

## IS THINKING MERELY THE ACTION OF LANGUAGE MECHANISMS<sup>1</sup>? (III.)

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### 1. INTRODUCTORY.

IN considering Professor Watson's views, I have taken them from his two published books<sup>2</sup>, and not from his later work only. For this decision there were two reasons. The first was that the 1919 statement of his beliefs has already been criticized by my three predecessors; the second, that this later account seems to bear traces of the "abbreviation, short-circuiting and economy"—to borrow his own terms—which all thought processes inevitably suffer on frequent repetition. Indeed, while reading the 1919 book, one sometimes runs the risk not only of forming language habits but even of substituting them for thinking, and of allowing to pass, in their telescoped form, some of his statements, the earlier and fuller presentation of which is far more challenging.

### 2. WHAT IS THINKING?

To define thinking rigidly and precisely is difficult. It may even involve the use of terms which, standing for ultimate things, are themselves incapable of definition. It is therefore probably more satisfactory to describe or to indicate common experiences which have fallen to the lot of most of us; to say "this is, and that is not, thinking," and thus to distinguish between thinking and the mere revival of experiences.

<sup>1</sup> A contribution to the Symposium presented at the Congress of Philosophy in Oxford, 24-27 September, 1920.

<sup>2</sup> *Behavior, an Introduction to Comparative Psychology*, New York, 1914; *Psychology from the Standpoint of a Behaviorist*, London, 1919. For the sake of brevity in the text the first of these will be referred to as "B," the second as "P."

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Let us suppose that, the time of year being March and the place somewhere in the North of England, a jaded business man is told that he must take a week's holiday. Five minutes later, being found in a brown study, he explains that he is 'thinking' whether to go to Cornwall or to the Lakes. Now, such a statement may describe at least two kinds of experience, only one of which is, to my mind, genuine thinking. His 'mind's eye' may have conjured up for him first the swirling greens and purples of the sunny Atlantic, then the peaceful snow-covered Langdales: he may feel again the sun's warmth as he lazily sprawls on Mullion cliffs or the sting of the wind and the pull on his muscles as he negotiates the Pillar. Finally, the appeal of one place or the other toppling him over, he sends his telegram North or South, and our interest in him ceases.

Now, allowing oneself passively to be tossed hither or thither by competing memories until, finally, one is cast up on some shore or other, though a common way of arriving at a decision, is not, I submit, *thinking*. Yet let us suppose that our friend, realising that to him the chief appeal of Cornwall is its lazy warmth, of Cumberland its exhilarating activity, that the first involves a long day's journey, the second an afternoon's, that the one holiday will be expensive, the other cheap, remembers that he has only a week, a slender purse, and an urgent desire for violent exercise. If, then, on the grounds of time, money and health, he chooses the Lakes, he may justifiably claim that he has "thought the matter out." Now what psychological processes does this involve?

In such an experience there seem to be the following salient features:

(i) Recall of past experiences; perhaps a faithful recall, but more probably one which is the result of processes of selection, condensation and the like.

(ii) Abstraction of their relevant aspects, under the guidance of conscious or unconscious directive tendencies, of which logical thinking and the mechanism known as the 'censorship' are special examples.

(iii) Comparison of those experiences, with the discovery of their likenesses and differences.

(iv) Re-comparison, with some aim or aims in view.

(v) Combination of the results of this comparison into some conclusion which is new for the individual himself.

(vi) Expression of this conclusion to others, or to himself, in speech, writing, gesture or action.

I am inclined to believe that unless in (v) the conclusion *is* new for the individual, it cannot without ambiguity be termed a result of thinking.

Like Dr Thomson, and for the same reason, I find it difficult to put thinking and habit into the same category. When an acquaintance says "Good morning" to you, it is unwise to take this as a proof of his 'thoughtfulness,' for (or of) you; as an expression of his earnest wish that during the present forenoon everything will go well. And such caution is certainly to be advised if, as sometimes happens, his remark be made in the evening. To call such a person absent-minded surely implies our belief that in this case his language mechanism, or language habit, did *not* express his thinking.

### 3. THE DISTINCTION BETWEEN THINKING AND ITS EXPRESSION.

But the conclusion in (v) may be unexpressed, or only partly expressed, verbally by the thinker to himself. The thinking may be 'image-less,' and wordless. Its expression, or the way in which it issues and records itself for others, is commonly in words. But this thinking and the expression of thought are as distinguishable as skating from the figure skater. We do not refer to an '8' on the ice as skating but we call it a skated figure. And for a similar reason I cannot see why we should designate as thinking the language processes which are merely one expression of it. Like Miss Smith and Mr Bartlett, I do not agree that "when we study the way a golfer stands in addressing his ball and swinging his club we are studying golf"<sup>1</sup> in any complete sense of the word 'study.' We are merely observant spectators of a temporary expression, or acute symptom. Moreover, if we think that this is studying golf, are we not exemplifying perfectly the shortcomings of most lookers-on at games, and perhaps, too, at behaviour?

To me it seems that 'golf' may mean:

- (1) The exhibition of the player's actions to others.
- (2) The 'feel,' 'look' and 'sound' to the golfer of his own temporary activity. (For obvious reasons, I am here avoiding the terms 'introspection,' 'sensation' and 'image'.)
- (3) The knowledge, which may or may not express itself in action, speech or writing, of the collection of rules, customs and traditions which constitute golf.
- (4) That kinaesthetic knowledge which the arrogance of our intellect sets aside from other knowledge, calling it skill.

If we watch the apparently careless ease of a first-class skater, and then inspect the figure which he has traced, are we studying 'skating'? If so, we are adopting a method of investigation which, unless supple-

<sup>1</sup> P. 326.

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mented, will carry us only a little way towards appreciating what the skater himself means by skating, or understanding how the geometrical simplicity of the figure is paralleled by the extraordinary physiological and psychological difficulties in cutting it. So it would seem to be with our thinking; the words which express its results to others, or even to ourselves, are often but ready-made suits which we catch up for want of better ones to hand, which clothe our thoughts but baggily and hide their individuality of outline.

### 4. THE ROLE OF IMAGERY IN THINKING.

I have tried my hardest, and have failed, to find a way of discussing briefly the subject of this Symposium without mentioning the behaviourist's attack upon the doctrine of the image. And the reasons for my failure seem to be these; first, that it seems impossible, at this stage of our knowledge, to discuss thinking without mentioning imagery, secondly, that Professor Watson's account of the commonest type of imagery—visual—seems to me questionable, thirdly, that I am far from convinced that he has made out a case for the dismissal of the image from psychology. I must therefore discuss briefly some aspects of the relations between thinking and imagery.

The raw material upon which thinking operates, and without which it cannot exist, is composed of selections from revived experiences. What shall such raw material be called? I should be inclined to say that it consisted largely of *ideas*, in Professor Stout's sense of the term<sup>1</sup>, and *notions*, in Professor Ogden's<sup>2</sup>. But this at once exposes me to criticism from Professor Watson, for an idea is a significant mental *image*, an image *plus* its meaning, and a notion is "a content of experience that sums up in a nuclear form a series of experiences which, *in extenso*, would involve sensations, *images* and affections." And it is just the "fiction" of images, with their aliases—"centrally aroused sensations" and the like—, which behaviourists assert must be destroyed. In 1914, Professor Watson admits that the inclusion of the image weakens the claims of the behaviourist, and adds that "it seems wisest, even at the cost of exposing the weakness of our position, to attack rather than to remain upon the defensive."<sup>3</sup>

The three pages which follow this statement indicate some directions along which an attack might some day be conducted, but, surely, little

<sup>1</sup> *Manual of Psychology*, London, 1904 (2nd edition), 410.

<sup>2</sup> *Introduction to General Psychology*, London, 1916, 90.

<sup>3</sup> B. 17.

else. And in 1919 the word image does not appear in his book, because Professor Watson finds that he can "get along without it" (p. viii). Yet in the intervening years scores of investigators have been studying thousands of cases in which the main focus of interest has centered upon what the ordinary psychologist calls images. The obsessive memories, dreams, and hallucinations of the war-neuroses—more especially of the anxiety-neuroses, where the behaviour and speech of the patient often triumphantly succeeded in concealing his thoughts—all these have flooded the literature of psychology. Few other psychologists, especially perhaps those dealing with hallucinations and dreams, seem to have rejected the conception of imagery, and neither those three pages in 1914 nor the 1919 book convince me that Professor Watson can dispense with it.

I hope it is clear that I am not here asserting or denying the existence of any metaphysical differences between image and percept, nor am I venturing any risky speculation as to whether they differ psychologically in 'texture.' But at present, being concerned merely with the province and methods of psychology, I cannot see that Professor Watson has adduced evidence sufficient to bring about the abandonment of the study of 'imagery' by 'introspection.' Moreover, the events which have occurred since his first book was published would appear to have made it obvious that the introspective approach in psychology cannot yet be abandoned. I am therefore inclined to agree with those writers who hold that behaviourists should widen their scheme in order to admit the image.

5. IS THE BEHAVIOURIST'S EXPLANATION OF 'IMAGELESS THINKING'  
ADEQUATE?

Let us now discuss the case in which this debatable entity, the image, becomes unimportant for the purpose of discussion or vanishes altogether; viz. that of 'imageless thought,' or, to put it more narrowly, of certain experiences termed 'awareness of meaning,' in which images are undiscoverable even by expert introspection. If such awareness of meaning be no longer 'carried by' images, even by images of words, spoken, heard or seen, this would seem to be the place for a behaviourist's theory of thinking. Such imageless awareness, leading perhaps to imageless thinking, may be 'carried by' or 'go on in terms of implicit language, or may be identifiable with implicit language itself. I include both possibilities, for I am not always quite certain whether Professor Watson favours one or the other. He says of "reasoning, imagery, etc."...

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"such processes are dependent upon language or upon a set of similarly functioning bodily habits put on after language habits<sup>1</sup>"; the latter expressing the means by which we have "short-circuited (substituted for) the word system of thought<sup>2</sup>."

Now it is just the latter which enable Professor Watson to give a negative answer to the straight question "Do we always think in terms of words?" and thereby to escape, at least for the moment, the difficult task of explaining how it is that a man may sit for an hour unable to put his thoughts into words; how we may remember the meaning of an epigram, of a poem, or of a philosophical theory and yet be utterly unable to recall the words in which it was expressed. But of such bodily habits the examples which he gives are simple movements like the nod of affirmation, the shrug of the shoulders, or "winking, which expresses a whole series of words."

Presumably, being gestures, they eke out the inadequacy of the words. We all tend to use them, for instance, when floundering in a foreign language. But is it possible to believe that a political philosopher's awareness of the meaning of 'international relations' might consist in the mere articulation of the phrase, with or without the help of a wink, however subtle? An old-fashioned psychologist, while admitting that the articulation of the words and even the wink, the shrug or the nod might bear some of the weight of the awareness of meaning, would have shifted most of the support to the image. A less old-fashioned psychologist, believing that awareness of meaning might exist without imagery, or at any rate with the most tenuous, unsubstantial shred of it, would probably admit the participation of the words and the bodily habit. But to make them solely responsible for the awareness of the meaning of, say, the theory of relativity seems going too fast. To quote from Professor Watson: "the train of thoughts going on in your mind, according to the upholders of the image, has no adequate behaviour counterpart while it is in transit."<sup>3</sup> The difficult word here seems to be *adequate*. Most people would admit that many trains of thought may have adequate behaviour counterparts, but what is the really adequate behaviour counterpart to the full awareness of the meaning of  $V - 1$ , unless it be the formation of the words or written symbols? But it is just this that many abstract thinkers deny. For if they be thinking in words (not in images of words, for that is not admitted by the behaviourists, but in actual word experiences), why, when they struggle for hours with

<sup>1</sup> B. 334.

<sup>2</sup> *Ibid.* 332.

<sup>3</sup> B. 17.

thoughts which are difficult to express, don't they just write them down and have done with it?

It would really seem that if the words are there we ought to be more conscious of them than, unfortunately, some of us are. For it seems unlikely that the behaviourist, of all persons, could wish to suppose the presence of words which are unconscious, in the sense that we have never yet been conscious of them. Yet how does he explain the common experience of waiting for a suitable epithet to drop off our pen; when we know "how we feel" about a subject, but cannot find a word? One day, in writing of a person's life work, I found myself clearly conscious not only of the aspect which I wished to describe, but also of the fact that the word in my mind—'exact'—was not the word I wanted. Next there came, to my surprise, a visual image of a flat piece of dough, upon which a ring-shaped tin cutter promptly descended, cleanly detaching from it a circular disc. Then, and not till then, my pen wrote the word for which I had been waiting,—'precise.' As far as I know, I had never before noticed the derivation of this word and its connexion with cutting. Now, if the behaviourist will allow that both the image of the pastry-cutter which came first and the word which followed, represented the meaning, we might come to terms, provided we agree that the awareness of this particular meaning, i.e. of the preciseness of the whole of a scientist's descriptive writings, was supported by, but by no means confined in, either of them.

#### 6. THE APPEAL OF BEHAVIOURISM TO CERTAIN TYPES OF MIND.

But this leads on to another question which appears to me to be inevitable,—whether some features of Professor Watson's exposition may be expressions of his own predominant kinds of imagery. If, taking some of his phrases, the reader will study the context in which they occur: the "fiction of visual imagery"; "kinaesthetic *substitutes* for imagery," when what he is describing seem rather to be kinaesthetic *accompaniments* (B. 18); "had the idea of the image not taken such firm hold upon us..." (B. 20); that under "more constructive language types of activities" he includes the plan of a novel, the painting of a masterpiece and the composition of a great opera (P. 225); "dreams are word-reactions"; and his account of his own experiences—that before tearing off the leaf of his calendar he says aloud "tear off leaf," and that if he *thinks* the words "tear off leaf," "the words *must be uttered* silently before the habitual act arises" (B. 333); that hesitation before going to the races is expressed (in the reader, according to the text, but surely

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rather in Professor Watson!) in "conflicting word processes" and "that the final word act issues" (P. 332); that "in watching a fight we tend to ward off a blow or strike a blow" (P. 108), and compare them with his statement "... closer examination leads me to deny in my own case the presence of imagery in the Galtonian sense<sup>1</sup>," this supposition seems to be justified.

One comment upon this is that it would be interesting to know how much of this knowledge was obtained by any process other than that which psychologists usually call introspection; another that the data of introspection should be verified by observations made upon large numbers of very different types of mentality; still another, that not only has Professor Watson no right to implicate the helpless reader by his use of 'we' and 'you' but that introspective study of imagery makes most psychologists, in writing upon such a subject, hesitate to use even the impersonal 'one.'

For to a visualiser, though this account of the "fiction of visual imagery" certainly seems stranger than fiction, it is hard to believe that it is truth. Take for instance the statement<sup>2</sup>: "There are probably in most cases kinaesthetic substitutes for imagery. Concurrently with the *articulated word apple*<sup>3</sup>, there arise associated kinaesthetic impulses in eye muscles. If these latter are strong, one can see how the fiction of visual imagery might arise."

Comment has already been made upon the first sentence in this quotation. The second apparently assumes (for it is difficult to give it any other meaning) that when we image an apple we faintly articulate the word. But do all of us? The other night I said to a friend that a piece of silk needed 'oiling.' At the time I said it I knew quite well that it was crumpled, and I had a perfectly clear knowledge of the process necessary to restore its shape, viz. ironing. But if my thought of the process of ironing included the "faintly articulated word" 'ironing,' or other "kinaesthetic substitutes for imagery," presumably the articulation of the word and the kinaesthetic substitutes which correspond to ironing should have prevented the mistake.

Concerning the third sentence of the last quoted statement, there seem to be two difficulties:

(1) The consciousness of the movements of the eyes necessary to fixate an apple, or even to follow its outline, is one type of mental process, that of its colours as imaged appears to be quite another.

<sup>1</sup> *Psychol Rev.* 1913, xx. 173.

<sup>2</sup> B. 18.

<sup>3</sup> Italics in text.

(2) **What** little experimental (behaviouristic) evidence we have seems to be against the probability that there is any close connexion even between the eye-movements and the shape of an object, though Professor Watson says (P. 324) "we have learned to draw objects and to *trace them with the eyes.*" This sentence seems to contradict the findings of experimental aesthetics<sup>1</sup>.

To sum up this section, I cannot help feeling that the above account may be true of the 'motor-minded' person whose visual imagery is weak, but that it should be supplemented by accounts from the large numbers of persons whose powers have been bestowed in the inverse relation. It would be leading this discussion too far from its subject to speculate to what extent the extrovert type of mind tends to welcome behaviourism, the introvert to consider it inadequate. But a discussion between Professor Watson and Mr Henry James, with, perhaps, Professor William James acting as interpreter, would have been invaluable.

#### 7. BEHAVIOURISM AND THE PROBLEM OF MEANING.

As I have indicated before, I cannot make up my mind whether the behaviourist really claims that the awareness of meaning is 'carried by' (or 'goes on in terms of) these language processes, or is identifiable with them. In either case it would be interesting to read a behaviouristic explanation of those experimental investigations of thinking which make it difficult to harmonize the laws which govern the memory of meanings with those which govern the memory of words<sup>2</sup>; why we can learn fifteen pairs of similar meanings in one repetition, each meaning being expressed in perhaps five words, while no such happy facility is displayed in learning paired vocabularies; why two meanings may be associated with the greatest ease although the words which express them have never been in consciousness together or even in immediate succession; why the second 'half-thoughts' in a series will at once associate themselves, and retroactively, with their partners in a series read some time before; why the subject may give the right thought in the wrong words. I cannot yet understand all this on the supposition that thinking consists merely in the action of language mechanisms.

When we recall Professor James's description of thought as a series of flights and perchings, it seems that the behaviourist has given us an account of some kinds of perchings, and, fascinating as it is, it reads like

<sup>1</sup> See Valentine, *The Psychology of Beauty*, London, 44 f.

<sup>2</sup> Cf. Külpe, "Ueber die moderne Psychologie des Denkens," *Internationale Monatsschrift* series, and the work of the Wurzburg school generally.

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a description of flying by an aerodrome mechanic, who sees only the last stages of the aviator's descent. But, to the upholders of the image, as well as to the behaviourist, the 'awareness of meaning' still remains an unsolved problem. Even if it turns out to be incipient behaviour, there will, probably, still be room for its study, from the inside, by introspection.