

[Introduction of the thesis 'Collected papers on brain, mind and consciousness' submitted to the University of Adelaide in 1969 for the degree of D.Litt. Degree awarded 1972. With revisions by UTP.]

BRAIN, MIND AND CONSCIOUSNESS

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Mind-Body Identity

The claim that the collection of papers here presented constitute a substantial and original contribution to a branch of letters, namely, the philosophy of mind, rests primarily on the 2nd paper in the collection, a paper entitled "Is consciousness a brain process?" which was published in the *British Journal Psychology* in 1956. This paper together with a paper by Professor Herbert Feigl entitled "The 'mental' and the 'physical'" which appeared in 1958 in Volume II of the *Minnesota Studies in the Philosophy of Science*, and a paper by Professor J.J.C. Smart entitled "Sensations and Brain Processes" published in *Philosophical Review* for 1959 are the three primary sources for what has since become known as the 'identity theory' of the mind-body relationship. Needless to say the view that mental processes, mental events or mental states are nothing more or less than physical processes, events or states of the brain has a long history prior to 1956. What is probably the earliest use of the term 'identity theory' to describe this position is to be found in E.G. Boring's *Physical Dimensions of Consciousness* published in 1933; but, under the name of Materialism (strictly speaking the view that there is only one kind of independently existing entity or 'substance', to use Aristotle's term, namely a material substance or body in contrast to Cartesian Dualism which recognises two kinds of substance, one physical, the other mental, and Idealism which recognises only mental substance), it can be traced back at least as far as Hobbes, who maintains in the *Leviathan* that "sense", meaning by that what more recent philosophers have referred as "sensory experience" or "sensation", is a "motion" induced by "pressure" on the sense organs which is transmitted

by the mediation of nerves ... to the brain and heart.

And of sensible qualities he says

Neither in us that are pressed, are they anything else, but divers motions; (for motion, produceth nothing but motion) (Hobbes, 1651, Ch. 1.)

Before the late 1950's, however, the claim of the identity theory to provide a satisfactory solution of the mind-body problem had not been taken very seriously by professional philosophers in view of what appeared to be insurmountable logical and epistemological objections. The importance of the 1956 paper was that it showed for the first time that the logical objections to the identification of the mental with the cerebral hold only for the view that statements about mental states, processes and events are equivalent in meaning to statements about brain states, processes and events. If what is claimed is that these statements, though different in meaning, both nevertheless refer, as a matter of empirical fact, to the same phenomenon, the thesis at once becomes very much more difficult, if not impossible to refute by logical argument alone.

As Professor Brian Medlin (1969) has stated

it is manifest that the expressions 'mental state' and 'brain state' are *not* synonyms. It is precisely for this reason that the identity theory was not taken seriously before Place's insight of 1956.

Phenomenalism

While Medlin is undoubtedly right in claiming that it was only when the identity theory was presented "as a plausible empirical hypothesis" rather than as "a supposed logical truth" that the identity theory came to be recognised as a viable solution to the mind-body problem, it is important to recognise that this "insight" as he calls it, which, incidentally, came independently to Feigl at around the same time, was only made possible by virtue of the fact that the epistemological objections, which historically were a much more powerful bulwark against Materialism, had already been swept away in the revolution which overtook philosophical thinking in the English speaking world in the years immediately following the Second World War. I refer to the collapse of Phenomenalism as an acceptable epistemological theory due to the recognition that the epistemological problem to which Phenomenalism is an answer is a pseudo-problem.

Phenomenalism is the thesis originally proposed by Berkeley (1710), though he does not in the end subscribe to it, according to which the material world is constructed by the mind out of sensory or perceptual experience. It may be regarded as the empiricist response to the sceptical doubts, originally raised by Descartes (1637), about the existence of the material world. In Descartes' account of the matter, the existence of the material world is re-established only by a roundabout argument which begins with a proof of the

existence of a Perfect Being (i.e., God) and concludes that such a being would not deceive us into thinking that the material world existed, if it did not. These sceptical doubts provided Descartes with his strongest argument for the dualism of mind and body. The uncertainty of the inference from sensory experience to the existence of the material world which is supposed to generate that experience by its action on the sense organs and ultimately the brain contrasts with the certainty that attaches to the existence of the individual's own thought processes by virtue of the apparent self-contradiction involved in denying their occurrence - *Cogito ergo sum*. It is arguable, moreover, that it was precisely because it failed to provide a convincing answer to the epistemological doubts that Descartes had raised with respect to the existence of the material world that the Materialism proposed by Hobbes failed to gain the support of any important philosophical writer for more than three hundred years after the death of Descartes.

It is difficult to be sure who should be given the credit for recognising that the Cartesian doubts about the existence of the material world are without serious intellectual foundation. In my own case the final emancipation from the shackles of Cartesian Scepticism and Phenomenalism came when I heard the late Professor J.L. Austin give his famous course of lectures entitled 'Sense and Sensibilia' at Oxford in 1948 (Austin 1962). I was already prepared, however, to accept Austin's refutation of Phenomenalism by the strongly anti-Cartesian tenor of Ryle's lectures in which he delivered the substance of what was to appear as *The Concept of Mind* in 1949. But having received my training in philosophy at Oxford, I was only partially aware at that time of the undoubted influence on both Austin and Ryle of Ludwig Wittgenstein whose *Philosophical Investigations* did not appear in print until 1953. In the *Investigations* Wittgenstein does not discuss Phenomenalism explicitly by name, but he does discuss the notion of a private language composed of words which purport to refer to the individual's inner experience. To my mind, there can be little doubt that when Wittgenstein (1953 pp 88-100) criticises the notion of a private language and points out that such a language could not be taught to anyone else and could not therefore function as a means of interpersonal communication, the sort of language he has in mind is the 'Sense-datum language' proposed by latter day phenomenologists like Moore (1953), Russell (1914), Broad (1925), Price (1932) and Ayer (1940) whose theories require such a language to formulate the fundamental and incorrigible statements about an individual's sensory experience from which empirical statements about the material world can be inferred.

Wittgenstein's contention that a private language of this kind could not be understood by another person and could not therefore serve as a means of interpersonal communication, is based on a recognition that language, and hence the knowledge that is expressed in terms of it, is a social phenomenon which can subservise its communicatory function only in so far as there exists some kind of tacit agreement or convention between speakers as to the reference of its component words. The recognition of this fact has two important implications for epistemology and the philosophy of mind respectively. The important epistemological consequence is that the fundamental statements which provide the foundation of empirical and scientific knowledge cannot be statements in a sense-datum language referring to an individual's private experience, they must be statements in the ordinary language of interpersonal communication referring to features of their common environment which two or more speakers can simultaneously observe and accept as the referents of the form of words used to express the statement in question. For the philosophy of mind the important consequence is that the only way in which an individual can made reference to his own inner experience in such a way as to be understood by another person is by identifying his experience as the sort of experience which characteristically occurs whenever something (specified) is the case in the common environment which he shares with other people. In other words we can only refer to private experiences by using a language whose primary function is to describe and refer to objects, events, states and processes in the material world. To propose, as the phenomenalist does, the derivation of statements about the material world from statements about sensory experience, is to put the cart before the horse.

These, of course, are the consequences that I would draw from Wittgenstein's observations on the private language. They are not the consequences that Wittgenstein himself draws. Unfortunately, in my view, he draws the much more radical and controversial conclusion that no language that is capable of subserving the function of interpersonal communication, such as the natural language that we use in everyday life, can be used to refer to the private inner experiences of the speaker. There can, therefore, be no words in a natural language which refer to such experiences; and any words in such a language, such as those which are normally taken to refer to bodily sensations, 'pain', 'itch', 'throb', 'tingle', etc., which are commonly taken to refer to such experiences, must be construed in some other way. Nevertheless, the negative implications of Wittgenstein's argument in so far as they bear on Phenomenalism and Cartesian Scepticism are plain

enough, and they must have been appreciated by Wittgenstein and many of his pupils long before the text of the *Investigations* was assembled in 1945. Since I consider that this argument provides a more decisive refutation of Phenomenalism and Cartesian Scepticism than any other, and since the argument in the modified form in which I have stated it bears close affinities with the argument I used (Place 1956, 1959a) to refute a form of Phenomenalism prevalent amongst physiologists and psychologists which I referred to as "the phenomenological fallacy", I am inclined to give Wittgenstein the credit for this development.

Although I had read *Philosophical Investigations* when I wrote my 1956 paper, my attention was focused at that time on Wittgenstein's behaviourist theory of sensation which I explicitly rejected in formulating my version of the identity theory. I did not become aware of the affinity between Wittgenstein's private language argument and my own discussion of the phenomenological fallacy until 1959, when I attended a graduate class on the *Investigations* at Oxford under the auspices of Professor Ryle. ~~This resulted in the hitherto unpublished paper entitled 'Understanding the language of sensations' a revised version appears as the 5th article in this collection (Place 1959 b).~~ [This class was the inspiration for a paper entitled 'Understanding the language of sensations' which appeared in the *Australasian Journal of Philosophy* in 1971.]

[Nevertheless a]lthough I was not consciously aware of the influence of Wittgenstein when I compiled the 1956 paper, apart from the part of his teaching which I was explicitly rejecting, I have no doubt that my refutation of the phenomenological fallacy owes much to Wittgenstein indirectly through the influence of those of my teachers and colleagues who had been more directly and personally influenced by him. I am thinking here especially of Brian Farrell who was my tutor in psychology during part of my undergraduate career at Oxford and who had a powerful influence on my thinking both in psychology and philosophy during this time, and of my former colleague at the University of Adelaide, C. B. ("Charlie") Martin who, although he had not known Wittgenstein personally, had studied at Cambridge at a time when Wittgenstein's influence was still very much alive and had made Wittgenstein's teaching very much a part of himself; though it is an influence from which, in later years, he has come increasingly to dissociate himself.

But if it is true that I was unconsciously influenced by Wittgenstein in my discussion of the phenomenological fallacy, it is possible that Wittgenstein may have been similarly unconsciously influenced

by J. B. Watson, the founder of Behaviourism in psychology. For it was Watson (1913) who first pointed out in this century, though he had been anticipated in this regard nearly a century earlier by Comte (1830-42), that the observations on which all genuine empirical sciences are based, are objective observations of publicly observable phenomena which can be checked by any number of independent observers. What Wittgenstein did in effect was to generalise Comte and Watson's principle of objectivity from the specific case of the fundamental observation statements of empirical science to any relation between a referring expression and its referent in any language that is capable of functioning as a medium of interpersonal communication. Nor does the analogy end there; for just as Watson was led by the principle of objectivity in scientific observation to the conclusion that objectively observable behaviour is the only proper subject of enquiry for a science of psychology, so Wittgenstein was led by the principle of objectivity in language in general to the conclusion that all mental concepts in ordinary language must be construed, in so far as they refer to the individual, as referring to his or her behaviour.

Behaviourism

Although Behaviourism is from one point of view an alternative and rival to the identity theory as a solution to the mind-body problem, it is doubtful if the identity thesis could have been formulated when and in the way that it was, had it not developed, as it clearly did in my own case, out of a strong bias in favour of the principal objective of Behaviourism, namely to describe mental phenomena without introducing the concept of a mind or soul considered as a supernatural entity capable of a separate existence apart from the body, combined with a recognition of the inadequacy of Behaviourism as applied to certain aspects of mental life. It was not, however, the inadequacies of Watson's Behaviourism that led to the evolution of the identity theory. For although Watson himself sometimes speaks as if his view entails the non-existence of private inner experiences, his position is logically tenable only in the form which has since become known as Methodological (as opposed to Metaphysical) Behaviourism. Methodological Behaviourism is the point of view which is defended by Watson's namesake, A. J. Watson, in his contribution to a symposium entitled 'Consciousness and Perception in Psychology' held at the Joint Session of the Aristotelian Society and the Mind Association in 1966 to which the 7th paper in this collection was a reply. It holds that the existence or

non-existence of conscious experience is not an issue that can be decided by a scientific psychology which can study only the publicly observable features of an individual's behaviour. The Methodological Behaviourist is not concerned to deny that human beings sometimes talk about events and processes taking place within themselves which are not available to public inspection. All he wants to maintain is that such events and processes are not a proper subject for scientific enquiry and can be safely left to the tender mercy of philosophers and other literati.

Behaviourism only became a viable solution to the mind-body problem as it presents itself to philosophers, when it became possible to argue that the mental concepts of ordinary language refer, not to private experiences, but to some aspect of the individual's behaviour. Although the idea seems to have originated with Wittgenstein who makes use of it in his treatment of the concept of understanding a mathematical series on pages 56-61 of the *Philosophical Investigations*, it was Ryle (1949) who first carried out a systematic exposition of the mental concepts of ordinary language along behaviourist lines; and it was as a means of plugging what seemed to me a major weakness in Ryle's account of mental concepts, without making concessions to the Cartesian doctrine of "the ghost in the machine", that my own version of the identity theory was originally conceived.

Although Ryle's was the first systematic attempt to show that a behaviourist interpretation is the correct interpretation of the mental concepts of ordinary language, he was not the first to show that a behaviourist interpretation of those concepts is logically possible. The credit for this must go to the American behaviourist psychologist E. C. Tolman who in his *Purposive Behavior in Animals and Men*, published in 1932, showed that it was possible to give definitions of most of the mental concepts of ordinary language in terms of different aspects of the objectively observable behaviour of the rat in the maze. Tolman did not claim, as Ryle did, that he was giving an account of these concepts as they are ordinarily used, but he certainly thought that his recommended behaviourist definitions corresponded sufficiently closely to ordinary usage to justify the retention of the same words in his theoretical system. He also thought that the system of concepts so derived provided a tolerably complete description of human and animal behaviour and enabled him to say everything that can be said in terms of the mental concepts of ordinary language with only one notable omission. Armed with a set of concepts defined solely in terms of behaviour, he could not, he

acknowledges give an account of conscious experiences of, "raw feels" as he calls them (Tolman 1932 pp 214-215). Tolman's influence on my own formulation of the identity theory was slight in comparison with that of Ryle. It did, however, play an important role in relation to Feigl's independent formulation of the identity thesis published in 1958. For just as I had seen my own version of the thesis as filling a gap in Ryle's behaviourist account of mental concepts, so Feigl presented his version as filling the corresponding gap in Tolman's. In my own case the term 'consciousness' which I wanted to identify with a process in the brain, was a generic term embracing those mental concepts, such as having a sensation or a mental image, looking, listening, paying attention, thinking without talking out loud or under one's breath and dreaming, where, so it seemed to me, neither Ryle's account in terms of behavioural dispositions nor Wittgenstein's account (elaborated subsequently by Malcolm (1959) in his theory dreaming) in terms of the avowal or expression of such tendencies could be made to work. For Feigl it was Tolman's "raw feels" that were to be identified with states of the brain.

Central State Materialism

Needless to say, from its inception the mind-body identity thesis has generated controversy. Most of the controversy, however, has been controversy between its protagonists and those who have sought to show in one way or another that the thesis is false or logically untenable. Among those who have argued in its favour there has been remarkably little disagreement. Only on one issue have the supporters of the identity thesis become seriously divided. This issue concerns the nature of the two terms between which the identity relationship is supposed to hold. In my own version of the theory, consciousness, in the sense outlined above, is identified with a brain process. In Feigl's version, Tolman's "raw feels" are identified with brain states. In Smart's version sensations are identified with brain processes. In another version of the theory proposed by D. M. Armstrong in his (1968) book *A Materialist Theory of the Mind* mental states are identified with brain states. Of these different formulations the differences between Smart, Feigl and myself are in the main differences of terminology rather than of substance. In the late nineteen fifties when ~~one~~ [these] papers were [first] published we were all agreed in restricting the application of the identity thesis to a limited range of concepts. We were also in substantial agreement in limiting the application of the identity

theory to those mental concepts which do not readily lend themselves to a behaviourist interpretation and in accepting a behaviourist account as valid for the remainder. Furthermore although neither Feigl nor Smart specify very clearly the range of concepts over which the identity theory is intended to hold, there is an obvious conceptual connection between Tolman's "raw feels", as used by Feigl and terms like "consciousness" and "private experience" in the sense in which I used those terms, while Smart's term "sensations" focuses attention quite explicitly on one of the group of concepts which, as I made clear in the 1956 paper, my term "consciousness" was intended to embrace. Armstrong's position on the other hand, represents a significant break, with the identity theory as it was originally formulated, in that he wants to extend the application of the mind-body identity relationship to all mental concepts including concepts like 'knowing', 'believing', and 'wanting' where an analysis in terms of behavioural dispositions had earlier seemed impregnable. The motives behind the development of Armstrong's "Central State Materialism", as he calls it, are not hard to divine. One of the principal attractions of the identity thesis is the simple and direct way in which it cuts through the tangled web of sophistries which are required in order to give plausibility to the various alternatives from Berkeley's Idealism, at the one extreme, to Malcolm's Behaviourism as applied to dreaming at the other. But there is one point in the theory, in its original form, where it becomes necessary to draw fine distinctions, develop subtle and complicated arguments and use technical philosophical terminology rather than ordinary language, and this is at the point where it becomes necessary to define the line of conceptual demarcation between the concepts to which the identity theory is to be applied on the one hand and the other. It is one of the attractions of Armstrong's theory that it cuts this particular Gordian knot.

A second factor contributing to the extension of the identity theory to embrace mental states is that it provides or appears to provide an answer to certain objections that have been raised since the publication of my 1956 paper, notably by my [former] colleague [at Leeds,] ~~Professor~~ [Peter] Geach in his book *Mental Acts* published in 1957, to Ryle's interpretation of mental concepts in general and of knowledge and belief in particular in terms of a disposition to exhibit certain specifiable kinds of publicly observable behaviour. Geach's criticism of the dispositional theory of mental concepts is that it fails to account adequately for the use of these concepts in explaining the publicly observable behaviour of the individual. For if, as the dispositional theory holds, to say that someone is in a given mental state is to make a hypothetical statement

about how he would behave if certain contingencies were to arise, and to say nothing categorical about him, it would seem to be an unilluminating tautology to say that someone behaved in a certain way because he was in a given mental state, where to be disposed to behave in that way is part of what is meant by saying that he is in that mental state.

Although he does not acknowledge his indebtedness to Geach, Armstrong bases his [case for] Central State Materialism on ~~an analysis of mental states which arises directly out of an argument~~ [a criticism of Ryle's account of mental dispositions] (Armstrong 1968, pp. 85-88) which ~~looks remarkably like a paraphrase of Geach~~ [is isomorphic with Geach's criticism of Ryle's theory in *Mental Acts*]. He [Armstrong] argues for what he calls a "realist" account of dispositions in contrast to what he describes as Ryle's "phenomenalist" account of dispositions in which the existence of dispositions said to consist solely in the truth of certain counterfactual conditional statements. A mental disposition in Armstrong's view is a solid categorical state of the individual which is responsible for the individual "manifesting certain behaviour in certain circumstances" (Armstrong 1968, p.86), or, to use the formula he recommends as a definition of mental states in general, "a state of the person apt for the bringing about of certain behaviour" (Armstrong 1968, p.82). As far as ordinary language is concerned nothing more can or need be said about such states, but just as a physicist would want to discover the physical basis of a dispositional property such as the brittleness of glass in terms of the molecular structure of the material, so the psychologist or neurophysiologist would quite justifiably want to discover the physical composition of a mental state which, we can be fairly certain on empirical grounds, is some state of the brain.

~~In spite of the arguments of Geach and Armstrong, I remain as I was when I wrote the first paper in this collection (Place, 1954), a convinced believer in the behavioural disposition theory of mental states. The advantages of this theory over traditional inner process or inner state theories which are discussed in more detail below are not in my view outweighed by the objections that Geach and Armstrong have brought against it. Nor, so it seems to me, does Armstrong's compromise of an inner state "apt for the production of behaviour" enable him to incorporate the principal virtue of the hypothetical contingency interpretation of mental dispositions, namely the account it gives of the truth conditions governing first person mental states assertions like 'I know that p', 'I believe that p' and 'I want O'.~~

[In defending Ryle's account of mental state predicates in terms of concealed hypotheticals,] I do not of course, wish to deny that there are states of the brain which underlie and which, if we knew more about them, would explain the existence and nature of mental states. What I do want to deny is Armstrong's thesis that the identity relationship [of identity] ~~which I have suggested~~ [or, as I prefer to call it, composition which] applies in the case of consciousness and brain processes, also applies as between mental states and brain states. I first put forward the argument against the identification of brain states with mental states in the 6th paper in the present collection (Place 1967) which was my contribution to a symposium on "Psychological Predicates" at the Oberlin Colloquium in 1965. In this paper I suggested that mental states could be regarded as performance characteristics of the behaving organism, and, as such, could be compared to the horse power of a motor car. I pointed out that performance characteristics like horse power depend

on the physical dimensions and characteristics of the machine but horse power is not the same thing as the constructional features on which it depends. Clearly if we apply this analogy to mental states, capacities and tendencies we do not want to say that they are the physical states of the brain microstructure. The most we could possibly want to claim is that they are characteristics of the individual as a functioning unit which he has by virtue of the current state of the microstructure of his brain ... (Place 1967, p. 60).

The contention that dispositional properties cannot be identified with the underlying physical structures on which they depend not only contradicts Armstrong's theory of the identity of mental states and brain states, it also makes Armstrong's theory redundant by deflecting Geach's objection to Ryle's hypothetical analysis of dispositional concepts which Armstrong's theory is designed to meet. To illustrate this point let us consider the two examples of dispositional properties that Geach discusses, namely Ryle's case of the brittleness of the glass and his own case of the magnetised bit of iron. As Geach points out

a physicist would be merely impatient if someone said to him: 'Why look for, or postulate, any actual difference between a magnetized and an unmagnetized bit of iron? Why not say that if certain things are done to a bit of iron certain hypotheticals become true of it?' He would be still more impatient at being told that his enquiries were vitiated by the logical mistake of treating 'X is magnetized' as categorical, whereas it is really hypothetical or semi-hypothetical. (Geach 1957.p.6)

What this argument shows is that from a scientific point of view it is not sufficient simply to assert the existence of a dispositional property and suppose that this assertion is in itself sufficient to explain the phenomenon. What it does not show, as Geach seems to think it does, is that it is a mistake to analyse dispositional properties in hypothetical terms. Any scientist worth his salt will always look for some

categorical basis for any dispositional property; and if he looks for it, he usually finds it. But this does not show that the dispositional properties are really categorical. For the categorical basis of a dispositional property is not the same thing as the dispositional property which depends upon it and whose existence is explained by it. Thus the polarisation of its constituent atoms explains why the iron became magnetised; but we would not ordinarily be inclined to say that the magnetic properties of a piece of iron are the same thing as the polarisation of its constituent atoms. [They are not even in the same place. The iron's magnetic field is outside it in the area around and between its two poles. The atoms and their polarisation - itself a dispositional state - are inside it.]

~~I fancy that the conclusion that I wish to draw from these considerations namely that mental states and dispositions are not to be identified with the brain states on which they depend, will not be readily acceptable to my fellow materialists. Armstrong, I imagine, would want to charge me with inconsistency; how, he might argue, can I maintain that sensations and other mental processes not merely depend on, but actually are brain processes, while claiming that beliefs and other mental states depend on states of the brain, but are not the same thing as those brain states? My answer to this objection would be that there is a fundamental difference, which Armstrong largely ignore, between processes on the one hand and states on the other, and that this logical difference is such that the logical relationship between a process and its physical or physiological analysis is necessarily different from the logical relationship that hold between a state or a dispositional property and the physical or physiological state on which it depends.~~

~~Another objection is one which Smart, I feel, might be tempted to raise against me. This is the objection that if I allow a causal relationship between two separate things in the case of a mental state and the underlying brain state, I am opening the door for someone to argue that mental states are metaphysical properties which exist independently of any publicly observable behaviour on the one hand and any potentially observable brain state on the other. The short answer to this objection is to point out that anyone who drew this conclusion from my view would also have to hold, if he were to be consistent, that things like the horse power of the car, the brittleness of the glass and the magnetic properties of the iron bare are metaphysical properties which exist independently both of the behaviour of the objects in question under certain specifiable contingencies on the one hand and their mechanical, atomic or molecular structure on~~

~~the other. A longer answer is that since I follow Ryle in interpreting statements attributing a dispositional property to someone or something as hypothetical statements about how the object or individual in question would behave if certain contingencies were to arise, to assert the existence of such a property does not involve any categorical assertion about what is actually the case at any given moment of time. Of course, as Geach points out, there is always a presumption that whenever such a hypothetical statement is demonstrably true there is always some underlying condition of the object or individual in question that accounts for it. But there is no need to invent a metaphysical property to fill this particular bill, since there is always some physical or physiological state which does the job very much better.~~

~~The weakness of Geach's discussion of dispositional concepts in *Mental Acts*; [t]o my mind, is that [Geach's discussion of dispositional concepts in *Mental Acts*] confuses explanations of phenomena with explanations that are given of individual facts. By a phenomenon here I refer to the sort of relationship between events that is expressed in an empirical generalisation and whose existence is verified by systematic and repeated observation or by some kind of test or experimental procedure. By a fact I refer to an individual event or occurrence which is observed on a particular occasion. Any fact in this sense is an instance of some phenomenon, and the observations that combine to establish the existence of a phenomenon are observations of individual facts. When we explain facts in this sense, we usually explain them by showing that they are instances of an empirical generalisation which describes a phenomenon of which the fact in question is an instance. Explanations of facts, in this sense, occur very frequently in ordinary non-technical discourse, and are of special importance in legal contexts, in clinical medicine and in technical enquiries into the causes of accidents and disasters. In pure science and in many fields of applied science, explanations of individual facts are conspicuous by their absence. Scientists, for the most part, are concerned with explaining phenomena. Considerable care and attention is devoted to precise observation of individual facts; but the object of this is not to be able to explain those facts considered as isolated occurrences. Its purpose is to define as precisely as possible the phenomenon of which the facts in question are an instance. Only when the phenomenon has been precisely specified, does the question of a scientific explanation of the phenomenon arise.~~

Now a dispositional property in terms of this distinction is a phenomenon. It is an observed relationship between events or occurrences. It can, therefore, be used with perfect propriety to explain the individual facts that constitute instances of it. Thus we can explain the fact that the glass broke when the stone struck it by referring to the brittleness of glass; we can explain the fact that pins collected on the iron bar by the iron bar's being magnetised; we can, if we don't mind using archaic language, attribute the fact that the man went to sleep after smoking opium to the dormitive power of the drug; and we can attribute the speed with which the car climbed the hill to its large horsepower. By the same token we can explain Dr. Johnson's standing in the rain in Uttoxeter market place (Geach 1957 p. 8) by his wish to do penance. What we cannot do is to explain a phenomenon by an empirical generalisation which simply describes the phenomenon itself in other words. That is what is wrong with Geach's (1957 p. 5) example where the dormitive power of opium is used to explain the fact that it puts people to sleep. This example does not show, as Geach seems to think, that dispositional concepts like 'dormitive power' have no explanatory use. It only shows that a dispositional property cannot be used to explain itself.

At this point in his argument Geach creates further confusion by comparing this case where a dispositional property is explained by itself under another description with the case where the physicist is faced with the problem of explaining the phenomenon of magnetism. Here we are dealing not with the use of dispositional properties to explain other things, but with the scientific explanation of the dispositional property itself. In the example he chooses it is true that the scientific explanation of the dispositional property involves the postulation or discovery of some underlying categorical state of the object that has the property. But this does not show what he seems to think it shows, namely that the explanatory utility of concepts like 'brittleness' and 'being magnetised' derives from this underlying categorical state. For the underlying categorical state, the molecular structure of the glass or the atomic structure of the iron bar, does not explain the same thing that dispositional properties themselves explain. Dispositional properties like brittleness and being magnetised explain individual facts like the glass shattering and the pins collecting of the bar. The molecular structure of the glass and the atomic structure of the iron explain the brittleness and the magnetic properties.

I conclude, therefore, that Geach has failed in his attempt to show that it would not be possible to account for the explanatory function of dispositional concepts, if it were, as Ryle (1949 p. 43) has argued, simply a matter of "subsuming the thing under a law". But if Ryle is right about concepts like brittleness, then he is probably also right in applying this argument to mental states like knowing, believing and wanting. Certainly Geach's argument does not show that he is wrong. Furthermore if Geach's argument fails, there is nothing but the urge for simplicity and uniformity to support Armstrong's Central State Materialism in the face of the evidence I have presented which shows that dispositional properties are not ordinarily said to be identical with the underlying physical or physiological structure that accounts for their existence.

The logical heterogeneity of mental concepts

If in the light of these considerations we decide to reject Armstrong's attempt to generalise the identity theory to cover all the multifarious things to which the adjective 'mental' is applied, we are again faced with the difficult problem of drawing a firm logical distinction between those mental concepts to which the identity theory is to be applied and those where some kind of dispositional theory is more appropriate. Needless to say the suggestion that such a distinction can be drawn at all, implies that mental concepts are a logically heterogeneous groups. It cannot, I think, be seriously doubted that mental concepts as a group are logically heterogeneous; and the credit for recognising that, and in what respects they are logically heterogeneous belongs undoubtedly to Gilbert Ryle in his epoch making survey of "the logical geography" of our ordinary mental concepts in *The Concept of Mind*.

What Ryle tries to do in *The Concept of Mind* is to show that what he calls the "official doctrine" consistently misclassifies and misrepresents the logic of all mental concepts. The official doctrine, as he describes it, (Ryle 1949 pp. 11-15) holds that the mind consists of a continuous sequence of occurrences that take place in some, not very clearly defined, sense *inside* the individual whose mind it is. These internal mental episodes or occurrences can be inspected by their owner with the aid of a special power of faculty known as 'introspection', but are not accessible to observation or inspection by anyone else. Ryle tries to show that this official theory completely misconstrues the logic of all mental concepts of ordinary language and attempts to replace it, wherever possible, with an account in terms of some kind of disposition to behave

in some publicly observable way. He is compelled to recognise, however, that the arguments he uses to show that the official doctrine is false and that the dispositional theory provides a more plausible account, apply with greater force to some mental concepts than they do to others. It is clear, for example, that although concepts like 'knowing', 'believing', 'wanting' and 'intending', do not refer to occurrences since they cannot be said to occur or to be occurring at a particular point in time, there are other mental concepts like 'observing', 'interpreting', 'noticing', 'realising', 'enjoying', and 'worrying' which *do* refer to occurrences. Similarly although there are some mental concepts like 'being vain', 'being intelligent', 'knowing', 'understanding', and 'remembering' where the decision as to whether or not they apply does not rest with the individual concerned, there are other mental concepts, like 'believing', 'imagining', 'having a sensation', and 'dreaming' where the individual's ascription of the concept to himself cannot be challenged by another person without imputing the intention to deceive. Consequently in order to maintain his thesis that the official doctrine misconstrues, not just some, but all mental concepts, Ryle is compelled to distinguish different logical varieties amongst the group of mental concepts as a whole and to use different arguments in applying his general thesis to these different varieties of concept.

In the first paper in the present collection (Place 1954) I criticised the account that Ryle gives of the concept of paying heed or attention to something which is central to his account of consciousness and observation. I argued (1) that his objections to the official interpretation of attention and consciousness as an inner activity or process do not carry conviction, (2) that his attempt to provide an alternative dispositional theory of these concepts fails, and (3) that the official theory provides a much more satisfactory account in this case.

The conclusions which I drew from these considerations was that although Ryle's account in terms of dispositions to behave, or something like it, holds true for certain mental concepts there is, as I put it in a later paper,

an intractable residue of concepts clustering around the notions of consciousness, experience, sensation, and mental imagery, where some sort of inner process story is unavoidable (Place 1956 p. 44).

In other words the official doctrine, as Ryle calls it, is not wholly wrong. It is mistaken as applied to some mental concepts, but is substantially correct as applied to others. But in arguing in favour of the traditional

inner process story with respect to certain mental concepts, I did not want to return to Cartesian Dualism; and it was in order to avoid putting this group of concepts back beyond the reach of scientific theory and empirical investigation that I made the original suggestion at the end of the 1954 paper that

the logical objections to the statement 'consciousness is a process in the brain' are no greater than the logical objections which might be raised to the statement 'lightning is a motion of electric charges' (Place 1954 p. 255).

The logical criteria which I used in "The concept of heed" to distinguish those mental concepts to which the "official" inner process doctrine and hence, also, the identity thesis could be applied from those for which I wanted to retain Ryle's dispositional analysis, were themselves derived from *The Concept of Mind*. These criteria are of two kinds. In the first place there is a set of distinctions based on what may be termed the temporal reference of the concept in question. This is the distinction which I drew rather more clearly in the 6th paper in the present collection (Place 1967) and again in the unpublished paper written earlier this year (1969b) entitled 'Sensations and Processes - a reply to Munsat' which appears in the 9th paper in the collection, between nouns referring to states, events and processes, with a parallel distinction in the case of verbs between dispositional verbs, act verbs and activity verbs. The second set of criteria are those relating to the truth conditions that apply to different mental concepts, particularly with respect to what Ryle has called the "privileged access" of the individual to his own mental condition.

Although the distinctions based on these sets of criteria partly cut across one another, it will be convenient for purposes of exposition to consider separately each of the categories distinguished according to temporal reference, states, processes and events, and deal with the distinctions based on the truth conditions that apply to each of these categories in turn.

Mental States

A state, as I use the term, is a condition or property of someone or something "that is the case for a specifiable period of time, but which cannot like an occurrence be said to occur at a specific point of time" (Place 1969b p.2). There are many varieties of mental states in this sense, but for our present purposes it will be convenient to consider only three of them represented by the verbs 'know', 'believe', and 'want'.

Mental states like knowing, believing and wanting differ from some, though by no means all states in the physical environment in that their presence in another individual cannot be determined simply by inspection. On the "official theory", as Ryle expounds it, this is explained on the assumption that cognitions and motives are hidden inside the individual and that, although they cannot be inspected by another person, they can be inspected by their owner, in the way that the occupier of a house can inspect the state of decoration and repair of its different rooms. However, as Ryle points out, this theory does not account for the way in which we in fact determine whether or not someone knows, believes or wants something. For if this theory were true, it ought to be the case that our only way of finding out what someone else knows, believes or wants is to ask him and unless we had reason to suppose that he was lying, we would not be in a position to dispute his statement that he knows, believes or wants what he says he knows, believes or wants. Now it is certainly true that asking him is normally the best way of finding out what someone knows, believes or wants; but, in the case of knowing, the individual's statement that he knows something carries no special authority, as it would do if the official theory were correct. In order to decide whether or not someone knows something, we have to get him to display his knowledge either in what he says or, in the case of knowing how to do something, in what he does; but the decision as to whether what he says or does adds up to his knowing something, does not rest with him. This depends on whether or not his performance satisfies or reaches a certain standard as assessed objectively by a competent observer.

However it is possible to defend the official theory from some of the impact of this argument by pointing out that the only thing that makes knowledge a matter of public determination is the implied claim that what is known is in fact correct. The individual may be wrong in claiming, as he does when he calls it knowledge, that what he believes to be the correct answer, is in fact correct; but he cannot be mistaken in making the more limited claim that he believes it to be correct.

Nevertheless although it is true that one cannot be mistaken in claiming to believe something, there is something decidedly odd about the suggestion that this is because the owner of a belief can somehow look inside and inspect it. An individual can be said to know what he believes, but this knowledge is not derived from observation. We cannot observe a belief in the way we can be said to observe a sensation. Nor are beliefs, unlike dreams, sensations and other kinds of experience, things we can be said to describe, or report.

An individual can state or express his beliefs, but he does not describe or report them. Moreover when he does state his beliefs he is not talking about himself, unless he happens to be stating his beliefs about himself. If I say that the earth is round, I am stating my belief that the earth is round; but it would be very odd to say in such a case that in stating my belief I am making an introspective report. I am talking about the earth and not about myself; and it does not seem plausible to argue that I have switched from talking about the earth to talking about myself if, instead of saying 'the earth is round', I say 'I believe that the earth is round'. This point is discussed in greater detail in the paper entitled 'Consciousness and Perception in Psychology' which appears as the 7th paper in the present collection (Place 1966 pp 120-122).

In the case where an individual states or expresses what he wants, it is more natural to speak of his providing inside information about himself; but it still does not make sense to talk of his observing, describing or reporting on his desires. Furthermore whereas it does not make sense to talk of someone having beliefs he does not know about, it does make sense to talk of his having desires which he doesn't know about though he cannot very well be mistaken in thinking that he has the desires he believes he has. These logical facts are perhaps not totally irreconcilable with the official doctrine as applied to our knowledge of wants, but they are not easily explained by it.

Ryle's dispositional theory is, by contrast, very much at home with mental states. The invisibility of mental states is explained on this view by the hypothetical nature of what is stated when a dispositional property is ascribed to someone or something. What we are saying when we ascribe a dispositional property like brittleness to something is not that it is in some condition that can be determined simply by inspection, nor that there is something happening to it now; what we are saying is that something would happen, if certain contingencies were to arise. In order to determine the truth of a hypothetical statement of this kind, we have either to wait until the relevant contingency arises, in the case of brittleness until a stone happens to strike the glass, or we have to perform an appropriate test in which we arrange for the contingency to occur ourselves, in the brittleness case by actually throwing the stone at the glass. When we ask someone whether they know something, what they believe, or what they want, we are, on the dispositional theory, carrying out just such a test. The reason why the individual cannot be mistaken in asserting that he believes what he claims to believe, is that believing entails the disposition under appropriate circumstances to assert the

proposition he is said to believe and to mean what he says. If, therefore, he states his belief, meaning what he says, he has exhibited the very behaviour in a disposition to perform which his belief consists. If he does not mean what he says, we do not say he is mistaken in thinking that he believes what he says he believes; we say that he is pretending to believe what he does not in fact believe. On this view the statement 'I believe that p' is not an introspective report. It is a self-verifying statement. You cannot say 'I believe that p' without *ipso facto* asserting p, and since to believe that p is on this view to be disposed to assert p and act accordingly your saying 'I believe that p' shows that you have a tendency to assert p. It does not show that you have a tendency to act on p, but if you were not inclined to act on p, the assertion would not be made in good faith. It would be a pretence, not an honest mistake, as it should be, if the official doctrine were true.

A similar argument applies in the case of wanting something. To want something according to the dispositional theory, is to be disposed to act in appropriate circumstances in such a way as to bring about the object of one's desire. One way of bringing about the object of one's desire is to ask for it, and one way of asking for it is to say that one wants it. Consequently it is not possible to make a statement of the form 'I want O', meaning what one says, without *ipso facto* performing the kind of act that is calculated to bring O about. Here again the statement 'I want O' is self-verifying. There is however a difference here between 'believing' and 'wanting'. The statement 'I do not believe that p' is self-verifying because it involves the assertion of the proposition 'not p' which anyone who does not believe that p must be disposed to assert. A denial that one wants O, on the other hand, is not self-verifying. For it does not follow from the fact that one is disinclined to act so as to bring O about by saying 'I want O', that one is not in fact inclined to act so as to bring O about in other ways. Hence the possibility of unconscious motives.

There cannot be much doubt, I think, that the dispositional theory provides a much more satisfactory account of the truth conditions of first person statements involving verbs like 'know' 'believe' and 'want' than does the amended form of the official doctrine which holds that they are internal states of the individual accessible to introspective scrutiny. If, therefore, I am right in thinking that Geach's (1957) objections are the only serious objections that have been raised against the dispositional theory of mental states, and if I am also right in thinking that the argument presented above show that Geach's arguments do not prove what he thinks they prove, it seems safe to conclude that the dispositional theory provides a correct

account of all mental states, which, on the analogy of the concept of horse power used above, are to be conceived as performance characteristics of the individual causally dependent upon, but not identical with the underlying state of the brain.

Mental Processes

The distinctive feature of a state is that it is not an occurrence, it cannot be said to occur or be occurring at a specific point in time; though if, like all mental states, it is a dispositional state, it may involve a liability to produce occurrences of a certain kind from time to time. Occurrences are of two kinds, [instantaneous] events which occur at a specific point in time, but are not extended in time, and processes which are extended in time, but which, unlike states, can be said to be occurring at any point of time during their period of operation. Some mental occurrences are mental events, and some are mental processes. These categories deserve separate consideration, and I propose to consider mental processes first because it is here that the contrast with mental states is sharpest.

Mental process words are of two kinds. On the one hand we have a set of nouns and noun phrases like 'a sensation' and its subordinate concepts, 'pain', 'itch', 'twinge', 'throb', 'spots before the eyes', 'singing in the ears', etc., nouns like 'feeling', 'experience', 'after-image', 'mental picture', 'train of thought', and 'dream'. On the other hand we have a set of verbs like 'look', 'watch', 'listen', 'pay attention', 'read', 'scrutinise', 'ponder', 'enjoy', and 'dream' which are activity verbs, the verbal counterparts of process nouns

where one can say of someone that he was doing something both at a particular point in time and for a period of time (Place, 1969b, p.3).

There are certain other mental verbs like 'feel', 'smell', 'taste', and 'observe' which can sometimes be used to refer to an activity or process that is extended over time and sometimes to a mental act or event that is not extended in time. There are also two adjectives 'aware' and 'conscious' which, when combined with the preposition 'of' and some non-factual object, refer to a process, but which in the expressions 'conscious' or 'aware that p' or 'of the fact that p' refer to a mental state. Finally the verb 'to think' and its noun 'thought' can be used either as an activity or process expression as in 'a train of thought', as an act or event expression as in 'the thought occurred to me', or as a mental state expression as in 'he thinks that p'.

On the "official theory", as Ryle (1949 pp. 11-15) caricatures it, all the contents of the mind are construed as mental processes, and it is one of the main criticisms of the theory that it fails to recognise that there are other modes or categories of mental life. It is not surprising, therefore, to find that it is in dealing with mental processes that the official theory is most at home, whereas the dispositional theory runs into serious difficulties. For not only are mental processes the sorts of things that the official theory expects to find in the mind, it is also very much easier to sustain the view that mental processes are processes hidden within the individual whose mental processes they are and available only to his introspective observation. There are, of course, certain aspects of mental activity which are not hidden within the individual. Looking and watching for example usually involve movements of the head and eyes so as to bring the object of observation into focus. Similarly feeling, in the activity sense of the term, usually involves a deliberate movement either of the fingers over the object of observation or of the object itself over some sensitive part of the skin such as the cheek. Again, both reading and thinking in the activity sense of that term may involve utterances that are audible to others, though intended only for the benefit of the reader or thinker. But in no case are these objectively observable concomitants invariably associated with the mental activity in question, nor is their occurrence an infallible sign of mental activity. If we don't want someone to know he is being watched, we can watch him out of the corner of our eyes, that is without making the head and eye movements which we would normally make to bring him into focus. Moreover in performing this manoeuvre we allow our eyes to settle on something else that may not register at all and which we cannot, therefore, be said to be looking at or watching. Similarly we can be engrossed in a train of thought for a long period of time without showing any observable sign in our outward behaviour. We can also mutter without paying attention to what we are saying in which case our muttering is not part of our thought.

Two points emerge from a consideration of these examples. The first arises in those cases where the outward movements are absent and the mental activity continues. Here it is difficult to resist the conclusion that an internal process or activity takes over the function performed by the outward observable movements. In the case of watching out of the corner of one's eye, what seems to be required is a process like [that performed by] the central filter mechanism postulated by Broadbent (1958) to account for the selective registration of one out of two or more simultaneously presented auditory messages, which focuses,

as it were, on part of the periphery of the visual field to the exclusion of the stimulation that is impinging on the fovea. In the case of the thinking that occurs without visible or audible speech, it is very tempting to see in mental imagery, whether it be auditory imagery of words or visual imagery of things actually seen, a means whereby the individual can commune with himself without any overtly observable movement.

The second point emerges from the cases where the overt behaviour occurs without any corresponding registration of objects in the line of regard or of the words which the individual is apparently muttering to himself. In these cases although another person may have strong or even conclusive evidence that these stimuli in question were registering at the time from the way the individual adapts his behaviour to them or from his ability to recall them later, the registration itself is a process that can never be observed by another person.

As we have seen, the fact that the existence of mental states is not immediately detectable by another person is not an argument for the view that these states are internal to the individual concerned, since on the dispositional theory the existence of a mental state only becomes apparent if and when the potentiality in which it consists is actualised. The fact that no exercise of the disposition is observed over a particular stretch of time is no evidence for the non-existence of the state. The situation in the case of processes is very different. For a process is by definition something of which it makes sense to say that there is something going on throughout its period of operation, and this, as I pointed out in the 9th paper in the present collection, implies that "a process is something that is subject to continuous change or movement during the period of its operation" (Place 1969b p. 6). Now since it is perfectly possible for someone who is completely immobile to be continuously, watching, listening, feeling pains, itches, throbs, and twinges, thinking, picturing things in his mind's eye or dreaming throughout this period of total immobility, it is clear that the continuous change or movement involved in these processes does not consist in such a case in any change or movement in his limbs or any externally observable part of his anatomy and must, therefore, consist in changes or movement inside him not detectable by gross observation from outside.

Furthermore the idiom of observation and description which, as we have seen, is inappropriate in giving an account of how an individual can tell what he knows, believes or wants, fits very much better in giving an account of how the individual comes to know and is able to tell others about his own mental

processes. The relationship, however, is not a simple one. With one exception, it makes sense to talk of someone observing and describing all the mental processes referred to by the group mental process nouns and noun phrases. Someone can be said to observe and describe, both at the time and subsequently, his sensations, his pains, his itches, his twinges, his throbbings, the spots he gets before his eyes, the singing in his ears, his feelings, his experience, his after images, his mental pictures and his train of thought. The one exception is his dreams which he cannot be said to observe or describe at the time when they are going on, though he can describe them after the event; but this is only because during sleep, when dreams occur, he is not in the frame of mind to scrutinise anything in the careful and attentive way implied by the word 'observation' or to tell any kind of coherent story. But this is very much the case of the exception that proves the rule. For, although we are not in a frame of mind during sleep to scrutinise our dreams, it makes perfectly good sense to say that we are spectators of them in a way that we are not spectators of our beliefs and desires.

In the case of a mental activity verb, on the other hand, it does not make sense to speak of someone either observing or describing the activity itself. An individual can observe and describe his sensations but not his feeling or his having them. He can describe the things he observes or pays attention to, but he cannot be said to observe or describe his observation or the attention he pays to them. He can observe and describe his mental images and other thought processes, and he can describe his dreams; but he cannot observe or describe his picturing or his thinking of them, nor can he describe his dreaming of his dreams, as distinct from the images, thoughts and dreams produced by those activities. Not only is it unidiomatic to talk of someone observing his mental activities; to suppose that careful observation involves a second order observation of the activity of first order observation leads, as Ryle (1949 p.165) has pointed out, to an infinite regress of higher order observations of lower order observations in order to account for the individual's ability to report his own mental activities.

At first sight the fact that it makes sense to talk of 'observing' and 'describing' in the case of mental process nouns, but not in the case of mental process verbs, appears to run counter to one of the basic principles on which the identity theory as applied to mental processes, has been based. This is the contention that in the case of mental process nouns like 'sensation', 'experience', 'mental image', and 'dream' there are not two things, the sensation and having or feeling it, the experience and the consciousness of it, the mental

image and the picturing of it, the dream and the dreaming of it. In such cases the grammatical distinction between verb and object does not reflect a corresponding distinction in reality, as it does in the case where the grammatical object is something in the individual's physical or physiological environment. I made this point originally in 'The concept of heed' (Place 1954 pp. 250 & 252), in arguing against Ryle's "mongrel categorical" theory of heed paying. It was taken up by Smart (1959 p. 151) who made it a central point in his presentation of the identity thesis. He uses it to deflect the objection that sensations and after images have properties such as colour or spatial position that are inconsistent with their being brain processes. Smart argues that it is the having of the sensation or the image that is the brain process, not the sensation or image itself which does not exist as a separate entity apart from the having of it. No one would want to say that the having of a sensation in one's toe was in the toe, or that the having of a green after image was itself green. I used the argument in this way myself in the 6th paper of the present collection (Place 1967 p.67 footnote) and again in the 9th paper (Place 1969b p.9). The same point has been made by Armstrong (1962) in connection with bodily sensations. Armstrong distinguished what he calls "transitive sensations", by which he means what I would prefer to call 'intro-perceptions' like feeling one's heart beating, from "intransitive sensations" like feeling a throbbing. In feeling one's heart beating there are two things the heart beating and the feeling of it since the heart goes on beating when its owner is no longer feeling it. In feeling a throbbing, on the other hand, the transitive-intransitive terminology is a useful way of expressing this distinction; but I do not favour his use of the term 'sensation'. I would prefer to speak of transitive and intransitive consciousness or transitive and intransitive observation reserving the term 'sensation', as it is reserved in my view, in ordinary language, as a name for one of the 'objects' of intransitive consciousness.

I find the distinction between transitive and intransitive observation or consciousness particularly valuable in making sense of the fact, already mentioned, that we can speak of observing and describing in connection with mental process nouns, but not in connection with mental process verbs or adjectives. The point here seems to be that mental process nouns are the grammatical objects of intransitive observation or consciousness. It would seem to be the case that all mental activity verbs either are or involve some kind of observation or consciousness. In the case of some forms of mental activity verbs like 'picturing' and 'dreaming', the consciousness involved is necessarily always intransitive. In other cases, like 'thinking',

'paying attention', 'observing', 'feeling' and 'being conscious of', it can be either transitive or intransitive. 'Looking', 'watching', 'listening', 'smelling' and 'tasting' on the other hand are normally used only in cases of transitive consciousness.

Observing or being conscious of something whether transitively or intransitively entails being able to describe what one observes or is conscious of, both at the time and subsequently. Where the observation or consciousness is transitive what is described is some object or state of affairs in the physical or physiological environment of the individual. Where the observation or consciousness is intransitive what is described is the mental process itself, which is describable, not because it has been observed, but because it is itself a form of observation or consciousness.

Normally intransitive consciousness is only mentioned and described in cases where no transitive consciousness is possible, cases like having a sensation in the ordinary sense of the term where it refers to an experience produced by sensory stimulation which does not lend itself to an interpretation in terms of something being the case in the environment, or like having a dream or mental image where there is no corresponding sensory stimulation as well as not corresponding state of the environment, or like an illusion where the interpretation suggested by the stimulus is known to be incorrect as description of the environmental state of affairs. It is to this kind of intransitive observation that the term 'introspection' properly applies. As I pointed out in my original exposition of the identity thesis (Place 1956 pp. 49-50), descriptions of intransitive consciousness (introspective reports) always take the form of a comparison between the intransitive consciousness that is being described and some form of transitive consciousness which it resembles. For this observation I am indebted to a discussion of what he calls 'low claim assertions' by a former colleague in the Philosophy Department of the University of Adelaide, Dr. C. B. Martin (1954), leads directly to the theory of introspection and introspective reporting which I originally formulated in correspondence with Professor J. J. C. Smart and which he subsequently expounded with appropriate acknowledgements in his formulation of the identity thesis published in 1959.

Psychologically speaking the change from talking about the environment to talking about one's state of consciousness is simply a matter of inhibiting descriptive reactions not justified by appearances alone, and of disinhibiting descriptive reactions which are normally inhibited because the individual has learned that they are unlikely to provide a reliable guide to the state of the environment in the prevailing circumstances (Smart 1959, p. 154).

More recently in the 8th paper in this collection 'Burt on Brain and Consciousness', (Place 1969a), I elaborated this theory as part of an attempt to construct a psycho-physiological theory of consciousness which lends itself to empirical confirmation or disconfirmation rather more readily than the vague hypothesis that consciousness is some as yet unspecified process in the brain. In my view this theory of introspection provides a more satisfactory answer than does the rival theory of an internal scanning process, proposed by Putnam (1960) and subsequently adopted by Armstrong (1968), to the problem which I stated in the 7th paper in the present collection, as follows:

Most human beings believe they can report and describe things that go on inside them that others cannot observe. It may be that this is a false belief and that when they think they are reporting inner processes and events, they are doing something quite different. But if so, it is the responsibility of the psychologist, as a student of human behaviour, to show that human beings do not in fact have this capacity they think they have and explain how they come to believe that they have. If, on the other hand, human beings have this capacity, then it is equally the responsibility of the psychologist to explain how this comes about. (Place 1966 pp. 103-4)

What are the implications of this theory of introspection as intransitive consciousness for the problem of the alleged incorrigibility of introspective reports? In order to answer this question it is necessary, I believe, to distinguish two senses in which a statement may be said to be incorrigible. A statement may be incorrigible in the way that I have suggested first person belief statements are incorrigible, because they are self-verifying. In this sense a statement of the form 'I believe that p' may be false; but the speaker cannot be mistaken in uttering it, since it can only be false in a case where he is not honestly asserting p, as the form of words he uses implies that he is. Introspective reports, understood as reports or descriptions of intransitive consciousness, are not incorrigible in this sense, because unlike statements of belief they describe or report an occurrence that is independent of the report or description that is given of it. They are, however, incorrigible in another sense, in that there is at present no way whereby an independent observer can check the accuracy of the report or description that is given by an individual of his sensations, images and dreams. In the absence of such an independent check on the accuracy of introspective reports, it is not possible to point to cases where the individual is clearly mistaken in the descriptions that he gives of his intransitive consciousness. But from what psychologists have discovered about the factors that influence the accuracy of first hand reports and descriptions in cases where the consciousness involved is transitive and the report or description can be compared with the object or occurrence which it reports or describes (Cf. Bartlett, 1932),

there is no reason to suppose that factors such as expectations, attitudes and other preconceptions do not distort reports and descriptions of intransitive consciousness in much the same way that they are known to distort descriptions of the objects of transitive consciousness. As Bartlett's work demonstrates, such distortions are particularly likely in cases like fleeting images and dreams whose chaotic and inconsequential character inevitably invites rationalisation on subsequent recall, and where there is necessarily an appreciable lapse of time between the occurrence of the mental process and the description or report that is given of it later.

Although such theories are much less obviously applicable to mental processes than they are to mental states, there have been two attempts to give an account of mental process concepts in terms of behavioural dispositions. One is Ryle's (1949) attempt to explain mental activity verbs like 'thinking' and 'paying heed' or 'attention' as "mongrel categorical expressions". The other is Wittgenstein's (1953) theory that first person pain statements "replace crying" which has been adapted with remarkable ingenuity by Malcolm (1959) to the case of dreams and dreaming. I do not propose to examine either of these theories in detail here since criticisms of both of them, have been published elsewhere. The 1st paper in this collection, 'The concept of heed' published in 1954, contains what I would still regard as the decisive refutation of Ryle's mongrel categorical theory of attention and heed paying. The only point I would like to add to this discussion now is to point out that there are at least two mental activity verbs, namely 'trying' and 'enjoying' which *are* genuine mongrel categoricals in Ryle's sense. A mongrel categorical verb as Ryle uses the term, is an activity verb in the sense defined above, but which I better construed as a kind of adverbial expression which derives its logical status as an activity verb from some other kind of activity rather than a special kind of activity in itself. It is always a matter of doing something else in a particular way. Thus one cannot be said to be trying unless there is something, other than the trying, that one is trying to bring about, as well as some other way of characterising the activity in which the trying consists. But trying is not doing something over and above what one is doing in trying. It is simply doing that in a particular frame of mind, namely, in the belief that in so doing one is increasing the chances of bringing about whatever it is one is trying to do. Likewise one cannot be said to be enjoying unless there is some other activity that one is enjoying doing. Enjoying something is not a matter of doing something else over and above the activity that one is

currently engaged in. It is matter of doing what one is enjoying doing in a certain frame of mind, namely, as Penelhum (1969) has suggested, in the frame of mind of wanting to continue doing whatever it is that one is enjoying doing. As I pointed out in 'The concept of heed' (Place 1954), this type of analysis fails in the case of concepts like 'looking', 'listening', and 'paying attention' because our own activities are not the only things to which we pay attention. [We can pay attention to our current stimulus environment as it impinges on our sense organs, not just our own activity with respect to it.] In the case of enjoying, on the other hand, what we enjoy is always something that we are doing at the time. But, as Penelhum (1957) has again pointed out, there is only one kind of activity we can enjoy, namely some kind of mental activity such as looking, watching, listening, smelling, tasting, feeling, contemplating, thinking or dreaming. If, however, we are to give an account of enjoying as the performance of these mental activities in a certain frame of mind, we can hardly go on to argue, as Ryle wants to do, that they in their turn consist in the performance of some other activity in another frame of mind.

Ryle's "mongrel categorical" story is intended to give an account of what I have called transitive consciousness in which the individual pays attention to or is conscious of publicly observable phenomena in his environment, particularly the individual's transitive consciousness of his own behaviour. Since, however, paying heed or attention, on this interpretation, is simply a matter of carrying out some publicly observable performance in a certain way, Ryle assumes that the presence or absence of attentive performance is a matter of public observation and makes no serious attempt to explain the much more obvious privacy of intransitive consciousness involving sensations, mental images and dreams. It is here that Wittgenstein's (1953) discussion of pain and other sensation words and Malcolm's (1959) discussion of dreaming, fills a serious gap in the dispositional theory of mind as expounded by Ryle; although no attempt has yet been made to link these two approaches together into a consistent dispositional theory of consciousness as a whole.

The strength of Wittgenstein's theory lies not in the positive account that is given of sensations and dreams, as in its criticism of the alternative view which holds that sensations, images and dreams are private experiences known only to their owner. It is not difficult to pick holes in the thesis that first person pain-statements are not really statements at all, they are mere cries for help that "replace crying". Nor is it

difficult to pick holes, as Ayer (1960) for example has done, in Malcolm's theory that dreaming consists in the disposition, on waking, to make false statements about what was happening during the period of sleep. It is much more difficult to show that Wittgenstein's private language argument (Wittgenstein 1953 pp. 88 ff.) does not prove what Kenny (1963) for example thinks it proves, namely that there cannot be such a thing as a private experience or private mental event. This is what I tried to do in the 5th paper in the present collection entitled 'Understanding the language of sensations' written originally in 1959, but substantially rewritten for inclusion here.

If, as I think it does, this paper refutes Wittgenstein's criticism of the view that sensation words are the names of private experiences as decisively as 'The concept of heed' (Place 1954) may be said to have refuted the mongrel categorical theory of consciousness, it is clear that there is no case for rejecting, and no effective alternative to the traditional inner process story as far as mental process concepts are concerned. But if we conclude that the only way to account for the fact that mental processes are not available to public inspection is to suppose that they are processes that take place inside their owner, it is difficult to see what meaning can be attached to the word 'inside' here, if it is not taken to indicate that the processes in question take place in a literal physical sense somewhere underneath the skin of the individual concerned. Moreover, since we know that there are processes occurring in the individual's brain whenever he is known to be engaged in any mental activity or undergoing any mental process, and that the functions of these brain processes are very closely related to, if not identical with, those we attribute to mental processes, it is reasonable to assume on the principle of Occam's razor that there is in fact only one set of processes here under two different descriptions.

This, of course, is the position which I took up when I argued that it is not possible on logical grounds alone to exclude an affirmative answer to the question 'Is consciousness a brain process?' (Place 1956). When I proposed the identification of brain processes with consciousness, I was using the term 'consciousness' to embrace the group of concepts which I have here referred to as 'mental process concepts'. Consciousness in this sense was intended to apply only to those cases in which we speak of someone being conscious or aware of an object, whether it be a case of transitive consciousness involving some object or other sensible feature of the physical environment or a case of intransitive consciousness involving a

grammatical object like a sensation, a mental image or a dream. It was not intended to apply, to consciousness of facts, since expressions like ‘being conscious’ or ‘aware that p’ or ‘being conscious’ or ‘aware of the fact that p’ are mental state expressions, not mental process expressions. It was and still is my contention that consciousness of objects in this sense is a mental process and that there are no mental process concepts that do not refer to some kind of object-consciousness, whether transitive or intransitive. As I pointed out in the 9th paper in the present collection,

The mental phenomena which the term ‘consciousness’ was intended to embrace were those mental phenomena and only those which, in my view, could be properly described as processes. It was precisely for this reason that I proposed the identification of this group of phenomena with processes in the brain rather than with brain events, brain states or with performance characteristics of the cerebral machinery. (Place 1969b p. 2).

[Instantaneous] Mental Events

Throughout the series of papers included in the present collection I have consistently maintained that mental processes are processes within the individual tentatively identifiable with processes in the brain. I have also consistently maintained that mental states are to be interpreted along the lines suggested by Ryle (1949) as dispositions to exhibit certain types of publicly observable behaviour and are not to be identified with the states of the brain on which they undoubtedly depend. In my treatment of [instantaneous] mental events, on the other hand, I have repeatedly vacillated between treating them, or some of them as introspectible inner occurrences like mental processes to which the identity thesis can be properly applied, and giving a dispositional account which would place them in the same basket as mental states.

This vacillation over [instantaneous] mental events is well illustrated on the 1st paper in the present collection, ‘The concept of heed’ (Place 1954) where on page 246 the [instantaneous] mental event word ‘recognising’ is included along with a number of mental state words as an example of a concept where

to my way of thinking there can be little doubt that the dispositional account is substantially correct.

On page 252, on the other hand, two [instantaneous] mental event concepts ‘realising that p’ and ‘calling to mind that p’ are used in giving examples of cases where

it makes sense to ask the individual what it is like to watch, listen, observe or be conscious of something

in contrast to having "a certain capacity or tendency" where it does not make sense to talk in this way. In fact I based the latter argument on cases where it makes sense to talk of 'describing what it is like to', instead of just 'describing' in order to include [instantaneous] mental events like realising and the occurrence of a thought to someone along with mental processes in the concept of consciousness.

In the 2nd paper in this collection in which I developed the identity thesis (Place 1956) I confined its application strictly to the relationship between mental processes and brain processes. However in the 4th paper in the present collection entitled "Materialism as a scientific hypothesis" (Place 1960), I accepted the possibility of an identity relationship holding between two independently observed events, although again I confined the application of the identity thesis as far as the mind-body relationship is concerned to the mental process/brain process relationship. In fact I have never deviated from my original view that the neurological side of the equation is to be represented by brain processes rather than brain states or brain events. On the other hand, in the 7th paper in the present collection I followed the usage of my fellow symposiast (Watson 1966) in accepting that the concept of consciousness implies that

human beings can report the occurrence inside themselves of *events* and processes which play an important part in determining their behaviour. (Place, 1966, p. 103 [- italics added])

I have been conscious for many years that my failure to provide a consistent account of [instantaneous] mental events and their relationship to [instantaneous] brain events has been a major weakness of the identity theory in the form in which I have expounded it. There is no inconsistency involved in holding, as I have done, that the identity theory applies to mental processes and not to mental states, while remaining agnostic with respect to its application to [instantaneous] mental events; [but] there is something decidedly unsatisfactory about a theory which gives two distinctly different accounts of two out of the three basic categories which mental concepts are divided without giving an account of the third major category. This account, moreover, fails to suggest any unifying principle which might be supposed to link the three categories of mentality together, other than the rather superficial characteristic of immunity to immediate public inspection. It is this aspect of the identity thesis in the form in which I have expounded it hitherto, which, as I see it, has led to Armstrong's (1966) dissatisfaction with the thesis in its original form and to his formulation of what I regard as the heretical doctrine of Central State Materialism.

The solution to this problem which I now favour is to recognise that [instantaneous] mental events form a kind of bridge or link between mental processes on the one hand and mental states on the other, and that, in conformity with this intermediate status, the psycho-physical relationship between [instantaneous] mental events and [instantaneous] brain events is to be construed as a kind of double aspect relationship intermediate between identity on the one hand and causal dependency of independent entities on the other.

As we have seen, [instantaneous] events differ both from states and from processes in that they are not extended in time. On the other hand like processes and unlike states, they are occurrences. The essential feature that occurrences have in common which differentiates them from states is that they involve change. In the case of processes which are extended over time the change is either progressive, as in the case of what I have called "productive processes" (Place 1969b p. 7), or fluctuating. In the case of [instantaneous] events the change is, needless to say, instantaneous. States, on the other hand, do not change as long as they are the case. When a state changes it ceases to be that state; [either] another and different state has come into being[, or the state has been superseded by a process. In either case the transition from one to the other is an instantaneous event, as it is when one process is succeeded by another or when a process is succeeded by a state.]

The fact that [instantaneous] events involve change whereas states necessarily remain the same would seem to suggest that [instantaneous] mental events are like mental processes in being available to inspection only by their owner. For though we can often tell by the gleam that comes into someone's eyes that he has noticed, realised, recognised, grasped or inferred something, what we observe in such cases is a behavioural by-product of the [instantaneous] mental event, not the event itself, which may occur without any outward observable sign. Yet the individual to whom an [instantaneous] mental event occurs usually has no difficulty in reporting, not only what happened, but precisely when it happened. Changes of this kind clearly are not publicly observable changes in behaviour, and it is, therefore, very tempting to conclude that they must be introspectible changes in the individual's inner life. The dispositional theory, which attributes the public invisibility of mental states to the hypothetical character of what is asserted when they are attributed

to someone, seems much less plausible in accounting for the public invisibility of the precisely clockable change that constitutes a mental event.

There are other respects, however, in which [instantaneous] mental event concepts are very much more like mental state concepts. The chief of them is the fact that, with the exception of 'deciding to do something' which sometimes entails intending to do it, all mental event concepts fall into the category of cognitive concepts in the sense that they entail either 'knowing something' or 'believing something'. Thus 'noticing' entails 'knowing that there is something answering to the description in question in or on whatever the individual was observing at the time'. 'Realising' entails 'knowing that what was realised was, is or will be the case'. 'Recognising' entails 'knowing that what one is observing is something that one has observed on a previous occasion'. 'Grasping the point or the meaning of something' entails 'knowing what the point is or what the thing means'. 'Inferring' entails 'believing that the conclusion in question follows from or is in some sense justified by the premise or premises from which it has been derived'. 'The occurrence of a thought' entails '[having] at least a temporary inclination to believe ~~it~~ [or act accordingly]'. In this respect [instantaneous] mental event concepts are quite different from mental process concepts. For although 'looking', 'watching', 'listening', and 'observing may be described as cognitive concepts in the sense that they all refer to ways of getting to know something, they are not cognitive concepts in the sense we are considering, since they do not entail any actual knowing or believing. One can look and fail to see, listen, and fail to hear, pay attention and fail to notice, think and fail to reach a conclusion, ponder and fail to decide.

These examples serve not only to bring out the point that mental activity or process verbs do not entail mental state verbs, in contrast to mental act or [instantaneous mental event] verbs which do. They also draw attention to the fact that [instantaneous] mental event words usually, if not invariably, refer to the attainment of the goal towards which some kind of mental activity is directed, the goal of the mental activity being the attainment of a mental state which consists either in some kind of knowledge of some kind of belief or, as in the case of a decision, in an intention to do something. This, I take it, is the point that Ryle (1949 pp.149-153) is making when he draws attention to the distinction between "task" and "achievement" verbs and the relationship between them.

As I pointed out in the 9th. paper in the present collection

any process, like any state, entails at least two events, its beginning and its end (Place 1969b, p.10).

One might add that every event is both the end of one state or process and the beginning of another. In some cases, as when a billiard ball hits the cushion, one process, movement towards the cushion, ends and another process, movement away from the cushion, begins. In other cases, as when the ball loses momentum and stops, a process gives way to a state. When the ball is struck by the cue or by another ball, the stationary state gives way to a process or movement; but in such cases attention is usually focused on the process-process relationship between the movement of the cue and the movement of the ball when struck by it. Changes from one state to another without an intervening process, though logically possible, belong to the realm of magic and miracles rather than to reality as we know it in every day life. It is clear from this that events which end a process and begin a state are one of the two most common varieties of event, the kind of event, moreover, that is necessarily required to bring any purposive activity to its consummation. It is not surprising, therefore, to find that all the [instantaneous] mental events to which we commonly refer are of this type.

If the mental events to which we commonly refer are, as I have suggested, always transformations of mental processes into mental states, and if, as I have also argued, mental states are dispositions to behave, whereas mental processes are private occurrences within the individual, what are we to say about [the instantaneous] mental events [whereby a mental process results in a mental state]? The answer that suggests itself is that [instantaneous] mental events are a bit of both. In so far as they constitute the termination or consummation of a mental process, they involve private occurrences within the individual; in so far as they constitute the beginning of a mental state, they involve dispositions to behave in a publicly observable way.

The view that a [n instantaneous] mental event consists in the production of a mental state by and out of a pre-existing mental process, implies that the truth conditions governing statements asserting the occurrence of a mental event are a matter of some complexity. To say that someone saw, heard, realised, recognised, remembered, inferred or decided something, or that a particular thought occurred to him, implies on this view

- (1) that he was engaged in some kind of mental activity such as looking, listening, or thinking at the time,
- (2) that from the moment in question he was for a short time at least in some kind of mental state such as knowing, believing or intending to do something, which was not the case before the event occurred,
- (3) that the mental state in question came into being at some specific point in time, and
- (4) that the development of the mental state occurred as a result of the antecedent mental process.

The truth conditions that apply are necessarily different for each of these separate assertions. Thus the first of them is a statement about the occurrence of a mental process and is therefore subject to the truth conditions governing such statements. ~~Hence~~ [If the argument presented above is correct, this part of what is involved in ~~the ascription of a mental event refers~~ [ascribing the occurrence of an instantaneous mental event makes reference] to a private inner process of consciousness whose objects whether transitive or intransitive can be described by the individual in whom the process occurs, either at the time or in subsequent recall, but which cannot be inspected, as thing stand, by anyone else. The second constituent assertion, on the other hand, ascribes a mental state to the individual. In this case, ~~therefore~~, the truth conditions governing the ascription of mental states apply. On the view presented above this means that the existence of the state in question ~~can be~~ [is] determined objectively by applying the appropriate test, ~~which in the case of a belief is satisfied quite simply by the assertion of the proposition believed by the individual in question.~~ [In the case where the mental state involved is a belief or an intention, its existence is shown by a sincere verbal expression of the belief or intention in question, where the sincerity of that expression is demonstrated by its congruence with the speaker's subsequent behaviour. In the case where the occurrence of an instantaneous mental event requires that the individual concerned should have achieved the mental state of knowing something to be the case, we must be satisfied not only that the relevant verbal and behavioural dispositions are present, but also that what is asserted or liable to be asserted is true.]

In this connection, however, a problem arises in the case where a thought occurs to someone which he does not adopt as a belief. The problem here is not that there is no dispositional mental state that comes into existence when the thought occurs, since it seems not unreasonable to argue that if the thought that p

occurs to someone, he is at least temporarily inclined to believe that *p* and hence disposed to assert *p*. The problem arises from the fact that in the case we are considering he may no longer be even inclined to believe *p* when he comes to report the occurrence of the thought that *p*. Consequently, in reporting the occurrence of the thought that *p*, he is not *ipso facto* asserting *p*, as he is when he expresses the belief that *p*. Hence the statement 'the thought occurred to me that *p*' is not self-verifying in the way that the statement 'I believe that *p*' is self-verifying. On the other hand, it is logically on all fours with past tense first person belief statements of the form 'I used to believe that *p*', which are likewise non-self-verifying. However past tense first person belief statements do not have the characteristic of incorrigibility that applies to first person present tense belief statements. For it is perfectly possible for someone to make a mistake in reporting his past beliefs. It sometime happens that a scholar makes a statement about the beliefs which he held at a certain stage of his career which can be refuted from a study of his published works written at the time. Similar mistakes can occur in reporting the thoughts that occur to the individual, though in this case they are less common or less commonly detected, partly because thought occurrences are usually reported very shortly after their occurrence, when there is less likelihood of memory distortion, and partly because people are less inclined to commit themselves in speech, and still less in print, to evanescent thoughts which they do not incorporate in their system of beliefs. But unless he is heard to blurt out his unconsidered thoughts as they occur, it is clear that the individual is normally in a much better position than anyone else to know what thoughts occur to him. In some cases, where the individual exercises his tentative disposition to assert a given proposition by muttering a form of words under his breath that is audible only to himself or by imagining himself speaking, hearing or reading the words in question, he can quite properly be said to derive his information about his own thoughts from introspection. But in the case of the so-called 'imageless thoughts', which were the subject of a famous psychological controversy at the beginning of this century, where the individual is able to report the content of his thoughts, although no words of imagery occurred at the time, we cannot say that this information is derived directly from introspection in the sense defined above, where it refers to a process of intransitive observation or consciousness. What presumably happens when an individual reports an imageless thought of this kind after the event, is that he rehearses from memory the sequence of objects of which he was both transitively and intransitively conscious until, by so doing, he reinstates his mental state

at the time in question. He is then able to express in words the verbal disposition which was previously left unexpressed. In such cases the information provided may theoretically be mistaken, since it is subject to the fallibility of memory; but as in the case of introspection proper it is incorrigible in that, as things stand, no one but the individual concerned is in a position to correct any mistakes he may make.

This explanation of the way in which the individual acquires the ability to report his imageless thoughts, also accounts for his ability to specify, as no one but he can do, precisely when it was that a particular [instantaneous] mental event occurred to him. For to locate an occurrence is essentially a matter of specifying its position in a temporal sequence of antecedent and subsequent occurrences, which is precisely the sort of information which a rehearsal of the kind envisaged above would give. It will be noticed that the temporal location of a [n instantaneous] mental event, like the mental process which gives rise to it, and unlike many of the mental states that result from it, is something that is not subject to objective determination by an outside observer. Nor yet is it something that is directly ascertained by introspective observation. For although the individual may be said to observe both the antecedent mental process and any subsequent expression of the mental state that results from it, the mental event itself is not susceptible to observation or description. An outside observer can satisfy himself that someone has seen, heard, recognised, decided or inferred something from what he says or from the way he behaves, but he can seldom determine with any certainty how long this new found potentiality had existed before it was expressed in word or deed. As far as the timing of mental events is concerned the individual himself has privileged access to inside information not available to an outside observer. [The reason for this is that only he has access, through introspective observation, to the sequence of conscious experiences by reference to which the instantaneous mental event is temporally located.]

Finally in the case of the causal relationship between the antecedent mental process and the subsequent mental state which is implied by the assertion that a [n instantaneous] mental event has occurred, it is clear that[,] on any view of the epistemology of causation, ~~the individual in whom the mental event in question occurs is in a much better position to determine the existence of such a causal relationship than is an outside observer. For information about the occurrence of the antecedent mental process and the onset of the mental state, both of which are important in drawing conclusions of this kind, are, as we have seen,~~

available to the individual concerned in a way that are not available to an external observer. However, as is shown by the phenomenon of beliefs demonstrably induced by verbal suggestions made by another person, which are nevertheless explained by the individual as resulting from his own sensory experience of the phenomenon in question, it is quite possible for the individual to be mistaken in asserting a causal relationship between a particular mental process and a subsequent mental state. [knowledge of the precise temporal relations between the various events involved is essential, if we are to make reliable judgements of the causal relations holding between those events. But, as we have seen, the individual in whom an instantaneous mental event occurs is in a privileged position to determine the temporal location of such events. It follows that that individual has an equally privileged position with respect to making judgements of causal relationship between antecedent mental processes and the ensuing instantaneous mental event constituted by the onset of the mental state. It is, of course, possible that some of these judgements commit the fallacy of *post hoc, propter hoc*, although the intimacy and long-standing nature of the individual's experience of the way mental processes are succeeded by mental states makes it unlikely that such mistaken causal judgements are at all common in the sphere of the mental. Nevertheless, as is shown by the phenomenon of beliefs demonstrably induced by verbal suggestions made by another person, which are nevertheless explained by the individual as resulting from his own experiences and thought processes, it is quite possible for the individual to be mistaken in asserting a causal relationship between a mental process and the onset of a subsequent mental state.]

The final problem that demands our attention is the relationship between [instantaneous] mental events and the [instantaneous] brain events with which they are presumably correlated. We can find the answer to this question, I suggest, if we consider a mechanical analogy, similar to the analogy of horse power which I used in discussing the relationship between mental states and brain states in the 6th. paper in the present collection (Place 1967). In the case of a [n instantaneous] mental event, the appropriate analogy, ~~in my view, is in the closing of a switch that puts the light on in a room~~ [I suggest, is the actuation of a changeover switch on a relay which determines which of two lights, one red, one green, comes on when, at some later stage, another switch is thrown]. Here we have ~~one~~ [a single] process[,] the moving of the switch[,] which results in two distinct states, ~~the switch in the closed position and the light being on. Here the switch, when~~

~~in the closed position, keeps the light on, and we have no temptation to say that the switch being in the closed position is the same thing as the light being on. But when we consider the event whereby the switch closes and the light goes on, although we should still want to say that the switch closing and the light going on are to that extent two separate causally related things, we do not speak of two separate causally related events. There is only one event with two causally related parts or aspects, the closing of the switch and the light going on. [On the one hand there is the partial completion of the circuit leading to the one light, combined with a further breaking of what had been the partially complete circuit leading to the other. On the other hand there is the resulting change in the dispositional state of the system whereby a different light will come on when the circuit is finally completed. These states are causally related. The change in switch position alters the dispositional state of the system. There is no temptation here to say that the position of the switch *is the same thing as* the propensity for one light to come on rather than the other when the circuit is later completed. The analogy between the horsepower of an engine and the features of its microstructure, such as the cubic capacity of its cylinders which give it that horsepower, is exact. The same goes for the two instantaneous events whereby those two causally related states begin to exist. The switch opening and closing and the onset of the propensity for one light to come on rather than the other are two distinct and causally related events. The simultaneous opening and closing of the switch has these two effects, one direct, the other indirect. Directly it determines which of two circuits is partially complete. Indirectly it determines which of the two lights comes on, if and when the circuit is completed.]~~

On this analogy, when someone notices, realises or decides something, there is a change in the state of the brain which results in a change in the in the dispositional properties of the behaving organism. The state of the brain and the mental state are two separate and causally related things, from which it follows that the mental event whereby these two states come into being has two ~~causally related things, from which it follows that the mental event whereby these two states come into being has two causally related parts or aspects, a change in the state of the brain which produces the change in mental state. But these two changes do not constitute two separate events. There is only one event with these two aspects, one mental, the other neurological.~~ [effects, one direct, the other indirect. The direct effect is a change in the state of the brain which produces, indirectly, the change in mental state. But what is peculiar in cases such as this is that there

is no separate event whereby the direct effect of the event, the change in switch position in the one case, the change in brain state in the other, produces its indirect effect, a change in the propensity for one light to come on rather than the other in the one case, a change in mental state in the other. There is only one event with these two distinct and causally related effects. In terms of the traditional solutions to mind-body problem we can perhaps construe these as cases where there is but one event with two aspects, one structural, the other dispositional, in the mental case, one neurological, the other a mental disposition. This curious relationship which applies as much to the case of the changeover relay switch as it does to the case of a mental event reflects the fact that such instantaneous events constitute the interface between a unitary antecedent process and two distinct and causally related states, one structural, one dispositional, whose initiation are its simultaneous effects.]

This dual aspect solution, ~~by contrast is not acceptable~~ [cannot be invoked] in the case of mental processes. For in a case such as lightning and the electric discharge through the atmosphere which I ~~used~~ [cited] in the 1956 paper, ~~where the occurrence of a process is conceptualised and observed in two different ways, we do not say that the electric discharge causes the lightning or that the electric discharge and the lightning are two separate parts or aspects of a single process~~ [there is no temptation to say that the electric discharge causes the lightning or that the electric discharge and the lightning are two aspects of the same thing]. ~~The electric discharge and the lightning are~~ [These are quite simply two descriptions of] one and the same process. ~~If, therefore, as I have argued since 1954, this is the correct analogy to apply in the case of mental processes and brain processes, the relationship of mental processes to the associated brain processes must likewise be one of identity and not a dual aspect relationship.~~ [Consequently, if, as I have consistently held since the 1st paper in this series was published in 1954, this is the right analogy for the relation between mental processes and the brain processes with which they are correlated, these too must be alternative descriptions of one and the same process.]

To conclude, the general theory of the mind-body relationship which I now maintain is a tripartite theory. The [nature of the] relationship ~~that applies~~ between brain and mind is held to depend on whether we are dealing with mental states, mental events or mental processes. In the case of mental states I hold a dualist view in which there is unidirectional causal action of brain states on mental states. This not, however,

an epiphenomenalist view since I also hold that mental states ~~in their turn determine~~ [are causes of] behaviour. In the case of mental events I hold a ~~double~~ [dualist] aspect view in which ~~again the brain aspect acts unidirectionally on the mental aspect~~ [one event has two aspects or effects (brain states and mental states) such that the brain state stands as cause to the mental state as effect]; while in the case of mental processes I hold, ~~as I have always done, that the relationship is one of identity~~ [an identity theory in which the mental process and the correlated brain process are two descriptions of one and the same process].

However, since ~~in spite of~~, [despite] Geach's (1957) arguments[,], I still ~~maintain a behavioural disposition theory of mental states and the mental aspects of mental events, reserving categorical status for the independent brain states on which they depend, in conceding dualism to be true of mental states and the double aspect theory to be true of mental events~~ [subscribe to a Rylean dispositional theory of mental states, albeit one which recognises the causal dependence of such states on states of the brain, in advocating dualism in the case of mental states and a form of dual aspect theory in the case of mental events], I am ~~not~~ making any concession to the traditional view of the mind as something that has [in no way weakening my opposition to the view that the mind is a supernatural entity with] no place in the ~~physical~~ world [of physics]. Nor ~~in spite of this emphasis on the logical~~ [, despite the insistence on the ontological] heterogeneity of mental concepts, am I denying the ~~underlying~~ unity of the mind [considered as a biological system]. For the goal of mental activity is the production of a mental state and the attainment of that goal is a mental event.

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