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The Relation of Mind to Brain¹

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Prolegomena

The text that follows defines the notion of mind. The definition is not, however, stipulative, as it is felt that the concept is fundamental and cannot be analyzed in such a manner, rather, the 'definition' is an explanation of how the conception came about. One commences, therefore, with the notion of mind and following a Kantian strategy, one has at the same moment the conception of that which is not mind. Mind and not mind stand in a relation of mutual implication. This strategy of holding that the meaning of a conception can only be realized by a sideglance at its converse should, it is felt, be resorted to whenever both the conception and its converse are fundamental notions and cannot be defined stipulatively.

The rules of thinking employed are those of the classical philosophers, the main one being that descriptions derived from one standpoint should not be confounded with descriptions derived from any other. This is not to deny that by the taking up of a new standpoint conceptions are modified from the point of view of the old; it is to deny, however, that the modified conceptions are a *pure* amalgam of conceptions derived from both standpoints without the information derived from one standpoint predominating. Rather, one standpoint provides a 'given' and another an 'interpretation', and when one is taken up conceptions from any other are unknowable strictly from the point of view of the initial standpoint. By

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flitting from standpoint to standpoint one obtains the whole picture but the information obtained from each standpoint is strictly limited.

The fabrication of the mind experience together with the external world is analyzed ontogenetically. Both conceptions are considered as 'tied to' specific standpoints and are refined and constructed by the 'application' to each other of indigenous elements. The applications are called 'traductions' and an increasing complexity of cognitive structure corresponds to various 'traductory levels'. A traduction, therefore, enables the experiences of one standpoint to be interpreted in terms of the possible experiences of another and hence is the fundamental basis of all experiential interpretation.

The paper is unreservedly Piagetian and also an attempt to geneticize metaphysics. The Piagetian strategy [PIAGET, 1950, p. 45] of genetic analysis known as 'interactionism', (which is not to be confused with the mind-brain view of that name), is to treat and explain the participant in a spectator fashion. Here, on the other hand, the spectator aspect of phenomenology is treated in a participant fashion. The two strategies would appear complementary – the one applying to epistemology, the second to metaphysics. PIAGET makes a distinction between 'épistémologie génétique généralisée', by which there is no stepping outside of the tangle of mutual implicative relations and 'épistémologie génétique restreinte' by which the experimenter is outside the system under study and traces the longitudinal development of cognition. Whereas by the first method of study the experimenter is himself contained within his own subject matter, by the second method he observes the 'interaction' of environment and subject in the fabrication of the subject's own cognitive schemas. Figuratively speaking, by extrapolating to the answers to well-posed questions, the experimenter is able to don the spectacles of the subject and make inferences about the world as it appears to the subject. It should be noted that this method is purely scientific and based upon the gathering of data from thought experiments. The first method, on the other hand, is a logical enterprise and the step from the subject's conception of his world to the experimenter's, i. e., our own, brings in the use of the first method.

By the use of an 'épistémologie génétique généralisée', the starting bases and vantage points of various classical philosophers are analyzed and it is shown that logically derived conclusions regarding the mind-brain relation are dictated by the various starting points at various traductory levels. Finally, various fallacies are pointed out arising from the simultaneous adoption of two vantage points.

A distinction is made between two mutually implied logical orientations which are felt to be fundamental to the standpoint of psychological and biological theorizing. As the distinction is fundamental, no stipulative definition is given, the conceptions being grasped intuitively. That is to say, the problem data require their supposition. The distinction is that between:

a) participant phenomenology or the experience of 'private' feelings, desires, thoughts
and

b) spectator phenomenology or the view of the external world without consideration of experience peculiar to oneself.

Furthermore, it is strongly felt that certain conceptions and certain distinctions are made by the organism qua machine and *are not derived from experience*. That is to say, information is engendered by the organismic mechanism, and utilized by the organism as '*basic information*' in the regulation of its activities. The distinction may be said to be given as part of the '*physiological a priori*' of the organism. For example, the distinction between self-produced and other-produced movement would appear to be related to the regulative principle that engenders 'reafference' by HOLST and MITTELSTAEDT [1950]. The 'experience' of will is derived, therefore, *unexperientially*, i.e., it is not derivable from sensations or impressions from the external world, and the organism is 'informed' by a 'feedback' from regulative machinery. Likewise, the self-other distinction is given innately by the same principle and similarly, not by experience. If one is averse to reading into the writings of others the discoveries of later men, then the honours for emphasizing the importance of regulative machinery do not go to KANT ([1790] 'Critique of Judgment') but to ROSENBLUETH, WIENER and BIGELOW [1943] and WIENER [1961]:

'The central nervous system no longer appears as a self-contained organ, receiving inputs from the senses and discharging into the muscles. On the contrary, some of its most characteristic activities are explicable only as circular processes, emerging from the nervous system into the muscles, and re-entering the nervous system through the sense organs, whether they be proprioceptors or organs of the special sense' (p. 8).

Other fundamental mutually implied conceptions without stipulative definition are:

A. Function or the transmission of information, which is in a relation of mutual implication with: structure - which is information, or, mo-

definitely, is the criterion for the regulation of action. A subspecies of structural information (the metron content of the metron-logon content distinction below) is in a relation of mutual implication with:

B. Those cycles of feedback activity which *engender* structural information utilized in the regulation of action. As before stated, these cycles of activity belong to the organism qua machine and *their plan of organization does not leave the organism*, i.e., they are 'closed systems', whereas the organism considered as a functioning structure is an 'open system'. Such being the case, these cycles may be considered from a functional standpoint as both *pre-structural and pre-functional*. From one point of view, they may be considered as a '*ground plan*' of *information engenderment* utilized in the organism's spatial orientation. On the other hand, a subclass is concerned with motivation: viewed as a homeostatic device, the perturbations in the internal environment engender information that leads to disequilibrium. The 'behavioural supports' in the external environment, the attainment of which leads to the re-establishment of equilibrium, may be considered as 'cognised values'. To the organism qua machine these 'goals of activity' have value only with respect to the primary value of disequilibrium reduction and the discrepancy between the perturbed state and homeostasis may be considered as information.

Unlike functional cycles in an open system, 'adaptation' to a new imposed link-up of those closed regulative cycles never occurs [cf. SPERRY, 1950]. Whenever adaptation in organismic functioning does take place, there is, rather, an adaptation *to* the information *provided by those cycles* in the face of incompatible information in the functional cycle (cf. experiments showing eye-hand rearrangement using prisms).

The cybernetic conceptions here outlined have affinities with ALLPORT's [1955] perceptual notions.

Finally, the irreducibility of these distinctions to stipulative definitions is utilized in explaining the irreducibility of the concept of mind to the concept of brain and vice versa.

Introduction

From an *empirical* study of the organism it may be suggested that if organismic functioning is to be explained there are certain distinctions of a fundamental nature to be made derivable from engineering considerations, namely, the differences between:

- a) function or the transmission of information,
- b) structure or organization measured as information which is the criterion of regulation,
- c) the *engenderment* of structural information by feedback loop activity in a match or mismatch between an expected and obtained feedback of a purely quantitative kind. That is to say, a *metron* informational expectancy is intended rather than a *logon* informational expectancy (cf. MACKEY [1950] for the distinction), which also obtains in the organism but with which we are not concerned here.

From a *logical* study of the mind-brain relationship, on the other hand, it may be suggested that there are two fundamentally different types of phenomenological awareness. The suggestion is again a consequence of a consideration of all the phenomena to be explained. The first may be called *participant phenomenology* and consists of what is generally meant by the 'experience' of mind or the 'privacy' of feelings, desires and thoughts. The second may be called *spectator phenomenology* or awareness of whatever exists 'out there', i.e., the 'external world', apart from oneself. It will be noted that both phenomenologies are equally subjective and mutually imply each other. Also, they are equally dependent upon the neurophysiology of the individual. What the 'external world' is apart from this neurophysiological relativism is felt to be a fruitless question even if, as we shall later show, a logical construct is required. Now, whereas structure is intended by and is peculiar to spectator phenomenology, function, by definition, can only be participant. Thus the 'experience' of function is not public and hence there is a difficulty in the verification that others have minds.

By the subsumption of organismic functioning under the topic 'neutrality' of cybernetic explanation, it may be contended that the organism transmits information. Let it be admitted, too, that the organism is an 'open system' [VON BERTALANFFY, 1950] but then consider the organism and environment together as constituting a functional cycle. In so doing, a time factor is needed in order that information may be introduced into this flow and in order that the cycle does not degenerate into a totally 'closed system'. By introducing a time dimension a balance may be arrived at between a mobile 'open system' and a 'closed system' but the 'universe', when it includes the organism, may still be imagined as 'closed'.

Now, if the 'universe' *excluding* the organism is also considered a 'closed system', then a mobile 'open system', such as an organism, will form a hybrid system with this 'universe'; on the other hand, an organism

will be a mere part within the 'universe' when immobile and merged totally with it. This hybrid system of organism and environment illustrated in fig. 1 (see p. 150) is a functional cycle and should be thought of as functioning over time. In this functional cycle, it is the affecting line of the cycle that is concerned with information transmission and the effecting line that is concerned with exerting control over the information that is transmitted.

Recently, the problem of 'meaning' has caused cyberneticians some concern. CHERRY ([1957], p. 182) has pointed out the need for an appraisal of the individual's subjective utilities when discussing decision processes. Yet by rejecting the notion of a reactive organism in favour of an organism relatively high in the phylogenetic tree that perceives judgmentally (i.e., an organism that has sophisticated machinery for discrimination on its input side), it may be shown neurophysiologically and cybernetically [cf. BARRETT, 1964] that by a processing of the input the organism aids in the fabrication of informational 'chunks' [MILLER, 1956] and *also* utilizes the information in regulating its effecting activities. It is because of this that the one-way effecting part of the cycle is not envisaged to constitute the whole cycle. So if, as we think, 'meaning' is the experience of a relation, i.e., the 'chunk's' regulating property (leaving aside the memorial aspect of decoding), then this is our 'observer' – a relation. And the relation is between input processing and (or rather in terms of), output regulation.

So the functional cycle is not at all a simple affair. If the organismic or 'open system' – end is abstracted, then the remainder, i. e., the environment, changes its informational or structural display according to the informational flow in the remainder of the 'universe' from which the organism is artificially abstracted by us. Yet the organism causes informational flow by its activities, in which case the organism forms part of the 'universe'. The cycle depicted in fig. 1 (see p. 150) is thus an instantaneous abstraction of these processes.

Within the organism, the cycle is regulated in accordance with the biological utilities of homeostasis, i.e., values both survival and acquired. Criticisms of the application of the concept of homeostasis to organismic motivational processes have relied overwhelmingly upon the data on 'curiosity drives'. However, if, as seems very likely [cf. SOKOLOV, 1960], curiosity is but a state of disequilibrium arising from a mismatch between expected and obtained outcome on the input side, then a 'curiosity drive'

becomes but a drive to allay disequilibrium by an 'inmapping' of current outcome from previous activity into a neurophysiological structure that provides a criterion against which input is matched.

If the environment determines the information transmitted, then values determine whether effects are executed in accordance with this transmission. Thus with respect to the flow on the cycle, both environment and organismic utilities act as 'pointsmen' (structure) to the ongoing traffic.

Having shown that we are aware of the complexity, we may, with impunity, temporarily ignore it and deal with the simple abstraction of the functional cycle. By doing so, it will be apparent that there is no distinction to be made between organism and environment. It has been a centuries long matter of philosophical speculation how this cleavage takes place. Just how it takes place was not, however, a legitimate logical problem. Now, students of proprioception and, more recently, HOLST and MITTELSTAEDT [1950] have contended that through regulation by 'reafference' from the organism's own effectors, i. e., regulation by a discharge from effectors indicating that movement has been self-produced, there is information available to distinguish between the organism as a mere recipient of external stimulation (as when it is immersed in the universal functional cycle) and when the organism is actually effecting change in the 'universe'. Deprived of this mechanism, the organism could not experience 'meaning' or regulated effects, or even be conscious. This is because, a priori, if the organism is to be effective, i. e., in control of its effects (a defining property of an organism), then, given the above pre-suppositions,

A. the transmission of the change in information caused by the effects must be realised to be self-effected, since, as we have defined it, 'meaning' refers to the experience of the capacity to utilise the transmitted 'chunks' in order to regulate effects and without this information no 'outcomes' (in the logon content sense) of activities could be predicted; and

B. taking as the (unverifiable) criterion of the existence of mind the ability to accomplish means activities (for without this ability the organism's spontaneity becomes and regresses to reactivity - an admittedly speculative proposition, but no inferences can be verified [function is pure participation]), then, with organismic affect and effect functioning autonomously, there can be no means activities, no sense of time, no experience of 'meaning', ('meaning' defined here as the affect-effect relationship), hence no experience of 'mind'.

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interpretation of the information engendered by the Holst-Mittelstaedt-Wiener mechanisms we shall call 'conatus'.

The distinction between function and structure has been made more recently by PRIBRAM [1963, p. 122] in his restatement of motivational problems, drive being the functional aspect of a structural homeostat. Here, on the other hand, we are concerned with function in its participant sense and structure in its spectator sense; that is to say, structure other than that to which the function with which we are concerned is logically tied. The concern with the function of an organism and also the structure of that organism's functioning is a legitimate *scientific* enterprise and no respect is paid to the observation base as the organism is viewed from two points (functional and structural) *simultaneously*. The concern, here, with the function of an organism and the structure (in the *organism's* 'external world') intended by this function is a legitimate *logical* enterprise – and one conducted with strict regard to the observation base of the logician's thinking. It is necessary to keep in mind which method is being employed and to adopt the appropriate rules of thinking.

The first traduction

At this stage the self exists as mere value and conatus and the external world of the self as mere structure and change; both are differentiated for self is constituted by flow or entelechy (LEIBNIZ) that is alien to structure.

But self intends by its sense of value (speaking in a participant sense), or, its homeostatic utilities (speaking in a spectator-scientific sense), to control the structure of its external world and the following strategy was found effective: self applied its 'furniture' to the external structure so that its world became constituted by both a structural appearance and also, by the application of 'conatus' to structure in transition, by a conception of force. The amalgam of these two constituents produced the notion of causality; for HUME was structure-oriented as were WILHELM WUNDT and all the introspectionists including TITCHENER. For if the examination is by 'experience', i.e., spectator phenomenology alone, then one may not examine 'causality' exhaustively for it involves an interpretation (of force) that is not indigenous to it – 'experience' being used here in the sense of perceptual or visual-sensational experience, which is the way it is used by most empiricists.

Another example: the *activity* of thinking is purely functional; but when introspecting, when retrospectively, 'immanent objectivity' is transcended and one is structure-oriented to the end result of the tactical and strategic manoeuvres of thinking. And because of this the Würzburgers failed (cf. HUMPHREY [1951] for an account of their work). One *cannot* be both a Wundtian and a follower of BRENTANO, for the one's orientation precludes the other's and so does their subject matter and method. Even if the language used to describe so-called 'sensations' is illegitimately derived from the language of the external world, WUNDT was quite correct in pouring invective over the Würzburg School, because his method was misapplied to a foreign subject matter. A method of structural analysis was used to investigate the functional activity of thinking and the Würzburgers were in the unenviable position of applying an illegitimate method illegitimately. WUNDT's subject matter was functional and his true method was never developed. The method is contained in a deduction of the logical consequences of cybernetic principles.

Therefore, as far as the question of the constitution of the concept of causality is concerned, one may juxtapose the structural analysis of HUME and the pure functional analysis of MAINE DE BIRAN, both opting for a pure (and incorrect) analysis of that which is an amalgam of structural experience and functional interpretation.

It is a consequence of this derivation of causality that when talking in mentalistic terms or terms derived from an organismic observation base the notion of causality must be dispensed with as alien to this standpoint. Thus PIAGET uses the conception of 'implication', e.g., a stimulus implies a response when assimilated to a schema (in a conditioning situation) even if the response is not executed. Likewise, MILLER, GALANTER and PRIBRAM [1960] writing on purposive behaviour have coined the term 'Plan' to designate the required conception of a bridge between the cognitive-regulative aspects of organismic functioning and the orctic.

The second traduction

WUNDT's objective of describing sensations in language derived from the external world was an illusion. It was an illusion because descriptions of the external world are *logically* prior to descriptions of sensations which are derived from the former descriptions. As has been pointed out by ALEXANDER [1963] there is a difficulty in the realization that a rule is

being followed in naming the sensations; for the impression that one follows a rule does not confirm that one follows a rule unless there can be something that will prove the impression correct. And this impression cannot be another impression for that would be 'as if someone were to buy several copies of the morning paper to assure himself that what it said was true' (WITTGENSTEIN). WUNDT's attack on the Würzburgers' account has been said merely to voice the usual objections to introspectionism but this is not the case. It is one thing to hold that mental life is a functional activity and that introspectionism, since it only lays hold of structures, is the wrong method to apply to the study of the mind; and quite another to hold that introspectionism reveals only structures whether mental life is a functional activity or not, so that if people are found discovering functions by this method, they are then misapplying the method. The Würzburgers' strategy was as follows: firstly, by the application of the introspective method no structures were found where commonsense might suppose they would be found thus leaving a gap in an explanatory framework; next, the gap was filled by relinquishing presentationalism and by putting on the theoretical spectacles of BRENTANO's act psychology; and finally, there was a regression back to presentationalism for explanations and for the requirement of a structure corresponding to the functions previously postulated. Needless to say, the enterprise was a theoretical doublecross. Equally, the distinction made by BRENTANO between «innere Beobachtung» and «innere Wahrnehmung» although valid, does not rid one of the necessity for a 'private language' in order that the observations of 'innere Beobachtung' may be described; and 'private languages', as has been pointed out elsewhere, are logically impossible.

Perceiving that objects were affected in a cause-and-effect manner in the external world, self by an act of pure interpretation applied the notion of causality to itself whilst experiencing in a naive realistic fashion, i.e., participantly. This traduction was purely interpretive, unlike the first traduction, the result of which had resulted in a functional interpretation but with structure experienced. The second interpretive traduction, therefore, was alien to the same indigenous functioning of self and could not be conceived *at the same time that self experienced in a naive realistic fashion* (else there would be a confounding of view-points). By this traduction self continued to perceive in a naive realistic fashion whilst admitting the *possibility* (for it cannot be proved logically), that its perceptions were caused, i. e., that they have a neurophysiological basis, a contention taken for granted when considering other people, i.e., others in self's

spectator phenomenology. As before stated, causality is alien to participant phenomenology and by the attempted application there results the implication of that which yet cannot be conceived *from this participant observation base*. This is none other than the conception of a 'noumenal influence' (KANT) and the 'substance' or 'God' of SPINOZA. The difference between these two philosophers – the one primarily an epistemologist, the other a metaphysician – is that whereas KANT was aware of how he came by the 'noumenal influence' and stayed with his subjectivistic bias (and rightly so), SPINOZA erased his tracks, as it were, and took 'substance' as a new and illegitimate starting point, for he had 'forgotten' how he had arrived there. This is the key to SPINOZA's metaphysics, which is a truncated philosophy, for he nowhere makes clear how he comes by 'substance' as a starting point. Nevertheless, in order to arrive at a suitable solution to the mind-brain relationship, both the mind (function) and body (structure) must be transcended, i.e., they must be viewed from a tertium. This entails a temporary renunciation of a subjectivistic starting point. Thus KANT could never have solved the relation of mind and body even if he correctly deduced their mutual implication, for he never ventured from subjectivism – the starting point of all philosophy. On the other hand, SPINOZA's philosophy is inconsistent in that he secretly ventured back to the starting point of subjectivism and of epistemology in order to obtain 'res extensa' (body) – for it cannot be obtained from the vantage point of 'substance'. Thus he peeped through two doors (an epistemological and a metaphysical) but admitted only peeping through one, even although, if it is admitted that two vantage points must be successively adopted, he gave a correct explanation of that which is to be seen through the door of the subjectivistic bias, i.e., the external world.

The third traduction

From movement in the external world the organism may be said to discover by trial and error that the outcomes of its regulations show 'restraint' and, most important of all, that 'variety is conserved' [ASHBY, 1957]. By further discovery and experimentation, the notion of spatiality is constructed for it neither exists solely in the external environment, nor is it innate to the self [PIAGET and INHELDER, 1956].

But it is not the case (as the positivists will have), that the notion of space is mere structure. For by its own activity of transforming structure

in a determinate sequence the functional aspect of conatus must be introduced even although space is not conceived under both aspects at the same time. Now, from the purely structural aspect of this amalgam we have spatiality and an information flow chart; from the purely functional aspect, on the other hand, we have (with the participation of self, i.e., participant phenomenology) both the function that is mind and constitutes self and also the noumenal influence. This conception is the Monad of LEIBNIZ, which must be conceived participantly, i.e., functionally; for it is but a traduction of the structure of spatiality in the external world to the self and thus constitutes function. We have thus arrived back to the static conception of a functional cycle illustrated in fig. 1 (p. 150) before the first traduction.

Thus the structure of spatiality, born of the noumenal influence and the activity of self, by the third traduction attains the utmost economy of pure participation. Further we cannot go. Being pure participation, i.e., pure function, there are, as LEIBNIZ writes: 'no windows in monads' – for this would admit structure. Furthermore, if, as we hold, body is structure and mind is function, the one can never be reduced to the other; for they are conceived as juxtaposed only after the second traduction but not after the third and to talk of these conceptions as juxtaposed is to return to the state of the second traduction – within which state our phenomenology lives, for it never attains the level of the third traduction because organisms are both 'mobile' and 'open systems'; equally, a Monad can be conceived only in thought and the whole cycle of the Monad is never experienced. Thus the participant should not be confused with the structural and another's mind can only be conceived by participating in thought with that person whereupon all causal influences from our spectator phenomenology vanish and we are left with that person's naive realism within our empathy.

However, the *relation* of mind to body is to be found only within the second traduction and not within the third; and so it is that SPINOZA, philosopher of the second traduction, was able to develop the double aspect theory, whereas LEIBNIZ, philosopher of the third traduction, developed the doctrine of pre-established harmony (between information flow and the information flow chart, i.e., the former being function, the latter, structure). This is because after the third traduction there is no tertium from which the two aspects of mind (function) and body (structure) may be viewed, and by the second traduction (i.e., of causality upon the self) that which is structure in the external world cannot be changed to function

when experienced by the self – for causality is a hybrid structure-function concept and from its inhomogeneity arose the notion of a *tertium* – the noumenal influence. Thus one may hold that within the correct traductory context both philosophers were correct (fig. 2 see p. 150).

Deployment of argument

So far we have been using the term 'mind' as synonymous with the term 'function'. However, it can also be used (and is more generally) with the connotation of being conscious, i. e., 'having a mind' may equal 'being conscious'. Nevertheless, we may defend our usage in that one must always be 'conscious of something', i.e., 'consciousness' has a 'pointing implicative' or 'functional-with-structure-immanently-objectified' use, whereas 'mind' implies the existence of function as distinct from the structural body and this by a kind of mental double-take that establishes body and mind as distinct without ever being able to juxtapose them. There is a distinction, therefore, between 'consciousness' which is a hybrid structure-function notion and 'mind' which is pure function but which yet requires the sophistication of philosophical speculation before it can be conceived.

The traditional empiricist-idealist controversies were fought by competent men on both sides, who, choosing different starting points logically deduced their differing conclusions as each problem arose. *The theme of this paper is that there is but one logical starting point* (that of the mutual implication of mind and body), that it was chosen only by KANT, and that the conclusions reached by both idealists and empiricists are vitiated by false conceptions of that which is 'given' at the commencement of philosophical speculation.

KANT adequately delineated his own 'transcendental idealism' from both the empiricistic and idealistic viewpoints. In his 'Refutation of Idealism' (cf. 'Critique of Pure Reason') KANT divided the opposing idealistic doctrines into two camps:

1. The *problematic idealism* of DESCARTES, which holds that existence of objects in space outside us is doubtful and undemonstrable, there being only one indubitable empirical assertion, namely, "I am".

2. The *dogmatic idealism* of BERKELEY, which holds that objects in space are 'false and impossible'.

The refutation of problematic idealism is along the following lines: for the starting point of Cartesian philosophy to be true it would be necessary to prove that we have experience and not mere imagination of the external world.

'... and this, it would seem, cannot be achieved save by proof that even our inner experience, which for Descartes is indubitable, is possible only on the assumption of other experience.'

Dogmatic idealism, on the other hand, is unavoidable if space is interpreted as belonging to the noumenal world.

'For in that case space, and everything it serves as condition, is non-entity.'

That is to say, if the a priori of experience or the conditions for experience are given an external origin, then self, by disclaiming its own involvement in the fabrication of experience, divorces itself from any proof (by mutual implication) that the external world exists.

In 'The Fourth Paralogism: Of Ideality (In regard to outer relation)', KANT clarifies the distinction between his own doctrine of *transcendental idealism* and *empirical realism* from *empirical idealism* and *transcendental realism*:

'By transcendental idealism I mean the doctrine that appearances are to be regarded as being, one and all, representations only, not things in themselves, and that time and space are therefore only sensible forms of our intuition, not determinations given as existing by themselves, nor conditions of objects viewed as things in themselves.'

Oposing this is the doctrine of transcendental realism which holds that time and space are given in themselves independently of our sensibility. Thus outer objects are interpreted as noumena and the transcendental realist is forced afterwards to play the part of the empirical idealist, for:

'After wrongly supposing that objects of the senses, if they are to be external, must have an existence by themselves, and independently of the senses, he finds that, judged from this point of view, all our sensuous representations are inadequate to establish their reality.'

The transcendental idealist, on the other hand, is an empirical realist and by admitting his own self-consciousness, admits also the existence of matter:

'For he considers this matter and even its inner possibility to be appearance merely; and appearance, if separated from our sensibility, is nothing. Matter is with him, therefore, only a species of representations (intuition), which are called external, not as standing in relation to objects in themselves external, but because they relate perceptions to the space in which all things are external to one another, while yet the space itself is in us.'

Thus the empirical realist rejects inference to the so called 'cause' of perceptions and these very perceptions are dependent upon the observer's representations:

'External objects (bodies), however, are mere appearances, and are therefore nothing but a species of my representations, the objects of which are something only through these representations. Apart from them they are nothing. Thus external things exist as well as I myself, and both, indeed, upon the immediate witness of my self-consciousness. The only difference is that the representation of myself, as the thinking subject, belongs to inner sense only, while the representations which mark extended beings belong also to outer sense. In order to arrive at the reality of outer objects I have just as little need to resort to inference as I have in regard to the reality of the object of my inner sense, that is, in regard to the reality of my thoughts. For in both cases alike the objects are nothing but representations, the immediate perception (consciousness) of which is at the same time a sufficient proof of their reality.'

From this it may be seen that transcendental idealism cannot be categorized as either true idealism or empiricism.

For ease of conceptualisation fig. 3 (see p. 150) has been drawn in order to approximate the molar conclusions of empiricism (A) and transcendental idealism (B). A recourse to illustrations has been attempted in philosophical writing before with varying degrees of success. A warning is made now to the reader that fig. 3 is merely an aid and does not represent (and could not) a method of logical thought that involves completely the user of the diagram. The conclusions of empirical idealism (which may be set over against transcendental idealism), are difficult to approximate by diagram.

The empiricist is one who attains the external world by a subjectivistic bias, switches to an objectivistic bias based on the external world and then proceeds to explain the former subjectivism from that standpoint. The error is to confound the observer's and participant's viewpoints, structure and function, mind and body. This form of sandwich thinking is shown in fig. 3a and is compared with the structural diagram (fig. 3b) of naive realistic mind-experience, i.e., it is a structural diagram of that which is purely participant – but having remarked upon this it is hoped it will cause no confusion. As they stand, fig. 3a illustrates two errors:

1. that of representing a cause-and-effect structurally experienced and functionally interpreted relationship as affecting a purely structural experience directly; and

2. that of representing a purely participant functionalism in a spectator fashion.

Fig. 3b also commits error (2), as we have remarked, but in showing the structural aspect of function it bears as close a relationship to mind-awareness as an information flow chart does to the information flow. We have, of course, attempted in fig. 3b to represent function which cannot really be represented diagrammatically.

Fig. 1

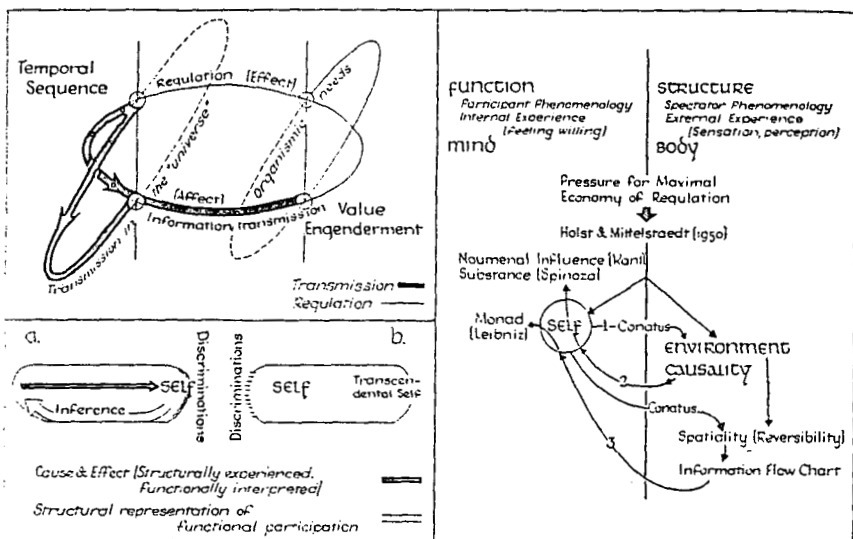


Fig. 3

Fig. 2

It will be seen that in diagram 3a, naive realism has been denied and replaced by an illegitimate inference to that which could never be known anyway – unless it were presupposed. Fig. 3a also illustrates the conceptual scheme of the sense-data theorists, and has been the seductive stumbling block of all those in the Cartesian, Humian and Lockian traditions. Its reaction formation, which is equally perverse, is an empirical idealism (BERKELEY) with its transcendental realism; this type of thinking

bears a superficial resemblance to that which is structurally illustrated in fig. 3b but in this case the thinker forgets how his problem ever arose (i.e., from the observance that the perceptions of others are causally instigated and *not* from the 'knowledge' that his own perceptions are causally instigated). In attempting to account for his own interpretations, the transcendental realist (as opposed to the empirical realist) secretly and illegitimately takes the external world as a starting point, by whose activities categories are passively acquired. Let it be noted that the Kantian categories are neither passively acquired nor do they provide a passive reception for input. Yet a further difference between the fig. 3a-type and fig. 3b-type thinking is that whereas with the former discriminations are 'given' and have merely to be 'tied up in bundles' by the principles of associationism to form objects, with the latter an active discrimination by the organism of an undiscriminated whole is implied.

Finally, it must be emphasized that the relationship of mind to brain is a purely *logical* one and speculations concerning the complexity of brain functioning required for consciousness to occur miss the point because:

A. There is a confusion of the question concerning the *invariable concomitant* of consciousness (a certain complexity of brain functioning) – which is an empirical question and unfortunately involves an *unverifiable* answer as consciousness cannot be 'sampled' but only inferred – with the question of what *is* consciousness.

B. The concern with the complexity of brain functioning brings in its wake the notion of a mentalistic influence upon the physical and vice versa. From here a direct return to Cartesian interactionism occurs – hardly a tenable doctrine.

Also, to say that consciousness has a use to the organism is to commit a category mistake if consciousness is actually to *be* the organism. It must be concluded that consciousness may be safely ignored when *explaining* the organism's functioning else the functional is illicitly mixed with the structural.

Conclusion

Although the Leibnizian solution of the mind-brain problem was seen to be valid within the context of the third traductory level, the relationship of mind to brain is felt to be explained by the double aspect solution of SPINOZA at the second traductory level. Thus mind and brain are logically two aspects of a tertium which is itself a logical and unknowable construct.

SPINOZA called this logical construct 'substance' and it has been suggested that this is the same logical construct that KANT called the 'noumenal world'. SPINOZA's originality, it is felt, lay not only in deriving this logical construct from a subjectivistic standpoint (even if this is never made explicit), but also in relinquishing the subjectivistic standpoint for a standpoint based upon the construct and thereby viewing both mind and body as aspects thereof – and as two different aspects they are not reducible the one to the other.

Summary

A non-stipulative definition of mind is presented by an ontogenetic analysis of the notion. Levels of logical thinking are seen to arise due to the construction of phenomenological awareness by 'translations' and systems of logical thinking are analysed within these levels. The conclusion reached is that mind is a logical construct and should not be invoked when explaining behavior.

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