Reificating Disorders Into Natural Kinds

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In psychological science, what counts as a disorder undergoes constant reexamination. Scholars are frequently bringing modifications to diagnostic manuals based on their latest experimental results. Yet, the way disorders are constructed and updated is sporadically investigated, especially in contrast with the amount of research within the framework of a disorder. As such, the investigation of how scientific facts are constructed is often left to outsiders and historians (Danziger, 1994; Latour & Woolgar, 1979), which bear little influence on common practice. As a result, psychological science is vulnerable to certain fallacies that go unchallenged within the field. This conundrum is of particular magnitude when psychological experts need to define normality in order to inform medical or legal practice. As neuroscience and pharmacology gain more importance in psychiatry, the spotlight has quickly turned to the biological aspect of mental illness. This has led scientists to make ambitious claims about the neurological basis of mental illness, that go far beyond reasonable inferences. As a result, psychological disorders are increasingly and erroneously portrayed as natural kinds. In other terms, mental illness is portrayed as conceptualizing categories created independently from human judgment. In the midst of rapidly evolving technology and research, scientists and the public alike appear to lack a clear understanding of the social construction of disorders.

What is a disorder?

The DSM-5 defines psychological disorder as “a clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning” (APA, 2013). Without an exception, psychiatric diagnoses were initially introduced as recurrent problematic behaviors. It is critical to acknowledge that psychological disorders are categories

based on behavioral symptoms, and that biological measures used in academic research are only exploratory. In fact, if used in psychiatric practice, biological measures are taken to rule out any physical anomaly. Despite this, a dysfunctional neurobiology is often assumed to cause psychological disorders, through the process of reification.

Reification

Reification is the fallacy of treating an abstraction as if it were a concrete real event or physical entity. Constructs are examples of reification. A construct is a hypothetical explanatory variable that is not directly observable. Since the field of psychology investigates unobservable mental processes, its use of constructs is extensive, in order to mediate access to reality. For example, the concept of agreeableness in psychology is a construct: it is not directly observable, but is retroactively attributed a causal role based on aggregated behavioral samples. Complications can arise from such hypothetical thinking, however, by inadvertently suggesting that constructs refer to a discernable reality, which is called reification. After extensive data collection to support the measurability of a certain phenomenon, its realness is established in the scientific world. As a consequence, it is assumed that this categorization embodies a natural distinction, independent of human judgment—referred to as a natural kind. In social sciences, reification seems unavoidable, and this fallacious thinking can be traced back to centuries ago. John Stuart Mill (1806-1873) said that "the tendency was always strong to believe that whatever received a name must be an entity or being, having an independent existence of its own" (Robson, 1989). This common misconception mirrors an objectivist perspective, which assumes that all of reality consists of entities with fixed properties, and that a given property is necessary and sufficient to form categories.

Disorders are 'kind of' natural kinds?

Natural kinds typically refer to categories that are homogeneous and have boundaries that do not rely on human judgment. In Plato's words, it "carves nature at its joints". The individual members of a natural kind must share some underlying structure or property that characterizes the kind in all possible cultures, historical periods and worlds in which it could exist (Dupré, 1981). In contrast, human kinds are constructed by humans and have properties that can be affected by human activity.

With the advent of neuroscience and pharmacology, psychological science has been illustrating the brain as the key to understanding individual differences in behavior. For instance, George Bush, then president of the United States, inaugurated the Decade of the Brain (1990-1999), stimulating research for a better understanding of the human brain and behavior (Bush, 1990). In a similar vein, the "chemical imbalance" theory of mental illness is widespread in society, even though it is unfounded (Leo & Lacasse, 2007). Naturally, all planned behavior originates from the brain, which explains the title of this section. However, it is commonly theorized that identifiable categories of brain anomalies or dysfunctions cause the problematic behavior. In turn, the disorder becomes gradually defined by its (undefined) neurological essence rather than behavioral presentation. Neurorealism, the idea that brains can offer "proof" of the existence of a phenomenon, is a widespread misconception in media coverage of scientific endeavor (Racine, Waldman, Rosenberg, & Illes, 2010). In sum, psychological disorders are commonly framed as natural kinds, defined by neurological categories.

The issue with disorders as 'natural kinds'

No matter how appealing it is for certain grant-seeking scientists, the portrayal of disorders as natural kinds is improper. Verhoeff (2012) describes this issue in two parts. While it was done in the context of autism, it applies to psychological disorders in general. To begin with,

there is hardly a distinct unifying essence in psychological disorders, which Verhoeff refers to as the issue of heterogeneity. Despite the widespread contrary assumption, psychiatric diagnoses are not separated by natural boundaries (Kendell & Jablensky, 2003). Neuroscientific research has not successfully "carved nature at its joints" (Hyman, 2007, p. 729), and we remain unable to diagnose psychiatric disorders using brain scans, including neurodevelopmental disorders. Psychiatric disorders do not represent categories based on biological criteria.

Some might say that those afflicted with mental illness share symptoms, for instance social deficiencies in the case of autism. Yet, the essence of most disorders in still hotly debated. In the case of autism, the nature of empathetic deficiencies is still a matter of debate, whether it is cognitive (Baron-Cohen, 2000), or affective (Chevallier, Kohls, Troiani, Brodkin, & Schultz, 2012). This blurs the notion of autism's core symptomatology or essence. A feature that is rarely mentioned in autism, but always present, is sensitivity to environmental stimuli. Sensory sensitivity does lead to social impairment (Richard, French, Nash, Hadwin, & Donnelly, 2007). Thus, even with identical observations, two or more distinct conclusions can be argued, an issue typically referred to as the Rashomon effect (Heider, 1988). Furthermore, the diagnostic tools used have been very diverse, which changes the diagnostic criteria (which is in turn the essence) at every alteration. Recently, the construct of autism transitioned into a spectrum, a path that increasingly more disorders will probably follow, which altered the nature of autism. Even then, these diagnostic tools rely on constructs, arbitrary cutoff points, and clinical judgment. As such, the essence of psychiatric categories is not set in stone and is heterogeneous, and the factors leading to an individual's inclusion in a certain category relies heavily on human judgment. This disputes the assertion that psychiatric diagnoses are natural kinds.

The second argument of Verhoeff's (2012) position is that people classified within certain categories of disorders interact with the classification, which is a feature of human kinds. Hacking (1995) introduced the "looping effect", or how categorization interacts with the targets they aim to describe (Hacking, 2007). As such, psychological accounts are "making up people", kinds of people that did not exist before, due to the investigation interacting with them. For instance, the framing of substance addiction as a disorder might reduce the likelihood of the categorized to take action against their maladaptive behavior. Thus, mere categorization has altered the target. This has been extensively discussed within categories, but classification also interacts with the non-categorized, and with cultural conceptions of normality. For instance, consider the concept of gender in the social sciences. Social scientists have devised a construct that refers to the non-biological aspect of sexually dimorphic behavior. Slowly, the concept of gender has become reified into a reality, having an existence of its own. In present times, most are convinced that gender refers to something beyond a lexical object: a tangible entity that causally affects cognition and identity. In turn, this creates people that see gender variance as a way to be a person, or as a way to understand the world, which represents a new kind of people. This effect of looping is increasing as social movements gain traction, which strengthens the influence of institutions on the categorized.

Despite these pitfalls, behavioral sciences insist on framing disorders as natural kinds. Below are examples of misconceptions frequent in public and academic discourse, that reveal an underlying assumption of disorders as natural kinds.

Common misconceptions

The politically correct nomenclature for those afflicted with mental illness is "people with" a certain disorder, in order to avoid reducing them to their impairment. Labeling

individuals *with* a disorder implies that there is, somewhere, a true and intact person *without* mental illness and its associated features. Or, that this person's behavior and tastes are part of the framework of mental illness. Had he been born without autism, the socially impaired programmer would have been interested in talk shows and team sports. Not only it is not any less stigmatizing, but it is logically incorrect. It implies that mental illness is an entity that one can have, or not have. "Having" a certain behavior, for example autism, is either a misnomer, or a concealed assumption of an underlying natural kind. Correct nomenclature would be "autistic people" or "people with autistic symptomatology", which denotes a tendency to behave in certain ways, rather than a natural entity.

There are persistent debates about whether disorders are "real". In the International Consensus Statement on ADHD, 52 prominent authors state that "The notion that ADHD does not exist is simply wrong. All of the major medical associations […] recognize ADHD as a genuine disorder because the scientific evidence indicating it is so is overwhelming" (Barkley et al., 2002). The realness of ADHD is undebatable. Its inclusion in diagnostic manuals is what makes it a real disorder. However, the consensus seems to imply that certain behaviors or experimental findings can support the existence of a disorder, suggesting that these provide evidence for a palpable but unobservable reality. On the contrary, natural criteria cannot dictate what counts as a disorder. This indicates that the authors believe that having a name, a measurement, and correlates grants ADHD the status of natural kind. In fact, psychiatric disorders are constructed, and embody all features of a human kind.

The reification of mental illness into natural kinds is such that certain disorders are argued to apply to those who do not correspond to the usual criteria. A salient example is the creation of alternative criteria for men and women, assuming that an inner, natural property is

shared but expressed differently. Tony Attwood, a prominent scholar on autism, states that "We understand far too little about girls with autism spectrum disorders because we diagnose autism based on a male conceptualisation of the condition. We need a complete paradigm shift" (Attwood, 2009). Attwood makes the claim that something other than the conceptualisation of autism conceptualises autism. That makes very little sense, unless you perceive psychiatric categories through the lens of natural kinds. Some even claim that autism can be "camouflaged" in girls with a normal social and academic life (Dean, Harwood, & Kasari, 2017). In a similar vein, Quinn (2005) argues that women with ADHD are underdiagnosed, because their ADHD is often expressed as daydreaming and looking out the window, instead of hyperactivity. As such, their excessive motor behavior, which defines ADHD, is not expressed in the form of excessive motor behavior. If a behavioral pattern does not correspond to a certain description, then it logically cannot obtain the label of this description. In short, assumptions of natural kinds are frequent in the scientific literature on mental illness.

Conclusion

The classification of psychological disorders seems to unavoidably reify them into real, essential physical entities. In turn, it easily transforms them into natural kinds, allegedly based in neurological categories that are inferred, rather than observed. This process is without a doubt facilitated by pharmacology and neuroscience, which focus on the biological aspect of mental illness, and benefit from extensive funding and media coverage. However, portraying disorders as natural kinds is erroneous. The lack of unifying essence and the interactive effect of classification represent features of man-made human kinds. Yet, the assumption that disorders are natural kinds prevails both in popular media and academia. Hopefully, there can be a gradual convergence of philosophers of science and scientists, that would shed light on this easily

rectifiable misunderstanding. For instance, Steven E. Hyman, former director of the National Institute of Mental Health (NIMH), affirmed that "cautionary statements within the DSM-IV, if read at all, provide little protection among many communities of users against reification of the disorders listed within" (Hyman, 2010, p. 158). The acknowledgement of the issue is the silver lining to this conundrum.

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