SSM3: Philosophy in Medicine

Schizophrenia: The Problem in the Mind-Body Problem

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Schizophrenia: The Problem in the Mind-Body Problem

Schizophrenia remains an interesting puzzle in many fields of inquiry: psychiatry, cognitive science, neuroscience and philosophy, to name but some. Controversy surrounds its definition and its status as a disease falls into question. Similarly, philosophical debate continues on the mind-brain problem: the apparent mystery of how mental processes and physical brain processes are related. In this essay I aim to discuss the controversy surrounding the current medical concept of schizophrenia and hope to relate this matter to the philosophical problem of the mind and brain.

The concept of schizophrenia was originally documented by German psychiatrist, Emil Kraepelin, in the late nineteenth century as a form of insanity distinct from manic-depressive insanity, based on its progressive course, and named it *dementia praecox*. The term schizophrenia ("split mind") was later coined by Eugen Bleuler who elaborated on Kraepelin's definition, believing that it involved splitting – or loss of co-ordination – between different psychic functions, particularly between the emotional and intellectual aspects of the personality (Kendell, 1987, p 697).

By way of introduction to the medical description of schizophrenia, here follows a brief summary of the features used in the psychiatric diagnosis of the condition. The symptoms of schizophrenia have been classified into 'positive' and 'negative' symptoms, which respectively describe the presence or absence of certain features. Described by Schneider in 1957, and known as 'Schneider's First Rank Symptoms', the positive symptoms consist of the following:

1. Auditory hallucinations
2. Interference in the thinking process
3. Passivity experiences
4. The primary delusional experience

More recently have psychiatrists taken interest in the negative symptoms,[1] which comprise the following:

1. Blunting of affect
2. Poverty of speech
3. Lack of drive, lack of pleasure and poor attention

This is what we could call the Medical Model: a set of diagnostic criteria which, when deemed by a psychiatrist to be present in a patient, suggest the diagnosis of a disease – known as schizophrenia. This is the concept generally

[1] Strictly, according to medical convention, 'negative signs' is a more correct term. Symptoms are features noticed by the patient and signs are those found on examination by the doctor.

held by medical professionals; a diagnostic label used to define a specific medical condition.

However, the precise nature of schizophrenia has always been subject to controversy. Since it was first characterised by Kraepelin there was much debate about the classification of the illness, originally defined by having a progressive and irreversible course. Following cases of apparent remission, Kraepelin changed the definition of the illness to include the possibility of such outcomes (Tsuang, 1982, p 13). For this reason, Bleuler supposed that *dementia praecox* was in fact a group of similar diseases, having different outcomes (Thomas, 1997, p 86). Schizophrenia, unlike other illnesses, has never been definitively characterised and is still unsatisfactorily understood. Thus we see that the illness was not so much a clear-cut discovery, whereby the nature of the illness was there to be found, but a concept declared into existence by a plastic definition shaped to fit the irregularities between cases 'diagnosed' as schizophrenic.

One objection to the declaration that schizophrenia is an illness lies behind the non-specificity of the symptoms. Studies (e.g. Rees, 1971 and Ensink, 1992 in ibid. pp 97-98) have found that many of the phenomena classified as First Rank Symptoms can be found at discernable levels in the general population, in individuals not considered psychotic. Such evidence suggests that there is a spectrum of variation in human experiences and no clear boundary between those that are 'normal' and 'abnormal'. As Bentall (1990 in Thomas, 1997, p 102) argues, from this position it seems more appropriate that, rather than make a tentative diagnosis of some ill-defined syndrome, we recognise the presence of certain symptoms and understand them and their subtypes.

R.D. Laing was an influential proponent of a movement that could be regarded as putting a similar theory into practice. He looked upon Kraepelinian psychiatry as having grown up from a doctor-patient relationship of professional distance where personal feelings (especially of the doctor) were discounted from the therapeutic discourse; the doctor's subjectivity to the patient's exhibited 'signs' and were disregarded in order to uphold scientific objectivity. Laing denounces this process as impossible to see the 'signs' and 'symptoms' in question, which are necessarily revealed by the subjective experience of the doctor's relationship with the patient (Laing, 1960, pp 30-31). Indeed Laing does not regard schizophrenia as a disease and hence the patient does not have 'signs' or 'symptoms'. He asserts that if we are to make any headway in supporting the patient, understanding through successful communication is the key. But to view the patient's behaviour as 'signs' of 'disease' is to proclaim his unintelligibility, precluding any possibility of communication. Indeed, to see his manner in terms of disorder and psychopathology are ways of *not* understanding him (ibid. p 33). Thus Laing maintains that people cannot *have* schizophrenia, but one may *be* schizophrenic (ibid. p 34). Analogous to this, we may say someone *is* Welsh but they are not said to *have* welshness.

Much of Laing's discussion of schizophrenia centres on explaining the patient's *existential phenomenology*, which refers to his experience of being-in-the-world. From this standpoint, Laing explains the distinction between sanity and insanity, based on reciprocal recognition of others' identity. Sanity comprises the mutual recognition of other persons as that whom they take themselves to be (ibid. p 35). Furthermore, Laing proposes that in schizoid persons and schizophrenics there is detachment of the self from the person's whole being to explain the experiences of 'depersonalisation' and 'derealisation' (ibid. pp 78-79). Such phenomena are akin to the 'passivity experiences' described as symptoms of schizophrenia. To interject by way of analogy, 'I' may sit and contemplate the construction of this sentence while 'my hand' twiddles my pen around. Indeed, Laing's theory is somewhat consistent with Bleuler's original concept of a "split mind".

Possibly the most opposed to the medical concept of schizophrenia (and all mental illness, for that matter) is Thomas Szasz, who argues that mental illness is an invention; that schizophrenia does not exist. His argument centres on opposing the introduction of new criteria as to what constitutes a 'disease', that is, psychopathology. While physical illness is discovered, having foundations in histopathology and pathophysiology, mental illness is declared to exist, based on psychopathology (Szasz, 1961, p 12). Thus proposing schizophrenia to be a syndrome, despite the absence of a histopathological lesion or pathopysiological abnormality, Szasz describes, is a "psychosemantic trick" to affirm that it is a disease (Szasz, 1979, p 87). Szasz holds that psychopathology was itself created from the analysis of schizophrenics' thought:

> The schizophrenic's thinking is thus anatomized and pathologized in order to *create a science of psychopathology*, and then of psychoanalysis and psychodynamics, all of which serve to legitimize the madman as a medical (psychiatric) patient…
>
> (ibid. p.13; emphasis added)

The fallacy of this process is as follows. The diagnosis of schizophrenia is made on nothing but the presence of certain characteristics. And the disease is defined by no more than a certain set of characteristics, deemed to be pathological by nothing other than being recognised as characteristics of that disease. This line of reasoning is circular: chasing its own tail in pursuit of nothing but a hollow claim for its own truth. It hinges on the notion of psychopathology – that certain behaviours and mental processes are indicative of disease. As Szasz maintains, psychopathology was created from analysis of the schizophrenic. Hence the question is perhaps not 'does schizophrenia exist?' but more importantly 'does psychopathology exist?' Of course the two questions must have the same answer since the second question governs the answer to the first.

Possibly only a factual error, therefore to no detriment of Szasz' argument, is the contradictory literature that claims that psychopathology was first conceptualised in 1847, long before the birth of schizophrenia *per se*. Pertaining to this terminology were competing medical explanations of mental disease, divided by their approach to the distinction between 'normal' and 'pathological'. One such term, psychological pathology, favoured by psychiatrists, presupposed that unusual mental phenomena were inherently abnormal, demonstrative of disease and therefore incompatible with normal function (Thomas, 1997, pp 23-24). In current psychiatric classification there is indeed such cut-offs defining mental disorders: boundaries set between normal and abnormal that have been largely decided arbitrarily. It seems the main criterion that determines these boundaries is the prevalence of those 'abnormalities' that they demarcate, such that the illness defined is not commonplace to the point of ridicule (Kutchins & Kirk, 1997, p 27). If the diagnosis of mental illness is determined merely by the size of the minority that it sets apart from the majority, it is surely no more legitimate as a medical reality than a medieval witch-hunt.

A great deal of Szasz' opposition to the psychiatric concept of schizophrenia is rooted in the disparagement of the circumstances from which the concept originated. To be brief: the focus of psychiatry at that time was on the great achievement in discovering that general paralysis of the insane – a *mental* illness – was in fact caused by a familiar *physical* agent: syphilis. Szasz therefore holds that psychiatry, bolstered by its victory over syphilis, set about to demystify schizophrenia along the same successful route. But with no physical evidence to hand, psychiatry had to justify its incarceration of schizophrenic 'patients' by some other means, hence the invention of new standards by which to declare them ill (Szasz, 1979, pp 4-21). Indeed much of Szasz' work centres on the condemnation of involuntary psychiatry – a matter of philosophy beyond this course of discussion.

Over the years since schizophrenia was originally described on a psychopathological basis, medical science has been avidly seeking physical – pathological and pathophysiological – evidence to explain the existence of the disease as some organic brain dysfunction. Given that mental processes have some underlying physical explanation, we might assume that a person diagnosed as 'schizophrenic' by virtue of having apparently altered mental function must therefore have some altered brain function. But can we assume so? This matter now falls into question. The 'mind-brain (or mind-body) problem' is the name given to the subject of philosophical debate that we must undertake in order to answer this question.

Here I propose a model that incorporates the concept of disease into the division in the mind-brain problem. It is based on the current dichotomous categorisation of diseases into physical and mental. Some diseases are definitively *physical* diseases of the brain, with a known pathology and effects from the disease process (signs and symptoms) that are also physical. At the

other end of the scale are diseases, though more controversially classified as such, which are definitively *mental*, with no known physical pathology and identified purely by their mental effects. This dichotomy is represented in Fig. 1 as two ends of a continuum, with examples of diseases at various points on the scale.

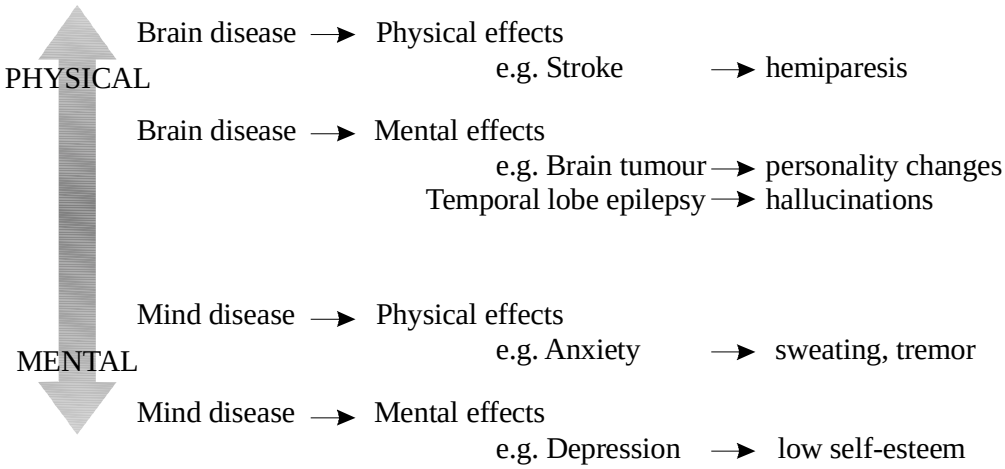

Fig. 1 The model of disease in respect to the mind-brain division

Now suppose that schizophrenia were 'demystified' by some revolutionary new investigative technique that revealed a physical difference between schizophrenics and non-schizophrenics: that their brain displays some particular oddity. Does schizophrenia then become a *brain* disease with *mental* effects? This is of course a hypothetical situation, although equivocal claims have been made for evidence of physical differences in the brains of schizophrenics. (However, this actual evidence will not be discussed here, being considered not in the realms of philosophy but of science.)

Now follows an introduction to some of the main theories in the mind-brain problem – a far from complete overview for the sake of brevity. To follow chronological convention, we first encounter Descartes, in the seventeenth century, who proposed that the mind and the brain are separate entities that work in totally different ways; the brain composed of physical stuff and the mind composed of mind stuff – hence the term Cartesian *dualism*. His theory continued through the assertion that there is a point in the brain (he chose the pineal gland) where the mind and brain interact – hence the term interactionist dualism (Dennett, 1991, p 34). But dualism, for all its simple attractiveness, fails to contend with the problem of *how* the mind, an entirely non-physical entity, manages to affect the brain and body, a physical entity. And to resign oneself to saying, "it just does" or "we cannot know" is to admit defeat without trying. Dualism therefore gave way to *materialism* or *physicalism* – that there is no 'mind stuff', only physical stuff – whereby all phenomena can be explained entirely by physical laws (ibid. p 33). Hence we are no longer faced with the problem of 'how' concerning the mind, since

mind *is* only brain. And while this theory's monistic simplicity appears plainly unobjectionable, unfortunately, to us beings whose consciousness seems as obviously 'real' as does our body, this reduction seems to paper over too many cracks to satisfy our inquiring minds that are denied their own existence. As Dennett says,

> "…our materialism will not explain consciousness, but only promise to explain it, some sweet day. …whatever else our materialist theories may explain, they won't explain *consciousness* if we neglect the facts about the experience that we know so intimately "from the inside.""
>
> (ibid. pp 41-42; emphasis in original).

So to acknowledge the existence of the mind and the brain, while avoiding the defeatist notion of dualism, we are somewhat obliged to consider the phenomenological approach whereby that very intimate *from the inside* is confronted at the same time as recognising the importance of the brain having *something to do with it all*. Phenomenology, in this current discussion, refers to subjective experiences taken empirically from a neutral position, without inference and through no means of reduction (after Spitzer & Uehlein, 1993, in Thomas, 1997, p 175).

The obstacles which face the mind-brain problem seem to arise where cause and effect are mentioned, for example, 'brain events *cause* mind events' or vice versa. The epiphenomenalist argument (that brain events cause mind events, not vice versa) seems refutable by observation that deliberate mental processes (e.g. voluntarily thinking of something sad) have visible changes on brain scanning. Indeed this appears to be a mind event *causing* a brain event (Thomas, 1997, p 168). But still the epiphenomentalist may argue: the observed brain event was causing the mind event. And we would be none the wiser. However, this problem of cause and effect no longer applies when we consider that *mind events and brain events are the same thing seen from different viewpoints.*

The possibility that consciousness *is* a brain process cannot be dismissed on logical grounds alone, where we speak using the 'is' of composition, not the 'is' of definition (Place, 1956, pp 44-46). Place argues that the problem with substantiating this assertion is the impracticality of simultaneously observing consciousness and brain processes, together with the lack of continuity between the two sets of observations. That is, no matter how intricately one observes synaptic transmission one may never at once observe consciousness, and through no amount of introspection can one observe the passage of nerve impulses (ibid. p 47). Place also describes the 'phenomenological fallacy' – a logical mistake made from the supposition that subjective description of experiences refers to literal the properties of objects and events on some 'internal cinema', referred to as the 'phenomenal field'. He continues:

> "…it is only after we have learned to describe the things in our environment that we can learn to describe our consciousness of them. We describe our conscious experience not in terms of the mythological 'phenomenal properties' which are supposed to inhere in the mythological 'objects' in the mythological 'phenomenal field', but by reference to the actual physical properties of the concrete physical objects, events and processes…"
>
> (ibid. p 49)

Thus Place holds that it is not the phenomenology of our senses we are usually conscious of when describing out environment, but the properties of the objects themselves. He surmises that because of this phenomenological fallacy, the problem of a physiological explanation for introspective observations is made to seem more difficult than it really is.

If consciousness is indeed a brain process, one may suppose that all mental events are reducible to physical events. If so, psychology and behavioural science could be 'explained away' by neuroscience and physiology as the all-encompassing foundation behind brain as mind. However, while at first this seems possible at least in principle, Bechtel (1983) argues not. First is required the notion of a 'functional architecture'. In terms of computers, the programming language (in which a programmer writes) is compiled into machine code, which maps directly onto operations in the hardware of the machine. This mapping is what defines the 'functional architecture' of the machine (after Pylyshyn, 1980 in ibid. p 368). In humans, the functional architecture is the mapping of neural states onto symbolic expressions. Bechtel proposes that mental events cannot be entirely understood in terms of their physical components because the components are organised in such a way as to interact at different levels of organisation. By analogy, physiological processes result from chemical activities therefore may be seen to be ultimately explainable through chemistry alone. But how these chemical activities interact in the context of an organism requires a physiological explanation. The components are organised so as to interact with each other in selected ways, for example, where chemical reactions are regulated via control of the internal environment of the organism. So in terms of the mind,

> "…the component neural processes are designed (by evolution) to be capable of information processing. Once the system is engaged in information processing, the regularities of information processing (e.g., the principles of thought) govern the behavior of the individual components (i.e., the symbols that are mapped onto neural processes) in much the same way [physiological principles] govern the chemical reactions occurring in a living organism."
>
> (ibid. p 370)

One may then object that these regularities are fully explicable in the study of neuroscience in terms of physical brain processes. Indeed this may be so,

however Bechtel contends that the principles of information processing that neuroscientists may study are one and the same as the principles of cognitive science. He therefore follows that it is the functional architecture that both neuroscience and cognitive science study, without a reduction of one science to the other, for "neural processes are the constituents in cognitive operations." (ibid. pp 371-372)

Dennett's argument concerning phenomenology as a neutral, empirical theory of mind is that there cannot possibly be such an uncontroversial standpoint. The first-person perspective, with its apparent doctrine of infallibility (no-one else can correct your reports of what you are thinking), is indeed not neutral, as demonstrable by the capacity for our experiences to resemble incorrectly the physical phenomena that they concern (for example, optical illusions). The third-person perspective seems fraught with inadequacy, in that we cannot experience other people's minds by empirical science. Dennett therefore establishes his position in what he calls *heterophenomenology* as a neutral method of describing conscious experience from a third-person perspective. His example is reading a book of fiction; a story is conjured up in the imagination, as having characters, scenes and objects, each having discernible attributes. Although the story is not true, we may speak of things that are true in the story. That (fictional) world constitutes the reader's heterophenomenological world, which is then an "intersubjectively confirmable theoretical posit", having certain indisputable elements determined by the text, or ultimately by the author (Dennett, 1991, pp 72-81). Dennett subsequently integrates his heterophenomenology into consciousness theory.

> "…there is no difference [between thinking (judging, deciding) that something seems pink to you and something *really seeming* pink to you]. There is no such phenomenon as really seeming – over and above the phenomenon of judging in one way or another that something is the case."
>
> (ibid. p 364, emphasis in original)

The 'judgements' made in locations distributed throughout our brains inform other processes of their content, resulting in an interpretable theme, which creates a "heterophenomenological text", which through interpretation, creates the illusion of an author. In conscious experience, the fact that there *seems to be* phenomenology does not follow that there *really is* phenomenology, since in all, phenomenology is merely made of judgement. Dennett's analogy to our notion of consciousness is a centre of gravity – an abstract point (a fiction) which simplifies the calculation of attractions between physical bodies. It is *as if* every object has all its gravitation concentrated in one point. And it is *as if* we are single observers of our own continuous consciousness, while that too is an abstract simplification (a fiction) of the spatially and temporally distributed 'judgements' in our brains (ibid. pp 364-367).

Now, consider the gut. It has a complex array of neurons arranged in such a way as to provide co-ordinated reflex motility of the enteric wall, visible as waves of peristalsis. Compare this to the brain. It has a more complex architecture of neural connections which, besides the known motor and sensory tracts, is arranged in such a way as to provide – consciousness? A Mind? We acknowledge that the gut is not conscious – we cannot think with it (save the metaphorical expression 'gut feelings'). Yet with an increase in the complexity of the neural structure (by many orders of magnitude) to that of the brain, consciousness does not seem out of the question.

Cotterill (1998, pp 359-364) alludes to the poignant notion of consciousness as explained by neural mechanisms. A theory, not recent but somewhat overshadowed by the wealth of literature on sensory input in relation to the consciousness of beings, is that concerning the importance of muscular output in relation to the same: *the motor theory of thought*. An extensive explanation of this theory would be out of place in this discussion (see Cotterill, 1998) therefore I hope I may be excused for the following oversimplification. The brain's function as an input-output comparator (via identified neural pathways), calculating using the information received from the senses and from reverse branches of the motor output (the *efference copy*), results in the formation of "*multiple* maps of the environment, and of the body's relationship to the latter" (Gross & Grazanio, 1995 in ibid. p 364). By way of contrast, if we consider a unicellular organism, whose mobility mechanism is directly coupled to its surrounding environmental stimuli, the environment of such an organism and the map of its environment are one and the same (ibid. p 359) It therefore seems that Cotterill posits that the greater the complexity of a neural network placed in an environment, the more detailed and multiple *maps* of that environment it has. Thus we may infer that these maps – an abstract system – are what we introspectively call consciousness, or the mind.

With regard to schizophrenia, this proposed mechanism has been conjectured to explain the experiences of verbal hallucinations. Failure in the efference copy route is believed to prevent the arrival of signals that would normally inform the relevant sensory-processing regions of the brain of an internally generated signal. The subject's own (internal) speech is then mistaken for extrinsic voices (Frith, 1992, in Cotterill, 1998, pp 389-390). This deficit also seems to explain other experiences in schizophrenics, such as thought insertion, where the same lack of informative feedback makes one's own thoughts seem to have come from elsewhere (Thomas, 1997, pp 48-50). A similar theory had been proposed by Bick & Kinsbourne (1987, pp 222-225) to suggest that auditory hallucinations may be projections of the schizophrenic patient's verbal thought, while not actually speaking, because of deficient cerebral cortical inhibtion. They found that even as simple a manoeuvre as opening the mouth, to preclude the act of planning speech, prevented hallucinations in most schizophrenic subjects.

Similarly other theories, based on the understanding of brain function as the product of interaction between the functions of spatially distinct units (somewhat consistent with Dennett's theory of consciousness, see earlier) propose that schizophrenia reflects a breakdown in communication between cortical areas. Computer simulation of such a defect suggests that such areas become functionally autonomous, giving rise to "parasitic foci" which could explain delusions of control, verbal hallucinations, and thought broadcasting (Hoffman & McGlashan, 1993, pp 249-255).

After the preceding arguments on the mind-brain problem, it seems fit to conclude that the mind and brain are inextricably ravelled, where the brain is the necessary physical structure of which the mind is the function. To return to the earlier discussion on the nature of schizophrenia, or indeed its existence, in light of this conclusion we may surmise that it is both a mental and physical phenomenon. However, whether or not it is a disease is still controversial. With regard to physical evidence that it is a disease, given that the psychological observations are already presupposed to be 'abnormal', does it not follow that finding some physical differences we therefore decide that these too are pathological? By way of analogy, suppose we decide (arbitrarily) that 'people who enjoy washing-up must have some mental illness', since 'washing-up is not meant to be enjoyable'. On medical grounds, with enough investigation, we will (at least theoretically) find some physical difference between them and 'normal', on the premise that mental events have some physical event in the brain. The different brain function is labelled as the pathology, even though it is only 'pathological' based on the construct that those people are mentally 'ill'. We may at least conclude that schizophrenia is a condition – a recognised phenomenon – whether or not it is in fact a disease.

To conclude with regard to medical treatment of schizophrenia, a topic of which I have deliberately avoided direct discussion, and in the light of the mind-brain discussion, I propose that pharmacological methods are inappropriate, especially in the absence of psychological therapy. While the mind may be the result of a complex array of nervous impulses, disorders of it (or variations in function beyond what is considered normal) do not merit correction by means of altering such neural function. Indeed we may discover that someone with an apparently disordered mind may have some abnormal brain pattern – as would be expected if the mind and brain were one and the same from different viewpoints. But for the person in question (that is he or she whose mind is said to be malfunctioning) it is the mind which needs treatment. Only the mental state is apparent to the patient (the neural mechanism is surely unknown) thus any form of therapy must surely act on this side of the system. Pharmacological means for psychological ends therefore seems an underhand and crude method. The outdated surgical method, the prefrontal leucotomy (lobotomy), is perhaps the most striking example of such a crude treatment. But how far removed is current medical therapy from being a pharmacological lobotomy?

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