

superficially plausible account. My own feeling is that Kennedy's work is best interpreted as indicating that internal pictures are not necessary for the production and understanding of external pictures, but the history of studies of the blind shows that their results are no less ambiguous and in need of interpretation than any other type of study {83}. We should beware of seeking for knockdown arguments, either in philosophy or science. After all, any fool can see that the Earth doesn't move.

§II.B.7. Imaginary Montages.

In §II.B.5 we briefly considered Kosslyn's view that pictorial images are not formed holistically, but are built up in the visual buffer from an assemblage of sub-images of parts. We concluded there that this aspect of his theory could only deal with ~~some~~ cases of "cognitive penetration", only then at the cost of making the image functionally redundant for these sorts of task, and, indeed, of such a fleeting, unstable nature as to make it hard to see how it could ever be cognitively useful. However, this theory of the image as an assemblage of parts, as like a **photomontage** rather than like a painting should not be thought of merely as an **ad hoc** response to the work of people like Reed and Palmer. In fact such a view is entirely traditional amongst pictorialists, and on top of this some of Kosslyn's basic theoretical assumptions

compel him to take this line.

Matthews {1} argues to his own satisfaction that mental copies, mental pictures, are quite redundant in characterizing the experience of imaging. To briefly summarise a detailed argument he claims that it is sufficient to say that imaging X is something-like-seeing (the actual) X, and to say that it is something-like-seeing something-like-X (viz. a mental picture of X) adds nothing to our understanding {2*}. Be this as it may, he points out that traditionally the pictorial image also has another more specific explanatory rôle. The fact that imagery is pictorial has been supposed, at least since Lucretius {3}, to account for just what it is that we can truly imagine (as opposed to merely suppose). According to Matthews the theory goes this way:

We get our basic stock of images through our senses; and we are able to form additional images only by taking the ones given in sense experience and 'operating' on them. Possible operations include enlarging them in whole or in part, cutting them up and putting together whole images or image parts. But each of us is limited in the formation of mental images to the image materials we have on hand and the possible operations of mental 'carpentry'.
{4*}.

Kosslyn has very little to say along these lines, indeed, although his account of images as assembled from sub-parts is clearly most appropriate here he has almost nothing directly to say about such 'images of the imaginary' at all. But Kosslyn's teacher, Gordon Bower, has spoken along such lines:

I can remember Al Newell in imagery and I

can imagine an elephant in imagery, so I can also image a scene in which Al Newell is riding on the back of an elephant, even though I know that this does not correspond to any actual scene that I have witnessed. {5*}.

Now I quite believe that Bower is able to image all these things. But I do **not** believe that he would in fact be able to freely combine memory images in this way if they were significantly like pictures. It is surely most unlikely (and surely not necessary) that Bower has ever seen Professor Newell's leg's spread in just such a way as they would be if he were riding on an elephant. Considered closely it really does not seem as though most of our imagination images could be simple montages of spatial parts of memory images, as is so often assumed. No doubt what we can imagine is in some respect limited by what we have experienced, but not in such a simple and mechanical way as the theory of pictorial imagery and "mental carpentry" would imply {6*}.

Things may be even worse than this for Kosslyn. When we move away from the sort of simple geometric diagrams used by Reed {7} and the crude pictures (like fig. II.B.1_1) produced by the Kosslyn & Shwartz {8} simulation, and towards consideration of more natural and realistic imagery, it is not at all clear that Kosslyn's theory will account plausibly for the phenomenological reality even of memory images. Note that he is explicitly committed to the position that visual information is partially processed, partially categorized, before the stage of image formation. He must, indeed, hold this or

else he would be forced to something like the absurd 'TV-hood' model, from which there would be no come back at all to even the mildest instances of "cognitive penetration" (9*). One aspect at least of this 'pre-processing' is supposed to be analysing the percept into parts (10), but it is clear that this cannot be meant to be just a matter of 'cutting-up' a direct copy of the retinal image. The parts as stored must be meaningful, labelable in fact in the presumably finite vocabulary of the inner language, so that image descriptions can be couched in terms of them. Nevertheless, it is inherent in quasi-pictorialism that these parts must themselves be quasi-pictorial; they must encode geometrically definable segments of picture (11). Thus Kosslyn & Pomerantz suggest that:

we treat images as being composed of relatively large, interpreted, perceptual "chunks", like the arms, legs, head and trunk of a person (12*).

The implication would seem to be that images must be put together from a finite number of standardized pictorial parts (which presumably can be enlarged, rotated etc., just as compound quasi-pictorial images are supposed to be), somewhat after the manner in which identikit pictures of faces are assembled for the police. If these standardized parts are given innately (13*) then this theory has the additional advantage of making the possibility of visual imagery in the congenitally blind rather less problematic. However, it may well be doubted whether such a theory is in accord with our ordinary subjective experience of imagery. Mental imagery being so

notoriously idiosyncratic, I must leave it to the reader to judge whether it sounds like a plausible model for his everyday images of familiar objects, scenes, people, and so forth. I find it entirely implausible.

Theories which have commanded popular assent for as long as pictorial accounts of imagery are hardly likely to be vulnerable to a simple knock-down argument. In fact it seems to me that even where people have claimed to accept some such argument their thoughts about imagination often continue to be infected by unexamined pictorialist assumptions. Therefore I have, in this chapter, devoted considerable space to giving this well entrenched theory the benefit of every reasonable doubt and wearing it down by attrition as it were. We have not shown that quasi-pictorial images cannot exist. What we have, I think, shown is that if they do exist then they can have little to do with imagination more broadly conceived and they do not seem well suited to play much part in many cognitive processes, even processes where we might most expect imagery to have a central rôle. The evidence from the congenitally blind seems to show that no component derived from vision is necessary to any of the functions which have received extensive experimental investigation. Also, it seems that on any viable version of quasi-pictorialism our mental pictures must be considerably cruder than most of us have generally taken them to be. Quasi-pictorial images do not seem to produce very satisfactory explanations of either the experimental

evidence or of the subjective experience of imagery.
Should we not now prefer to be rid of these turbulent
entities?