# The limits of science for psychiatry

Kelly Alexandra Roe

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## An introduction to psychiatric classification

- In the beginning different theories of mental disorder proliferated...
- For each theoretical orientation there was a different system of classification
- The classification proposed by one theoretical orientation was shunned by the others
- There was a need for a common system of classification so that clinicians could agree what condition a patient had and so that researchers could study people with the same kind of disorder (need for inter-rater reliability)

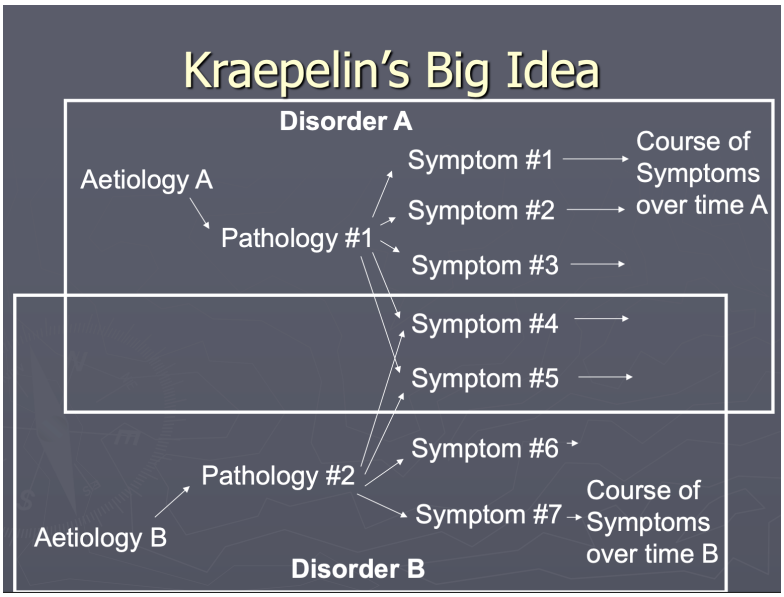
## The rise of the DSM and ICD

- The DSM and ICD are two different systems of classification
- They are designed so that you can translate the diagnostic categories and codes from one manual into the diagnostic categories and codes in the other
- Their similarity reflects 'truth by agreement' rather than truth by independent convergence
- The DSM is mostly used in the USA (as it is put out by the American Psychiatric Association) whereas the ICD is mostly used in Europe (as it is put out by the World Health Organisation)
- The DSM is growing in popularity around the world, however
- There have been numerous editions of each and the current editions are ICD-10 and DSM-IV-TR (where TR is Text Revised)
- The DSM is estimated to come out in 2010 or 2011

## The DSM and ICD

- Both share an approach that is regarded as Neo-Kraepelinean
- Kraepelin thought that instead of classifying kinds of disorders on the basis of theorising we should classify on the basis of our observations

- Kraepelin studied patient data and tried to plot aetiology, symptom, and course
- Kraepelin's big idea was that there would be a distinct number of symptom clusters that had a distinct aetiology and course




## Kraeplin

- His idea was that behavioural symptom clusters would share the same underlying pathology and the same underlying aetiology
- So, if we classified on the basis of aetiology or we classified on the basis of pathology or we classify on the basis of behavioural symptom clusters we would end up with the same system of classification
- If we think that some or all behavioural symptom clusters are multiply realized then this assumption would be false, however

# The virtues of the neo-Kraeplinean approach

- Hempel recommended that psychiatric classification should focus on observable behavioural symptoms (operationalized) in order to get some inter-rater reliability

- The idea was to start with the first stage of science: Describing observable features (behavioural symptoms) so that we could discover what observable features were to be found clustered together in nature (syndromes with unity)
- This is similar to chemistry and biology
- This was a way of getting around the divergence of theoretical orientation that was threatening to undermine psychiatry as a unified discipline

## Problems with the neo-Kraeplinean approach

- Most of the DSM and ICD categories haven't been validated (which is to say there there isn't any evidence that the categories really describe symptom clusters or 'syndromes with unity')
- Inter-rater reliability is poor
- It looks like genetic kinds, neurological kinds, cognitive kinds, behavioural kinds, and social kinds might come apart given multiple realizability (of both causal mechanisms and constitution)
- As such, how classification should proceed is going to depend on what classification is for

## The purpose of the DSM

- The DSM states more main aims:
  1. To provide a system of classification that is useful to clinician's
  2. To provide a system of classification that is useful to researchers
  3. To provide a system of classification that is useful to epidemiologists (the main purpose of the ICD)
- This isn't a stated aim (the DSM distances itself from these issues) but:
  - Getting a DSM / ICD code is required for publicly funded and / or health insurance funded treatment
  - Getting a DSM / ICD code is required (though not sufficient) for the insanity defence. Psychiatrists give expert testimony as to diagnosis and mental state

  - A disorder having a DSM / ICD code prioritises it for health funding

- We want to compile statistics on prevalence so that we know where to spend funding on preventing and treating health problems. As such, the statistical aim wouldn't seem to be distinct from other aims
- Clinicians need to be able to identify what kind of disorder a person has so that they know how to treat them
- Researchers need to be able to identify what kind of disorder a person has so that they can study the disorder and see what causes it and what interventions are able to prevent / manage / cure the disorder
- If behavioural kinds aren't reflective of neurological or genetic kinds then we might end up with different systems of classification that conflict
- While there has been some suggestion that psychiatric kinds should be viewed according to the underlying causal mechanisms this might provide a system that is unusable for clinicians in practice given current (and perhaps future) technologies

## Dysfunction as an ontological thesis

- THe most widely accepted view of mental disorder (and bio-medical disorder more generally) is the two-stage view
- On the two-stage view we can distinguish matters of fact from matters of value and both are individually necessary and jointly sufficient for mental disorder
- No matter how much we focus on the supposedly objective non-evaluative aspect of disorder, values just keep on recurring.
- As such, **the dysfunction assumption fails to provide a non-evaluative foundation for psychiatry**
- **We would be better to appreciate the evaluative nature of 'disorder' such that we can be explicit about the values so as to hold them up for critique**

## Dysfunction as a methodological thesis

- Even if we grant that the objective grounding fails we might still want to retain the malfunction assumption as a methodology (e.g., Murphy's view)
- The idea is to develop models of normal human functioning and then explain mental disorders as breakdowns in the model
- Not all scientists adhere to the methodological assumption, however. There are people trying to model the adaptive features of disorder (such as the potential benefits conferred by the genetic basis or the potential benefits conferred by low level symptoms)
- **A model that makes use of the 'malfunction' assumption can be translated into an equivalent model that doesn't make use of the 'malfunction' assumption**
- **We can do this by describing causal processes without attaching the label 'malfunction' to certain causal processes**
- **It is important to note that dysfunction can't be DISCOVERED by models that ASSUME it**

## Mental (Psychiatric) vs Somatic (e.g., Neurological)

- There are a variety of different ways that theorists have attempted to define 'mental'
  - Subjectivity
  - Qualia
  - Intentionality
- There are a variety of different ways that theorists have attempted to define 'mental disorder'
  - Mental causes for behavioural symptoms
  - Mental symptoms
  - One or the other
  - Both

- There are arbitrary field divisions in medicine
- Unclear why we should be concerned about this
- The present concern reflects politics more than anything else
  - Neurology
  - Psychiatry
  - Clinical psychology
- **Current political conflict between arbitrary field divisions is an impediment to scientific research and has led to dichotomizing instead of integration (much to the detriment of figuring out the subject matter)**

## Kinds of mental disorders

- The first part of the project will involve trying to discover what behavioural symptoms are found clustered together in nature
- While Murphy has suggested that we change the classification system so that it reflects kinds of causal mechanisms I don't think that the science is advanced enough for that at present
- Since the majority of DSM categories haven't been validated (haven't been found to be syndromes with unity) we are still struggling to achieve that first stage
- It might turn out that there simply aren't syndromes with unity. In that case we would be better off changing the classification system to a symptom based approach (used in neuro-psychology) where we focus on explaining and treating individual symptoms rather than clusters of symptoms
- Once we have our explanandum (either a syndrome with unity or a particular symptom) then we want to know that causal mechanisms are involved in producing and maintaining the symptoms
- Then the search for homeostatic mechanisms
  - Genetic
  - Neurological
  - Cognitive

– Social

## Modelling mental disorder

- Assuming a view of causation roughly along the lines of the interventionist account that has been offered by Woodward (argued for in Griffiths, Murphy, Cravers etc)
- This is because it seems to offer a good account of the kinds of reasoning processes that are involved in scientists making what are regarded as well founded causal claims by the scientific community
- Much research into psychiatric disorders involves attempts to model causal mechanisms
- Finding out about interventionist causal mechanisms provides us with information as to where we can intervene on the system so as to prevent, mask, or cure the behavioural symptoms that were problematic
- This provides a way of uniting the clinical and research projects. A good taxonomy should allow us to identify, study, and treat people of the same kind
- While Murphy maintains that we could have different classifications for different purposes I think that this problem can be solved by seeing how research and treatment are complimentary enterprises that feed into one another
- He didn't really consider medication development as something that drives taxonomy, but it is something that has driven taxonomy. While medication development doesn't provide fully grounded evidence for causal mechanisms it does provide some evidence
- This gives us an indication that the science and the application are integrated and have a reciprocal relationship
- THis mirrors the idea that I started with where the ethical concerns are integrated and are a necessary part of fixing the subject matter

# Malfunction and harm: Why the distinction doesn't work to ground psychiatry. Or: Why you can't keep the values out

- It is not hard to find abuses of psychiatry
- Political dissentors in Russia were diagnosed with 'Sluggish schizophrenia' and involuntarily confined and medicated
- Homosexuality was regarded as a mental disorder up until the 1960's
- 'Draeptomania' (while never making it into the DSM or ICD) was suggested as a category that applies to slaves who desired to escape their masters
- So what makes it the case that a condition really is a disorder and not just yet another case of the abuse of psychiatry?

## The critique of psychiatry

- Anti-psychiatrists (who most often were psychiatrists) maintain that psychiatry is not really / should not be regarded to be a branch of medicine
- They maintain that there is no more to mental disorder than social and / or moral norm violation
- They maintain that we need to change our social practices rather than attempting to change the individual

## The defence of psychiatry

- In response to the anti-psychiatry critique theorists have attempted to justify psychiatry's status as a branch of medicine by defining 'biomedical disorder' in a way that:
    1. Equally applies to medical and psychiatric disorder
    2. Provides an objective, scientific foundation for when people are disordered or non-disordered

## The main defence

- The most popular defence of psychiatry (the most popular definition of bio-medical disorder) is the two-stage view
- Two individually necessary and jointly sufficient conditions for mental disorder
  - Harm
  - Malfunction

## Harm

- Not much has been written on the harm criterion
- 'Harm' is thought to be a suitable stand-in for the normative aspect of disorder (whatever that might be)
- Harm is thought to be normative for the following reasons
  - Whether someone is harmed or not depends on their social environment
  - The harm seems to justify our helping. Someone who is harmed would be better off if they weren't harmed

## Dysfunction

- Dysfunction is supposed to be objective (to be discovered by geneticists and neurobiologists)
- We might want to add cognitive psychologists and sociologists to the list - but this would require extension of the medical model (which focuses on somatic disorder)
- There are meant to be facts about dysfunction that are distinct from our values and distinct from our beliefs

## My thesis

- The dysfunction criterion is insufficient to ground psychiatry (or medicine more generally) in non-normative facts

- The 'line drawing' problem is fatal
- Whether an individual has a mental disorder (or physical disorder) or not has more to do with our values than with objective facts grounded in science

## Case study

- Mr Smith is a 70 year old man admitted to hospital with congestive heart failure (CHF). He had a heart attack a few years ago, followed by a procedure that reopened a blocked coronary artery. He did well since then and tests showed that his "ejection fraction", the amount of blood that his heart pushes out in each contraction remained around 50 per cent. Down from the average of 60 per cent but still in the normal range.
- Over the last few weeks, he has developed increasing shortness of breath, and tests show that his ejection fraction has dropped to 20 per cent. This reduction in his heart's pumping ability is causing fluid to leak out of the veins in his lungs causing his trouble breathing. Possible causes of his heart failure range from another heart attack to valvular problems or other issues.

## Dysfunctions

- Four main accounts of dysfunction
  - Aristotelian teleological
  - Statistical
  - Evolutionary
  - Systemic
- I'll focus on the middle two
- There are different things that the heart does. E.g., taking up space, making a noise, pumping blood. Not pumping blood.

## Bio-statistical malfunctions

- Boorse is well known for his bio-statistical account of malfunction

1. The reference class is a natural class of organisms of uniform functional design; specifically, an age group of a sex of a species
2. A normal function of a part or process within members of the reference class is a statistically typical contribution by it to their individual survival and reproduction
3. A disease is a type of internal state which is either an impairment or normal functional ability, i.e., a reduction of one or more functional abilities below typical efficiency, or a limitation on functional ability caused by environmental agents
4. Health is the absence of disease (Boorse 1997, p7-8)

## Boorse's bio-statistical theory

- According to Boorse we fix functions by looking at the statistically normal effects
- The thought is that the abnormal effects are malfunctional

## Evolutionary functions

- The basic idea of evolutionary functions is that the function of a mechanism is the effects of the mechanism that contributed to survival and reproduction of past tokens of the trait
- Deciding whether a certain variant is selected against depends on which other forms exist in the population
- Consider the following case (from Schwartz, 2007)
- In the case of variants A, B, C, D, and E the expected reproduction of the variants is .2, .5, 1, 2, and 5.
- Schwartz has offered a solution to the line drawing problem where where we draw the line is partly a function of the degree of abnormality (on the statistical notion?) and partly a function of the degree of harm
- The problem is that harm also faces the problem. How much harm is enough?

## Schwartz's frequency and negative consequences approach

- The problem of common disease and the problem of healthy populations show that there is more variability in the prevalence of dysfunction than the frequency approach allows. What appears to be needed is an additional factor, and a natural candidate is the effect that a given level of functioning has on the organism
- This method presents no simple rule about where to put the line, but it provides a rule for judgments about consequences, and thus a way to answer the problems facing the frequency approach