The dysfunction criterion in medicine and psychiatry

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Introduction

- Sterelny said he would cancel this talk unless I declared that it was not my mid-term.
- I haven't given my mid-term yet, even though I've been working on my thesis with the ANU for 2 years (and 2 summers).
- My overall project is on how psychiatric classification should develop, where psychiatry is conceived of as an applied science of mental disorder
- In the first part of my thesis I look at the distinction between the presence and absence of disorder
- - How we decide what conditions to include as disorders
- I argue that the Dysfunction Criterion is unable to sort the disordered from the non-disordered - but that science can progress without it
- And then I really want to get on with other issues in psychiatric classification basically looking at how a science of mental disorder should proceed in light of the conclusions that I draw in the first part of my thesis
- Today I'm just going to be concerned with the issue of how we decide whether someone is disordered or not

Plan

- Introduce the question
- - What makes it the case that a person has a bio-medical disorder?
- Motivate the Dysfunction Criterion (DC) as the standard answer
- Talk about four broadly different accounts of what functions and dysfunctions are supposed to be
- Consider two different ways we can understand the DC:
- - As an ontological thesis (tells us the nature of disorder)

- - As a methodological thesis (tells scientists how they should model disorder)
- And I'll raise two objections for each version of the DC

Preliminaries

- 'Disorder' is commonly accepted as a stand-in for related notions such as 'illness', 'sickness', 'disease', 'disability' and so on
- There is some controversy around whether the notion of 'disorder' employed in psychiatry is the same as the notion of 'disorder' that is employed in general medicine
- The DC is intended as an account of 'disorder' as it is employed in general medicine and in psychiatry
- I'm thus going to start out assuming that the same notion is in play
- I'll make free use of examples from both psychiatry and general medicine in order to illustrate my points (as is standard in the literature)
- Even though psychiatry is the real target of my thesis
- I won't attempt to say what the difference is between mental (psychiatric) disorder and somatic (e.g., neurological) disorder

The problem

What makes it the case that a person has a disorder?

- One answer would be that a person has a mental disorder if they meet the diagnostic criteria for having a mental disorder
- There would seem to be at least three objections to this, however
- Firstly, it seems that the diagnostic criteria can get things wrong
- – Homosexuality
- – Sluggish Schizophrenia

- Secondly, a mere enumeration of disorders that are currently included in classification doesn't even purport to tell us what those disorders have in common
- Thirdly, it seems that we could discover new disorders whereas the above answer would seem to rule this out

Some intuitions

Three main intuitions

- 1) Certain symptoms / conditions are disorders if anything is
- – E.g., broken legs, HIV, cancer, depression, psychosis, mania
- 2) There is something wrong with these people
- - There is something wrong with their behaviour and / or
- – There is something wrong with their internal mechanisms that produce their behaviour
- 3) What is wrong with them is to be discovered by scientists (e.g., geneticists, neuroscientists).

Intuitions systematized into the dysfunction criterion

- The two-stage view is the most commonly accepted defence of psychiatry in the face of the anti-psychiatry critique
- According to the two-stage view there are two individually necessary and jointly sufficient conditions for bio-medical disorder
- – Harm to persons(thought to be normative)
- – Dysfunction(thought to be non-normative)
- The basic idea of the two stage view is to acknowledge a role for values (in the harm criterion) while grounding disorders in the natural sciences (by way of the DC)
- The DC is fairly much in line with our intuitions as can be seen in Wakefield's argument for a specific version of it:

Wakefield's argument for the dysfunction criterion

- P1) It is a conceptual truth of the bio-medical notion of disorder that disorder is a result of an internal dysfunction (where dysfunction is to be understood in some pre-theoretical sense)
- – (something is wrong with them)
- P2) It is a conceptual truth that there is an empirical process that fixes the functions and hence dysfunctions
- – (science will tell us both that there is something wrong and precisely what it is that is wrong)
- P3) Scientists have discovered that the relevant process for fixing functions and dysfunctions is evolution by natural selection
- C) Disorders are thus failures of an internal mechanism to perform its evolutionary function* (that results in harm to persons)
- *I will focus on this issue next

Problems with Wakefield's view

- Wakefield maintains that the relevant dysfunction must be internal to the person and this is in contrast to the DSM's view where the relevant dysfunction can be 'biological, psychological, or behavioural'
- – I'll return to this later and try and show that it doesn't matter which way we go on this
- Wakefield maintains that scientists have discovered that evolution by natural selection is the relevant process for fixing functions and dysfunctions
- Wakefield has faced substantial criticism for this part of his thesis.
- In order to motivate the DC as much as possible I'll now provide four different ways we can understand 'function' and make sure my criticisms of the DC apply to each reading of 'function'

What Fixes Functions and Dysfunctions?

- Four broadly different approaches to what fixes functions and dysfunctions:
- – Aristotelian Teleological (Megone)
- – Statistical (Boorse)
- – Evolutionary (Wakefield)
- – Systemic (Murphy)

Aristotelian Teleological (fTELOS)

- Forward looking, teleological, and purposive
- For example, watches are for keeping time and if a watch doesn't keep time then it is dysfunctioning
- What seems relevant is that the watch was designed by an agent with a certain intention
- Aristotle thought the function of a person was reason
- A common view of mental disorder is that people with mental disorders are irrational e.g., delusions

Statistical (fSTAT)

- Boorse maintains that we begin by identifying the relevant reference class by way of species / gender / age
- We then assign functions and dysfunctions on the basis of statistical mean
- Dysfunctions can thus be measured in standard deviations from the mean

Evolutionary (fEVO)

- The evolutionary notion of functions fixes functions by how much a trait contributes towards evolutionary fitness / expected reproduction

- E.g., 'the functions are whatever effects of past tokens resulted in their surviving and reproducing such that there are presently existing tokens'
- Or, on the propensity view 'the functions are whatever effects of present tokens will result in their surviving and reproducing into future generations'

Systemic (fSYST)

- According to the systemic notion of function we need to begin by specifying some relevant output of a system
- E.g., we want to explain how the circulatory system circulates blood / nutrients
- The functions of the components of the system are then fixed in virtue of the role they play in producing the relevant output
- E.g., 'the function of the heart with respect to the circulation of nutrients is to function as a pump'

Discussion

- There has been much controversy over whether these are simply different notions of function or whether one notion can be explicated such that some or all of the others can be derived from it.
- This is especially the case with systemic and evolutionary functions as people have attempted to provide a unified account of function in biology.
- This is also the case with Aristotelian teleological and evolutionary functions as people have attempted to naturalize intentionality and rationality
- At first glance these notions of function seem to be different, however (they would differ in their assignment of functions in at least some cases)
- – E.g., Millikan on how evolutionary functions can come apart from statistical functions
- If the different notions of function deliver different verdicts as to what the functions and dysfunctions are then a defender of the DC would

need to commit to a particular view on what functions are relevant for psychiatry and / or medicine

- What seems crucial about the dysfunction criterion is that functions and dysfunctions are thought to be objective, empirical, and non-obvious so real science is required to discover the functions on all four accounts
- So the thought is that science will (or already has) shown that certain conditions like schizophrenia, depression, and dementia, really are disorders
- And that science will(oral ready has) shown that certain conditions like voting democrat, homosexuality, political dissent, aren't disorders
- And science will determine whether controversial conditions like sociopathy or addiction really are disorders or not

Problems With the Ontological Version of the DC

(Where dysfunction determines which individuals are disordered)

1. Functions aren't purely objective features of the world – they can only be fixed by the world relative to a norm / standard of evaluation

- I'm going to start trying to motivate this point by way of example
- It used to be thought that females (xx) were dysfunctioning males (xy)
- Then we thought that females weren't dysfunctioning after all – they were just different
- There are individuals with other sex types, however (e.g., xxx, xxy) and so on
- We regard these people to be dysfunctioning males or females

- But some people are campaigning that they aren't dysfunctioning at all, they are simply different
- One might be tempted to think that this is a case of people wanting to celebrate dysfunction
- But the issue is what entitles us to regard the variant as a dysfunctioning variant in the first place
- I'm going to try and further motivate my concern by considering a standard objection to functions and offering a qualified defence of them by providing a positive view of their common structure
- One objection to talk of 'function' and 'dysfunction' is that it seems to have a normative aspect rather than being purely descriptive
- If one says 'the function of the heart is to pump blood' then this seems to license seemingly normative claims like:
- – Hearts **should** be pumping blood
- – The heart is **supposed to** be pumping blood
- – Hearts are **meant to be** pumping blood
- – That heart isn't pumping blood so something is **wrong** with it
- In response to this concern it should be noted that we can translate these seemingly normative claims into descriptions of physical properties and causal processes
- But the correct translated description is going to differ depending on the relevant normative standard
- So instead of saying 'that heart is dysfunctioning' we could say
- – fEVO 'that heart isn't doing what past hearts did that enabled them to survive and reproduce'
- – fSYST 'that heart isn't doing what other hearts do when they contribute to the circulatory system's circulation of nutrients
- These claims seem purely descriptive but it should be noted that they only licence normative claims about what the heart 'should' be doing relative to the normative standard
- Why should hearts do what past hearts did? If you value survival and reproduction then it seems important...

- If you value death (fINV-EVO) then the function of evolution would be extinction and a functioning heart would be one that made death more probable...

Common Features: Functions as Relations Between the World and a Standard of Evaluation

- Now it seems that all the different accounts of function seem to share a common structure
- They all provide some normative standard such that one can assign functions and dysfunctions to physical properties and causal processes
- Normative standards include:
- fTELOS – agents intentions and / or norms of rationality
- fSTAT – statistical mean
- fEVO – expected reproduction
- fSYST – some relevant output of whole
- fINVEVO – expected death
- It seems that scientists could agree on the causal processes that produce and maintain the phenomena
- But it seems hard to see how any of that would tell us whether people with xxx or xxy were dysfunctioning or differently functioning – until we have identified the relevant normative standard
- And thus it seems that functions and dysfunctions aren't simply entailed from descriptions of physical properties and causal processes
- fTELOS seems to be a reasonable standard for fixing the functions of artefacts
- fSTAT seems to be a reasonable standard for fixing the subject matter of some areas of abnormal psychology
- fEVO seems to be a reasonable standard for fixing the functions of biological systems when we are interested in expected reproduction
- fSYST seems to be a reasonable standard for fixing the functions that are the subject matter of comparative anatomy and physiology (where

we are not interested in how the systems came to be that way)

- We should be careful not to mistake consensus on the reasonableness of a normative standard (e.g., evolutionary biologists agreeing on f EVO as the relevant standard for evolutionary biology) for the absence of a normative standard, however
- But then the question becomes:
- – What is the relevant normative standard for psychiatry?
- None of those normative standards seem adequate for function fixing in either medicine in general or psychiatry in particular
- This is because if someone is psychiatrically or medically disordered then this has implications for whether they are entitled to treatment and whether we have some obligation to treat them
- While some defenders of the DC attempt to separate issues of dysfunction from issues of treatment this risks divorcing them such that the relevance of dysfunction for psychiatry is undermined
- This is an issue that I shall return to when I consider whether dysfunctions are best thought of as applying to states, internal effects of states, or behaviours and traits as well
- While survival seems fairly clearly relevant to medicine many more people are diagnosed with disorder than those whose survival is threatened (eczema, fear of flying in an aircraft)
- Reproduction seems even less relevant (if someone decides not to reproduce we don't consider them to be disordered!)
- Suffering / distress seems relevant though one would need to distinguish between suffering and distress that is relevant for disorder from suffering and distress which isn't
- At present, we simply don't have a good account of the relevant normative standard for psychiatry
- And this is because people seem to think (and are explicitly defending) the thesis that functions are (solely) objective features of the world that will be discovered by science
- But while science can find out what the functions and dysfunctions are once we have specified the relevant standard it is hard to see how

scientists can discover either the relevant standard or functions and dysfunctions in the absence of a relevant standard

- Progress will necessarily involve us getting clearer on the relevant normative standard for medicine and for psychiatry
- So while the anti-psychiatrists seem correct that disorder has more to do with norm violation than natural properties and processes they were wrong to think that medicine was different

2. The line drawing problem shows us that the current normative standards are unable to differentiate functions from malfunctions

- I'm anticipating that people might still think that one of the previous notions of function can be explicated in such a way that it is the relevant standard for psychiatry
- So... I'm going to attempt to motivate a more sceptical objection
- I want to illustrate this with a case where people tend to have clear intuitions that there are objective facts about function so I'll focus on the heart
- While it is a fairly standard view that the function of the heart is to pump blood this is far too coarse grained
- People whose hearts aren't pumping blood aren't typically regarded as DISORDERED
- They are typically regarded as DEAD
- Medicine is about dysfunctioning LIVING people, so we need to be much more specific about how we differentiate functions from dysfunctions such that we can account for dysfunctions in LIVING people
- The 'Ejection Fraction' is the percentage of blood in the heart that the heart pumps out of the heart per pump
- I'll use this to illustrate the point though my decision to do so is arbitrary and any other relevant feature for psychiatry or medicine would have done as well
- The problem is that it seems ARBITRARY where we draw the line

between the functional and the dysfunctional variants and thus it seems ARBITRARY whether we say that people with certain variants are disordered or not

Important to Note:

- This isn't just a problem for normal distributions
- The distribution could be skewed but we still face the line drawing problem
- The distribution could be peaked but we still face the line drawing problem
- There could be peaks and valleys in the curve of best fit but we still face the line drawing problem
- All that is required is variation in whatever feature we are interested in
- One might think that a different notion of function would be able to solve the line drawing problem
- I'll try and show how it seems to be a problem for the evolutionary notion of function as well – when there is variation in a trait
- What is required for fEVO is that the variation in the trait is both heritable and that the variations have different reproductive fitness
- The systemic view would face the same problem in deciding on the range of the relevant output (of where we draw the line as to how much circulation counts as functional)
- The Aristotelian teleological view faces the same problem in deciding what individuals count as rational and what individuals count as irrational in the first place
- It is hard to see what sort of standard of evaluation would be able to get around this problem of differentiating the functional variants from the dysfunctional variants in a way that is non-arbitrary (but maybe I need to think harder)
- I do think, however, that I can respond to one objection that people might have
- Functions and dysfunctions have been predicated of various things:

- – Processes,states,mechanisms
- – Effects of processes,states,mechanisms
- – Behaviours or traits
- I think that the line drawing problem is a problem for whichever way we decide to assign functions
- – How many cells die for a dysfunction in the form of a lesion?
- – How much difficulty focusing attention does one need in order for it to be dysfunctional?
- – How little serotonin counts as dysfunctional?
- – What ejection fraction is dysfunctional?
- Each of these seems to face the line drawing problem no matter which notion of function and dysfunction we adopt
- So I don't' really see how it matters whether we go with Wakefield's 'inner dysfunction' or the DSM's 'biological, psychological, or behavioural' dysfunction criterion
- Though I would need to go through each notion in function in detail to really argue for this

Maybe there Just are Some Indeterminate Cases but the Extremes are Clear Enough?

- One might be tempted to say that the extremes are fairly clearly functional and dysfunctional and it is just that there is some indeterminacy as to precisely where we draw the line
- But surely an entire population could be healthy, and conversely an entire population could be unhealthy so this won't save the DC
- The DC promised to tell us whether people were dysfunctioning or not independently of our intuition that something was wrong with certain people. The line drawing problem shows us that none of the currently accepted notions of function are able to do this, however
- We should care because the DSM and ICD view mental disorder vs the absence as being an all or none categorical difference

- If they are wrong about this then that has implications for classification (classification should be dimensional rather than categorical
- We should also care because:

Problems With the Methodological Version of the Dysfunction Criterion

1. The line drawing problem shows us that functions and dysfunctions are assumptions of models rather than something discovered by them

- The methodological version of the malfunction criterion tells scientists that they should:
- – Firstly: Model normal human psychology
- – Secondly: Model abnormal human psychology as 'breakdowns' or 'malfunctions' in the model
- Then the idea seems to be to plug in whichever notion of function and malfunction justifies our inclination to model one way or the other
- But the line drawing problem shows us that it is arbitrary which individuals get to count as 'normal' such that their causal processes / traits / mechanisms / states etc get to count as the 'functional' ones
- So the line drawing problem shows us that there is a corresponding methodological problem:
- – How do we decide whether an individual and/or a condition is to be modelled as functional or dysfunctional?
- The methodological thesis tells scientists to assume that people with a diagnosis of disorder are dysfunctional when they construct their models
- If function and dysfunction are assumptions of the models then they can't be independently discovered by them
- Thus scientists saying they have modelled the dysfunctions involved in schizophrenia (for example) doesn't show us that we are justified in

regarding the differences as dysfunctional

- We need to know (in particular) whether schizophrenia is dysfunctional according to the relevant standard for psychiatry (whatever that is) where the relevant standard is meant to be decided on independent grounds

2. Appealing to 'malfunction' to justify our regarding certain individuals as disordered (or certain conditions as disorders) is circular

- So, the dysfunction criterion doesn't seem to provide any independent justification for our intuition that there is something wrong with certain states / mechanisms / effects of mechanisms / behavioural traits
- With respect to what determines who is and who is not disordered (and which conditions are and are not disordered) progress is going to come down to our getting clearer on the relevant normative standard.
- But even then the line drawing problem shows us there is no guarantee that a normative standard would be able to provide a criteria that enables us to differentiate functions from dysfunctions in a non-arbitrary way
- Scientists could agree on the natural properties and causal processes in the world, yet disagree on what functions and dysfunctions there were
- Fortunately they don't need to assume either dysfunction or function in order to describe natural properties and causal processes, however
- Though which people we are interested in in a science of psychiatry is going to be determined by our values

Back to the project

- I'm thinking that this issue might be broken down in the following way:
- 1. Motivated the dysfunction criterion for psychiatry / medicine / cognitive neuro-psychology
- 2. Showed how it is ontologically problematic
- 3. Showed how it is methodologically problematic

- 4. Maintained that while we need to get clearer on the relevant normative standard in order to differentiate disorder from non-disorder...
- Scientists can basically get on with modelling the mechanisms that produce, maintain, and alter the phenomena that is of interest to us
- nd then the idea is to show how a science of psychiatry can progress in the absence of the dysfunction criterion