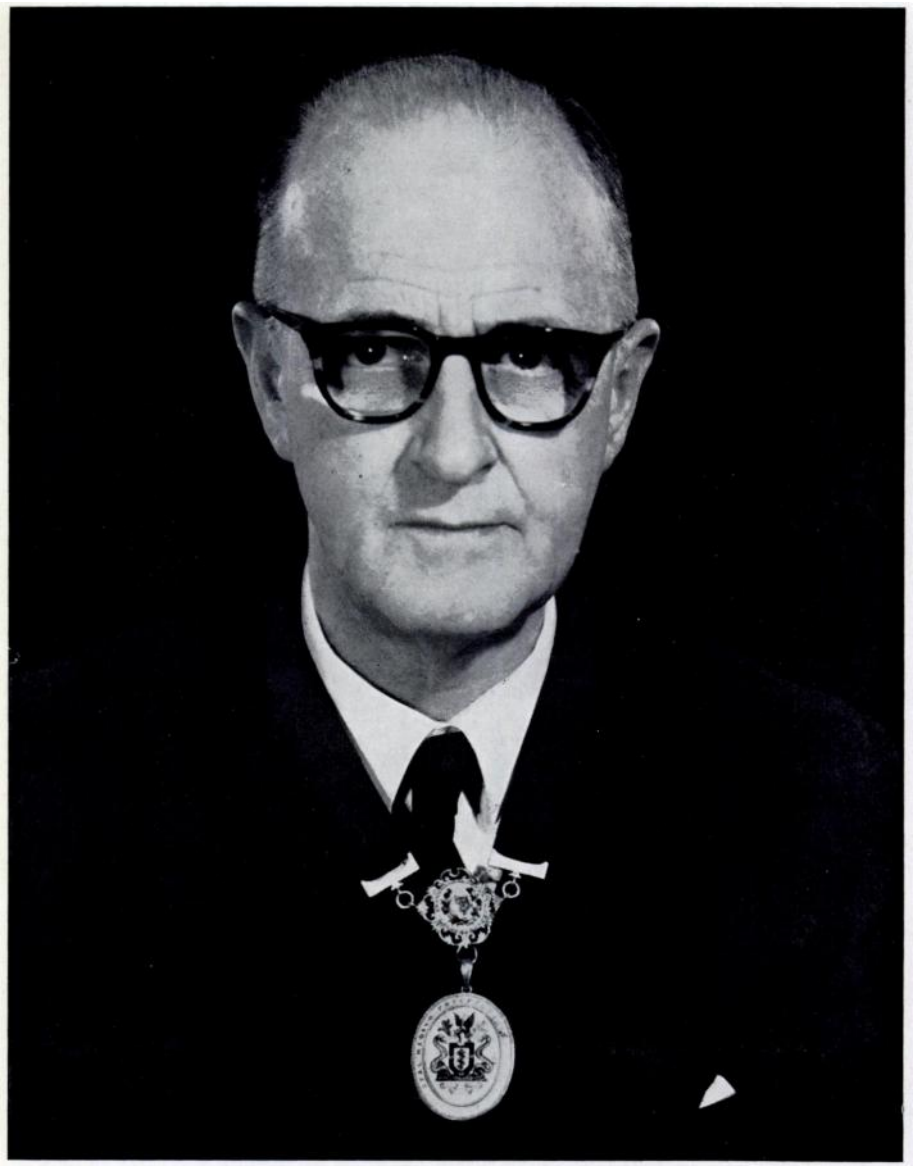

WILLIAM McCARTAN
President 1961-62

[*Frontispiece*

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

THE
JOURNAL OF MENTAL SCIENCE

[*Published by Authority of the Royal Medico-Psychological Association*]

No. 450 [NEW SERIES NO. 414] SEPTEMBER, 1961 VOL. 107

Original Articles

MONISM AND DUALISM:
NEW LAMPS FOR OLD

THE PRESIDENTIAL ADDRESS AT THE ONE HUNDRED AND TWENTY-FIRST ANNUAL MEETING OF THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION HELD AT QUEEN'S UNIVERSITY, BELFAST, ON 5 JULY, 1961

By

WILLIAM McCARTAN

THE Presidency of this Association carries with it an opportunity for service commensurate with the challenge of the time, and I am grateful that you should think me worthy of this high honour and fit for such responsibility at a crucial phase in the development of psychiatry. Events will show whether you have been wise in your choice, but however that may be you can be sure of my utmost effort on behalf of the Association.

One of the first duties of a newly-installed President is perhaps his greatest ordeal—the Presidential Address, with its problems of choice of topic, selection of a suitable title and presentation of subject matter. This is no problem to some, but I share the perplexity of a number of my predecessors.

When Dr. Michael J. Nolan was President on the only other occasion on which the Annual Meeting has been held in Northern Ireland, he commented on the difficulty of finding a subject which is both novel and of common interest.

My subject has not been of general interest to psychiatrists, although by the same token it is novel, since dualism-monism, if touched on at all, is rarely discussed in psychiatric text books or literature—even in psychosomatic contributions; an exception to this is the Presidential Address of Dr. Stanley Cobb to the American Psychosomatic Society in 1956 (1). In my view it is a pity that psychiatrists have not given more attention to this matter since, apart from the intrinsic importance of the central issue of mind-brain relationships, it has considerable influence on current thought and outlook.

Neurologists do not share our diffidence in discussing mind-brain relationship and it is more probably fortuitous that the subject was first chosen in the 13th of the series of Hughlings Jackson Lectures (2), rather than that its previous avoidance had been, as Sir Francis Walshe suggests, due to discretion on the part of his predecessors.

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

Neurologists join physicists, philosophers and physiologists in what might be described as applied metaphysics to the extent that a recent writer in the *Lancet* (3) coined the term "neurosophy" for a cult of the last two or three decades.

I may be showing less than average discretion in setting out to have a look at the sense and sequence of the erudite, at the historical setting of the controversy and its effect on contemporary thought. There is ample scope for other psychiatrists to do better. My survey must perforce be of the most sketchy nature because the literature is vast.

The metaphysical approach is well over 2,000 years old, the scientific about a hundred, or three hundred at the most if one includes René Descartes' speculative science.

Metaphysical concepts are as diverse as they are personal, controversial and inconclusive, and the depth of much of the literature is a tax on the understanding of the reader. The philosopher is, as Sir Russell Brain (4) has pointed out, unfamiliar with problems which daily confront neurologists and psychiatrists. His ideas of mind-brain relationship can therefore have only limited direct application to these specialties. Occasionally however the philosopher will show the way, as when Herbert Spencer inspired Hughlings Jackson's work. Even when some writing is so abstruse as to be barely intelligible it may indicate new avenues of thought, as when Immanuel Kant showed that time and space are not inherent in things although applicable to our experience of them; an idea which is highly relevant to any attempted physical concept of mind.

Whatever contribution metaphysics has made, much of it is naïve in the light of modern medical and scientific knowledge, but in turning away from metaphysics much modern thought has turned its back on philosophy as a whole and has thereby lost a guide and control in speculation.

I feel that the 20th century errs more in this respect than the 19th, and do not agree with Sir Francis Walshe (2) when he talks of " . . . the inevitable fruit of the divorce of natural science from metaphysics to have achieved which was the empty triumph of the 19th century".

It seems to me that leaders of thought in the 19th century as represented by Thomas Huxley, John Tyndall, Henry Maudsley, Hughlings Jackson and Francis Galton were able to combine a broad scientific outlook with philosophic insight and profundity of thought with lucidity of expression, whereas increasing specialization of the 20th century is, to some extent at any rate, offsetting scientific advance by narrowing perspective.

Broadly speaking, dualism postulates the co-existence of body and mind, monism their continuity and identity. In Descartes' dualism the divide was absolute and unbridgeable but it is probably true to say that dualist thought now conceives contact and concomitance between, but not continuity of, mind and body; to the monist, however, mind seems to be merely a complicated integration of known patterns in the central nervous system.

This is an over-simplification. In metaphysics there are two dualisms of mind and matter, heterogeneous and hypothetical. According to the former both mind and matter are each absolute; the latter holds that, although mind cannot bridge the chasm to know matter, it is compelled by its own laws of cause and effect to postulate matter as the origin if not the cause of its sensations (5). Hypothetical dualism is perhaps the one most favoured today. According to it consciousness is of two kinds, sensation and reason, the latter entirely separate from all the data of experience.

I should interpose here that no comment of mine this afternoon should be

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

taken as having any theological implication even when, in discussing dualism, I refer to Descartes' identification of soul with mind and his location of soul in the pineal body; or when I mention the paradox of what appears to me to be the liberalization of religious thought in the last 80 years—a liberalization which strengthens, in contrast with a tendency to dogma and intolerance in certain scientific circles which must impair objectivity.

Monism is much younger as a philosophy than dualism (6), having been introduced by Wolff in Germany about the beginning of the 18th century as the opposite of dualism. It was felt that reality is just one substance and that everything is merely part of that ultimate substance. The monism which identifies ultimate reality with matter or physical energy is materialistic monism; that which identifies ultimate reality with mind or spirit is psychical monism. Many other varieties appear to me to be of purely metaphysical interest. Monism in metaphysics moves in circles of meaning, some parts being barely distinguishable from dualism, e.g., Spinoza's logical monism which combines more than one irreducible minimum. There is even a dualistic monism which is neither material nor physical but expresses itself in these parallel ways.

Dualism should be considered against what Thomas Huxley (7) described as "the parallax of time" which as he says "helps us to the true position of a conception as the parallax of space helps us to that of a star".

Dualism is associated more with the name of René Descartes than anyone else. Apart from his religious upbringing Descartes' concept of soul and body was inherited through the Scholastics and medieval Churchmen from Greek thought, and this in turn derived from the ancient Orphic cult and from the effect on Greek thought of the Zoroasterian mystic dualism of spirit and matter with which Alexander's soldiers came into contact in the Persian campaigns. Dualism has influenced human outlook since—it marks thought at every stage of recorded history.

Runes quotes Whitehead as saying that Descartes' dualism "poisoned all subsequent philosophy" and Bronowski and Mazlish (8) say that it is ironical that the man who introduced the idea that the structure of the earth is mathematical and logical should have introduced into modern philosophy "the dualism of mind and body which has plagued thought ever since". However Sir Geoffrey Jefferson (9) found Descartes' views very apposite to the present day, which according to him has become "more Cartesian than it realizes". The truth inherent in both these apparently conflicting statements lies in the fact that Descartes stood between classical and modern thought in that his concept of soul and body approximated to that of Plato and Aristotle, whereas his idea of the universality of mathematics and his concept of the analogy of mechanical activity with bodily function anticipated cybernetics.

There is nothing unusual in the paradox of Descartes' idealistic dualism with mechanistic outlook. For example, Bertrand Russell (10) describes Pythagoras as a combination of Einstein and Mrs. Eddy, and we find anomalies of thought nearer our own time. Thomas Huxley was agnostic but rejected materialism, Pavlov was militantly materialistic but is said to have resented being described as a mechanist (11). There is therefore no need to invoke the derogatory to explain Descartes as Pavlov (12) has done when he attributes Descartes' alleged inconsistency to an expediency in avoiding offence to the Church.

One might have expected more uniformity of outlook and conformity of opinion as science advanced its frontiers and consolidated its gains. If anything, the reverse has been the case and controversy has heightened. At the same time

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

theological attitude to scientific discovery is altering sensibly, has become more liberal and is no longer on the defensive. The paradoxical situation is, therefore, that whilst religion now seems to accept scientific discovery with equanimity and even welcome, science in some quarters in relation to mind-brain relations is becoming dogmatic and resentful of other views. Thomas Huxley (7) said nearly a century ago in this University: "The growth of science has not introduced new difficulties of principle into theological problems, it has merely given visible body, as it were, to those already existing."

According to A. N. Whitehead (13) religion and science have always been in a state of continual development and "there has always been conflict between religion and science". I agree with the former but as to the latter, in the main, it seems to be past tense as far as theologians are concerned.

Religion was still suffering from the shock of the publication of Charles Darwin's book *The Origin of Species* in 1859 when Wilberforce, Bishop of Oxford, attacked Huxley in 1860 with an insulting gibe about his ancestry, but 14 years later when Tyndall delivered his Presidential Address to the British Association here in Belfast (1874), although it was attacked in some quarters, condemnation was probably already less unanimous, as shown by the fact that one religious paper went so far as to describe it as "patting religion on the back".

Despite the relevance to current thought of views such as those of Kant and Bergson on space and time it is perhaps true to say that on the whole science began to replace metaphysics with Herbert Spencer's concepts on which so much of Hughlings Jackson's work on the evolution and dissolution of the central nervous system was based. The change seems to coincide more or less with the appearance of modern neurology, which has moved the divide between body and mind from between body and mental function as a whole—or soul, as Descartes would have said—to that between the physical basis of perceptual function, emotion and memory on the one hand, and on the other hand the realm of conceptual thought including aesthetics and ethics.

But the divide remains; it has only shifted, and in this sphere, when he speaks beyond clinical experience, the psychiatrist or neurologist does so with no greater authority than the philosopher. Lord Samuel (14) says: "The meeting place between mind and matter in our own experience is not where we had supposed it to be; it is not at the boundary between body and not body, but is internal. This, however, does not solve the problem, it merely shifts it."

Thomas Huxley is, I suppose, usually taken to epitomize an aggressive scientific outlook and to have held materialist views, which in fact he and for that matter Tyndall and Hughlings Jackson all repudiated. Huxley got his reputation from his reaction to attacks launched in the name of the Church, as when he reproved Wilberforce or talked (7) of "being deafened by the tattoo of 'the drum ecclesiastic' ". But he was attacking individuals and the pretensions of individuals and not the Church as such nor the sincere belief of others. He disputed the idea (7) that ecclesiastical eminence conferred authority to sit in judgment on scientific matters, but this was a general principle against any eminence which presumed beyond its experience. He did not deprecate the views of others, however robustly he may have disagreed. Thomas Huxley and John Tyndall seem to have what Bertrand Russell (15) had in mind when he said that it is one of the rarest gifts to be able to hold a view with conviction and detachment at the same time. Huxley somewhere refers to science as the Cinderella and theology and philosophy as the Ugly Sisters and he related consciousness with molecular change (7), but four years earlier he had told the

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

Cambridge Young Men's Christian Society in a lecture on Descartes' Discourse on Method that "when materialists stray beyond the borders of their path and begin to talk about there being nothing else in the Universe but Matter and Force and Necessary Laws . . . I decline to follow them" (7).

His biographer, William Irvine (16), seems to me to misinterpret Huxley when he says "he threw away the mind in order to preserve the brain in all the sharp precise integrity which his faith and his appetite for clearness demanded".

Huxley's contemporary and friend, Tyndall, showed that he believed in psycho-physical parallelism when he said (17) in his Presidential Address to the British Association here in 1874, "We can trace the development of the central nervous system and correlate with it the parallel phenomena of sensation and thought. We can see with undoubting certainty that they go hand in hand. But we try to soar into a vacuum the moment we try to comprehend the connection between them." This is very like Sir Russell Brain's description of mind as "the great amphibian . . . for though it is linked through the brain to the world of matter it moves in its own sphere as though it could soar above the physical" (18).

I should interpose here that Sir Charles Sherrington (14) said of Tyndall: "The oracular Professor Tyndall, presiding over the British Association in Belfast, told his audience that as the bile is a secretion of the liver, so the mind is a secretion of the brain." Such naïve hypothesis is quite out of keeping with Tyndall's breadth of perspective. I can find no reference whatever in his Address to such a view—to what Maudsley had described (19) seven years earlier as "the crude proposition of Cabanis that the brain secretes thought as the liver secretes bile" which according to Maudsley had "been a subject of much ridicule to those who have not received it with outcries of disapprobation and disgust".

Hughlings Jackson (20) was likewise dualistic in outlook and quotes Herbert Spencer with approval as insisting on the absolute distinction between states of consciousness and nervous states. Jackson's views of brain-mind relationship was one of contact without continuity, "a parallelism between a certain physical evolution and the correlative psychical evolution". In laying down an absolute distinction between states of consciousness and nervous states Jackson warned against "a materialism . . . as to mind which is not materialist at all". At the same time he recognized that, whether high or low level, nervous tissue is basically identical and "it would be marvellous if at a certain level whether you call it evolution or not these (nervous centres) were changed into centres of a different kind of constitution".

Whereas Tyndall and Hughlings Jackson believed in a parallelism which is dualistic, Huxley and Henry Maudsley were epiphenomenalists (21), i.e., mind was regarded as something incidental to the organism in which it occurs—a materialistic monism.

I have considered Tyndall, Huxley and Jackson at some length as it seems to me that the bifurcation of materialistic and idealistic thought inherent in Descartes' thinking was little less marked in some biological thought in the 19th century.

As I have already mentioned, the word dualism appears in few psychiatric textbooks but Jelliffe and White (22) in the 5th edition of their textbook *Diseases of the Nervous System* describe dualism as the quite arbitrary separation of the individual into two distinct and mutually exclusive parts—body and mind.

This is another oversimplification and is misleading since, in dualism,

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

however separate body and mind may be, they are *not* mutually exclusive. Indeed, although dualism and monism are opposites, their one point in common is a holistic view of the individual and his setting. Erwin Schrodinger, Professor of Physics in Vienna (23), refers to "this one thing, mind and world". Although to me Schrödinger's outlook appears to be dualistic, this quotation seems to come very close to that of Spinoza's "logical monism" (10) which conceives the world as "a single substance, none of whose parts are logically capable of existing alone".

Another cause of misunderstanding in this controversy may be the identification of the problem of dualism-monism with vitalism-mechanism, on which the discussion is whether living and inanimate are continuous. Sluckin (24) points out that these problems are logically separate. One is not necessarily the counterpart of the other. The assumption that they are identical may perhaps be part of the apparent paradox of Descartes' dualistic outlook—a belief in soul and animal automatism.

Sir Charles Sherrington (25) led 20th century dualistic thought. He described mind and brain as "disparate; not mutually convertible; untranslatable the one into the other". He also gave a new slant to the holistic philosophy of Jan Smuts (26), which regards mind as a whole which is greater than the sum of its parts. Sherrington's holism (25) regards the mind as "other than" instead of "greater than" the sum of its parts.

Before he gave the Gifford Lectures in 1937—published in 1938 as "Man On His Nature"—Sherrington had already been the subject of a vituperative attack by Pavlov because of dualistic views in *The Brain and its Mechanism*. A stenographic record (12) of one of Pavlov's Wednesday seminars quotes him as saying, "Gentlemen, can any of you, who have read Sherrington's booklet, say anything in defence of the author? I believe this is not a matter of some kind of misunderstanding, thoughtlessness or misjudgment. I simply suppose that he is ill, although he is only 70 years old, and that there are distinct signs of old age, of senility."

This is a measure of the intolerance of which a great mind is capable. Pavlov's question was, of course, purely rhetorical—no one at the Conference did, or was expected to, say anything in defence of Sherrington.

Coming nearer home we find Professor Gilbert Ryle announcing in the opening pages of his book *The Concept of Mind* (27) his intention of speaking often of what he describes as the Descartes' myth with "deliberate abusiveness as the 'dogma of the Ghost in the Machine' ", and saying, "I hope to prove that it is entirely false and false not in detail but in principle. It is not merely an assemblage of particular mistakes. It is one big mistake and a mistake of a special kind. It is, namely, a category mistake." In another contribution (14) he concludes that " 'Mind' and 'matter' are echoes from the hustings of philosophy and prejudice the solution of all problems posed in terms of them."

The attitudes of Pavlov and Ryle are surely the opposite of conviction held with detachment which is so important in scientific and philosophic outlook.

Sir Francis Walshe (2) refers to "the chill physico-mathematical concept of the human mind" as "a muddy vesture of decay" and Lord Samuel (14) warns against addiction to what he describes as "the philosophic craving for unity".

Descartes' views on body-mind relationship were combined with what is to us a mediaeval physiology of hollow nerves, movement of animal spirits, the concentration of blood vessels around the imagined seat of the soul, the con-

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

version of the most active and quickest particles of blood into animal spirits. He is described as an unwearied dissector but his dualism was not influenced by this or by what was already known anatomically and physiologically. For example, his outlook was untouched by Vesalius' work on cerebral anatomy 100 years before or by Harvey's discovery of the circulation of blood which took place during his own lifetime.

It may be that the issues of dualism monism were more clear-cut against the sharp dualism of Descartes or in the parallelistic outlook of Tyndall and Hughlings Jackson than they are today against the background of modern neuro-anatomy, neuro-physiology, histochemistry, biophysics, current cybernetic analogy of mind and machine and Pavlov's study of higher nervous activity. Concepts such as reverberating circuits as a possible physical explanation of memory and the application of the electronic principle of negative feedback to the central control of goal-seeking activity, an understanding of the physiology of emotion and increasing knowledge of the physical basis of perception are tending to shift the divide between body and mind and leaving it less clearly defined.

To Cobb (28) "it can be maintained philosophically that an understanding of the physiology of perception is the basis of psychology and hence of psychiatry". He regards mind as an abstraction denoting the active integration of billions of nerve cells and hundreds of nuclei in the living brain, "it is merely so complex it is difficult to comprehend" which is consistent with his view that "the ultimate goal of science is a universal monism" (1).

The reverberating circuit theory is incidentally not a 20th century notion. Huxley (7) anticipated it in his Address to the British Association here 87 years ago when he said: "Hartley supposes that the vibrations excited by a sensory or other impression do not die but are represented by smaller vibrations", and added "Haller has substantially the same idea but contents himself with the general terms 'mutationes' to express the cerebral change which is the cause of a state of consciousness. These 'mutationes' persist for a long time after the cause which gives rise to them has ceased to operate . . . ".

It is difficult to keep up with Ritchie Russell when in relation to the frontal lobes he says (29), "Here perhaps we find the physiology of the psychoanalyst's super ego, a vast array of power in certain cell layers of the cortex built up by the physiological elaboration of the hypothalamic home of primitive instincts."

Russell thus finds a place in his mechanism for psychotherapeutic concepts in contrast with the attitude of Warren McCullough who according to Sluckin (24) describes "what are known as the analytic or psychodynamic theories in medical psychology as so much nonsense". McCullough (24) apparently believes that "the functional psychoses are due to improper voltages at nerve cells which function like local-battery-operated electro-magnetic relays; neuroses occur when some of the negative feed-back loops become positive and regenerative". One wonders what essential difference is there between such reasoning on mind-brain relations and the often derided conclusions of Descartes on soul and body 300 years ago?

Attempts to formulate "mind" within the compass of physical concepts are unrealistic. Erwin Schrödinger (23) says, "This one thing—mind and world—may well be capable of other forms of appearance that we cannot grasp and do not imply notions of space and time." As already mentioned, Kant held that time and space are "not inherent in the objects of our knowledge but are something we put into them by our methods of observation" (30) and Ryle

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

points out that any fear of what he describes as the "Bogey of Mechanism" is baseless since "not all questions are physical questions" (27).

The views of Sir Russell Brain on perception—the importance of an understanding of which Cobb has emphasized in this context—have been dealt with in many publications such as *Mind, Perception and Science* (4), *The Nature of Experience* (31) and *Perception and Imperception* (32). This latter was the Thirtieth Maudsley Lecture and in it he remarked that it is an error in semantics if, either on the monist or parallelist basis, one believes that physical laws regulating the nervous system approximate to the mind.

The rarity of an ability to hold views with conviction and detachment and the frequent lack of attention to the history of thought are reasons why discussion often turns to controversy leading to anathemas.

Another difficulty is that soul and mind are frequently used ambiguously —synonymously or differentially without indication. The *Encyclopaedia Britannica* (14th edition) does not help, in that soul is not even mentioned in its Index. The three souls of the Ancients—the vegetative, the sensitive and the reasoning—persist in the structure of our language and soul may be taken to refer to either the immaterial part of man, the disembodied spirit, the moral or emotional part of man or the intellectual part of man. Descartes used it in the sense of the latter two in his physiological writing, though its other significance was always in his thought. The *Epigram* by Francis Quarles is a classic example of the identification of soul with mental function:

> "My soul, sit thou a patient looker on;
> Judge not the play before the play is done.
> Her plot hath many changes; every day
> Speakes a new scene; the last Act crowns the play."

Further confusion arises from the fact that mind is talked and thought of as a substantive—as a thing—when in fact, as Asher (33) has pointed out, it is merely a convenient term to embrace thinking, perceiving, memorizing, consciousness, ethics, aesthetics and similar attributes of living. Practical evidence of this confusion is seen in medico-legal relations in that lawyers seem to find it difficult to arrive at a common understanding of mind with doctors who are inclined to think of it more dynamically.

In *The Concept of Mind* Professor Ryle (27) comments on the variety of meaning attached to the words "conscious" and "consciousness", e.g., discovered, embarrassment, heeding, sentience and the Freudian idea of the unconscious. There is little doubt that many difficulties and misunderstandings in this matter and in psychiatry in general would be lessened if more attention were devoted to that branch of philology which is concerned with meanings.

Eliot Slater (14) says, "The ambiguities and contradictions which are involved when we make use of such words as 'consciousness', 'mind', 'free will' which now seem so insuperable, may yield to quiet investigation, or may be shown to be but verbal and the result of our asking ourselves the wrong sort of question. What we already know does however suggest that the relationship between body and mind is so intimate that they are best regarded as one."

Thought is objective in proportion to the degree that allowance is made to offset the influence of conditioned thinking and in this respect one notes the statement of Koshtoyants (12) in the introduction to Pavlov's *Selected Works* that Pavlov was "brought up on the tradition of Russian materialist philosophy and the spirit of militant irreconcilability to idealism". This to me seems to

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

be a declaration of a conditioned and dedicated search for uniformity. There is a determinism implicit in such outlook in which individuality is entirely the outcome of environmental factors and inborn attributes; in which outlook and philosophy—if it can be so called—is merely "an abstraction from an autobiography".

A major difficulty in the consideration of mind-brain relationships is that, as Whitehead (13) says, "We cannot think in terms of an indefinite multiplicity of detail." Tyndall gave an example of this when he pointed out (17) that even Aristotle and Goethe, who had an almost superhuman power of amassing and systematizing facts, could not see the force of mechanical reasoning. It is probable that for the same reason any comprehensive approach by an individual to psychiatry, such as the Meyerian, cannot be other than vague.

The metaphysics of dualism, monism, epiphenomenalism, vitalism, mechanism, have, by and large, been outmoded by a philosophy which is holistic whether it be an atheistic rejection of "the ghost in the machine", an agnostic parallelism or, in the words of Tyndall (17), "a religious vitalization of the latest and deepest scientific truth".

Increase in knowledge of the structure and mechanism of the central nervous system since Descartes' day has not brought any greater basic understanding of the relationship of mind and brain. We may, as Grey Walter (34) says, be "in a pre-Newtonian age, as it were, in which one can still argue amiably about Cartesian vortices though we may feel that any moment a theory of gravitation may destroy and simplify our web of fancy". "Destroy and simplify" seem to cancel out, but however apt this elaborate metaphor (or simile) may be the new light of science has not to date shown much more than the older lamp of metaphysics.

Three hundred years of scientific advance since the Renaissance have led to great diversity of opinion rather than to a closer common understanding of the nature of mind-brain relationship. The erudition of the literature may impress, but, to borrow words of George Cloyne in another context in *The Times* newspaper (35), "it is a disagreeable thought that however deeply we plunge into the literature of the world—let alone its art and its music—we are unlikely to transcend our own experience of life".

Scientific advance has been accompanied by shrinkage of perspective owing to specialization and the value of literature is lessened by volume and by the time taken up with sorting out the worthwhile from the trivial.

If, after all this work and speculation, we are no nearer to essential truth, it is fair to ask what is worthwhile and how much of what is written is repetition of the same theme in different words—merely tautology? Does it bring us closer to or take us further from

> "a sense sublime
> Of something far more deeply interfused,
> Whose dwelling is the light of setting suns
> And the round ocean, and the living air,
> And the blue sky, and in the mind of man:
> A motion and a spirit that impels
> All thinking things, all objects of all thoughts,
> And rolls through all things." (36).

References

1. Cobb, Stanley, "Monism and Psychosomatic Medicine", *Psychosomatic Medicine*, May–June, 1957, **19**, No. 3.

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press

2. WALSHE, F. M. R., 13th Hughlings Jackson Lecture: "Thoughts Upon the Equation of Body and Mind", *Brain*, **76**, 1953, Part 1, 1–18.
3. *Lancet*, 1959, 229.
4. BRAIN, W. RUSSELL, *Mind, Perception and Science*, 1951. Blackwell Scientific Publications.
5. *Encyclopaedia Britannica*. 14th edition. Vol. 7, Page 694.
6. *Ibid.* 14th edition. Vol. 15, Page 721.
7. HUXLEY, THOMAS H., *Methods and Results Essays*, 1894. Macmillan. Pp. 202, 246, 243, 249, 239, 193, 215.
8. BRONOWSKI, J., and MAZLISH, BRUCE, *The Western Intellectual Tradition*, 1960. p. 228. Hutchinson.
9. JEFFERSON, GEOFFREY. Lister Oration 1949, "The Mind of Mechanical Man", *Brit. Med. J.*, 1949, 1106.
10. RUSSELL, BERTRAND, *History of Western Philosophy*, 1948, pp. 49, 600. George Allen and Unwin.
11. *The Times*, "Speech and Development of the Mind", 2 June, 1961.
12. PAVLOV, I. P., *Selected Works*, Moscow, 1955, pp. 566, 564, 38. Foreign Languages Publishing House.
13. WHITEHEAD, A. N., *Science and the Modern World*, 1953, pp. 225, 232. Cambridge University Press.
14. HASLETT, —. (ed.), *The Physical Basis of Mind*, 1957, pp. 68, 4, 79, 66, 44. Basil Blackwell.
15. RUSSELL, BERTRAND, *Wisdom of the West*, 1959, p. 101. London: Macdonald.
16. IRVINE, WILLIAM, *Apes, Angels and Victorians*, 1955, p. 282. Weidenfeld and Nicolson.
17. TYNDALL, JOHN, *Presidential Address to the British Association, Belfast 1874*, pp. 59, 14. Longmans, Green.
18. BRAIN, SIR W. RUSSELL, *The Contribution of Medicine to Our Idea of the Mind*, Rede Lecture for 1952, p. 26. Cambridge University Press.
19. MAUDSLEY, HENRY, *The Physiology and Pathology of Mind*, 1867, p. 38. Macmillan.
20. JACKSON, JOHN HUGHLINGS, *Selected Writings*, 1932, Vol. 2, p. 63. Hodder and Stoughton.
21. *Encyclopaedia Britannica*. 14th edition. Vol. 8. Page 658.
22. JELLIFFE, S. E., and WHITE, W. A., *Diseases of the Nervous System*, 1929, p. 1039. 5th edition. H. K. Lewis.
23. SCHRÖDINGER, ERWIN, *Mind and Matter*, The Tarner Lectures 1956, 1958, p. 77. Cambridge University Press.
24. SLUCKIN, W., *Minds and Machines*, 1960. pp. 106, 229, 228. Pelican.
25. SHERRINGTON, SIR CHARLES, *Man on His Nature*, 1951, pp. 248, 247. 2nd edition. Cambridge University Press.
26. *Encyclopaedia Britannica*. 14th edition. Vol. 11. Page 642.
27. RYLE, GILBERT, *The Concept of Mind*, 1960, pp. 15, 76, 156. Hutchinson.
28. COBB, STANLEY, *Foundations of Neuropsychiatry*, 1958, pp. 12, 303. Baltimore: Williams and Wilkins.
29. RUSSELL, W. RITCHIE, *Brain: Memory: Learning*, 1959, p. 132. Clarendon Press.
30. JEFFERSON, GEOFFREY, "Selected Papers", *Scepsis Scientifica*, p. 29.
31. BRAIN, SIR W. RUSSELL, *The Nature of Experience*, Riddell Memorial Lectures, 1959. Oxford University Press.
32. *Idem, J. Ment. Sci.*, 1956, **102**, 221.
33. ASHER, RICHARD, "Lettsomian Lecture", *Lancet*, 19 September, 1959.
34. WALTER, W. GREY, "The Brain as a Machine", *Proc. Roy. Soc. Med.*, **50**, 799.
35. CLOYNE, GEORGE, *The Times*, 16 June, 1960.
36. WORDSWORTH, WILLIAM, Part of quotation from *Tintern Abbey*, used by John Tyndall, F.R.S., to conclude his Presidential Address to the British Association in Belfast in 1874.

WILLIAM McCARTAN, M.D., M.R.C.P., D.P.M., *Ministry of Health and Local Government, Northern Ireland*

https://doi.org/10.1192/bjp.107.450.809 Published online by Cambridge University Press