conversation, because Descartes's immediate reply affirms this odd identity thesis.]

**[Descartes]** Whatever is in God is not in reality diverse from God himself; rather it *is* God himself. God is wholly unalterable with regard to the decrees that he has already enacted—for him not to be so is metaphysically impossible. But it has been widely believed that God can be altered in matters concerning ethics and religion. My evidence for this? The prayers of mankind! No-one would have prayed to God if he knew—or anyway was convinced—that God is unchangeable. To remove this difficulty and reconcile God's unchangeability with human prayers, we must say that

God is indeed quite unalterable, and has decreed from eternity either to grant me a particular request or not to grant it;

and at the same time

he decreed that the granting of my request is to be in virtue of my prayers, and at a time when I am leading an upright life.

The upshot is that I must pray and live uprightly if I want to

obtain anything from God. This then is the situation from the point of view of **ethics**; and my considered opinion about it is in agreement with the Gomarists, rather than the Arminians or even, amongst my own ·Roman Catholic· brethren, the Jesuits. [Francis Gomar (1563–1641) held that every detail in our lives is predestined; his theological opponent Jacobus Arminius (1560–1609) held that God’s sovereignty is compatible humans’ having free will; they were both teachers at the University of Leiden.]

From the point of view of **metaphysics**, however, it is quite unintelligible that God should be in any way alterable. It is irrelevant that the decrees could have been separated from God; indeed, we shouldn’t really say this. For although God is completely indifferent with respect to all things, he necessarily made the decrees he did, because

- he necessarily willed what was best, though
- it was of his own will that he did what was best.

We shouldn’t separate •the necessity of God’s decrees from •their indifference; his actions were completely indifferent, yet were also completely necessary. We may conceive that the decrees could have been separated from God, but this is merely a play of our own reason; the distinction between God and his decrees that it propounds is a •mental one, not a •real one. In reality the decrees couldn’t have been separated from God: he is not prior to them or distinct from them, and couldn’t have existed without them. That shows well enough how God accomplishes everything in a single act. But these matters are not to be grasped by our reason, and we mustn’t allow ourselves the indulgence of subjecting God’s nature and operations to our reasoning.

**[51]** What we’ll do is this: faced with something that so far as we can see is unlimited in some respect, we’ll describe it not as ‘infinite’ but as ‘indefinite’. An example: we can’t imagine a size so big that we can’t conceive of the possibility of a bigger; so our answer to the question ‘How big *could* a thing be?’ should be

‘Indefinitely big’. (1:26, VIII 15)

**[Burman]** This distinction is your invention. But someone is going to say: ‘What is the world like? Doesn’t it have set boundaries? Can *anything* exist as an actual individual entity without having a determinate nature and boundaries? And isn’t this also true of number, quantity, and so on?’

**[Descartes]** From our point of view these things—the world, the number-series—are indefinite, because we can never discover a particular limit in any of them. And perhaps they are infinite, because when the indefinite is multiplied again and again—as it is here—what you get is infinity. So *we* can say that the world is infinite, and the same for number etc. But for *God* they may be finite, because he may have a conception and understanding of fixed limits in the world, number, quantity, and so on, and may be aware of something greater than them. What makes them indefinite or infinite from our point of view is our own finitude, which prevents us from comprehending them because they exceed our powers.

**[52]** We classify the items we have perceptions of into **(1)** things, **(2)** states or properties of things and **(3)** eternal truths that don’t exist outside our thought. (1:48, VIII 22)

**[Burman]** But what about contingent truths such as *The dog is running*?

**[Descartes]** By ‘eternal truths’ I meant what are called *common* notions, such as ‘It is impossible for the same thing to be and not to be’, and so on. Contingent truths are about existing things; where you have contingent truths you have existing things, and vice versa.

## Part 2

**[53]** We have a lively understanding of this *matter* as something quite different from God and from ourselves or our mind; and we appear to see vividly that the idea of it comes to us from things located outside ourselves, which it—the idea—wholly resembles. (2:1, VIII 41)

**[Burman]** Why ‘we appear to see’—an indication of doubt?

**[Descartes]** I used that word because someone might deny that we *do* see this, and all I needed for my argument was the fact about what *appears* to us. We have to rely on our own minds and states of consciousness, so what we ‘see’ must ultimately boil down to what ‘appears’ to us. And what appears to us does require the existence of material objects as a source of those ideas.

**[54]** The action needed to move a boat which is at rest in still water is no greater than what’s needed to stop it suddenly when it is moving. Well, anyway, not *much* greater—the difference being due to the weight of the water displaced by the ship and the viscosity of the water, both of which could gradually bring the boat to a halt. (2:26, VIII 55)

**[Descartes]** We see this whenever a ship is sailing: water is displaced by the sides of the ship and piles up higher than the surrounding water. It stays piled up like this because it is sluggish in its movements; so it could bring •the ship to a halt if •it weren’t being driven on •by the wind•. What is meant by ‘viscosity’ is fairly widely known.

**[55]** The wheel of a moving carriage can be seen as having a circular motion around the axle and a straight line motion along the road. You can see that there aren’t two distinct movements here from the fact that every single point on the wheel follows only one line. It’s a twisted line that might still seem to you to be the upshot of several different motions, but that’s not essential. . . . The simplest possible motion, namely motion in a straight line,

can be seen as the upshot of infinitely many different motions. (2:32, VIII 58)

**[Descartes]** It’s *very* twisted, because it is continuously moving through many circles as the wheel rotates around its axle. And the circles aren’t simple and perfect either, but **the rest of the sentence:** *progredientes continuo et sic compositos et contortos.*

**translated (apparently accurately) by Cottingham:** joined up and twisted in a continuous forward motion.

**what Descartes is getting at here: ??**

This explains what I go on to say at the end of *Principles* 2:32.

**[56]** Concerning Descartes’s rules for determining how much a body’s motion is altered by collisions with other bodies. (2:46, VIII 68)

**[Descartes]** There were many complaints about the obscurity of these laws; so I clarified and explained them a bit further in the French edition of the *Principles*.

## Part 3

**[57]** It would be the height of presumption for us to suppose that we have the mental power needed to grasp the ends that God aimed at in creating the universe—let alone supposing that he did it all for our benefit! (3:2, VIII 81)

**[Descartes]** Yet men commonly think they are God’s favourites, from which they infer that everything was made for their benefit. ‘They think that’ their home, the earth, is the most important thing; that everything ‘that matters’ is *in* it and was created for the sake of it. But what do we know of what God may have created outside the earth—on the stars, and so on? How do we know that he hasn’t placed on the

stars other species of creature, other lives and other ‘men’ or man-like creatures? Perhaps souls separated from bodies, or other creatures whose nature escapes us, can live there. And how do we know that God hasn’t produced an infinity of kinds of creatures in a *deluge* (so to speak) of creation? All this is totally hidden from us because God’s purposes are hidden from us; so we oughtn’t to puff ourselves up with the thought that everything ‘important’ in the universe is to be found here on earth, or exists for our benefit. There may be, *elsewhere*, an infinity of creatures far superior to us.

**[58]** It is beyond question that the world was created right from the start with all the perfection it now has. (3:45, VIII 99)

**[Descartes]** I *could* explain the creation of the world in terms of my philosophical system [here = ‘my physics’] without departing from the account in *Genesis*. (Incidentally, if anyone can explain that book—or the *Song of Solomon* or the *Revelation*—I will regard him as a mighty Apollo!) I did once try to explain the creation, but I gave it up, preferring to leave this task to the theologians. The *Genesis* story about the creation is really in their province, because it seems to be metaphorical. If it is, the creation shouldn’t be taken as divided into six days; the division into ‘days’ should be taken as a concession to our way of conceiving of things. That’s the line Augustine took when he made the divisions ‘of days’ in terms of the thoughts of angels. ‘Another pointer to the account’s being metaphorical: Why is the darkness said to precede the light? The waters of the flood ‘that Noah survived’ were undoubtedly supernatural and miraculous. The reference to ‘the cataracts of the deep’ is metaphorical, but we don’t know how to cash it out literally. Some say they came down from heaven, and argue that this was where the waters were originally placed at the creation, on the grounds that *Genesis* reports God as placing the waters ‘above’ *haschâmaïm*. But

this word is also very commonly used in Hebrew to denote the air, and I think it’s just our prejudice [see Glossary] that leads us to regard this as ‘heaven’. Accordingly, the waters placed above the air are clouds. . . . [The editor and translator Charles Adam says that the Hebrew *haschâmaïm* means ‘the heavens’ and nothing else.]

**[59]** I have established that all the bodies in the universe are composed of a single ‘mass of’ matter that is ‘divisible’ into indefinitely many parts, and is in fact ‘divided’ into very many parts that move in different directions and have a sort of circular motion. (3:46, VIII 100)

**[Burman]** Where was this assumed or proved?

**[Descartes]** In *Principles* 2:33, where I showed that all motion goes in closed loops.

**[60]** Allow me then to suppose that God originally divided the matter of which the visible world is composed into particles of about the same size, a *moderate* size, intermediate between the biggest and smallest that now make up the heavens and stars. (3:46, VIII 101)

**[Descartes]** I call them ‘moderate’ by comparison with ‘particles of’ the first element; although they are too small, by a factor of one hundred or more, to be detected by our senses. I call them ‘intermediate’ because they occupy an intermediate position between the first element and the third.

**[61]** I’ll suppose that the total amount of motion of these particles was the same as what is now found in the universe; and that their motions were of two kinds, of equal force. **(1)** They moved individually and separately about their own centres, so as to form a fluid body such as we take the heavens to be. **(2)** They moved together in groups around certain other equidistant points corresponding to the present centres of the fixed stars, and around other more numerous points equaling the number of the planets, . . . so as to make up as many different vortices as there are now heavenly bodies in the universe. (3:46, VIII 101)

**[Burman]** This hypothesis seems rather complicated, but it is simple enough, and Regius seems to have deduced it all from motion.

**[Descartes]** It certainly is simple enough. Indeed, for a thesis that has an infinity of consequences it is *extremely* simple! It's the nature of a fluid body to move in and through vortexes, and the material we are discussing is *a fluid body moving in various different vortexes*—what could be simpler than that? As for Regius's proof: it is worthless. He has put up a surprising performance:

- In physics he has always been anxious to follow my views, and when he didn't know what they are to guess at them, whereas
- in metaphysics he has done everything possible to contradict my views, so far as his knowledge has allowed.

But this hypothesis of mine is very simple, if we consider the near-infinity of things I have deduced from it; and the way the consequences hang together confirms the hypothesis. For I came to see that I could deduce practically everything from it. And I swear before God that when I was putting forward these hypotheses I hadn't yet thought about •fire, •magnetism, and the rest; it wasn't until later that I saw how beautifully these things could be explained in terms of my original hypotheses. Indeed, in the *Treatise on the Animal* which I worked on this winter, I noticed the following: although I was aiming only to explain the *functions* of the animal, I found I could hardly do this without explaining the •*formation* of the animal right from the beginning. And •this I found I could derive from my principles, to such an extent that I could give a reason for the existence of the eye, nose, brain, and so on. And I plainly saw that the •nature of things was so constituted in accordance with my principles that •it couldn't be otherwise. But I didn't want to go into

such matters at such length and so I gave up writing the treatise. But I confess that the few thoughts that I have had concerning the universe are most pleasurable to look back on. I value them most highly, and wouldn't trade them in for any other thoughts I have had about any other topic.

**[62]** The smaller these scrapings of other particles are, the more easily they can be •moved and •made even smaller still. That's because the smaller they are the more surface area they have in proportion to their bulk. The upshot of this is that as a particle is ground down to a smaller and smaller size,

- the area across which it can confront other bodies that can grind it down further
- is not reduced as much as
- the bulk that enables it to resist such grinding-down.

(3:50, VIII 104)

**[Descartes]** That's a mathematical result. But it holds only for bodies with the same shape, e.g. two spheres; otherwise the ratio doesn't hold. . . .

**[63]** . . . the smaller they are the more surface area they have in proportion to their bulk. . . (3:50, VIII 104)

**[Descartes]** This is clear from the way a cube, for example, divides. [What follows expands Descartes's brief explanation.] •A cube of  $8\text{cm}^3$  has a surface area of  $24\text{cm}^2$  (because a cube with that volume measures 2cm along each edge, so each side has an area of  $4\text{cm}^2$ , and there are six sides); whereas •a cube of  $1\text{cm}^3$  has a surface area of  $6\text{cm}^2$ ; so reducing the bulk to one-*eighth* reduces the surface area only to one *quarter*.

**[64]** . . . how much they split up is a function of their bulk. (3:50, VIII 104)

**[Descartes]** The surface comes into this too, because you can't have bulk without surface or surface without bulk. I'm merely separating the two for theoretical purposes.

**[65]** [Quotes a passage that relates to a diagram and is obscure without it. Its upshot is to divide the extended universe into (a) 'the first heaven' (= our solar system), (b) 'the second heaven' (the region containing all the visible stars other than our sun) and (c) 'the third heaven' (whatever there is beyond the second heaven).] (3:52, VIII 106–7)

**[Descartes]** I take this third heaven to be the 'empyrean heaven' that the ancient cosmologists talked about. I have argued that by comparison with the second heaven, let alone our own first heaven, it is immeasurably large. Our view of our own heaven and earth as vast and as containing all things is a mere prejudice [see Glossary]. We think of the earth as being what everything else is *for*, and don't consider that it too is a planet which moves like Mars, Saturn, and the rest—bodies that we don't rate so highly. Before the creation of this universe and of space there was *nothing*—no space, no anything else. But God existed, immeasurable and omnipresent, just as he is now. He was in himself—i.e. had no relation to anything else—but after creating the world he couldn't *not* be present to it.

**[66]** The force of light doesn't consist in the duration of some movement, but merely in pressure, or in a first effort towards movement, which exerts force even if the movement itself doesn't happen. (3:63, VIII 115)

**[Descartes]** Pressure can happen without movement. To see this, take a brick and press it with your hands on both sides; no motion will be produced because the pressure and resistance on both sides are equal. The same thing happens in eyesight. Material of the second element is pressed against our eye; but because there's some resistance in the eye it exerts pressure back against the material. Thus there's pressure on each side, with no movement. Although people refuse to accept this account of the nature of light, in 150 years time they will see that it is a good one, the true one.

**[67]** [Presumably Burman asked for help with *Principles* 3:66 and its associated diagram. Descartes remarks that the matter is almost impossible to explain without help from a physical model. He doesn't try.] (VIII 117–18)

**[68]** The inexplicable variety that is apparent in how the fixed stars are located seems to show that the vortexes revolving round them are not equal in size. (3:68, VIII 119)

**[Burman]** Perhaps they are equal, and only seem unequal because of the unequal distances between them.

**[Descartes]** Well, that would make them unequal in size. The unequal distances between stars depends on the lack of equality in the vortexes which surround them, so the vortexes must be unequal in size.

**[69]** [Presumably Burman asked for help with *Principles* 3:83. Descartes answers in terms of a diagram at VIII 88. There's no useful way of presenting this material here.] VIII 138)

**[70]** We see a child by one movement give his top enough force to keep it moving for several minutes in which it completes several thousand rotations, although its bulk is very small and its motion is being impeded by the surrounding air and the ground it is spinning on. That makes it easy to believe that a planet, simply by being set moving when it was first created, could have carried on making its circuits right up to the present time without significant reduction in speed. (3:144, VIII 194)

**[Descartes]** This comparison is clear enough. The top would go on rotating for ever if it weren't impeded by the surrounding air; but because it is small it can't hold out against the air for long—only for a few minutes. The stars would also move for ever if they weren't impeded by neighbouring bodies; but because the stars are very large bodies they can more easily hold out against the air and other bodies that surround them—keeping moving for several thousand years. The larger a body is the more easily it can keep moving against the resistance of other bodies; and I can report seeing

a quite big child's top keeping on moving for nearly a quarter of an hour—just because of its large size. It's the same with the stars. *Does the top have to resist the air?* Put your hand near it while it is spinning and you'll feel the wind that is produced by the resistance of the top and the motion it sets up in the air.

**[71]** [Descartes here adds a detail to his account of why the earth rotates around an axis.] (3:150, VIII 198)

#### Part 4

**[72]** All the spaces around the earth are occupied either by •particles of terrestrial bodies or by •celestial matter. The globules of the celestial matter have an equal tendency to move away from the earth, so no one of them has the force to displace any other. But the particles of terrestrial bodies don't have this tendency so strongly; so whenever any celestial globules have terrestrial particles above them they must exert all their force to displace them. Thus, the weight of any terrestrial body is not strictly produced by all the celestial matter surrounding it, but only by the portion of celestial matter that rises into the space left by the body as it descends, and hence equals it in size. (4:23, VIII 213)

**[Burman]** But the solider a body is, the greater its centrifugal force, as we can see in the difference between a sling with a stone in it and a sling with a piece of wood. Now, the terrestrial bodies are more solid, so . . .

**[Descartes (interrupting)]** I turn your own point against you. **(a)** The terrestrial bodies are *not* more solid than the celestial globules; the opposite is true—or at least the two are equally solid—so the celestial globules move faster. **(b)** The globules move much faster than the terrestrial bodies because they are smaller. And the earth itself is a large body full of cavities and pores, so that it easily loses its motion and passes it on to another body. Thus, it can't move as fast as the globules;

so the globules, moving faster than the terrestrial bodies, push them down and make them heavy.

**[73]** Although the particles of celestial matter move in many different ways at the same time, the total over-all effect of their movements is what amounts to a state of equilibrium. (4:27, VIII 216)

**[Descartes]** In this way the entire system is in a state of equilibrium. But this is a hard thing to grasp, because it's a mathematical and mechanical truth. We don't think in terms of *machines* as much as we should, and this has been the source of nearly all error in philosophy [here = physics]. The over-all effect I'm talking about can be seen when air is blown into a bladder: this fills the bladder and produces movements in it; so that the air is in a sort of equilibrium, although its particles move agitatedly in various different ways. [Descartes's point here is just that although we can safely assume that the air-particles are rushing hither and thither inside the bladder, they are exerting the same pressure on every part of the bladder.]

**[74]** The shapes of the terrestrial particles of the third element are very various. The particles themselves fall into three principal kinds. (4:33, VIII 220)

**[Burman]** How do we arrive at these three kinds?

**[Descartes]** Through reasoning, and then through experience, which confirms the reasoning. We *see* that all terrestrial bodies are made up of the shapes in question: water is made up of oblong shapes, oil of branching shapes, and so on.

**[75]** [In a discussion of how glass is formed, Descartes wrote:] When two bodies with extended surfaces meet each other face to face, they can't get so near to one another that there's no room for globules of the second element to get between them, making it easy to pull them apart; but when one is slid onto the other from the side, they can join together much more closely and be much harder to pull apart. 4:125, VIII 270)

**[Burman]** But they'll still be meeting face to face, the only difference being that one came in from the side. Also: how is it that two bodies at rest against each other should stick together so firmly, when either one can easily be slid away from the other?

**[Descartes]** When they are driven together directly, face on, the globules of the second element that are trapped between them aren't expelled. When they come together obliquely, moving hither and thither—zigzagging around—they can expel the second-element globules. When the glass is hot its parts whip around quickly; the movement slows as the glass cools, and when it's cold the movement stops altogether and the parts of glass—unmoving and not separated by any second-element matter—are joined with one another to make one continuous body. It's inconceivable that a body should be made continuous and immobile by anything but its being in a state of rest.

**[Burman]** But I could easily move such small particles with my hand, though I see they are now immobile.

**[Descartes]** If you could do this, and the movements of your hand were enough to destroy their state of rest, they wouldn't be immobile. But in fact you *can't* do it, because the part of your hand that touches the parts of the hard body is softer than they are, so it can't move them—as I show well enough in *Principles 2*. The nature of glass, which is otherwise so difficult to explain, is very easily accounted for on the basis of these principles.

## Discourse on the Method

**[76]** Good sense is the best shared-out thing in the world; for everyone thinks he has such a good supply of it that he doesn't want more, even if he is extremely hard to please about other things. (Part 1, VI 1–2)

**[Burman]** But plenty of obtuse men often wish they had better and quicker minds.

**[Descartes]** I agree. Many men admit that they are inferior to others in •intelligence, •memory, and so on. But when it comes to •judgement and •fitness to give an opinion, everyone thinks that he is so excellent as to be second to none. Everyone is content with his own opinions, and no two people think alike. That's what I meant by 'good sense' in this passage.

**[77]** With regard to logic, I observed that syllogisms and most of its other techniques are of less use for learning things than for explaining to others the things they already know—or even. . . for speaking without judgment about matters about which one knows nothing. (Part 1, VI 17)

**[Descartes]** That last jab should really be aimed less at

- logic, which provides *demonstrative proofs* on all subjects, than at
- dialectic, which teaches us how to *talk* about all subjects

thus •undermining good sense rather than •building on it. How? By distracting us from the actual nature of the thing we are trying to study, taking us instead on a detour through *other* stuff—standard *positions* and catalogued *topics*. One past master at this is *Professor Voetius*: all he does in his books is to recite his opinions, declare that things are thus-and-so, and summon up crowds of authorities.

**[78]** Those long chains of very simple and easy inferences that geometers customarily use to arrive at their most difficult demonstrations had led me to think that all the things that human beings can know are inter-deducible in that same way. (Part 2, VI 19)

**[Burman]** But aren't all theological truths inter-connected and inter-derivable in that way?

**[Descartes]** Undoubtedly they are; but they depend on revelation, so we can't follow or understand their inter-connections in the same way. •Theology certainly mustn't be subjected to the kind of reasoning that *we* use for mathematics and for other truths, because •it is something we can't fully grasp. In theology •for human beings, the rule is •*The simpler the better*. If I thought that anyone would misuse my philosophy by taking arguments from it and applying them to theology, I would regret all the trouble I had taken. We can—we *should*—prove that the truths of theology are not inconsistent with those of philosophy, but we shouldn't in any way subject them to critical examination. That's what the monks did, opening the way to all the sects and heresies; I'm talking here about scholastic theology, which should have been top on everyone's list of things to be stamped out. What's the point of putting all this effort into theology, when we see that simple country folk have as good a chance of getting to heaven as we have? Let us be warned: it is *much* better to have •a theology as simple as that of country folk than to have •one that is plagued with many controversies. It's by choosing the latter that we corrupt theology and open the way for disputes, quarrels, wars and suchlike. Indeed, the theologians have made such a habit of foisting every kind of doctrine onto their theological opponents and then slandering it that they have mastered the art of intellectual slander and can hardly do anything else, even when they aren't trying to.

**[79]** I didn't have to look far for the things to start with, for I knew already that it must be with the things that are simplest and most easily known. Bearing in mind also that of all those who have pursued truth in the sciences only the mathematicians have been able to find any demonstrations—that is to say, certain and evident reasonings—I had no doubt that I should start with the very things *they* studied, though only so as to get my mind used to nourishing itself on truths and not being satisfied with bad reasoning. (Part 2, VI 19 )

**[Descartes]** This benefit can't be derived from mathematics as it is commonly taught. For this consists mostly of things like the history •of discoveries• and the explanation of terms; these can easily be learnt by memorization, so mastering them does nothing to develop the •pupil's• intelligence. To develop your intellect you need mathematical *knowledge*, and you can't get that from books, only from •*doing* mathematics and •being good at it. I didn't have any books, so I had to learn mathematics in that way. I'm very pleased with the results I achieved in this way. But not everyone has this aptitude for mathematics: it takes a *mathematical mind*, which must then be polished by actual practice. This mathematical knowledge must be acquired from *algebra*; but you won't get far in that without a teacher—unless you follow my footsteps in my *Geometry*, so as to become able to solve problems and discover truths in any field. . . .

So you need to study of mathematics if you are to make new discoveries in mathematics itself or in philosophy [here = 'philosophy and science']. But you don't need mathematics to understand my philosophical writings, except perhaps for a few mathematical points in the *Optics*. The topics on which I urge you to exercise your mind are very simple ones—the likes of *the nature and properties of the triangle*. These must be thought about and pondered on. Mathematics gets you accustomed to recognizing the truth. Here is why:

Mathematics provides examples of correct reasoning that you won't find anywhere else. So once you have accustomed your mind to mathematical reasoning, your mind will be well equipped for investigating other truths, because reasoning is exactly the same in every subject.

Some people who are clever at mathematics are less successful in subjects like physics, but that's not because there's anything wrong with their powers of reasoning. It comes from their having done mathematics not by •reasoning but by •imagining—everything they have accomplished has been by means of imagination. Now, in physics you can't do that, which is why they are so bad at it.

Also, mathematics accustoms the mind to distinguishing true and valid arguments from probable and false ones. Anyone who relies solely on probable arguments in mathematics will led off into absurd conclusions; this will show him that a demonstration [= 'rigorously deductively valid proof'] has to start from premises that are •certain; you can't do it with premises that are •merely •probable—in this context they might as well be •false. It's because philosophers haven't followed this advice that they can't distinguish proofs from probable arguments in philosophy and physics; and anyway they *prefer* to argue in terms of probabilities because they don't believe that demonstrative proofs have any place in the sciences that deal with reality. That's why the sceptics and others have thought that the existence of God can't be proved, and why many still think this; whereas in fact it is conclusively provable and, like all metaphysical truths, it can be proved *more solidly* than anything in mathematics. If you got the mathematicians to doubt all the things I cast doubt on in my metaphysical inquiries, that would be an end of certain mathematical proofs; but the doubt that I cast didn't stop me from going on to give metaphysical proofs. So proofs

in metaphysics are more certain than proofs in mathematics. And at every point I tried to provide 'mathematical proofs', as they are commonly called, in my philosophy; though these can be grasped by people who aren't familiar with mathematics. [The original says that they *can't* be grasped by such folk; but in the light of the connective 'though' (*quamvis*), and of the statement 'you don't need mathematics to understand my philosophical writings' earlier in this item, we must take this to be a copyist's slip.]

**[80]** So as not to be indecisive in my •actions during the time when reason obliged me to be so in my •judgments, and in order to live as well as I could during this time, I formed for myself a provisional moral code consisting of just three or four maxims that I would like to tell you about. (Part 3, VI 22)

**[Descartes]** I don't like writing on ethics, but I had to include these rules because of people like the Schoolmen; otherwise, they would have accused me of having no religion or faith and of trying to subvert them by means of my method.

**[81]** If we didn't know that everything real and true within us comes from a perfect and infinite being, then, however vivid and clear our ideas were, we would have no reason to be sure that they had the perfection of being true. (Part 4, VI 39)

**[Descartes]** If we didn't know that all truth comes from God, then however vivid our ideas were we wouldn't know that we weren't mistaken in taking them to be true—I mean, of course, when we were not focusing on them and merely remembered that we *had* vividly and clearly perceived them. At other times, when we are attending to •those truths themselves, even if we don't that know God exists we can't be in any doubt about •them. If that weren't so we couldn't prove that God exists.

**[82]** It is true that medicine as currently practised doesn't contain much of any significant use; but without wanting to put it

down I'm sure that everyone, even its own practitioners, would admit •that all we know in medicine is almost nothing compared with what remains to be known, and •that we might free ourselves from countless diseases of body and of mind, and perhaps even from the infirmity of old age, if we knew enough about their causes and about all the remedies that nature has provided for us. (Part 4, VI 62)

[Burman's notes indicate a special interest in *fortassis a senectutis debilitatione* = 'even from the infirmity of old age'. He seems to have •suggested that human mortality is a result of mankind's Fall as encapsulated in Adam's disobedience in the Garden of Eden, and to have •wondered about the difference between modern life-spans and some ancient Hebrew ones (e.g. Noah's 900 years). And so we have:]

**[Descartes]** A philosopher shouldn't be asked whether man was immortal before the Fall, and if so how; those are questions for the theologians. As for how men could live so long before the Flood, that's a question that defeats the philosopher. Perhaps

- God brought this about miraculously, without recourse to physical causes; or perhaps
- the natural world's structure was different before the Flood, and has worsened because of the Flood.

The philosopher studies nature—as he studies man—simply as it is now; he *can't* investigate its causes at any deeper level. But it shouldn't be doubted that human life *could* be prolonged if we knew the appropriate art [see Glossary]. We can increase the success-rate of vegetable grafts and cuttings and such-like, and can make them live longer, *because we know the art of doing this*; so why should it be different in the case of man? But the best way to keep to a healthy diet

and prolong life ·hardly needs any *art*; it is simply· to live and eat as the animals do, i.e. eat as much as we enjoy and relish, but no more.

**[Burman]** This might work in sound and healthy bodies where the appetite is working properly for the body; but it won't work for those who are ill.

**[Descartes]** Nonsense! Nature doesn't *change* when we are ill! It seems indeed that •nature plunges us into illnesses so that we can emerge all the stronger, and brushes obstacles aside provided we obey •it. Experience shows that sick people would recover faster and better if the doctors, instead of giving them all those nasty medicines, would let them have the food and drink that sick people generally like best. In such cases ·the patient's· nature concentrates on bringing about its own recovery; with its perfect internal awareness of itself, it knows better than the doctor who is on the outside.

**[Burman]** But there is such an infinity of foods, etc.; how should we chose among them, and in what order should we take them? and so on.

**[Descartes]** Our own experience teaches us that. We always know whether a food has agreed with us, so we can always learn whether to have that same food again, and whether we should eat it in the same way and in the same order. So, as Tiberius Caesar said, no-one who has reached the age of thirty should need a doctor, because at that age he is quite able to know from his own experience what is good for him and what is bad, so that he can be his own doctor.