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What Do We Think With?

I wrote this paper because I was asked to contribute to a dialogue between materialists and anti-materialists. It was proposed to me that I should speak in defence of the soul; but meditation on titles with the word 'soul' in them did not start me thinking to any good effect. I finally proposed the title I have just given, because it marks a fairly clear division between materialist and anti-materialist views. Materialists would say that each of us thinks with a material part of himself; specifically, with some tract of the brain—for there is no other part of the body that we have the least reason to regard as an organ of thought. I am an anti-materialist. One form of anti-materialism is immaterialism—the view that each of us thinks with an immaterial part of him, his mind or soul. I shall examine immaterialism later; for the moment let me just point out that materialism and immaterialism are not logical contradictories and may both be false.

I shall argue against materialism by setting up three theses about thinking.

(I) *Thinking is an activity.* In Locke's phrase, we can be 'busy in thinking'. Thinking is something that can absorb us, that we can throw ourselves into whole-heartedly, that we can be distracted from or that can distract us from other things, etc. All of these ways of describing an activity fit thinking no less well than they fit physical activities like billiards or football. In this respect the verb 'think' is widely

different from some other psychological verbs, e.g. the verbs 'mean' and 'understand', which do not relate to activities. Understanding is not an activity, because a claim on X's behalf that he understood can be justified only by X's having a certain capacity, and a capacity is not an activity. Again 'What were you doing all that time?' admits of the answer 'Thinking' but not the answer 'Understanding' ('Trying to understand' perhaps is a suitable answer—with an appropriate object understood for 'understand'—but to be engaged in trying to understand is to be thinking, not to be understanding). Again, a man's *bona fide* report is decisive as regards what he thought, but not as regards what he understood; a man may look as if he understood and claim *bona fide* to have understood and yet turn out not to have understood.

I may here interject a bit of theory. The doctrine of acts of understanding is quite wrongly attributed to the medieval scholastics. Though in ordinary Latin '*intelligere*' means 'understand', medieval Latin is often a standard rendering of Aristotle's Greek, and '*intelligere*' is Aristotle's '*noein*' which is Greek for 'to think of' not for 'to understand'. '*Homo actu intelligens lapidem*' in Aquinas's Latin thus means 'a man actually thinking of a stone', not 'understanding a stone' (whatever that is), nor even 'understanding the word "lapis"'. And '*actu intelligibile*' does not mean 'actually understandable', where the '-able' and the 'actually' seem to fight it out, with a doubtful issue; it renders '*energeiāi noēton*', 'actually thought of', where *energeiāi*, 'actually', is needed to exclude the systematic ambiguity of these participles in *-ton* between being actually an object of ϕing and being ϕable. I suspect that a misconstruction of this medieval jargon may have led, historically, to the postulation of 'acts of understanding'.

Meaning something is in a rather different position; if a man professes *bona fide* to have just now meant something by what he said, then he did mean it, just as if he professes *bona fide* to have thought of something then he did think of it. And one can even tie meaning to a particular time—

'When he said — he meant —'. But there are other ways of telling that meaning something is not an act, not an episode in an activity. When the indignant father finds his house-guest teaching children to game with dice and says 'That's not the sort of game I meant!' he is not alluding to an act of meaning whereby he meant a different sort of game to be taught. And if someone tells you to start at 1 and go on writing down odd numbers in succession till told to stop, he can properly say he meant you to write 103 after 101, without himself having performed an act of meaning '103 after 101'. Nor can we be absorbed in, or distracted by or from, meaning things, as we can in regard to thinking.

This part of my paper is all taken from Wittgenstein, because I think he was right, and I'd sooner be right than original; also, because I think it may serve to correct a misunderstanding of what he was about. He is supposed to have had a long-term programme of eliminating all acts or activities of the mind, a programme that he thought he'd already pretty well completed as regards meaning and understanding; thinking, though, was a tougher problem. On the contrary: it is clear that he wanted to contrast psychological words that did relate to actual experiences and activities with those which did not; this was the whole point of such 'grammatical investigation' as I have been summarizing. And it brings out the point of saying that thinking *is* an activity if we contrast the verb 'think' with other psychological verbs that do not relate to activities.

I shall say little about the programme of reducing ostensibly categorical propositions about the activity of thinking to hypothetical propositions about what a man would overtly do in certain unrealized conditions. This is only a programme: no such analysis of any individual proposition has actually been given, and none, I think would be at all plausible. One may well wonder what the attraction of the programme is—especially when unfulfilled conditional statements are themselves so puzzling philosophically.

(II) *Thinking is a basic activity.* I speak of more basic and less basic activities in much the same way as Miss Anscombe

spoke of more brute and less brute facts (in her *Analysis* paper 'On Brute Facts'). For example, in a given context C, action (1), inscribing certain marks on paper, is (2) writing a certain English sentence; and in a context C′ (specified in more detail than C), writing the English sentence is (3) formulating a certain step in a philosophical argument. Again, in a given context C, action (1), uttering certain articulate noises, is (2) giving an order for goods to the grocer; and in the more closely specified context C′, ordering from the grocer is (3) running further into debt. (Notice that in this case the context-of-action C′ would be specified partly by negative conditions, e.g. that the man had no money to pay the debts he already had and no prospect of getting any.) In either example I say that action (1) is more basic than action (2), and action (2) than action (3); to do a less basic action always consists in doing a more basic action, a certain context of action being presupposed.

Now if action (1) is basic in relation to action (2), and action (1) is performed with an instrument N, it does not necessarily follow that we can speak likewise of performing (2) with N. Again, if action (1) can be ascribed to the instrument N as well as to the agent, it does not follow that action (2) can be so ascribed. For example, we can speak of writing an English sentence with a pen, we can even perhaps say that a pen writes an English sentence; but we can scarcely say that a step of an argument is formulated with a pen, and certainly we cannot say that a pen formulates a step of an argument. Again, if a man produces articulate sounds with his vocal organs, we may equally well say that his vocal organs produce articulate sounds; but we cannot say that his vocal organs order goods from the grocer, though we can perhaps say that he orders goods with his vocal organs; certainly we cannot say that a man runs further into debt with his vocal organs, as he runs away from his angry creditor with his legs, and still less can we say that his vocal organs ran him into debt.

One way, then, that the materialists might be wrong would be if thinking were not ascribable to any instrument

because of its not being a basic activity. Discovery of such a mistake on the materialists' part need not, however, mean that our world-view need be very different from theirs. In any case, it seems to me that thinking is a basic activity; that there is not a more basic activity in which, given the context, the activity of thinking consists. If anyone holds otherwise, it is up to him to give an account of thinking as a non-basic activity. I know of no such account that is at all plausible. Perhaps someone might hold that in a given context to think certain thoughts is to have certain mental images, feelings, unspoken words, etc., passing through one's mind; but there are fairly obvious objections—in particular, that on many occasions of thinking thoughts, there seems to occur nothing of the sort that could be relevant.

(III) *The activity of thinking cannot be assigned a position in the physical time-series.* I shall approach this thesis by stages. First, I want to call your attention to the discontinuous character of thought—the complete inappropriateness of James's expression 'the stream of thought'. This is because each thought has a content which cannot pass over by a gradual transition to another content; if I have first the thought that lions are dangerous and then pass over to the thought that tigers are dangerous, this does not happen by a continuous change from the thought of a lion to the thought of a tiger. And even if a thought has a complex content, this does not mean that elements in this complex can occur separately or successively; the thought that all tigers are dangerous cannot consist in my first thinking of all tigers and then going on to think of danger. For, whatever B. F. Skinner may suppose, 'all tigers' is a phrase that has no meaning outside the context of a sentence, because 'all' is a word that does the job of showing how a predicate latches on to a subject; and similarly there is no such feat as thinking of all tigers except in the context of a thought that all tigers are so-and-so. Likewise, though I may no doubt have an indefinite thought of danger, a thought of tigers followed by such a thought would not be a thought that all tigers are dangerous; unless the whole content of the thought that all

tigers are dangerous is simultaneously present to the thinker, no such thought occurs at all.

Thinking consists in having a series of thoughts which can be counted off discretely—the first, the second, the third, . . .—; which, if complex, must occur with all their elements present simultaneously; which do not pass into one another by gradual transition. The truth of the account is I think borne out by the vain attempts of William James, in the chapter of his *Principles* that I just alluded to, to establish the contrary. He attempts to show that in the thought (say) that the pack of cards is on the table there are successive phases, in which elements corresponding to the separate words of this *that* clause are severally and successively prominent; that even formal words like 'is' and 'if' and 'or' have meaning because they correspond to feelings of transition that are part of the stream of thought; that the content of a thought is not something expressible in language and communicable to others, but something that you can only recollect if you reproduce 'the thought as it was uttered, with every word fringed and the whole sentence bathed in that original halo of obscure relations'. It would take a long time to show all that is wrong in James's way of regarding the matter; I can now only say briefly that James's description of thought blurs out the logical features of thought, and makes it impossible to see why one cannot *think* nonsense though one can *talk* nonsense. (If you write down a nonsensical *that* clause after 'Smith has the thought . . . ', the whole sentence will be nonsense and thus cannot be a true report of what Smith thought; but there is no such difficulty about quoting the nonsense Smith talks.) Indeed, James expressly says that 'subjective sense' is a matter of a 'feeling of rational relation'. It is not surprising that later in his career James should have solemnly said 'I renounce logic'; I suppose it was in much the same spirit that Humphrey in his book on *Thinking* spoke of 'freeing psychology from the shackles of logic.'

If thoughts occur not in a Jamesian stream, but as I maintain that they do—as a series in which certain thought-

contents successively occur, with no succession within any one thought and no gradual transition from one thought to another: then these thoughts, if they have position in the physical time-series, must occur either *legato* or *staccato*—either one thought's ending must immediately be the beginning of another thought, or there must a be time-gap of thoughtlessness in between thoughts. But are we in fact tied down to this alternative? Pains and other such sensory processes may be long or short, continuous or intermittent; but in spite of Longfellow's 'long, long thoughts', I do not think a thought (say, that the pack of cards is on the table, or that Geach's arguments are fallacious) can significantly be called long or short; nor are we obliged to say that in that case every thought must be strictly instantaneous.

The difficulty felt over saying that a thought need be neither long, nor short, nor instantaneous comes about, I suggest, from a (perhaps unacknowledged) assumption of a Newtonian or Kantian view of time: time is taken to be ogically prior to events, events on the other hand must occupy divisible stretches or else indivisible instants of time. If we reject this view and think instead in terms of time-relations, then what I am suggesting is that thoughts have not got all the kinds of time-relations that physical events, and I think also sensory processes, have. One may say that during half an hour by the clock such-and-such a series of thoughts occurred to a man; but I think it is impossible to find a stretch of physical events that would be just simultaneous, or even simultaneous to a good approximation, with one of the thoughts in the series. I think Norman Malcolm was right when he said at a meeting in Oxford that a mental image could be before one's mind's eye for just as long as a beetle took to crawl across a table; but I think it would be nonsense to say that I 'was thinking' a given thought for the period of the beetle's crawl—the continuous past of 'think' has no such use. (The White Knight 'was thinking' of a plan in that he *thought* certain thoughts successively; and for each individual thought 'was thinking' would have no application.)

The feature of thinking for which I have just been arguing may well lead us to reconsider whether we ought to accept Thesis (II). For one way that we might readily explain why it is impossible to assign to individual acts of thinking a position in the physical time-scale is that thinking is not after all a basic activity. If a more basic activity is clockable, the same may not hold for a less basic activity performed in performing the more basic one. In a given context, which includes the subsequent drinking of the poison and the death of the victim, a man's laying poison for his wife is an act of murder; the laying of the poison is clockable, but when was the murder committed? When the poison was laid, or when it was drunk, or when the wife died? This is a matter for legal decision and it might be legally important, but philosophically speaking there is no right answer—the murder is not clockable. There is no mystery about this, no reason to say that murders occur in a non-physical time-scale; for murdering is not a basic activity, and the basic events involved—the laying of the poison, the drinking of the poison, the victim's illness and death—are all of them straightforwardly clockable. Similarly, if thinking were shown to be a less basic activity in relation to certain clockable activities, we might perhaps cease to be puzzled by the fact that some questions about the time-relations of thinking to physical events are in principle unanswerable. This, I think, is the point at which my argument should be most closely scrutinized. But so far as I can see, thinking *is* a basic activity.

If thinking is a basic activity, the truth of Thesis (III) entails that materialism is false—that thinking is not the activity of the brain or of any bodily organ. For the basic activities of any bodily part must be clockable in physical time in a way that thinking is not. No physiological discoveries could establish that thoughts occurred precisely when certain brain-processes occurred; and *a fortiori* the suggestion that the brain-processes might be identical with the thoughts does not even deserve discussion.

Materialism, then, is false: but it does not follow that

immaterialism is true. You will remember that for present purposes immaterialism is the doctrine that a man thinks with an immaterial part of himself, his mind or soul. There is no direct way of inferring this from the falsity of materialism. If a man does not think with a material part of himself, we cannot infer that he does think with an immaterial part of himself; unless we first assume that in any event a man thinks with some part of himself, which may be material or immaterial. Indeed, it is difficult to make sense of the expression 'immaterial part', even if you say 'constituent' instead of 'part'.

It is a savage superstition to suppose that a man consists of two pieces, body and soul, which come apart at death; the superstition is not mended but rather aggravated by conceptual confusion, if the soul-piece is supposed to be immaterial. The genius of Plato and Descartes has given this superstition an undeservedly long lease of life; it gained some accidental support from Scriptural language, e.g. about flesh and spirit—accidental, because a Platonic-Cartesian reading of such passages is mistaken, as Scripture scholars now generally agree. In truth, a man *is* a sort of body, not a body *plus* an immaterial somewhat; for a man is an animal, and an animal is one kind of living body; and thinking is a vital activity of a man, not of any part of him, material or immaterial. The only tenable conception of the soul is the Aristotelian conception of the soul as the form, or actual organization, of the living body; and thus you may say a man thinks with his soul, if you mean positively that thinking is a vital activity, an activity of a living being, and negatively that thinking is not performed by any bodily organ.

In our present experience we encounter thought as an activity of organisms. But since thought is in principle not locatable in the physical time-continuum, as the vegetative, and I think also the sensitive, activities of organisms are, there is a logically open possibility that thought should occur independently, not as the activity of a living organism. We can even conceive, I think, of there being evidence that this possibility were realized. For thought, which is only

contingently connected with the physiological processes in a human body, is more than contingently connected with the characteristic works and expressions of thought: in particular with language. The non-contingent connexion of thought with language, the intrinsic intelligibility of language structure, is shown in the fact—rightly emphasized by Wittgenstein, often ignored by psychologists—that we can express new thoughts with old words and can understand an impromptu; nothing could be more inept than to call the speaking or understanding of language a matter of 'learned reactions'. It is this intrinsic intelligibility of language that makes translation machines work. The origination of the logical structure embodied in language is not just evidence of thinking; it *is* thinking, and its relation to language is one of formal, not efficient, causality. (I do not say this is the only sort of thinking.)

This much premised, let us imagine that over a period of time a roulette wheel gives only the numbers 1 to 26, and that this sequence of numbers spells out English sentences according to the obvious code (A = 1, B = 2, etc.) Let us further imagine that this goes on although the most elaborate precautions are taken against physical tampering with the wheel. All of this is clearly possible and raises no conceptual difficulties. I submit that we could then have conclusive evidence that the thoughts normally expressible by the English sentences in question were being originated, and strong evidence that they were originated by no living organism. The question how the thoughts could be supposed to 'influence' the roulette wheel appears to me a spurious one; I have already sufficiently described how the thoughts would be embodied in the numbers spelt out by the wheel; and it is just a mistake to suppose that we need to add a story about para-mechanical transference of para-energy, or that such an addition would be intelligible.

This and the like examples can show the possibility of disembodied thought; thought unconnected with any living organism. And some continuing disembodied thought might have such connexion with the thoughts I have as a living

man as to constitute my survival as a 'separated soul'. To be sure, such survival must sound a meagre and unsatisfying thing; particularly if it is the case, as I should hold, that there is no question of sensations and warm human feelings and mental images existing apart from a living organism. But I do not want the prospect to be anything but bleak; I am of the mind of Aquinas about the survival of 'separated souls', when he says in his commentary on I Corinthians that my soul is not I, and if only my soul is saved then I am not saved nor is any man. Even if Christians believe there are 'separate souls', the Christian hope is the glorious resurrection of the body, not the survival of a 'separated soul'.

I have said nothing so far about the ascription of thinking to machines. On this matter I shall be quite brief. Machines manifestly have no life, no sense, no feelings, no purposes except their makers'; there is just no question of ascribing to them the activity of thinking. I may be challenged, e.g. to define life, since I say machines have no life. But I am not logically bound to notice this challenge; to think I am bound to is simply an old fallacy—we might well call it Socrates' fallacy—which infers lack of knowledge whether a given thing is X or not from inability to produce a criterion for Xness that will work even in the odd or marginal case. And we just do know machines are not alive, even as we know Queen Anne is no longer alive; the case is not odd or marginal.

I have argued that thinking is an activity that cannot possibly be performed by any organic part of a living being. But even if this were possible, it would leave thinking as a vital activity, which can only be performed by a living being. And whereas a man can walk with an artificial leg, it would be an absurd fantasy to imagine his going on thinking with an artificial *Denkapparat* which was substituted for a damaged brain. Even if a brain thinks, a prosthetic 'brain' would not.

The arguments used to the contrary are often frivolously bad. For example: that machines sometimes surprise their makers, so presumably they have minds of their own. Or:

that we need not bother about machines being inorganic, because this objection to regarding them as alive could be got over by using wooden or plastic parts. Or: that a machine manifests something like vanity behaviour when, being constructed to seek light sources, it oscillates to and fro in front of a mirror (because of the mirror's virtual image). Such arguments give an impression of willing self-deception. And it is really sinister when those who then deceive themselves envisage a future where man will have constructed machines which not only really think but think much more wisely than we, and can be profitably consulted on such important matters as how many babies to allow to be born and when to start massacring our enemies. It is a suitable Nemesis of human pride that men should thus be getting ready to perform acts of brutish idolatry—to humble themselves before the superior minds that they, like the heathen before them, believe they can get to inhabit inanimate artefacts.