shifting and changeable opinions" (7:69). As he makes clear in the Second Replies, he is not denying that even an atheist can "cognize" or understand the Pythagorean theorem and be convinced of it (7:141*). But the atheist, without knowledge of God, will be subject to skeptical challenges such as those of the First Meditation; he does not have knowledge (something stable), because his opinion can be dislodged. As Descartes puts it, "no act of cognition that can be rendered doubtful seems fit to be called knowledge" (7:141*). Those who know God can counter such doubts, so they can possess (stable and lasting) knowledge.

The basic form of Descartes' argument is clear. He presents a conception of knowledge according to which the thing known must be true, must be accepted for good reasons, and must not be subject to known objections. He then suggests that prior to recognizing that God exists and is no deceiver, we can undermine even our knowledge of geometry by raising skeptical doubts about the general reliability of our cognition. Once God's existence and goodness have been proved, we can remove the doubts, and now the "good reasons" we have for believing geometrical demonstration (that we clearly and distinctly perceive them) remain a stable basis for knowledge. (Even if skeptical doubts arise again, we can now easily turn them back by considering our proof for the existence and goodness of God.)

God and the circle

The fact that Descartes appeals to clear and distinct perception to prove the existence of God (7:69) and then appeals to God to support the truth of clear and distinct perception (7:69–70) resulted in Arnauld's charge of circularity (7:214). In Chapter 5, we considered "remove the doubt" and "presumption in favor of the intellect" strategies for avoiding the circle, as opposed to a "strong validation of reason" strategy, which seemed to make the circle inevitable. What we need to know now is whether, in the Fifth Meditation, Descartes is appealing to God's existence and goodness merely to remove a ground for doubt without positively validating the intellect, or whether he is appealing to God for direct validation of the intellect (as seemed the case in Meditation 4). If the former, then the sense in which all knowl-

edge "depends on God" would be comparatively weak: it would depend on our investigating the deceiving-God hypothesis and finding it wanting, so as to remove the doubt and be left with our otherwise presumptively true clear and distinct perceptions. If the validation strategy is in play, then the sense in which all knowledge "depends on God" would be quite strong: we would need to know of God's existence and goodness in order to have a reason to trust that our clear and distinct perceptions are true.

The question of which strategy fits the text of the Fifth Meditation depends in part on what sort of challenge to the intellect Descartes intended to address there. If he was simply responding to the "slight" and "metaphysical" doubt raised by the "long-standing opinion" that there is an all-powerful God who might be a deceiver, then the remove-the-doubt strategy (as paired with presumption) appears to avoid circularity. Descartes would simply be arguing that as long as one hasn't considered the deceiving-God hypothesis carefully, one is subject to this ground for doubt. (Indeed, the atheist remains permanently subject to it.) Anyone who followed the procedure of Meditations 1 and 2 and came to appreciate clear and distinct perception might then use such perceptions to remove what turn out, against the standard of such perceptions, to be slight and metaphysical grounds for doubt. If a presumption in favor of the intellect is in place, then removing the doubt leaves us with our usual trust in the truth-detecting powers of our cognitive faculties when used properly.

In favor of the view that Descartes appeals to such a presumption, recall his several comparisons of the ontological argument with geometrical demonstration. In our discussion above, these comparisons initially seemed to provide a fall-back position. That is, Descartes would be saying that even if the arguments of Meditations 3 and 4 about God and deception fail, the ontological argument still achieves the same cognitive force as geometrical demonstration. But if the meditator is operating under the presumption that the transparent perceptions of the intellect are true, then these comparisons could support the truth of the ontological argument by putting it in an epistemic class with mathematical knowledge. (The question would remain of whether the arguments merit the comparison.)

However, there is a fly in the ointment. Another ground for doubt is in play besides the deceiving-God hypothesis. This is the defective-origins proposal from the First Meditation (a version of the defective-design hypothesis). This challenge surely cannot be removed simply by using clear and distinct perception to prove that God exists and is no deceiver, for it trades on the assumption that there is no God and that the human intellect is therefore the product of chance causes and may be naturally defective. Let us consider whether there is any way to answer this challenge without begging the question or arguing in a circle.

Defective origins

In the latter part of the Fifth Meditation, Descartes presents two grounds for doubt about such evident matters as the geometrical demonstration that the three angles of a triangle equal two right angles:

> as soon as I turn my mind's eye away from the demonstration, then in spite of still remembering that I perceived it very clearly, I can easily fall into doubt about its truth, if I am unaware of God. For I can convince myself that I have been made by nature so as to go wrong from time to time in matters which I think I perceive as evidently as can be. This will seem even more likely when I remember that there have been frequent cases where I have regarded things as true and certain, but have later been led by other arguments to judge them to be false. [7:70*]

The meditator dismisses the second ground, that she accepted some things as true and later judged them to be false, by saying that previously she was ignorant of the rule that clear and distinct perceptions are true "and believed these things for other reasons which I later discovered to be less reliable" (7:70). Prior to undergoing the process recorded in the *Meditations*, the meditator (as, earlier in life, Descartes himself) did not know how to recognize clear and distinct perceptions and so formed her beliefs on other grounds (such as sensory experience or the authority of a teacher).

The first ground, that she has "been made by nature so as to go wrong" in (at least some cases of) clear and distinct perception offers the real challenge, by reinvoking the defective-origins hypothesis. It is this ground for doubt, not the deceiving-God hypothesis (ostensibly already removed in Meditations 3–4), that the meditator now purports to banish through her knowledge that God exists. Here is what she says:

> Now, however, I have perceived that God exists, and at the same time I have understood that everything else depends on him, and that he is no deceiver; and I have drawn the conclusion that everything which I clearly and distinctly perceive is of necessity true. Accordingly, even if I am no longer attending to the arguments which led me to judge that this is true, as long as I remember that I clearly and distinctly perceived it, there are no counter-arguments which can be adduced to make me doubt it, but on the contrary I have true and certain knowledge of it. [7:70]

God's existence by itself would not counter the defective-origins hypothesis. Two further considerations are needed: God's goodness (non-deceptive nature) and the fact that, as the passage says, "everything else depends on him." Descartes seems to be reprising a line of thought from the Fourth Meditation. Our clear and distinct perceptions are true because God made us, and in particular, he made our intellect (and will), and he would be a deceiver if clear and distinct perceptions, to which we are compelled to assent, were ever false. In this way, God's creation of our cognitive faculties provides strong validation for those faculties.

The defective-origins hypothesis concerns the origin of the meditator's cognitive faculties: have they been fashioned by chance developments in a godless universe, or have they been created (hence designed) by God? According to the above argument, they have been designed by a non-deceiving God. But a familiar problem arises. Our only reason for believing that God exists and created our minds is that we clearly and distinctly perceive it to be the case. And the defective-origins hypothesis challenges the reliability of such perception. Either the question is begged, or the circle closes again.

Let us consider more fully the situation of the meditator to see if there is a way out, or at least a way of mitigating the problem. In order to evaluate the defective-origins hypothesis, the meditator might compare the competing explanations for the origin of her intellect. If she had to prove that one of the explanations is true before proceeding, she would indeed be stuck in a circle. But suppose for a moment that she actually considered the defective-origins hypothesis to offer an even more "slight" and "metaphysical" ground for doubt than the deceiving-God hypothesis. She might think that the basic presumption in favor of the intellect entitles her to use her intellectual faculty in evaluating the (so far ungrounded) possibility of defective origins. Or she might appeal to the extraction argument (reviewed in Chapter 5) in support of clear and distinct perception. She would then use her intellect to find the best explanation of the origin of her intellectual faculty. In the course of Meditations 3–5, she has (allegedly) found three good arguments for the existence of God, and one for his goodness. She finds that the defective-origins hypothesis is merely speculative, and in fact she cannot conceive that a conscious human mind could arise from chance conglomerations of matter. Hence, she accepts the creation hypothesis as the best explanation for the origin of her cognitive faculties.

Descartes surely would have considered the defective-origins hypothesis to be comparatively weak. In his day, there was general disagreement over whether a purely material being could have sensation and thought. Furthermore, there was very little support for the notion that a thinking being might develop in nature through chance interactions of matter, unguided by a creator. Descartes presumably reflected his own judgment of the implausibility of this hypothesis when he characterized as "exaggerated" (7:226) all the doubts of the First Meditation that relied on ignorance of God (which must include both branches of the defective-design argument). He no doubt thought it unlikely or impossible that thought could arise from matter by chance processes. Of course, to be effective in this context he must not rely merely on opinion but on a reasonable assessment of the real possibility of this happening. Today we conjecture that consciousness and thought can evolve by natural

processes (although at present there is no complete explanation of how mind could evolve). Hence, we are unlikely to grant to Descartes that his creationist hypothesis is stronger than the alternative.

In any event, even by Descartes' own lights, for his creationist hypothesis to be able to *rule out* alternatives, the metaphysical method of intellectual perception must be able to establish some strong metaphysical conclusions: that God exists, is no deceiver, and is the creator of the human mind. Suppose that in order to avoid making any initial claims about God or creation, Descartes first appealed to the extraction argument in support of clear and distinct perception, and he subsequently used that method to decide for creation over natural origins. Such a move would beg the question about whether clear and distinct perception can be trusted. As we observed in Chapter 5, those perceptions must be used in assessing the extraction argument itself. The extraction argument might, for instance, simply involve a mistaken act of over-generalization from the certainty of the *cogito*. If clear and distinct perception cannot already be trusted, how would we decide? A presumption in favor of the intellect fares no better; it also begs the question about whether the intellect can be trusted to reveal the real natures of things, and hence the existence and creative tendencies of God.

More generally, one would not need to embrace the defective-origins hypothesis to question whether the human mind is able to limn the essences of things and establish that God exists and has furnished us with intellects adequate to the tasks of *a priori* metaphysics. The defective-origins hypothesis is only one version of an opposing, naturalistic account of the origin of thought. One might assert that the human mind has arisen from nature, and that it is not generally defective in design, but that it lacks the innate ideas or intellectual perceptions of God and matter that Descartes claims to find in the Fifth Meditation. Or one might allow that the mind has ideas of God and of the essence of matter but question whether those ideas actually reveal the essences of things.

Such challenges to the existence or reliability of Descartes' intellectual perceptions move beyond the circle to address his system more generally. We will return to them in Chapter 10.

The circle and the aim of the Meditations

An underlying question frames our consideration of the circle. This is the question of whether, in the *Meditations*, Descartes intended, or needed, to provide a deep challenge to the reliability of human cognition, or merely wanted to use the skeptical process to direct the reader to clear and distinct perceptions and then on to the first principles of metaphysics and physics. (This question was raised at the ends of Chapters 2 and 3.)

Evidence can be found on both sides. Less than two years after the *Meditations* appeared, Descartes wrote to Princess Elizabeth that he tried "never to spend more than a few hours a day in the thoughts which occupy the imagination, and a few hours a year on those which occupy the intellect alone" (3:692–3), detached from imagination and sense. The feel of the letter (discussed further in Chapter 10) is that one should engage in metaphysics long enough to perceive the existence of God and the essences of mind and matter, and then get on with the business of natural philosophy (having come to a new understanding of the senses, as in Meditation 6).

If Descartes' aim was simply to introduce the method and results of clear and distinct perception and get on with things, then talk of a presumption would be understandable. Descartes would indeed be out to discover some truth, not about the question of whether human minds can know truth but about the main topics of metaphysics (God and finite beings). He wanted to help the reader to see what good reasons for adopting a metaphysical thesis are like, and then to direct her to some conclusions based on good reasons. He did not intend to pose some very deep question about whether the human mind is capable of truth at all. He wanted to help some human minds to perceive clearly and distinctly the truths that he had already seen for himself. He did not argue in a circle, because he never intended to offer a strong validation in the first place. In this connection, it is interesting to note that in the Geometrical Arguments he did not attempt to validate clear and distinct perception but simply appealed to "self-evident" propositions and arguments (7:162–3).

On the other side, it seems that given his metaphysical ambitions, Descartes both should have wanted to, and did, pose deep questions

about the relation between the human intellect and the real order of things. He was after all not out just to achieve an "all things considered" best theory of the world. He was after the one true metaphysics.

We have seen that Descartes knew the deeper challenge could be posed. In the passage from the Fourth Replies quoted in Chapter 5, he acknowledged that one may ask whether "the order in which things are mutually related in our perception of them" matches "the order in which they are related in actual reality" (7:226). There he suggests that the question can be favorably resolved by removing the "exaggerated doubts" of the First Meditation. But it is not clear that once the matter has been raised it can be disposed of so easily. In another place, the second objectors (7:127) reprised Caterus' query (7:99) about whether our human concepts or ideas should be thought to reveal the real essences and existence of things, as in the ontological argument; they urged that God's existence depends on the real possibility of his essence, not on human concepts. In response, Descartes distinguished two sorts of possibility. The first sort coincides with "whatever does not conflict with our human concepts" (7:150). He took that to be the common meaning and even offered it as a definition in the Geometrical Arguments: "When we say that something is *contained in the nature or concept* of a thing, this is the same as saying that it is true of that thing, or that it can be asserted of that thing" (7:162). However, he was aware that the claim that human concepts reveal real possibilities (or, in the ontological argument, real actualities) might be challenged. He acknowledged that the second objectors might be asking about a sort of possibility "which relates to the object itself" (7:150). But in the Replies he refused to take seriously the position that human concepts do not match the objects in themselves, for otherwise "all human knowledge will be destroyed, though for no good reason" (7:151). Given that he acknowledged the question of whether our concepts match reality, there is plenty of material in Meditations 4–5 to suggest that he did take the question seriously and answered by offering a divine guarantee for human (metaphysical) cognition.

This second aim, of deeply challenging reason and providing deep foundations in response, is not incompatible with the first (methodological) aim, of helping the reader to uncover and use the faculty of

pure intellect. But that first sort of aim does not require the second. It can be evaluated on its own, by whether the reader finds the promised clarity. The first aim meshes nicely with the methodological bent of the early seventeenth century. The second aim engages more fully the metaphysical tradition. Previous metaphysicians had attempted to explain how human cognition could achieve knowledge of essences – whether through Platonist direct apprehension of separate Forms, or the Aristotelian intellect, which distills essences through sensory contact with things. Descartes' doctrine of the creation of the eternal truths offers its own explanation of how human concepts could (innately) be aligned with the very natures of things. Perhaps Descartes was caught between these two aims: of simply putting forward the best arguments he had for the first principles of his new science (something he could do without circularity, but with no guarantee of ultimate truth), and of offering an ultimate explanation for why his best arguments must reveal the one true theory (where his efforts appear question-begging or circular).

The several readings of Descartes' aims and strategy offered here are intended to help readers to develop their own positions on the circle in conjunction with further reading of the relevant texts. That position might be one of those described, some combination of them, or a further strategy. One of the intriguing features of philosophical texts is that they repay close study and interpretive work. The problems surrounding the circle and Descartes' metaphysical method are rich and complex. Final assessment remains with the reader.

References and further reading

For introductory discussion of Descartes on innate ideas see Kenny, ch. 5, and Cottingham, *Descartes*, ch. 6. Flage and Bonnen, ch. 2, consider innate ideas in the context of Cartesian method. The articles by Gaukroger and Marion in the *Cambridge Companion* examine Descartes' work in mathematics and his argument about matter's essence. Menn, *Descartes and Augustine*, ch. 8, sec. B, discusses the essence of matter. Several articles on Descartes' mathematics and its relation to his physics may be found in S. Gaukroger (ed.), *Descartes: Philosophy, Mathematics and Physics* (Brighton, UK: Harvester, 1980).