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R. E. D. CLARK, M.A., Ph.D.

## Men As Trees Walking<sup>1</sup>

UNTIL the present century it was commonly taken for granted that people born blind have the same ideas of space as those who can see. Philosophers, notably Locke, Descartes, and Leibnitz, in discussing the concept of space, assumed that both sight and touch give rise to the same basic ideas of space and distance. This assumption seemed to be confirmed by the fact that the congenitally blind do, in fact, speak of space just as we all do. Bishop Berkeley, however, in his *Essay Towards a Theory of Vision* (1709) put forward the suggestion that tactile sensation gives rise to a psychological world of space, and that only later do we learn to line this up with sight. But he gave no evidence for this view, and, in fact, as we shall see, the situation is the other way round.

The blindness of the congenitally blind, when due to cataract, can be remedied by surgery. But with very rare exceptions<sup>2</sup> this has only been possible in recent times. In the early days of the operation a number of people, including intelligent adults, received sight for the first time, most of them towards the end of the nineteenth century. If we include a few spontaneous cures, records of about eighty cases have now been published. Further cases are likely to be excessively rare, because in most Western countries congenital blindness must be reported, so that cures are now effected in early years before an infant is old enough to describe what it is like to be without sight.

It is a matter of great interest to psychologists to discover how a sightless person reacts to a newly acquired sense. In Germany M. von Senden devoted many years to the study of this subject. In 1932 he published a detailed survey of all known cases—a monograph of considerable length.

This book formed the basis of D. O. Hebb's epoch-making discussion of perceptual learning in infancy (*Organisation of Behaviour*, 1949), so that its importance eventually came to be realised. The book was

<sup>1</sup> The author is indebted to Dr Leon Morris, and Mr Haddon Wilmer, for their helpful discussion in the preparation of this paper.

<sup>2</sup> The first known case was in Arabia, in 1020.

exceedingly rare in Germany as sales had been small and all the remaining copies at the publisher's warehouse were destroyed in the Leipzig raid in 1943. All von Senden's original notes and case records were destroyed in another raid. Miss Sylvia Schwappe of the British Museum was able at last to discover a micro-film copy and laboured for ten years to get it published. Finally, in 1960, an English edition appeared.<sup>1</sup>

The picture which emerges is surprising. In none of the many cases studied did a sense of touch, in the absence of sight, give rise to a concept of a three-dimensional world. Or, if it did, as the philosopher G. J. Warnock thinks possible, it was of a kind very difficult to translate into that with which sighted people are familiar.

The blind-born, von Senden believes, have no sense of depth or space or even of distance. He cites many remarkable quotations illustrating the point. A boy knew that his room was part of a house but could not conceive that the house would look bigger than his room. A building a mile away was thought of as near at hand 'but requiring the taking of a lot of steps'. Up and down movement in elevators gave rise to no sense of height, or even of change in position. It was thought that the sun or a candle were touching a person who felt their warmth. The moon seemed a rather mythical object, but a blind person thought that it could be more easily investigated by means of elongated arms than by sight. The statement that it was a long way off conveyed nothing. A blind person had often been told that trees are taller than men, but the statement was not understood. After the operation, 'when she saw that a tree was ten times as tall as her father and mother she thought that her eyes were playing a trick on her'.

A more recent case, aged 52, in which the patient had been able to see for nearly a year in early childhood, follows the same pattern.<sup>2</sup> Psychological tests were applied. On being presented with the Necker cube and the Staircase illusions, the man experienced no reversals. These illusions depend upon the fact that objects are seen in depth, but after recovery from blindness no sense of depth is present.

Again, touch alone gives no sense of shape or of how parts are joined together. There seems to be no general picture in the mind of a cube, or even of flat shapes like circles, triangles or hexagons. The blind person is conscious of smooth surfaces (which he finds 'beautiful'),

<sup>1</sup> M. von Senden, 'Space and Sight', *The Perception of Space and Shape in the congenitally Blind before and after Operation*. English translation, Peter Heath. Methuen, 1960, 42s.

<sup>2</sup> R. L. Gregory and J. G. Walker, *Recovery From Early Blindness*, E.P.S. Monograph, No. 2, 1963.

spikes or corners and edges but, owing to the fact that one can only feel a part at a time, objects larger than those which can be held in the hand are not sensed as a whole. There may be no idea, for instance, of how the parts of a frequently handled pet dog are related together.

After sight has been restored, those who were blind have great difficulty in recognising that what they see corresponds to the shapes they have previously handled. A week after a man's eyes had been opened he was shown an orange and asked its shape. His newly acquired sight gave him no clue—he could only discover that it was round by feeling. And later, on looking at a square and at a triangle he said that they were round. When corrected he said: 'Oh yes, now I understand. You can see how they feel'.

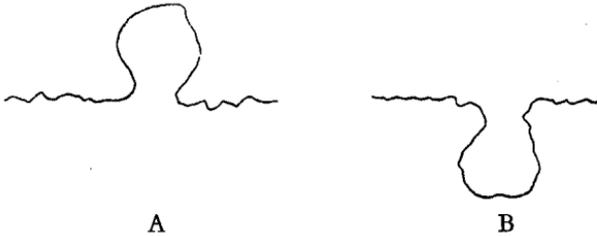
For many months such patients wonder why sight is supposed to be useful. They find it incredibly hard to discern shapes. The new sense brings uncertainty. There may even be a refusal to use it unless compelled. One blind man who knew his way about perfectly became lost and had to ask his way home when he was given his sight.

The blind soon learn to use the same language as other people. But often it is a form of words without awareness of the meaning. When they first realise that other people have a sense which they lack they attempt to understand it as a kind of touching. A number of these people thought that those who had sight were rather to be pitied than otherwise. Their curious faculty only worked at times which they called 'day', and failed altogether at times which they called 'night', but a blind man could go anywhere at night.

After sight has been restored it usually takes several months before its value is appreciated. During this learning period the eyes can be observed endlessly 'feeling' round the contours of objects.

The reason for this wandering of the eyes may be illustrated by reference to the writer's own experience. He has had four diathermy operations for detached retinas which have involved both eyes—two operations in 1950, one in 1952 and one in 1958. In three instances the area of detachment passed the macula. The interest of such operations is that they are equivalent to an experiment in which the retinas are removed and replaced in a new position. This means that previous to an operation the sight of, say, a straight line stimulated certain nerve endings and the messages transmitted to the brain were interpreted as 'straight line'. But after the operation the same straight line would stimulate different nerves and the corresponding message would normally have been interpreted in some other way. The result is that, after

an operation, shapes as seen by the 'bad' eye, are distorted. After the 1952 operation this effect was strongly marked. A straight line, for instance, appeared as A below, the main loop being at the point at



which I was looking directly. This, of course, caused a good deal of strain. It was impossible at a glance to see the shape of an object through the eye. But by looking along the contours of objects, the main bend moved along and it became possible, very rapidly, to distinguish between the permanent and objective features of a shape and the subjective distortions. Over a good many months the distortion died down slowly. It is interesting to note that the other eye compensated for the distortion—a straight line appearing as in B. When both eyes were used together the shapes of large objects could be recognised easily enough, but when objects subtending a small angle at the eye were observed (e.g. a preacher's face in the pulpit) the eyes became dominant alternately with somewhat startling results!

In view of these experiences, we can understand something of the confusion that a person who sees for the first time must feel. He will see a welter of colour and shape. But the mind will not have learned how to interpret the messages passing through the optic nerves. By moving the eyes rapidly from side to side and up and down some parts of the picture will retain permanence and some will move with the eyes. In this way it would be possible to make out large shapes, but for finer details to be perceived much time, patience and practice of eye movements would be necessary.

Now let us consider what von Senden has to say about how blind people group objects together.

Those of us whose dominant sense is sight group things together when they *look* alike—for instance, things of the same colour, or shape, or things which move in similar ways, etc.

Blind people do the same in principle, but they depend almost entirely upon a sense of feeling (taste and hearing only enter to a limited

extent). The resulting classifications or *schema* differ greatly from those of sighted persons.

One such schema is that of the 'sequence-circle' with reference points—something which by continuous touching will bring you back to the part you first touched—one or more points in the schema must be distinctive so that you know when the 'circle' has been completed. (The 'circle' has, of course, no relation to a geometrical circle.) A wheel, with some point suitably marked, would fall into this schema; but so also would a living room—for a blind person would obtain his bearings by touching the sides of the room until he is back at the starting point again. Other schemata result from similar feelings—hard, soft, cold or warm things may each be classified together.

But structural plans are also represented. One of the commonest of these is that of a trunk or cylinder round which you can put your hands. But in this schema, if you lift your hands upwards, you find that they are suddenly stopped by branch-like objects which come out of the trunk. On the ends of these you can sometimes feel smaller movable objects.

In this schema the blind classify such objects as umbrella-stands, candelabras, men and trees. There is no confusion between them, of course, for polished wood, glass, skin and bark feel quite different. But they belong to the same structural pattern.

Thus men and trees are grouped together. Both have a central trunk and objects coming out of it (limbs or branches) with further smaller objects attached to these in turn (fingers, leaves and twigs). But they differ in their feel and in the fact that limbs move more than branches.

To people with sight men and trees bear no resemblance whatever. But of one congenitally blind girl we read that after she had received her sight 'one of the most important pieces of information that she imparted to a blind friend was the discovery that men do not look like trees at all'. We have already noted that the factor of size does not enter the picture—of the same girl it is stated that if she had remained blind 'she would have gone through life with the vague impression that the tallest tree was about ten feet high'.

With this background of recently discovered knowledge it is instructive to turn to the New Testament. Many of our Lord's healing miracles were concerned with the restoring of sight to the blind (Matt. ix. 27; x. 46, 52; xi. 5; xii. 22; xv. 29-31; xxi. 14; Mark viii. 22-26; x. 46-52; Luke iv. 18; John ix. 1-7, and parallel passages). In only one

instance (John ix) is a man specifically stated to have been born blind, and in a few others we are given very brief details of what happened. But apart from the simple statement 'now I see' in John ix there is only one first-hand description of his experience by a blind man who was cured (Mark viii. 22-26).

In this one case the miracle is recorded as having taken place in two stages. Firstly, the man's sight was restored. When he opened his eyes he looked round half dazed and probably felt as bewildered as modern patients have done. Jesus said: 'Do you see anything?' He replied, 'I see men, but they look like trees, walking.'

The association of trees with men is quite unnatural except for the blind: a man with sight never confuses them. And it is obvious, too, that the man thought that men were about the same size as ordinary trees. The fact that this surprising confusion is mentioned in the gospel is a strong indication that the miracle happened as recorded.

But what did the man mean? His words *might* reasonably be taken in the sense, 'Now that I have it, sight is not much use to me after all. I cannot distinguish men from trees except that men walk and trees do not.' But with so little evidence available, we cannot be dogmatic.

Jesus laid His hands on him again. This time when he opened his eyes he looked intently or steadily (*dieblephen*) 'and was restored and saw everything clearly'. The implication seems to be that at the first stage, he did *not* look steadily—his eyes were wandering, seemingly aimlessly. This, as we have noted, is the natural reaction of those who first receive their sight. Nothing would be more natural than to say to such a man, 'Do you see anything?', meaning, 'Do you recognise anything?' Again, the story rings true.

In these few words, recorded only by St Mark, we seem to have as good evidence as we could desire that the miracle was genuine.<sup>1</sup> Not a single ancient writer, so far as we know, had an inkling of understanding about the psychological world of men born blind—for no confusion would have arisen in one who had previously seen (at least beyond the time of infancy). Besides—the cure of a man born blind would have made a more startling story. But there is no mention of this. According to the gospels Jesus often cured blind people, so there

<sup>1</sup> The word used, *apokatestathē*, translated 'restored', seems to be used in the same sense of 'cured', and should not necessarily be taken to imply that the man had previously seen. The sense could be 'restored to what it ought to be'. Thus, Mark iii. 5 uses the same word in connexion with the cure of the withered hand which was restored 'whole as the other', i.e. 'as it ought to have been' and not 'as it was before'.

would have been little point in finding out whether this man in particular had never seen before, or had been blind since infancy.<sup>1</sup>

Finally, it is worth comparing the case reported here with the much more detailed one in John, chapter ix. We note that in neither instance, so far as we are told, did the men ask to be cured. In other cases such requests were common, as in the story of blind Bartimaeus. This is natural, because a man born blind, or blind since infancy, might have little wish to see and, indeed, might have little or no conception of what seeing means.

Again, in neither case do we read that the men thanked Jesus for what He had done, or praised God for all around to hear—though again these features are common in the records of other miracles. As we have noted in the modern cases, men who have received their sight for the first time have no cause to feel thankful until much later on. In John ix it is noteworthy that Jesus waited for some time before finding the man again to tell him about the possibility of belief in the Son of Man. Immediately after he had been cured he would have been too dazed to appreciate what Jesus wished to tell him, so that the need for delay is easy to understand—we only read of delay in the case of one other miracle (John v. 14). Unfortunately, we have no record of what the man said when he first saw, but this is natural since neither Jesus nor his disciples were present at the time of the cure.

<sup>1</sup> This conclusion may be compared with that of Professor R. H. Fuller (*Interpreting the Miracles*, 1963, p. 34) who thinks that the miracle is one of the three least evidential in the Marcan record. It exhibits 'the pure form of a Hellenistic wonder-story, without any modification', and probably entered into the Christian tradition 'from a popular source outside Palestine in the Greek-speaking world'. The only evidence offered is that Form Criticism supposedly points to this conclusion (but why should not a *true* story be told in the form current at the time?) and that there is a story that the Emperor Vespasian cured a blind man by the same technique using spittle. But Vespasian did not come to the throne until around forty years after Christ's death; would there not, therefore, have been ample time for such stories of the Gospel to have reached Rome by this time, and for flatterers to have applied some of them to the Emperor?