judicious proposer' gives is negative. For, he says, though this blind man 'has obtained the experience of, how a globe, how a cube affects his touch; yet he [does not yet know] that what affects his touch so or so, must affect his sight so or so; or that a protuberant angle in the cube, that pressed his hand unequally, shall appear to his eye, as it does in the cube.' The author of the *Essay* declares that he entirely agrees.

THEO. It may be that Mr Molyneux and the author of the *Essay* are not as far from my opinion as at first appears, and that the reasons for their view – contained in Mr Molyneux's letter, it appears, and successfully used by him to convince people of their mistake – have been deliberately suppressed by our author in order to make his readers exercise their minds the harder. If you will just consider my reply, sir, you will see that I have included in it a condition which can be taken to be implicit in the question: namely that it is merely a problem of telling which is which, and that the blind man knows that the two shaped bodies which he has to discern are before him and thus that each of the appearances which he sees is either that of a cube or that of a sphere. Given this condition, it seems to me past question that the blind man whose sight is restored could discern them by applying rational principles to the sensory knowledge which he has already acquired by touch. I am not talking about what he might actually do on the spot, when he is dazzled and confused by the strangeness – or, one should add, unaccustomed to making inferences. My view rests on the fact that in the case of the sphere there are no distinguished points on the surface of the sphere taken in itself, since everything there is uniform and without angles, whereas in the case of the cube there are eight points which are distinguished from all the others. If there were not that way of discerning shapes, a blind man could not learn the rudiments of geometry by touch, nor could someone else learn them by sight without touch. However, we find that men born blind are capable of learning geometry, and indeed always have some rudiments of a natural geometry; and we find that geometry is mostly learned by sight alone without employing touch, as could and indeed must be done by a paralytic or by anyone else to whom touch is virtually denied. These two geometries, the blind man's and the paralytic's, must come together, and agree, and indeed ultimately rest on the same ideas, even though they have no images in common. Which shows yet again how essential it is to distinguish *images* from *exact ideas* which are composed of definitions. It would indeed be very interesting and even informative to investigate thoroughly the ideas of someone born blind, and to hear how he would describe shapes. For he could achieve that, and could even understand optical theory in so far as it rests on distinct mathematical ideas, though he would not be able to achieve a conception of the *vivid-confused*, i.e. of the image of light and colours. That is why one man born blind, who had heard lessons in optics and appeared to understand

PHIL. Here is a problem for you, which 'that very ingenious and studious promoter of real knowledge, the learned and worthy Mr *Molyneux,' sent to the distinguished Mr Locke. This is more or less how he worded it: 'Suppose a man born blind, and now adult, and taught by his touch to distinguish between a cube, and a sphere of the same metal, and nighly of the same bigness, so as to tell, when he felt one and t'other, which is the cube, which the sphere. Suppose then the cube and sphere placed on a table, and the blind man to be made to see. *Quaere*, whether by his sight, before he touched them, he could now distinguish, and tell, which is the globe, which the cube.' Now, sir, please tell me what your view is about this.

THEO. The question strikes me as a rather interesting one. I would need to spend time thinking about it; but since you urge me to reply at once I will risk saying, just between the two of us, that I believe that if the blind man knows that the two shapes which he sees are those of a cube and a sphere, he will be able to identify them and to say without touching them that this one is the sphere and this the cube.

PHIL. I am afraid I have to include you among the many who have given Mr Molyneux the wrong answer. In the letter containing this question he recounts that having, on the occasion of Mr Locke's *Essay*, 'proposed this to divers very ingenious men, he hardly ever met with one, that at first gave the answer to it, which he thinks true, [although after] hearing his reasons they were convinced' of their mistake. The answer which this 'acute and

them quite well, when he was asked what he believed light was, replied that he supposed it must be something pleasant like sugar. Similarly, it would be very important to investigate the ideas which a man born deaf and dumb can have about things without shapes: we ordinarily have the description of such things in words, but he would have to have it in an entirely different manner – though it might be equivalent to ours, just as Chinese writing produces an effect equivalent to that of our alphabet although it is utterly different from it and might appear to have been invented by a deaf man. I am indebted to a great Prince for the report of a man in Paris who was born deaf and dumb and whose ears have finally begun to perform their function. He has now learned the French language (the report came from the French court, not long ago), and will be able to tell very interesting things about his conceptions during his previous state and about how his ideas have changed since beginning to exercise his sense of hearing. Men born deaf and dumb can accomplish more than one might think. There was one at Oldenburg, during the time of the last Count, who had become a good painter and also proved himself to be a very intelligent man. A most learned Breton has told me that around 1690 in Blain – a town belonging to the Duke de Rohan, ten leagues from Nantes – there was a poor man, born deaf and dumb, who lived in a hut near the chateau, outside the town; he would carry letters and so on to the town, and would be guided to the right houses by certain signs made to him by people who were used to employing him. Eventually the poor man became blind as well, yet he still made himself useful taking letters to the town, wherever was indicated to him by touch. He had a board in his hut, running from the door to the spot where his feet rested, and the movements of this would announce to him when someone was coming in. Men are very remiss in not informing themselves accurately about how such people think. If he is no longer alive there is likely to be someone on the spot who could still give us some information about him and explain how people indicated to him the tasks he was to carry out.

But to return to the man born blind who begins to see, and to what he would judge about the sphere and the cube when he saw but did not touch them: as I said a moment ago, I reply that he will know which is which if he is told that, of the two appearances or perceptions he has of them, one belongs to the sphere and the other to the cube. But if he is not thus instructed in advance, I grant that it will not at once occur to him that these paintings of them (as it were) that he forms at the back of his eyes, which could come from a flat painting on the table, represent bodies. That will occur to him only when he becomes convinced of it by the sense of touch or when he comes, through applying principles of optics to the light rays, to understand from the evidence of the lights and shadows that there is something blocking the rays and that it must be precisely the same thing that resists his touch. He will eventually come to understand this when he

sees the sphere and cube rolling, with consequent changes in their appearances and in the shadows they cast; or when, with the two bodies remaining still, the source of the light falling on them is moved or the position of his eyes changes. For these are pretty much the means that we do have for distinguishing at a distance between a picture or perspective representing an object and the real object.