

as images, but around hypothetical physical/physiological mechanisms (55). Thus although they did not deny the experience of mental images (56), they rarely found it needful to discuss them.

§I.B.2. Attitudes to Imagery, and Individual Differences.

Dennett (1) has noted that psychologists and other people interested in the workings of the mind (which is perhaps everyone) can by and large be divided into two, seemingly passionately opposed, camps. These are the "iconophobes" and the "iconophiles", those who deny and those who assert the reality, or at least the psychological significance, of mental imagery. In the early days of experimental psychology, as we have just seen, the iconophiles were well in command. Even the Würzburg school did not deny that images are real and important, just that they are all-important. There was also a good deal of interest amongst clinical psychologists in hallucinations and other "pathological" forms of image (2). From about 1920 to 1960, however, as all accounts (3) essentially seem to agree, iconophobia reigned supreme. Even a 'fringe' area like parapsychology can be seen to turn from an interest in 'apparitions' to the study of card guessing and the like (4). In America particularly (and the United States, then as now, was very much where the psychological action was) interest in imagery not only went into decline, it is as if

it was virtually proscribed. Paivio (5) notes how various technical coinages such as the "cognitive maps" and "sign-Gestalt-expectations" of Tolman, the "fractional anticipatory goal responses" of Hull, and the "representational mediation processes" of Osgood came to be used during this period in contexts where the iconophile would, more gracefully, refer to imagery. Similarly, B.F. Skinner is willing to talk of "conditioned seeing" and "operant seeing", but not of images or imagery (6*). It is difficult to exaggerate the dominance of iconophobia in these years: Paivio regards the 1920s and 30s as "the most arid period" for the mental image (7), and Holt (8) dates the first reawakenings of interest to the mid 1950s, but even through the 1940s and 50s, it seems, *Psychological Abstracts* records no more than five references to imagery (9). This situation was reflected amongst philosophers too; H.H. Price was clearly conscious of swimming against the tide when he teased his colleagues for being "too clever" to take images seriously (10). Since the mid 1960s, however, the situation has changed again and imagery has been very much back on the psychological agenda. (Parapsychology has also again followed the trend with its interest in so called "remote viewing" (11).) Interest has continued to rise, to the extent that a *Journal of Mental Imagery* was founded in 1977, and another called *Imagination, Cognition and Personality* in 1981. This time, however, the iconophiles do not have things all their own way. Pylyshyn's paper of 1973 entitled "What the Mind's Eye Tells the Mind's Brain" inaugurated a whole new line of

iconophobic criticism {12*}.

When Francis Galton issued his pioneering questionnaire on the vividness of mental imagery {13*} he was "amazed" to find that although most people reported experiencing images of greater or lesser vividness, a few, concentrated among scientists and other intellectuals, denied experiencing any imagery at all {14*}. Such non, or at least very poor {15*}, imagers seem nowadays to form about 10-12% of the population {16}, and it seems natural to conclude (and many have) that the argument between iconophobes and iconophiles rests simply on a personal, idiosyncratic difference in visualising power. Abelson, for example, takes it as significant that:

Kosslyn [perhaps our most iconophilic contemporary] tells me that he has very vivid images, and at least one of his theoretical opponents states that he hardly has them at all. {17}.

Accepting this explanation of the theoretical differences leads to a sort of compromise view: mental images must exist (since the iconophiles, we admit, have them), but as many iconophobes manage very well without them they cannot have any significant cognitive function. At best imagery must be some sort of mental luxury or cognitive crutch, at worst they are a distraction from the business of proper 'scientific' thinking.

 Tempting as this conclusion is, as a way out of a seemingly irreconcilable dispute, I think we can and must resist it. The real stumbling-block to resolution lies not

in the personal characteristics of the disputants, but in their conceptual confusions. After all, if people's theoretical attitudes towards imagery are determined by idiosyncratic personal differences then how does one account for the historical record? Was the American psychological community from sometime before 1920 entirely recruited from the "10-12%" of non-imagers? Why did the vetting procedure break down sometime before 1960? Surely we are rather looking at a process of persuasion and change of theoretical view. Differences in subjective experience may account for some of the passion of the debate, but not, I think, for the substantive disagreement. I would like to suggest that the reported vividness and quantity of people's imagery may be at least as much determined by the views they (and their peers) hold on the topic as vice-versa. There is, in fact, some experimental warrant for thinking that such self-ratings of imagery are very susceptible to social pressures, to the desire to please whoever is asking (18*). I do not mean to suggest that people are lying, it is just that without direct access to other minds it is hard to know how to properly conceptualise our subjective experience and against what standards to judge it. Unless one is strongly committed to some theory about mental contents it is not unreasonable to take some implicit guidance from questioners who seem to know better and care more. 'Folk psychology', the beliefs of the general public about the workings of the mind, seems to be pretty iconophilic (19*), so most ordinary people normally think they experience plenty of imagery, or

perhaps we should say that they are inclined to notice the relevant experiences and to conceptualise them in imagery terms. When iconophobic theories are in the air, however, those who are likely to get to hear about them and are inclined to be impressed by theoretical argument (i.e. scientists and other intellectuals) may tend to conceptualise any such experiences differently, and perhaps to generally downplay them (20*). It may even be that they are simply reluctant to call the relevant experiences "imagery". This sort of interpretation of iconophobia seems to me to be supported by the comments made by one of the scientific 'non-imagers' replying to Galton's inquiries:

These questions presuppose assent to some sort of a proposition regarding the 'mind's eye', and the 'images' which it sees. . . . This points to some initial fallacy. . . . It is only by a figure of speech that I can describe my recollection of a scene as a 'mental image' which I can 'see' with my 'mind's eye.' . . . I do not see it . . . any more than a man sees the thousand lines of Sophocles which under due pressure he is ready to repeat. The memory possesses it, and the mind can at will roam over the whole, or study minutely any part. {21}.

I believe it will help if we distinguish certain issues over which people can be iconophobic or iconophilic. We can hope that this may prove a first step toward resolving their antagonisms. The first possible disagreement occurs over whether people ever really have at all the experiences which are commonly designated as "having/seeing a mental image", "visualising", "picturing", "seeing in the mind's eye", etc., that is, experiences which resemble (faint) perceptual experiences, but which

occur in the absence of the things that seem to be 'perceived'. Let us call the two possible positions on this "iconophobiaE" and "iconophiliaE" (E for Existence, or Experience). In fact out-and-out iconophobesE seem to be very rare. A more common position is that although such experiences may sometimes occur they have no real cognitive function, they may even hinder clear thinking, or positively deceive us (imagery may be entirely assimilated to hallucination {22*}). We may call this "iconophobiaF" (for Function), and its counterpart, that imagery plays an important, regular, perhaps vital rôle in cognition, will be iconophiliaF. (Note that iconophobiaF is a weaker position than iconophobiaE, but iconophiliaF is actually stronger than, and implies, its E counterpart.) A quite separate point of difference arises not over the existence or functional importance of mental imagery but over its underlying mechanism. The problem is that the everyday terminology of "images", "the mind's eye" and "picturing" strongly suggest a particular sort of explanation of the phenomenon; they suggest that something significantly like an ordinary material picture, yet somehow mental, is centrally involved. This indeed seems to be the form generally taken by 'folk' explanations of imagery (and sometimes by scientific and philosophical accounts too). The reasons for the entrenchment of such 'pictorial' theories, and the explanatory merits of their various varieties will be explored below in Part II. For now, however, let us call the people who accept this sort of commonsense 'pictorial' view "iconophilesM" (for

Mechanism). Those who reject it, who regard the everyday terminology of "images" as implying a radically false theory and who thus deny that there are 'real' mental pictures, will be iconophobes^M. They may or may not be led to try to avoid this everyday terminology (23*).

Now it should be apparent that iconophobia/philias^F and ^M are quite logically independent of one another (24*). You can quite well regard mental images as being picture-like yet unimportant or bad (this seems to have been Plato's position (25)), or as not involving anything pictorial yet very important (my own view, for instance). Nevertheless, there has been a strong tendency to associate the various forms of iconophilia and iconophobia together, and this, I think, has caused confusion not only in people's understanding of their opponents' views but sometimes in their self understanding as well. Galton's correspondent quoted above looks to me very much like someone who has allowed his quite reasonable iconophobia^M to push him all the way to an entirely unwarranted iconophobia^E. This, I think, is one way at least in which theoretical belief can affect introspective reports. Iconophiles^M, such as Kosslyn (26), will generally have no difficulty in recognising their imaginative life, but even Donald Hebb, who seems to be in principle an iconophile^F, has found that his iconophobia^M has severely impaired his ability to introspect his own imagery. Hebb gives quite an amusing account of how he lost his ability to see images through imagining his own 'mind's eye', and recognising the

absurdity of it {27}.

There is, it must be admitted, a particular problem facing iconophobes^M. If, like Ryle {28}, they reject the everyday "image" terminology as "misleading", and try to avoid it, they run a grave risk of being mistaken for iconophobes^E (and thus ^F also) - non-imagers misled by simple ignorance of other people's interior life. Ryle has certainly suffered this fate, for instance at the hands of Danto {29} and Lawrie {30}, and it has sometimes led, I think, to some of his arguments not being given the weight they deserve. In fact Ryle seems to have been a moderate iconophile^F {31}. Allan Paivio, by contrast, retains the "image" terminology in expounding his own strong iconophilia^F {32}, and gets taken even by his departmental colleague Pylyshyn (iconophobe^F and ^M) to be an iconophile^M also {33} - which he seems not to be {34}. My own position owes much to both Ryle and Paivio. In general I shall take the easier path and follow Paivio in using the ordinary "image" terminology - my iconophobia^M should become apparent enough.

§I.B.3. J.B. Watson's Iconophobia.

The iconophobia (^F tending strongly to ^E) which, as we noted above, reigned amongst psychologists for over forty years of this century can, I believe, be shown to be