Scientific realism, anti-realism and psychiatric diagnosis

1.0 Introduction

Taking the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases (ICD) as archetypes, a psychiatric diagnosis primarily lists symptoms and signs of people whom it purports to describe. It may also list additional factors such as how the condition develops over time, prevalence figures, causal factors and gender differences. In this paper I focus on the behavioural aspects of psychiatric diagnosis. There is a long history of concern over psychiatric diagnosis. Some critics consider psychiatric diagnosis as arbitrary or as a means of pathologising people with only minor problems. They sometimes argue that, in contrast to typical pictures of science as providing descriptions of how the world actually is, psychiatric diagnosis have been invented, created or constructed by psychiatrists. This is important because psychiatric diagnoses can influence decisions over treatment and over compulsory detentions. Being diagnosed can influence an individual's self-perception and their relationship to others. Psychiatric diagnoses being somehow false or untrue would raise serious questions over how much they should influence clinical decision making. I will provide an overview of arguments for and against psychiatric diagnosis meriting belief through exploring notions of realism and anti-realism present in analytical philosophy of science and philosophy of psychiatry.

Questions of realism are about whether our beliefs accurately describe the world. To the degree that our beliefs accurately describe the world, realism is justified. To the degree that our beliefs do not accurately describe the world, then, a form of anti-realism is justified. For example, most people are realists about tables. When most people speak about or use tables it seems there is something which exists. In contrast, most people are anti-realists about unicorns. These are typically understood as being imaginary. They are something we have created or constructed in our minds.

This chapters focuses on a particular type of realism, scientific realism.[1] This topic focuses on the questions about the realism or anti-realism of scientific concepts. The central issue of the scientific realism debate is whether scientific theories correctly or very nearly correctly describe the world. Most people generally believe that what scientists describe actually exists. Some philosophers, known as scientific realists, share these views. Other philosophers are scientific anti-realists. They commonly point out that there have been many scientific theories which scientists believed in, sometimes on very good evidence, yet those theories were mistaken in many of their central claims. Despite making incredibly successful predictions many past abandoned theories postulated things which turned out to actually not actually exist. A scientific anti-realist, Larry Laudan, lists many theories which scientists once believed in, but which turned out to be mistaken in central details about what exists in the world:

1 Philosophers of psychiatry typically see psychiatric diagnoses as entities rather than scientific theories. Some scientific realists, known as entity realists, also see scientific realism as focusing on entities rather than theories. However, most scientific realist typically focus upon scientific theories because they believe entities can only be established through scientific theories. I believe this is the case with psychiatric diagnoses (see sections 2.2 and 2.3 of this article). Consequently I shall focus upon typical notions of scientific realism and its emphasis on theories.

"-the crystalline spheres of ancient and medieval astronomy;
-the humoral theory of medicine;
-the effluvial theory of static electricity;
-'catastrophist' geology, with its commitment to a universal (Noachian) deluge;
-the phlogiston theory of chemistry;
-the caloric theory of heat;
-the vibratory theory of heat;
-the vital force theories of physiology;
-the electromagnetic aether;
-the optical aether".[2]

The realist and anti-realist debate thus aims to establish whether modern scientific theories are similarly mistaken in central claims about what things exist in the world, questioning if things like electrons and tectonic plates actually exist or if they are mistaken in a similar manner to old, abandoned scientific theories. The history of psychiatry also includes many long-abandoned psychiatric diagnoses such as hysteria, monomania, childhood schizophrenia, neurasthenia, draeptomania, simple schizophrenia and symbiotic psychosis, raising such anti-realist concerns towards psychiatric diagnosis.[3]

Scientific realist Stathis Psillos outlines scientific realism as having two aspects, both of which must be met for a scientific theory to merit belief. Failure to meet either of them results in anti-realism, whereby a scientific theory does not merit belief. These aspects are metaphysical realism and epistemic realism. Metaphysical realism focuses on questions about what exists. Epistemic realism focuses on questions about how much we know about what exists. The remainder of this chapter firstly considers arguments for and against metaphysical realism in psychiatry. That is, what part, if any, of the real world could psychiatric diagnosis describe? Then the chapter secondly considers arguments for and against epistemic realism in psychiatry. That is, how reliable are psychiatric diagnosis for describing what exists in the parts of the world psychiatry investigates?[4]

2.0 Metaphysical realism and anti-realism

Scientific realism involves "*The Metaphysical Thesis*: The world has a definite and mind-independent structure".[5] A metaphysical realist thinks the world has a mind-independent structure which will be in principle knowable. The world has a particular form independent of

2 Larry Laudan, 'A Confutation of Convergent Realism', *Philosophy of Science* 48, no.1 (1981): 33.

3 Note that historians and historically inclined philosophers often disagree over the degree to which abandoned scientific theories and abandoned psychiatric diagnosis actually were mistaken; these are examples of problematic cases.

4 There is also "*The Semantic Thesis*: Scientific theories should be taken at face value... they are capable of being true or false", Stathis Psillos,'The Present State of the Scientific Realism Debate', in *Knowing the Structure of Nature: Essays on Realism and Explanation*, ed. Sathis Psillos (Basingstoke: Palgrave Macmillan, 2009), 4 emphasis original. I shall not discuss this because semantic anti-realism is generally rejected by modern philosophy of science. "Semantic realism is not contested anymore", *Ibid, 5* with even leading anti-realists philosophers of science being semantic realists.

5 *Ibid*, 4 emphasis original.

our views about it. It exists in a particular way, and there are facts about the way the world exists, regardless of how we think the world is. Metaphysical realists see the mind-independent structure of the world as what is real, as what scientific theories try to literally describe. In contrast, metaphysical anti-realism is where particular facts about the nature of the world are only present after human conventions are in place. A metaphysical anti-realist denies there is a mind-independent structure. Astrology is a fairly uncontroversial example of something which philosophers would adopt metaphysical anti-realism towards. Astrology makes claims that things like the positions of the planets can influence the interpersonal relationships of humans. If the actual metaphysical structure of the world is one in which the position of the planets does not affect human interpersonal relationships, then astrology does not study the metaphysical structure of the world. Astrology attempts to describe something which has no metaphysical structure so the relationships posited by astrology describe nothing real.

Metaphysical realism and anti-realism are often domain specific. Someone might think there are true facts about the nature of the world in parts of the world studied by some sciences but not in areas studied by other sciences. Some examples highlight how philosophers could be metaphysical realist about some scientific claims but be a metaphysical anti-realist over other claims. A philosopher might believe there are mind-independent facts about atoms in physics and cells in biology but not about organisms. For a second example, a philosopher might deny that there are mind-independent facts about economic activities of nations. There might be facts about people, geographic locations and exchange of money but not about nations. A metaphysical anti-realist might claim nations are arbitrary groups, in that it is purely human conventions which decide where the boundaries between Germany and France are. There are no mind-independent facts about economic activities of nations because which nations there are is purely a matter of arbitrary human conventions. Thus a metaphysical anti-realist about psychiatric diagnosis does not believe that nothing exists. Rather, they might be metaphysical realists about many different scientific claims but not over psychiatric diagnosis.

The central question here is whether there is any part of the metaphysical structure of the world which psychiatric diagnosis might describe. The alternative is that, like with astrology, psychiatric diagnosis are things which humans have created and that do not describe the real world. I shall now outline metaphysical realism over psychiatric diagnosis then I shall discuss arguments for metaphysical anti-realism over psychiatric diagnosis.

A metaphysical realist over psychiatric diagnosis will think that the symptoms (thoughts, feelings and behaviour) exhibited by patients is part of the mind-independent structure. Alternatively, the metaphysical realist over psychiatric diagnosis will think that those symptoms (thoughts, feelings and behaviour) is caused by the mind-independent structure of the world. A metaphysical anti-realist will deny these claims. The most commonly employed notion of metaphysical realism in psychiatry is that of "natural kinds". These are typically thought of as natural divisions in the world which form due to real causes. Since "membership in a natural kind depends on the common basis that holds the kind together, we have a ready solution to the problem of why patients who meet the diagnosis share a set of symptoms, viz. that they are all undergoing the same processes and the symptoms are effects of those processes".[6] On this account, individuals with the same underlying physiological characteristics will exhibit the same behaviour. The same causes in

6 Dominic Murphy, 'Natural Kinds in Folk Psychology and in Psychiatry', in *Classifying Psychopathology*, eds. Harold Kincaid and Jacqueline A Sullivan (Massachusetts: MIT Press, 2014), 106.

the metaphysical structure of the world are present in each individual with the diagnosis. Therefore, a psychiatric diagnosis would merit belief if it correctly described that behaviour. There are, however, many different approaches to natural kinds. I will firstly outline four different accounts of kinds in psychiatry, as presented by Nick Haslam. Then, I will assess in what manner each one is or is not realist.

Firstly, Haslam outlines essentialist natural kinds where a "specific, causally efficacious pathological process, mechanism or structure is present".[7] This is essentialist because the underlying cause is present for everyone with that illness and absent in those without. Also, essentialist natural kinds have clear boundaries. Someone either has that psychiatric diagnosis or they do not; no one partially has the diagnosis. Secondly, Haslam outlines discrete kinds, which also have clear boundaries, meaning someone cannot partly meet the diagnostic criteria. However, discrete kinds differ from essentialist natural kinds because discrete kinds do not have essentialist causes.[8] On this account, multiple different causes can come together to produce a discrete set of symptoms; there is no need for one single cause to be present. Thirdly, Haslam outlines fuzzy kinds which lack the discrete boundaries of discrete kinds. There is no sharp natural demarcation between where the fuzzy kind starts and ends. Whilst there is a difference between some individuals with fuzzy kinds and some individuals who lack that fuzzy kind, there are also cases where individuals have only some of the symptoms of the psychiatric diagnosis so partly have the fuzzy kind and partly do not.[9] Additionally, they also lack essentialist causes. Finally, Haslam outlines practical kinds whereby there is no boundary in the world between those with the psychiatric diagnosis and those without. Rather, the boundary is "imposed for practical reasons [rather than being] detected because it is in some respect objectively present".[10] Whereas people with a particular fuzzy kind are separated from those who do not have it (even if there are people who only partly have it), with practical kinds there is no clear separation between anyone with a practical kind and anyone without it. The place where a particular practical kind starts and ends is decided by psychiatrists rather than determined by the world.

Following Haslam's four different types of kinds, psychiatric diagnoses can clearly come in many forms. Which of these forms count as realist? Philosophers disagree about this matter. I consider two different realist accounts of natural kinds by philosophers of science and match them to Haslam's four different types of kinds. Brian Ellis developed a notion of natural kinds named scientific essentialism.[11] According to Ellis, there are naturally forming entities in the world which have essential properties. All instances of a particular entity have the same properties so will be identical to each other. Additionally, since the essential properties of one entity are different to the essential properties of another entity those two entities form a natural demarcation in the world. This is roughly Haslam's notion of essentialist natural kinds. Philosophically-informed psychiatrists Robert Kendell and Assen Jablensky took quite a similar position, arguing that valid psychiatric diagnosis have necessary and sufficient biological mechanisms, ones always present in that illness and not

7 Haslam, Nick, 'Kinds of Kinds: A Conceptual Taxonomy of Psychiatry Categories', *Philosophy, Psychiatry and Psychology* 9, no.13 (2002): 212.

8 *Ibid*, 210.

9 *Ibid,* 208.

10 *Ibid,* 214.

11 Brian Ellis, *Scientific Essentialism* (Cambridge, Cambridge University Press, 2001), 22.

present in other illness. Any psychiatric diagnosis not meeting these criteria will be arbitrary.[12] Down's syndrome is one of the few psychiatric diagnoses to fit essentialist natural kinds, each individual with Down's syndrome having a specific underlying cause and everyone without Down's syndrome lacking that specific underlying cause.

A more popular realist account of natural kinds in philosophy of psychiatry employs Richard Boyd's homeostatic cluster kind approach. In this account there are causal mechanisms in nature which then produce clustering sets of characteristics. "The natural definition of one of these homeo-static property cluster kinds is determined by the members of a cluster of often co-occurring properties and by the ("homeo-static") mechanisms that bring about their co-occurrence".[13] This position differs from Ellis' scientific essentialism on two grounds. Firstly, there is no requirement that the homeostatic mechanisms are essentialist. Not every mechanism will be present in all cases of the disorder. Secondly, the characteristics produced by these mechanisms need not form into discrete bundles. Some homeostatic property cluster kinds will be sharply demarcated from other homeostatic property cluster kinds, but not all will be. Boyd's account fits Haslam's account of discrete kinds and fuzzy kinds. Homeostatic mechanisms can produce groupings of symptoms which are closely correlated, the symptoms being either present or absent in an individual, and thus produce discrete kinds. However, sometimes homeostatic mechanisms produce groupings of symptoms which occur together in a looser, more irregular fashion, the symptoms only being partially present in some individuals, and thus produce fuzzy kinds. Many philosophers of psychiatry employ Boyd's account of natural kinds.[14]

I now bring together Haslam's four types of kinds with these two realist notions of kinds. Haslam's essentialist natural kinds fit Ellis' scientific essentialism, providing an essentialist realist position. This is realist because the world determines how the groupings of symptoms go together. Haslam's discrete kinds and fuzzy kinds fit Boyd's Homeostatic cluster kind position. These could be seen as non-essentialist realist positions. Though not an essentialist position, the world still determines how the groupings of symptoms go together. This is typically thought to make them realist but I will look at arguments which challenge realist understandings of discrete and fuzzy kinds below. Finally, Haslam's practical kinds fit neither Ellis's or Boyd's account. Psychiatrists, rather than the world, determine the boundaries of practical kinds. This means they do not fit the two most popular approaches to realism employed by philosophers of psychiatry and therefore practical kinds would be considered an anti-realist position.

Essentialist natural kinds are realist and practical kinds are anti-realist under the most common approaches in philosophy of psychiatry. In what follows I focus on the more problematic fuzzy and discrete kinds. I consider an argument which would suggest that fuzzy kinds are actually anti-realist then I consider another argument which would suggest that both fuzzy and discrete kinds are actually anti-realist.

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12 Robert Kendell and Assen Jablensky, 'Distinguishing between the validity and utility of psychiatric diagnosis', *American Journal of Psychiatry* 35, (2003): 9.

13 Richard Boyd, 'Realism, Anti-Foundationalism and the Enthusiasm for Natural Kinds', *Philosophical Studies* 61, (1991): 141.

14 Helen Beebee and Nigel Sabbarton-Leary, 'Are Psychiatric Kinds 'Real'?', *The European Journal of Analytical Philosophy* 6 no.1, (2010): 23; Kenneth S Kendlar, Peter Zachar and Carl Craver, 'What kinds of things are psychiatric disorders?', *Psychological Medicine* 41, (2011): 1146; Murphy, *Natural Kinds*, 120; Jonathan Tsou, 'Natural Kinds, Psychiatric Classification and the History of the DSM', *History of Psychiatry* 27, no.4 (2016): 411.

2.1 Are psychiatric diagnoses part of the metaphysical structure of the world?

Essentialist kinds and discrete kinds have clear boundaries in comparison to non-essentialist and non-discrete kinds. Something either is or is not a particular essentialist or discrete kind. Therefore, they seem part of the metaphysical structure of the world since that metaphysical structure seems to determine their boundaries. In contrast, fuzzy kinds do not have discrete boundaries. For any given fuzzy kind, there will be individuals who definitely are that fuzzy kind, individuals who are definitely not that fuzzy kind but there are also individuals who are partly that fuzzy kind. This raises the danger that psychiatrists need to make a decision about who is included in membership of that fuzzy kind. Therefore, the boundaries of the fuzzy kind are not solely determined by the metaphysical structure but also by psychiatrists. This is especially worrying for a realist psychiatry if Haslam is correct to claim that fuzzy kinds are more common in psychiatry than essentialist natural kinds and discrete kinds.[15]

A related problem is co-morbidity. This is where an individual is given multiple diagnoses. This situation can be very common. For example, many autistic individuals also meet the criteria for other diagnosis. Around 45% of autistic individuals meet clinical criteria for depression and 40% meet clinical criteria for anxiety. It is not obviously clear whether this means the individual should be given three different diagnosis or if they should just be diagnosed with autism but the symptoms of autism should also cover the symptoms of depression and anxiety. This suggests the world itself does not determine the boundaries of psychiatric diagnosis but rather psychiatrists must make this decision, which would make fuzzy kinds metaphysically anti-realist.

Realists can respond by adopting a pluralistic realism. There are real groupings of behaviours in the mind-independent structure of the world. Therefore, a psychiatric diagnosis which describes that behaviour is describing something real, even if there is more than one way psychiatrists can describe that real behaviour.[16] For example, the symptoms associated with autism are real; additionally, they group together in reality. Despite this, it is still an open question if psychiatrists should just employ autism, should instead employ autism and Asperger's syndrome or use autism, Asperger's syndrome and even more subtypes.[17] The realist would claim all these options are ways of describing the real world, making each option a realist psychiatric diagnosis. This does, however, raise concerns that psychiatric diagnoses are only real in a very loose sense. The behaviour exhibited by patients might be part of the metaphysical structure of the world, but it seems that the opinions of psychiatrists are required to formulate fuzzy kinds, meaning that determining fuzzy kinds involves something more than just the metaphysical structure of the world. Fuzzy kinds seem to sit between essentialist and discrete kinds, which have clear boundaries of symptoms, and practical kinds, which have their boundaries determined by psychiatrists rather than the world. This leaves the metaphysical status of fuzzy kinds unclear.

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15 Nick Haslam, 'Natural Kinds in Psychiatry: Conceptually Implausible, Empirically Questionable, and Stigmatizing', in Classifying Psychopathology, eds. Harold Kincaid and Jacqueline A Sullivan (Massachusetts: MIT Press, 2014), 23.

16 Rachel Cooper, *Psychiatry and the Philosophy of Science* (Stocksfield: Acumen, 2007), 50.

17 This example reflects the difference between DSM-IV and DSM-5. DSM-IV included the diagnoses of autism and Asperger's syndrome whereas DSM-5 merged Asperger's syndrome into autism.

2.2 Are mechanisms part of the metaphysical structure of the world?

Essentialist kinds are realist because they have underlying essentialist mechanisms, that is, a mechanism which is present in every instance of the kind and not present elsewhere. Under this approach the world determines the boundaries of the mechanism and therefore also determines the boundaries of the essentialist kind. Discrete and fuzzy kinds are taken as real because they have homeostatic mechanisms. However, I now discuss the possibility that homeostatic mechanisms are determined not by the world but by the views of psychiatrists. This would in turn mean that discrete and fuzzy kinds are determined by the views of psychiatrists rather than the world and so would not be realist.

Homeostatic mechanisms might be demarcated on the views of psychiatrists rather than the metaphysical structure of the world because diverse causes can produce a homeostatic mechanism. For example, species continue to have relatively similar characteristics due to the homeostatic mechanism of the exchange of genes during mating, however, the exact same genes will not be transmitted in each instance of mating. Therefore, one homeostatic mechanism, the breeding habits of a particular species, will contain much causal diversity, specifically, different genes being transmitted in any particular instance of two animals of that species mating. Philosophers of psychiatry are rarely clear about the degree of causal diversity that can be present before a homeostatic mechanism stops being demarcated by the metaphysical structure of the world and is instead demarcated by the views of psychiatrists. I shall first discuss the current evidence of causal diversity in psychiatry then discuss the philosophical issues this raises.

Prominent psychiatrists David Kupfer, Michael First & Darrel Regier write that "not one laboratory marker has been found to be specific in identifying any of the DSM-defined syndromes. Epidemiologic and clinical studies have shown extremely high rates of co-morbidity among the disorders, undermining the hypothesis that the syndromes represent distinct etiologies".[18] Philosophically-informed psychiatrist Kenneth Kendler writes that "our genes seem neither to have read DSM-IV nor to particularly respect the diagnostic boundaries it established".[19] Psychiatry has uncovered very few mechanisms responsible for currently-employed diagnoses and modern psychiatric evidence suggests there might not be many essentialist or homeostatic mechanisms out there waiting to be found. Rare instances of identifying big, simple causes are unlikely to be replicated.[20] Stronger causes are easier to find, such as genes which are relatively common in individuals with a particular diagnosis being easier to find than genes which occur very rarely within that diagnosis.[21] Additionally, causation in psychiatry often does not work in the manner of one cause one effect. Often, the same cause can result in many different outcomes whilst different causes can result in the same outcome.

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18 David J Kupfer, Micheal B First and Darrel A Regier, *A Research Agenda for DSM-V* (Washington: American Psychiatric Association, 2002), xvii.

19 Kenneth S Kendler, 'Advances in Our Understanding of Genetic Risk Factors for Autism Spectrum Disorders' *American Journal of Psychiatry* 167, n.11 (2010): 1291.

20 Kenneth S Kendler, 'Towards a Philosophical Structure for Psychiatry', *American Journal of Psychiatry* 162, (2005): 434.

21 Kenneth S Kendler, '"A Gene for…": The Nature of Gene Action in Psychiatric Disorders', *American Journal of Psychiatry*, 162 (2005): 1247.

Are such levels of causal heterogeneity compatible with homeostatic mechanisms or not? Unfortunately, very few philosophers define in detail what exactly constitutes a homeostatic mechanism. Consider that, for example, autism is currently being linked to hundreds of genes. Do hundreds of possible genes, only some of which will be present in any autistic person and many of which can be found in non-autistic people, count as a mechanism? An alternative approach to mechanisms focuses on developmental pathways, whereby lots of different causes (such as the presence of some of those hundreds of genes linked to autism) can set off a process. This process would be the homeostatic mechanism that causes autism. Therefore, a psychiatric diagnosis could have a single underlying homeostatic mechanism even if an immense variety of causal factors determine if that homeostatic mechanism actually is present. However, current evidence suggests many different causal pathways can produce grouping of symptoms. For example, Sun et al[22] found 24 possible causal pathways which can lead to schizophrenia. Does this mean schizophrenia has twenty-four different homeostatic cluster kind mechanisms and therefore should be split into twenty four different diagnoses, or does each of those pathways count as part of one bigger homeostatic cluster kind mechanism? Philosophers of psychiatry appealing to cluster kind mechanisms have generally not discussed such matters and those who have discussed this often disagree.

All this raises concerns that the metaphysical structure of reality in psychiatry might not consist of homeostatic mechanisms. Discrete kinds and fuzzy kinds are considered realist because they have real mechanisms; however, if homeostatic mechanisms are things which psychiatrists demarcate, rather than existing in the metaphysical structure of the world, then discrete kinds and fuzzy kinds would not be realist. Either there needs to be substantially stronger causes out there which have not yet been discovered, though there is reason to doubt this possibility, or realist philosophers of psychiatry need develop their position if they wish to avoid metaphysical anti-realism.

3.0 Epistemic realism and anti-realism

The second realist concern is epistemic realism. Scientific realism also requires the "*The Epistemic Thesis*: Mature and predicatively successful scientific theories *are* well confirmed and approximately true of the world".[23] These are epistemic questions about how much we can know about the metaphysical structure of the world. An epistemic realist believes that scientific theories correctly describes the mind-independent structure. An epistemic realist believes there is something that a particular scientific theory could describe and that it describes it correctly. In contrast, an epistemic anti-realist doubts that scientific theories correctly describe the world. An epistemic anti-realist might be a metaphysical realist, believing there is something that a particular scientific theory could describe, but doubts that scientific theories accurately describe that part of the world. For example, an epistemic realist in physics might believe the metaphysical structure of the world contains particles and believe that our theories about electrons correctly describe some sub-atomic particles. In contrast, an epistemic anti-realist might accept that sub-atomic particles exist but might also

22 Jingchun Sun, Peilin Jia, Anyman H Fanous, Edwin van den Oord, Xiangning Chen, Brien P Riley, Richard L Amdur, Kenneth S Kendler and Zhongming Zhao, 'Schizophrenia Gene Networks and Pathways and Their Application for Novel Candidate Gene Selection', *Plos One 5*, no.6 (2010): 5.

23 Psillos, *Structure of Nature*, 4 emphasis original.

believe our theories about electrons do not accurately describe the real sub-atomic particles. It might be the case that we group different types of sub-atomic particles under the name electrons. In reality, the sub-atomic particles are actually different, having different properties, but physicists mistakenly believe they are all the same sub-atomic particle which we name electrons.[24]

Typically, epistemic realism and epistemic anti-realism are theory specific; few philosophers adopt scientific realism regarding all scientific theories or adopt anti-realism regarding all scientific theories. Modern scientific theories differ in how speculative they are and how much they are supported by evidence. An epistemic realist about a particular psychiatric diagnosis believes it substantially describes the metaphysical structure of the world; an epistemic anti-realist about a particular diagnosis doubts this. As with scientific theories, it is possible to be realist about some psychiatric diagnosis and not others.

Questions of epistemic realism have been long studied within philosophy of science. These are general arguments that can be applied to all sciences. Since psychiatry is typically considered a science I will apply these general arguments to psychiatry. Having done this, I will then look at epistemic issues which are specific to psychiatry.

3.1 Epistemic arguments in philosophy of science

The main argument for scientific realism within philosophy of science is known as the no miracles argument. This argument points to the incredible predictive success of scientific theories. Some scientific theories, especially in physics, are capable of making immensely accurate predictions. The argument goes that there are only two possible ways scientific theories are capable of making such predictions: either the theory correctly describes the world or a miracle has occurred. Since miracles are not allowed in philosophy the only explanation is that scientific theories correctly (or very nearly correctly) describe the world. The no miracles argument is rarely applied to psychiatry, including by philosophers of psychiatry. It is not easy to apply to psychiatry since examples of miracle like predictions are rare in psychiatry. It can, however, be applied in a more minimal form. If a particular psychiatric diagnosis were considered successful then it seems reasonable to suppose that the diagnosis is making at least some partially accurate claims about the world. A successful psychiatric diagnosis might be one which significantly helps predict how people with the diagnosis will act and helps with understanding why they do so. However, it is unclear just what degree of success would be required for this argument to work. Additionally, if a psychiatric diagnosis were considered successful this would only entail that it makes at least some partially accurate claims about the world but the exact degree of accuracy would not be clear.

I now discuss three arguments for epistemic anti-realism found in the philosophy of science, starting with the pessimistic meta-induction. Throughout history scientists have believed in theories, often on extremely good evidence, which turned out false, suggesting

24 Note that it is possible to be a metaphysical anti-realist but also an epistemic realist. A philosopher might think there is no one true structure for science to describe yet still thinks scientific theories can be assessed for the level of belief they deserve. For example, an epistemic realist might think simple theories are preferable to complicated theories and so use simplicity as a standard to judge which theories merit belief. They would only be epistemic realist over simple theories even though, by being metaphysical anti-realists, they are not willing to claim that the nature of reality itself is simple.

good evidence is insufficient for belief and our current theories will turn out false. Past and potential future changes suggest modern psychiatric diagnoses are on shaky ground and are likely to change. This likelihood of being abandoned undermines reliable belief in them. Arguments similar to these are common in philosophy of psychiatry, with regular complaints that psychiatric diagnoses keep changing. It is unclear why psychiatric diagnosis keep being revised if they are already correct. There are concerns that these changes are driven by the arbitrary views of psychiatrists rather than scientific evidence. Additionally, advances in genetics and neuroscience may mean we abandon major diagnosis like schizophrenia and manic depression. Past and potential future changes are often taken to suggest current psychiatric diagnoses do not merit belief.

Another argument from philosophy of science is underdetermination. This is where two different theories can equally well explain the evidence; therefore there is no justification for assigning belief to one theory rather than the other. If more than one theory is equally compatible with the evidence then scientists cannot employ evidence to decide which theory is correct. Related arguments in philosophy of psychiatry are common, with the suggestion that current psychiatric diagnoses are just one way of classifying mentally ill people. Murphy writes, "what evidence do we have that current practice in psychiatry produces good outcomes, outcomes that couldn't be matched by alternative nosologies that start from a completely different set of premises?".[25] The possibility of constructing alternative psychiatric diagnoses is taken to suggest we lack reason to believe current psychiatric diagnoses are the correct ones.

A third philosophy of science argument concerns the theory-laden nature of evidence. This is where evidence employed to construct scientific theories itself partly depends upon scientific theories, potentially mistaken ones, which can result in substantial negative epistemic consequences. This also has parallels in philosophy of psychiatry, it being commonly argued that psychiatric diagnoses are overly reliant upon false theories. There are many competing theoretical approaches to mental illness, such as psychoanalysis, cognitive psychology, neuroscience and genetics. Not only are we unsure which theory is correct, potentially many of them are false. If so, theories might cause psychiatrists to make false observations, theory influencing and thus distorting the observations used to form diagnoses. Reliance upon false theories undermines belief in existing psychiatric diagnoses.

I believe that these arguments are best judged by historical studies. The strength of the pessimistic meta-induction is based upon establishing how greatly a psychiatric diagnosis undergo change in criteria across their history. Underdetermination arguments are best judged by comparing modern diagnosis to actual historical diagnoses which have stood the test of being applied to real patients rather than to undeveloped hypothetical alternatives. Theory-laden nature of evidence arguments are also best judged by studying if psychiatrists in the past, who often held very different theories to modern psychiatrists, reported different symptoms or clustered symptoms together in a different manner.

3.2 Epistemic arguments in philosophy of psychiatry

I now consider epistemic arguments in philosophy of psychiatry. These are arguments discussed by philosophers of psychiatry which deal with issues specific to psychiatry rather than being arguments applicable to all sciences.

25 Dominic Murphy, *Psychiatric in the Scientific Image* (Cambridge: MIT Press) 10.

There are many epistemic issues over neuroscience. For example, there are concerns that the dominant causal theory of schizophrenia since the 1970s, the dopamine hypothesis, is mistaken and should be abandoned. These issues are important because neuroscience is often taken as the most likely place to find the mechanisms underlying essentialist, discrete and fuzzy kinds. There is debate over whether neuroscience is ready for finding mechanisms underlying psychiatric illness. Some philosophers think neuroscience is ready whereas other consider neuroscience to be insufficiently developed. Additionally, even when sufficiently developed, employing neuroscience to understand the multiplicity of causal factors will be very difficult, raising epistemic concerns that mechanisms are incorrectly described or one mechanism is unrealistically emphasised over other mechanisms.

There are many epistemic concerns over how well psychiatrists describe the symptoms of patients. Phenomenologists are concerned that psychiatrists use relatively basic understanding of symptoms which does not convey the complexity of subjective experience. Also, there are often relatively weak links between symptoms and underlying neurology, since symptoms often involves non-neuroscientific factors like social environments. This creates epistemic issues over knowing the degree to which a neuroscientific or non-neuroscientific understanding is required.

There are also epistemic issues related to non-scientific interests influencing scientific research. For instance, the insurance industry and drug manufacturers could influence psychiatric researchers to consciously or unconsciously interpret results to suit their interests rather than just describe the world.

Some philosophers have believed that patients will respond to different drugs because they have different underlying mechanisms, therefore drug responses help establish which patients share underlying causes.[26] However, drugs typically only affect individual symptoms and typically affect individuals with different psychiatric diagnosis, making drugs epistemologically unreliable for demarcating psychiatric diagnosis.

There are epistemic concerns that psychiatric diagnosis distracts psychiatrist's attention away from other aspects of the patient. There are concerns that many important aspects which influence how the patients behave, such as their upbringing, their socio-economic environment and their personality are largely ignored. These factors could significantly cause mental distress but they are not typically considered medical factors. For example, if an individual is depressed because they have poor housing then the obvious solution would be to provide them with better housing rather than send them to a psychiatrist. Epistemic issues arise when such factors are ignored due to focusing excessively upon their psychiatric diagnosis.

Overall, philosophers of psychiatry are on balance epistemic anti-realists. They are generally concerned that currently employed psychiatric diagnosis are flawed and could be improved to better describe reality. They vary in the degree to which they believe psychiatric diagnosis need modifying, some calling for widespread changes and others calling for more minor changes.

5.0 Conclusion

26 Jonathan Y Tsou, 'Intervention, causal reasoning, and the neurobiology of mental disorders: Pharmacological drugs as experimental instruments', *Studies in History and Philosophy of Biological and Biomedical Sciences'* 43, (2012): 546.

Psychiatrists want psychiatric diagnoses to describe something real, rather than something in the minds of psychiatrists. This would help ensure the diagnosis actually describes what the patient is like and help the development of better treatments.

Realism has two components, the metaphysical and the epistemic. Most philosophers of psychiatry are metaphysical realists, believing there is a mind-independent structure of natural kinds for psychiatric diagnosis to describe. Natural kinds are typically taken as having boundaries of symptoms and mechanisms which are demarcated by the world. However, if, as I have argued, psychiatrists need make choices when drawing the boundaries of symptoms and if the immense causal diversity underlying psychiatry mean mechanisms are demarcated by psychiatrists then notions of realist psychiatric diagnosis are challenged. Finally, many philosophers of psychiatry are epistemic anti-realists, believing most currently employed psychiatric diagnoses fail to accurately describe the world.

The realism debate over psychiatric diagnosis has important consequences. If realism is justified, then the world largely or entirely determines what the correct psychiatric diagnosis are. In contrast, if anti-realism is justified then psychiatrists need decide which psychiatric diagnosis to employ since there is no one correct set of psychiatric diagnosis. If so, then psychiatrists need consider and debate what they want psychiatric diagnosis to be like. For example, they need decide whether they want to employ lots of diagnosis, each of which provides a quite specific description of patients, or if they want to employ a smaller number of diagnosis, each of which is applicable to a wider range of individuals. Thus anti-realism over psychiatric diagnosis entails that there should be a debate over how to formulate psychiatric diagnosis. This debate need not take place if metaphysical and epistemic realism over psychiatric diagnosis were justified, meaning psychiatry had found the one correct set of psychiatric diagnosis.

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