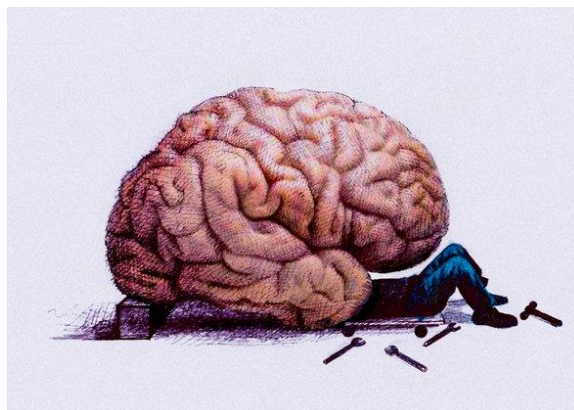


Classic Text 27 - Philosophy of Mind: Psychiatry

Psychiatry is the specialised branch of medicine that deals with the diagnosis, treatment and prevention of mental disorders. First coined by the German physician Johann Christian Reil in 1808, the word psychiatry derives from the Greek ψυχή (psykhē) for soul and ἰατρός (iātros) for physician; although the practice continued to be known as “mad doctoring” in 19th Century Britain.



Although the literature on the philosophy of mind is vast, that concerning the philosophy of psychiatry in particular is sparse and often fragmented. Of course psychiatrists are confronted with philosophical issues every day. Typical philosophical questions for psychiatrists include:

- Am I conducting my practice ethically?
- Is my patient engaged in reality testing?
- Am I imposing my clinical worldview on a patient with a culturally very different outlook?
- Are there underlying existential issues that I might be missing?

Notwithstanding, the subject of psychiatry and the research informing it are founded upon just a handful of philosophical assumptions, which are seldom acknowledged or questioned. Patil & Giordano’s (2010) article “On the ontological assumptions of the medical model of psychiatry: philosophical considerations and pragmatic tasks” is useful departure point for further discussion. The article may be downloaded for free [here](#). Under (Under South Africa copyright law individual academic papers may be reproduced for educational purposes.)

Introduction:

Psychiatry (in the West, at least) is taught and operates under the medical model of disease and disorder, developing targeted therapies based such mechanistic conceptualisations. The traditional acts of medicine (*i.e.* diagnosis, therapeutics, and prognosis) take for granted the ability to distinguish between what is “normal” or “neurotypical” and what is “abnormal” or “pathological”.¹

In spite of our ever increasing knowledge of neuroscience, the relationship between certain mental events such as consciousness and certain biological process remains contentious. It is unfortunate that the authors seize upon just one such issue, namely David Chalmers’ (1996) “hard problem” of consciousness, when for some philosophers such as Daniel Dennett (2005), consciousness is functionally definable. Furthermore, by glossing over the issue in a single sentence followed by the

¹ One common statistical approach is to define “normal” as surrounding the population mean of any given measure and “abnormal” as any deviation of 2 or more standard deviations from the mean. Another common physiological approaches is simply *define* subjects, such as a **standard person** being “a man between 20-30 years of age, weighing 70 kg, 170 cm in height, living in a climate with an average temperature of from 10°C to 20°C... etc.” Obviously, this won’t do for psychiatry, although we will have more to say about the statistical approach further on.

phrases “the continued ambiguity of the brain-mind relationship,” and “the philosophical divide” the authors create the mistaken impression that neurobiologists, cognitive scientists and philosophers of mind are more at odds than they are substantially in agreement.

Nevertheless, according to the authors, the basic challenge for psychiatry should be to formulate a viable system for meaningfully characterising mental normality and abnormality, and to question how such a formulation might affect the scope and nature of psychiatric practice. This project is not simply academic or esoteric given the ongoing progress in genetics and neuroscience and the fact that healthcare policies, both public and private, are based to a large extent on just two current diagnostic schema: The International Statistical Classification of Diseases and Related Health Problems (ICD-10 or 11) in South Africa and Diagnostic and the Statistical Manual of Mental Disorders (DSM-5) the US.

Discussion:

Problems in Psychiatric Diagnosis

Patil & Giordano introduce their discussion by quoting from two articles highly critical of psychiatry: According Allan Horwitz, (2002) “because [diagnostic psychiatry] uses symptoms to classify disorders, it also categorizes an enormous diversity of human emotions, conduct, and relationships as distinct pathological entities.” That it does because precise diagnostic classifications can be used to distinguish between non-pathological and various pathological states without pathologising the symptoms, conduct or relations *per se*.

In his article *The Myth of Mental Illness*, Thomas Szasz (1960) disputed psychiatry’s claims of medical legitimacy by questioning its evaluative disposition. According to Szasz, psychiatry utilises terms such as “delusions,” “compulsions” and “obsessions” which lack the descriptive objectivity of other domains of medicine. Compare the terms “blood pressure,” “body mass index” or “temperature” for which there are objective measures that require no operationalisation. Szasz did not deny that neuroanatomical lesions could result in dysfunctional behaviour, but claimed that these were, strictly speaking, instances of brain disease. However, according to Szasz (2007), classifying various forms of behaviour as pathological, “...rests on a serious, albeit simple, error: ... mistaking or confusing what is real with what is imitation; literal meaning with metaphorical meaning; medicine with morals.” Thus, if psychiatry lacks the terms that corral out pathology from normality, how could psychiatrists claim to make objective diagnoses based on a predominantly subjective (and flexible) epistemology?

One immediate rebuttal is to point out that firstly, such terms are not subjective but are *defined* in diagnostic manuals based on a process of “compromise and consensus” by members of expert committees and *operationalised* by various instruments such as the Beck Depression Inventory. Secondly, their application to pathology rests on two criteria, to wit that any putative disorder must cause significant distress and impaired function to the person so diagnosed. (DSM-5 p. 20) For example, if Bob believes that he receives communications from alien intelligences via a microchip that was implanted in one of his fillings by his dentist while he was sedated, then he is clearly delusional by all reasonable standards. However if Bob displays no significant distress and is able to continue to discharge his duties at work and as a family man and friend, he cannot be diagnosed as suffering from a delusional disorder.

The authors suggest that the “conceptual tension in psychiatry [that they see,] mirrors larger debates about objectivity and normativity in the philosophy of science.” In *The Structure of Scientific Revolutions*, Thomas Kuhn (1962) argued that in order to compare theories from older and more recent periods or indeed any era, science requires a perspective that is external to each - what he calls an ‘Archimedean platform’. However we cannot escape our current perspective which is sensitive to the normative practices of social communities; therefore such a platform is not available to us. (Stanford Encyclopedia of Philosophy: Thomas Kuhn) Instead “scientists (and clinicians) undergo training and develop expertise within localized academic institutions. As a consequence, intellectual traditions tend to bind scientists and clinicians within a coherent community of practitioners.” As Kuhn pointed out, members of a particular academic community tend to favour similar constructs and values about what constitutes a good theory (or best practice). Such values are seldom made explicit; rather they are tacitly assumed and maintained collectively within the academic community. Therefore, for Kuhn, the collective nature of scientific theory-building implies that the values of academic communities are relevant in the content of scientific discourse and theorisation (and, the authors add, clinical practice).

If science (like other ideologies) evolves within a cultural framework then, the authors ask, “... in what sense is it immune from the normative practices of society?” Science (and by extension, clinical medicine) is indeed a cultural phenomenon with hegemonic assumptions about the nature of reality and being; however it is neither subjective nor relativistic and therefore does not lay itself open to the same postmodern criticisms about other ideologies. Instead, science favours a self-correcting epistemology that is increasingly adjusted and refined over time. When newer, reliable observations become impossible to accommodate within existing hegemonic beliefs, then those initial assumptions are overturned in what Kuhn called a “paradigm shift”.

According to the authors, “[i]n applying this framework to the medical model of psychiatry, we see a reliance upon four main ontological assumptions.” The latter are:

1. **Realism:** The claim that mental events such as beliefs, desires and thoughts are *real* phenomena and not merely artefacts of socio-cultural norms;
2. **Naturalism:** The belief that adverse changes in the neural substrate or functioning are causally implicated in the development and persistence of mental disorders;
3. **Reductionism:** The belief that at some level, adverse changes in the neural substrate or functioning are *necessary* to account for mental disorders;
4. **Essentialism:** The claim that mental disorders have underlying “essences” that distinguish one type of mental disorder from another.

Below we follow the authors in examining these assumptions in turn and attempt to decide whether each and all are warranted and necessary in order to arrive at a “valid” concept of a mental disorder.

Realism

The realist position holds that the terms employed in scientific theories correspond to actual properties or structures in the external world, even if they are not directly observable. Thus, voltage-gated ion channels or serotonin receptors do, in fact, exist independently of our ability to perceive them via our senses. That we know about them is due to technological innovations such as the **patch clamp technique** in which changes in the voltage across a membrane containing such a channel is amplified and displayed by an instrument such as an oscilloscope that we can perceive. Furthermore the properties referred to by scientific theories are independent of our cultural or linguistic practices. Even if, for example, there were no words or even any humans to theorise about such matters, water molecules would still have two hydrogen atoms chemically bonded to an oxygen atom.²

Realism is a species of physical monism which, *inter alia*, implies that minds and bodies (and souls, if they exist) are not of separate substances but depend for their existence on the same physical matter of the universe. Realism is therefore not compatible with mind-body dualism which postulates two ontologically separate substances. Dualism is manifestly untrue when we examine brain lesions and their sequelae. In general, a **lesion** is any damage or abnormal change in the tissue of an organism, usually caused by disease or trauma. Lesions to various regions of the brain may result in loss or deleterious alteration of associated function or changes in subjective experience.

For example, individuals with lesions to parts of the left temporal lobe, specifically Wernicke's, area may suffer from what is called "fluent aphasia" in which they speak in long, grammatically correct sentences that have no meaning. Others with lesions to anterior regions of the brain, such as the left posterior inferior frontal gyrus or inferior frontal operculum also known as Broca's area may suffer from "non-fluent aphasia" in which they have great difficulty expressing themselves verbally, while retaining comprehension. (Wikipedia: Aphasia)

Cotard's syndrome, which is extremely rare, involves the belief that one is dead, non-existent, putrefying or missing parts of one's body. The syndrome is thought to result from neural misfiring in the fusiform face area of the brain and amygdalae. (Pearn & Gardner-Thorpe, 2002) Clearly, cognitive and behavioural functioning depend on the integrity of the nervous system's functioning as a physical (biological) entity. Similarly, we might ask, how *else* are we to account for the gradual loss of cognitive ability seen among patients with neurodegenerative disease such as Alzheimer's?

In Classic Text 06 we assessed several arguments in favour and against dualism and found the former wanting. However the one that psychiatrists implicitly endorse every time they reach for the prescription pad is the argument from psychopharmacology. The point of prescribing psychoactive medication is to bring about biochemical changes in the nervous system of the patient presenting

² The author's choice of glycine as an example of an amino acid that would "always have a hydrogen atom as its functional group" is problematic for two reasons. Firstly the hydrogen side chain in glycine is not the functional group that makes it part of the homologous series of amino acids. The amine (-NH₂) and carboxyl (-COOH) are the functional groups in question. In *addition* to these, the hydrogen side chain is what singles out glycine as one, and not some other amino acid. Secondly, the concept of a functional group is a valid human construct used to group organic molecules that have certain physical and chemical features in common. If there were alien chemists on other worlds, they might group organic molecules based on different valid alien constructs.

with a mental disorder. If dualism were true and mental disorders were somehow immaterial in origin, psychiatrists wouldn't need chemicals to treat them and any chemical agents that they might employ would be ineffective.

As the authors note, "nothing has been claimed about how neural structures causally produce mental states (*naturalism*), or whether mental states are best understood through their more basic, physical components (*reductionism*)." We do not believe that drawing out the debate over realism or physicalism will add anything to the present discussion. Besides which, we have devoted several Classic Texts (11, 16, 19 & 23) to the subject; therefore we shall gloss over Cash's (2008) objection that there is no reason to suppose that mental properties such as beliefs, doubts, desires and fears actually exist in the natural world. We recommend Dennett (1989) as an antidote.

Naturalism

In philosophy in general, naturalism is the belief that only natural (as opposed to supernatural or spiritual) laws and forces operate in the world. As far as naturalistic theories of mind are concerned, mental properties, such as thoughts or beliefs, are derived from neurobiological structures in a causally relevant way. In order to characterise a mental disorder as naturalistic, the clinically observed behavioural manifestation of the disorder must be shown to have causal roots in biology, including the biology of possible infectious agents, toxins or a history of trauma. That is not to say that all pathological behaviour should only be understood only through biology, but rather that biological explanations must feature alongside complex environmental and socio-cultural explanations.

Throughout much of the history of psychiatry practitioners were unable to link mental disorders to identifiable causal events at the level of biology, relying instead on sufficiently frequently reported regularities between events such that they were justified in accepting such observations as evidence of causation. Starting in the early 20th Century, first with psychology and only later with psychiatry, researchers pursued an increasingly statistical approach to the study of psychopathology. While statistics cannot single out potential causes, it can however provide quantifiable measure of the probability of an event occurring solely by chance. The development of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) over the years, has, as the name implies, provided stand diagnostic criteria for the classification of mental disorders, which since DSM-III have been grounded in empirical evidence. Such standardisation has allowed for the coordination and statistically meaningful comparison of research programs from disparate communities and cultures across the world, without imposing a theory-bound nosology.

Humans however are not instinctively statistically intuitive, as is evinced by the number of statistical fallacies to which we are prone. But as the authors point out,

the act of intuiting causal relationships in the world long predates the development of statistics, or even mathematics. Such reasoning is possible because human beings have the capacity to reason inductively and infer logical relationships from data in, and obtained from the environment. Children as young as three years old can make appropriate judgments about novel stimuli and causally link processes they have only observed in operation. (Gopnik & Schulz, 2004)

As we saw in Classic Text 04 Hume was sceptical of the about the existence of causes, at least in the external world. Recall that he observed that we are never able to discover “any quality, which binds the effect to the cause, and renders the one an infallible consequence of the other. We only find that the one does actually, in fact, follow the other.” However, without being stymied by Hume’s metaphysical skepticism, we can proceed on the assumption that what we call causality can be understood as event regularities. As Ross & Spurrett (2007) observe, “...to the extent that we have culturally universal intuitions about causation, this is a fact about our ethology and cognitive dispositions, rather than a fact about the general structure of the world.” In other words, as the authors note, “naturalistic intuitions are not evidence of their content.”

In Classic Text 04 we discussed a counter-example to Hume’s thoroughgoing causal skepticism by describing the parasite *Plasmodium spp.* (visible in the blood of the infected host under the light microscope) as the indisputable *cause* of malaria. In the last half century or so imaging technology has opened up the hitherto impervious carapace of the skull to scientific and clinical scrutiny. Without any philosophical scruples we can now for example say, “The infarct visible on the CT scan is the *cause* of Smith’s aphasia” or “the spontaneous firing of a cluster of neurons in the temporal lobe, as revealed by this EEG, is the *cause* of Jones’ seizures.”

Reductionism

As neuroscience has elucidated the biological basis for several mental disorders, be they biochemical, genetic or developmental, so this has bolstered the philosophical belief that all mental properties will ultimately be explicable in terms of interactions between their putative substrates. Given that such interactions are causally implicated in psychopathology, a logical paradigm would confer underlying genetic and biochemical processes explanatory primacy. That is not to say that subjective experience or cultural influences do not play a role in psychopathology. However, since both of the former are necessarily instantiated *in vivo*, their “true” explanatory locus must reside in pathological structures and functions.

Many people balk at reductive explanations, believing, rightly so, that it is too easy to lose sight of the person among the underlying neurobiological and biochemical phenomena. Dennett’s *The Intentional Stance* (1989) however addresses this anxiety by clarifying the relations and predictions of mentalistic behaviour through the use of different levels of explanatory abstraction. According to the *Physical Stance*, behaviour could, in principle, be explained by the physical laws governing the interactions of constituent matter. Next, according to the *Design Stance*, behaviour is predictable based on the mind’s purpose, function and design. For Dennett and most evolutionary biologists, the teleological terms “purpose”, “function”, and “design” do not point to supernatural “designer” but to the “design” outcome of natural selection. The purpose of eyes is to detect electromagnetic radiation of a wavelength on the order of 380 - 740 nm in the case of humans. That is their function. From as early as 550 million years ago, eyes evolved multiple times in the animal kingdom and can therefore be said to have been designed by natural selection. Creatures with eyes that function according to their purpose have a distinct reproductive advantage over those without eyes or with

eyes that do not function so as to detect potentially dangerous conditions including the presence of predators and to locate sustenance and potential mates.³

The final level of abstraction is the *Intentional Stance*, which predicts behaviour by considering what motivates a rational agent to choose in a given situation. The intentional stance requires no understanding of the physical or biochemical underpinnings of the mind, nor does it rely on principles of mental design or function. Instead it relies on metacognitive abilities such as a **theory of mind**, which is the ability to attribute mental states to oneself and others and to understand that others have different intentions and perspectives from one's own. Children as young as 2 to 3 evince a theory of mind.⁴

Neuroscience, which focuses on the brain and its representations, informs both an evolving philosophy of mind⁵ and the clinical practice of psychiatry. However, science itself is a work in progress, therefore as neuroscientists work on the project of explanation, so those explananda stand in need of interpretation. Normativity is an ineluctable part of science, however it is *we* who make sense of the world and explain it with our theories; therefore practical considerations will inevitably play an important role in choice of such theories. This means that reductionism is not the *raison d'être* of the naturalistic project, nor should it imply that reductionism is not possible, in principle. Defining mental content thus becomes a practical consideration. Accordingly, behaviour can be interpreted using a level of abstraction appropriate to the researcher or clinician.

Essentialism

Essentialism on the medical model of psychiatry is the ontological assumption that psychiatric disorders, as defined by clinical nosology, map onto reality in a discrete way, carving "nature at its joints" as it were. Thus mental disorders possess essential properties, without which they would not be what they are. The authors claim that this assumption is "highly questionable, and that as *currently conceived*, [it] is anachronistic at best, and remains inconsistent with scientific thinking (at worst), and therefore is in need of re-examination and revision."

Both scientists and laypersons organise knowledge into categories based on the measures they value. We may classify objects for a particular reason or function. Such classifications are neither arbitrary nor random assortments. According to Sadler (2005), "...this non-arbitrariness is essential to a classification because it provides the basis for users with common purposes to talk about the

³ Of course in the case of creatures that live in perpetual darkness such as cave crickets and moles, eyes are superfluous, even maladaptive, and so have been selected against. The important point is that what is adaptive in one environment may be maladaptive in another. Similarly, what may have been adaptive to a species at one time in its evolutionary history may be maladaptive at another time.

⁴ The following is a simple test to establish whether a child has reached the developmental milestone of a theory of mind. In the presence of a collaborator, let's call her 'Jill', show the child a small fluffy toy. While Jill and the child watch, place it under a hat. Jill then leaves the room for two minutes. While she is away, remove the toy and show the child that you are now going to hide it under a cushion. Then ask the child where he or she thinks that Jill will look for the toy when she returns. If the child rightly guesses that Jill will look under the hat, even though the child knows that it is under the cushion, then the child evinces a theory of mind. Guessing correctly this way demonstrates that the child can attribute a counterfactual belief to another person - a level of abstraction that requires the intentional stance.

⁵ With the advent of experimental philosophy this relation has become reciprocal.

same things. For us to discuss ‘major depression’ productively, we have to agree, in large part, about what major depression is, and in what practical context such a notion arises.”

The validity of a category is a function of the degree to which it corresponds with consonant body of explanatory theories. Groupings are also very much dependent on motivations for doing so. Thus grouping lungfish with cows makes sense to biologists concerned with macro-evolutionary processes; however to fishermen or dairy farmers there would be no motivation for doing so because the validity of such a grouping would be impractical.

Wittgenstein argued against the construct of essentialism in the following passage summarised by Hallett (1991):

Suppose I show someone various multi-coloured pictures, and say: “The colour you see in all these is called “yellow ochre”... Then he can look *at*, point *to*, the common thing.” [But] compare this case: I show him samples of different shades of blue and say: “The colour that is common to all these is what I call “blue”. Now what can be looked at or pointed to save the varied hues of blue? And don't say, “There *must* be something common, or they would not, be called ‘blue’,” but *look and see* whether there is anything in common at all.

According to the authors, “[T]he crucial argument here is that the property of “blue” is reliant, to some extent, upon practical considerations and constraints.”⁶ However the colour blue of an item can be objectively defined as that colour of visible reflected light of wavelength 440 - 490 nm which may vary in saturation and lightness according to standard scales.

Notwithstanding, modern psychiatry continues to proceed along essentialist lines. This is illustrated by Robins & Guze's (1970) claim that, “...the finding of an increased prevalence of the same disorder among the close relatives of the original patients strongly indicates that one is dealing with a valid entity.” On this analysis, genetic and presumably other biochemical factors are treated as primary causes. The task of neuropathologists then is to discover these pathological qualities within the brain. While lived experience does play an acknowledged role psychopathology, the above model is preoccupied with brain function. Genetic and biochemical causes are regarded as exerting their influences in a bottom up direction with any or all symptoms arising from the instantiation of such type aetiologies.

The medical model of psychiatry regards the current nosology as representing discrete organic disease states rather than heterogeneous symptom clusters. These symptom clusters are typically validated by *post hoc* quantitative and statistical analyses of clinical data, including hierarchical cluster analysis and pattern recognition paradigms. These reveal which combinations of symptoms tend to group together and to what extent. Creating these types of discrete definitions for many contemporary psychiatric conditions is problematic in that, “...no amount of clustering can get around the fact that several variables used in such models may have little or no biological plausibility.” (Aronowitz, 2001) Without biological mechanisms to account for these variables it is unclear whether such symptom clusters represent different ways of labelling the same pathology or

⁶ Some of these constraints are linguistic. English for example has a single word for blue, while Russian has two words: *goluboy* for light blue and *siniy* for dark blue. Such differences have been shown to influence thought domains far from language, such as visual perception. (Caldwell-Harris, 2019)

whether they might be better accounted for by socio-cultural influences, or other biological confounds.

According to Peter Zachar and Nick Haslam, psychiatric categories do not uniformly delineate underlying essences, but are defined largely by practical considerations. (Haslam, 1998, 2002ab, 2007; Haslam *et al.*, 2000; Zachar, 2000ab, 2002) According to the authors, "In many ways, this recalls the Szaszian argument for mental illness as "myth" - here literally used to denote a practical, explanatory narrative." However such narratives or heuristic devices cannot be regarded as truly "explanatory" unless they answer to some demonstrable biological phenomena.

Practical considerations are important in reaching consensus over definitions that set the threshold(s) at which a particular set of signs and symptoms may be deemed clinically significant. However, if essentialism is indispensable to the medical model of psychiatry then we need to establish what criteria are essential to any construct of normality or order vs. abnormality or disorder. These must encompass neurobiology, mental functioning, cognitive processes, the expression of emotion and behaviour, all within the relevant socio-cultural context. To this end, the authors posit non-linear adaptive properties within and between particular brain networks as an "essential" element of normality. Progressive linearity would signify an aberrant state that "could manifest effects from the cellular to the cognitive-behavioral (and even socio-cultural) levels." Mental disorders, so conceived, can thus be seen as the outcome of a spectrum of possible effects. Furthermore, "genetic factors predispose endo- and exophenotypes that are differentially expressed though interaction(s) with internal and external environmental influences throughout the lifespan, thereby grounding neuropsychiatric syndromes [in] underlying biological factors." (Giordano & Wurzman, 2008; Wurzman, *et al.* 2008)

Cozolino & Siegel (2017) provide a similar account of such ideas derived from Chaos Theory of which non-linearity is only one element:

Chaos theory suggests that complex systems adhere to a specific set of principles. Three of these principles, nonlinearity, self-organizational processes, and movement toward complexity, are especially relevant to psychiatry. Nonlinear refers to the finding that small changes in input (or initial conditions) can lead to large and unpredictable changes in output. Complex systems function on the rules of probability, which predict that certain combinations of activity within the system are more likely than others, and that these combinations will tend to move the system toward self-organization. This probability also predicts that the system moves itself toward increasingly complex states of functioning.

Complexity theory may offer a foundation for proposing a useful working definition of mental health applicable to individuals, families, and larger social systems. In complex systems, self-organizational processes that move the system's states toward maximal complexity are mathematically shown to be the most flexible, adaptive, coherent, energized, and stable. The movement toward complexity lies between the extremes of sameness, with rigidity and order on the one side, and change, with randomness and chaos on the other. Complexity is achieved when the components of the system achieve a balance between the two fundamental processes of differentiation (specialization in function) and linkage (connected together as a functional whole). When a system integrates differentiated parts, it

achieves a state of complexity and harmonious, adaptive functioning that is bordered on either side by chaos and rigidity.

Examination of psychiatric syndromes reveals examples of deviations from this integrated complex state in which an individual exhibits states and traits of chaos and/or rigidity. For a given individual, such a balance can be achieved when the genetically and experientially influenced growth of neural circuits combines the differentiation of specialized regions with linkage via neural fibers that connect widely distributed areas into a functional, integrated whole. According to this view from the interdisciplinary field of “interpersonal neurobiology,” disorder can be seen as occurring when a system’s integration is impaired and its flow toward complexity is impeded as revealed in its movement toward either rigidity or chaos. ...

Psychiatric disturbances may be conceptualized as disturbances in self-organizational processes. Both inherited and experiential internal determinants, as well as ongoing external, environmental, and social influences that place constraints on the system, can directly affect the development and effective use of integrative self-regulatory mechanisms. Integration is the underlying mechanism of optimal self-regulation. And interpersonal integration likely supports the growth of integrative regions of the brain. Clinical interventions may thus function at the level of external constraints (psychotherapy with integrative communication within a relationship) or internal constraints (pharmacological treatments) that alter the ways in which the individual’s mind is able to achieve integration and healthy forms of self-organization. Optimal self-organization is created with integration, the linkage of differentiated parts of a system. By seeing the mind as something beyond “brain activity” and “subjective experience” alone, a definition of one aspect of mind as “the embodied and relational, self-organizing emergent process that regulates the flow of energy and information” makes it possible to understand the interconnected nature of the broad range of disorders and interventions as related to the fundamental process of integration. Viewing psychiatric disturbances in this way also allows for a synthesis of the views of psychodynamic, biological, and social psychiatry. (p. 694)

Both the authors’ and the above account acknowledge the causal determinants of psychiatric disorders at a physical level while embracing some form of token physicalism that allows for the emergence of more complex systems and the bio-psychosocial influence of environments.

Furthermore, the **spectrum aetiological concept** (not to be confused with the concept of ‘spectrum disorders’) is compatible with the criteria of realism, naturalism, reductionism and essentialism assumed by the medical model of psychiatry. Respectively, the spectrum aetiological concept involves:

1. neural substrates (realism),
2. a disturbance in the orderly functioning or equilibrium of the substrate(s) (naturalism),
3. a perturbation or disruption of fundamental or ancillary components of the bio-psychosocial organism (reductionism via token physicalism),
4. the manifestation of a distinct “*eidos*” that characterizes its atypical features, *i.e.* loss of non-linearity, adaptability, stasis or randomness, and the resultant effect on neural function, cognition, emotion and behavior (essentialism).

Conclusion

The authors recognize that Psychiatry has adopted a categorical approach in delineating mental disorders. When diagnostic criteria are concise and clear they facilitate the development of coordinated treatment regimens, provide standardized classifications of patient groups for statistical research across the globe, as well as a framework for documenting and retrieving information for use by public health care systems. However, the categorical approach undertaken in DSM-5 is not one of pigeonholing patients into mutually exclusive boxes. Rather a Dimensional Approach to Diagnosis was followed, capturing widespread shared symptoms and risk factors that are evident in comorbid conditions. There is also an explicit acknowledgment that, "... like most common human ills, mental disorders are heterogeneous at many levels, ranging from genetic risk factors to symptoms." (DSM-5 p. 12)

DSM-5 is also structured along the lines of Developmental and Lifespan Considerations, reflecting developmental processes that manifest at different stages throughout life. DSM-5 also takes cognoscence of cultural issues as well as social and familial norms and values under the rubrics of Cultural syndromes, Cultural idioms of distress and Cultural explanations or perceived causes for mental disorders. Information about Gender and Sex Differences as well as Reproductive Life Cycle Events are also included in the way they may influence the individual risk for a particular disorder and the effects on the experience of a disorder.

These developments postdate the authors' concerns about the categorical approach to the classification of mental disorders, raised in the first paragraph of their conclusion. However, their philosophical concern with essentialism as part of the medical model of psychiatry is understandable. Essentialism entails the existence of natural kinds. According to Wikipedia, "the term **natural kind** identifies a grouping of entities that always share particular qualities, independently of human knowledge of the entities or their qualities." (Wikipedia: Natural kind) Differently defined by Zachar (2002), a natural kind is "...an entity that is regular (nonrandom) and internally consistent from one instance to the next." Therefore, once we can recognise which properties characterise a specific natural kind, we can identify other prototypical instantiations of that kind. However, if a category cannot be identified with respect to its essential properties, then that category is not a natural kind, but some artificial category.

According to Harré (1986) the concept of a natural kind is a "fancy". We however disagree. It is easy to adopt a realist position with regard to natural kinds such as elementary particles, chemical species and genes because these entities exist independently of human knowledge. Regarding discrete psychopathologies such as schizophrenia or bipolar disorder as natural kinds is problematic for some because these pathologies depend for their existence on humans with characteristically dysfunctional mental processes. This runs contrary to the idea of a natural kind as sharing "particular qualities, independently of human knowledge of the entities or their qualities," but this is a red herring. Just because human consciousness cannot be extricated from putative natural kinds that are characterised by discrete dysfunctional human mental processes does not prove that they do not or cannot exist.

Suppose we imagine characteristically human psychopathology without a human subject. If we were to construct sufficiently advanced artificial intelligences we might observe a few of them locked into analogously dysfunctional mental processes, in which case we could argue that they represent instantiations of analogous natural kinds of psychopathologies *in silico* rather than *in vivo*. Think of HAL, the unquestionably paranoid sentient computer in Arthur C. Clarke's *2001: A Space Odyssey*. The point is not whether there can be such machines but that we can, imaginatively at least, decouple humanoid psychopathologies from human subjects and so regard them as objective natural kinds.

Harré may be right that “a ‘natural kind’ is a concept which can only be understood within the double framework of practice and theory”; however the *existence* of natural kinds is dependent on neither. According to the authors, “The validity of a category is determined by the extent to which it assimilates with a diverse, multidimensional system of fact(s) and explanation(s)”; but this is a *post hoc* epistemic generalization, not an ontological statement. Similarly, the practical task of distinguishing accidental from essential properties is an epistemic one, not an ontological one. If this task guides which properties will be deemed relevant to clinical action, so much the better.

The authors' discussion concerning non-linearity over a wide range of spatial and temporal scales and reciprocal bottom-up and top-down effects affected by the activity of the entire system as a whole, including psychosocial factors is standard fare today. See Cozolino & Siegel (2017) above. Bottom-up effects alone can only account for a variety of physical epiphenomenalism. (See Classic Text 26) However, an analysis top-down effects on the neural substrate would explain how conscious mental states such as beliefs, desires and insights could have a causally efficacious reciprocal effect; though to date we have seen little progress on that front⁷.

Whether we will be able to identify essential properties that characterize non-linear dynamic or chaotic processes that instantiate mental states remains an open question. Similarly, identifying what differentiates such states or processes as psychopathological is a parallel question. According to the authors, “We believe that the aforementioned refined eidetic conceptualization shows some promise, and in this way might provide a “missing link” between the medical model and psychiatry.” We are reminded that psychopathologies are *processes*, like other dysfunctions, that unfold along spatial and temporal dimensions. Furthermore, we are reminded by Ghaemi (2003) that etiology is not a binary issue, but involves elements of degree. The authors propose that their spectrum aetiological concept allows for the categorization of mental disorders according to the extent and type(s) of relatedness conferred by:

1. common genetic risk and predisposing factors,
2. dysfunction of shared substrates and networks, and
3. benefit from types of treatments that have identifiable effects/actions.

Of course, any understanding of mental normality and pathology must necessarily also be embedded in life and lived experience. Despite their popularity, Complexity and Chaos theory occupy one branch of mathematics, not in themselves a science unless grounded in well-established facts, and an appreciation of the limits of such knowledge. According to Karl Jaspers (1957), “every concrete

⁷ Perhaps this means that physical epiphenomenalism is the correct analysis and that all conscious mental activity is the outcome of reciprocal bottom-up processes such as thalamo-cortical oscillations.

event - whether of a physical or psychic nature - is open to causal explanation in principle, and psychic processes too may be subjected to such explanation. There is no limit to the discovery of causes and with every psychic event we always look for cause and effect.” (p. 305) Jaspers (1997) however adds that “...reality is seen through the spectacles of one theory or another. We have therefore to make a continual effort to discount theoretical prejudices...and to train ourselves to pure appreciation of facts...every advance in factual knowledge means an advance in method...” (p. 16-17)

The authors conclude with some speculative remarks about events that have already come to pass:

- the publishing of DSM-5, incorporating many of the anticipated changes,
- the publishing of a Chapter on *Normality and Mental Health* by Vaillant (1997) reviewing seven models of mental health in Kaplan and Sadock’s *Comprehensive Textbook of Psychiatry*, 10th Edition, and
- the advent of a new Decade of the Mind Project underway internationally.

Task

Essay question: Is psychiatry a science and what does this imply for psychiatric research and treatment? This is an important question because there are people and organisations on the one side (such as certain churches) that regard psychiatry as a sham and other organisations (such as the World Health Organisation) that regard psychiatry as a highly evidence based life-saving specialist practice.

Feedback

Your answer to this question will be determined by:

- what you regard as qualifying as a science in the first place,
- whether the ontological assumptions of psychiatry are compatible with those of the sciences in general,
- whether and how psychiatrists and academic departments of psychiatry undertake research and
- how this informs notions of best practice.

You will need to do some further research on the topic as this question cannot be decided on philosophical grounds alone. As always, any claims you make must be substantiated.

References

ARONOWITZ, R. (2001) When do symptoms become a disease? *Ann Intern Med.* **134**:803-8

CASH M. (2008) Normativity is the mother of intention: Wittgenstein, normative practices and neurological representations. *New Ideas in Psychology.* **27**:133-47. doi: 10.1016/j.newideapsych.2008.04.010.

- CALDWELL-HARRIS, C. (2019) Our Language Affects What We See. *Scientific American Mind* **30**(3): 15-17
- CHALMERS D. (1996) *The Conscious Mind: In Search of a Fundamental Theory*. Oxford University Press: New York
- COZOLINO, L. & SIEGEL, D. (2017) Contributions of the Psychological Sciences: Sensation, Perception, and Cognition: Self-Organizational Processes. In Sadock, B. *et al.* Eds. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*, 10th Edition. Wolters Kluwer Health p. 694
- DENNETT D. (1989) *The Intentional Stance*. MIT Press: Cambridge, MA:
- DENNETT, D. (2005) *Sweet Dreams: Philosophical Obstacles to a Science of Consciousness*. MIT Press: Cambridge, MA
- DSM-5 (2013) *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. 5th ed. American Psychiatric Association: Arlington, VA
- GHAEMI, S. (2003) *Concepts of Psychiatry: A Pluralistic Approach to the Mind and Mental Illness*. Johns Hopkins University Press: Baltimore, MD
- GIORDANO, J. & WURZMAN, R. (2008) Neurological disease and depression: The possibility and plausibility of putative neuropsychiatric spectrum disorders. *Depression: Mind and Body*. **4**(1):2-5
- GOLDBERGER A., *et al.* (2002) What is physiologic complexity and how does it change with aging and disease? *Neurobiol Aging*. **23**:23-6. doi: 10.1016/S0197-4580(01)00266-4
- GOPNIK A. & SCHULZ, L. (2004) Mechanisms of theory formation in young children. *Trends Cogn Sci*. **8**:371-7. doi: 10.1016/j.tics.2004.06.005
- HALLETT G. (1991) *Essentialism: A Wittgensteinian Critique*. SUNY Press: Albany, NY
- HARRÉ, R. (1986) *Varieties of Realism: A Rationale for the Natural Sciences*. Basil Blackwell Ltd: Oxford
- HASLAM, N. (1998) Natural kinds, human kinds, and essentialism. *Social Research* **65**:291-314
- HASLAM, N. (2002a) Kinds of kinds: A conceptual taxonomy of psychiatric categories. *Philosophy, Psychiatry, and Psychology* **9**:203-217. doi: 10.1353/ppp.2003.0043
- HASLAM, N. (2002b) Practical, functional, and natural kinds. *Philosophy, Psychiatry, and Psychology* **9**:237-241. doi: 10.1353/ppp.2003.0044
- HASLAM, N. (2007) Folk taxonomies versus official taxonomies. *Philosophy, Psychiatry, and Psychology* **14**:281-284
- HASLAM, N. *et al.* (2000) Essentialist beliefs about social categories. *Br J Soc Psychol*. **39**:113-127. doi: 10.1348/014466600164363
- HORWITZ, A. (2002) *Creating Mental Illness*. University of Chicago Press: Chicago, IL

- JASPERS K. (1957) *Die großen Philosophen*. Piper: Munich
- JASPERS K. (1997) In: *General Psychopathology*. Hoenig J. & Hamilton M., Eds. Johns Hopkins University Press: Baltimore, MD
- KUHN T. (1962) *The Structure of Scientific Revolutions*. University of Chicago Press: Chicago
- PATIL, T. & GIORDANO, J. (2010) On the ontological assumptions of the medical model of psychiatry: philosophical considerations and pragmatic tasks. *Philosophy, Ethics, and Humanities in Medicine* **5**: 3
- PEARN, J. & GARDNER-THORPE, C. (2002) Jules Cotard (1840–1889) His Life and the Unique Syndrome that bears his Name. *Neurology* **58** (9):1400-3. doi:10.1212/wnl.58.9.1400
- ROBINS, E. & GUZE, S. (1970) Establishment of diagnostic validity in psychiatric illness: its application to schizophrenia. *Am J Psychiatry* **126**:983-987
- ROSS D., & SPURRETT D. (2007) Notions of Cause: Russell's thesis revisited. *British Journal for the Philosophy of Science*. **58**:45-76. doi: 10.1093/bjps/axl027.
- Sadler J. (2005) *Values and Psychiatric Diagnosis*. Oxford Press: New York
- SZASZ, T. (1960) The myth of mental illness. *Am Psychol*. **15**:113-118. doi: 10.1037/h0046535.
- SZASZ, T. S. (2007) *The Medicalization of Everyday Life*. Syracuse University Press: New York
- VAILLANT, G. (2017) Normality and Mental Health. In Sadock, B. et al. Eds. Kaplan and Sadock's Comprehensive Textbook of Psychiatry, 10th Edition. Wolters Kluwer Health p. 752-768
- WURZMAN R, et al. (2008) Pain and depression: Potential and possibility for putative spectrum disorders. *Pain Practitioner* **17**(3):14-20
- ZACHAR, P. (2000a) Psychiatric disorders are not natural kinds. *Philosophy, Psychiatry, and Psychology* **7**:167-182
- ZACHAR, P. (2000b) Folk taxonomies should not have essences, either: a response to the commentary. *Philosophy, Psychiatry, and Psychology* **7**:191-194
- ZACHAR, P. (2002) The practical kinds model as a pragmatist theory of classification. *Philosophy, Psychiatry, and Psychology* **9**:219-227. doi: 10.1353/ppp.2003.0051