



Perspectival Realism about Mental Disorders

Metaphysics from a Human Point of View
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Joint work

Sections 1 and 2 of this talk are based on work with Hanna van Loo and several other psychiatrists.



① Disease classification

Classification schemes for mental illness serve a large variety of goals.

- > Medical doctors use classification schemes to design and apply treatments.
- > Researchers employ them to design studies and carry them out.
- > Patients and their families and friends fall back on classifications for explanation and understanding.

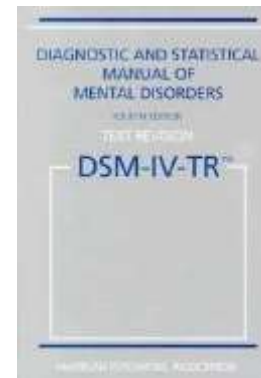
How can we best serve these goals? When is a classification scheme “good”?

Classification as representation?

Can we understand such classifications as representing something? If so, then what do they represent?



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And how are they made to relate to the reality that is being represented?

This talk

I consider if psychiatric classifications manage to represent, and how they might perform this function.

- › Classifying requires a particular *perspective*. Disease concepts need to be *coordinated* to empirical fact.
- › By viewing classifications in this way, we can see the problem of finding *good classifications* in a new light.
- › For disease concepts to make proper contact with reality, they need to have a role in a *practice*.

A better grip of what makes a classification good improves research and clinical practice.

② Conventionalism

We can view the DSM as a *convention* that occasions substantive claims about mental disorders.



Its role is similar to that of a ruler or a thermometer: on the one hand definitional, on the other constitutive.

Coordinative definitions

Mental disorders obtain the role of *coordinative definitions*, as developed in Reichenbach and Poincaré.



Reichenbach



Poincaré

This shows the *perspectival* nature of mental disorders. They occupy a place between reality and construction.

Philosophical upshots

The idea of conventionalism can clarify a number of *conceptual problems* in psychiatry.

- › The DSM performs two functions: diagnostic tool and theoretical structure. Does psychiatry suffer from vicious *circularity* or experimenter's regress?
- › Psychiatric disorders are man-made and they therefore suffer from *arbitrariness*. How can they be carriers of causal power?

In what follows we consider these two problems in relation to methods in psychiatric science: model selection and causal modelling.

③ Psychiatric reference classes

A good classification allocates patients to the right *reference classes* or groupings.



What patient characteristics are included in the psychiatrist's ideal classification? What serves her goals best?

Constructing statistical models

A *statistical model* distinguishes reference classes in the population.

- > We want to select characteristics and thereby identify groups that are homogeneous in terms of the chances pertaining to the individuals in them.
- > The choice for certain characteristics gets translated to the choice for distinct statistical variables, and hence the choice of a statistical model.
- > The choice of variables is partly determined by the expected predictive performance of the model, but it is otherwise highly context-sensitive.

The right model

A good statistical model includes the right set of patient characteristics for the purpose of context-specific predictions and clinical interventions.

- > We want to select characteristics, and thus identify groups, that determine *stable chances*.
- > Such characteristics determine a classification that allows for *reliable predictions*.
- > And it helps to identify *effective interventions*, ones that give stable chances of success.

Arguably this contributes to an *understanding* of disorders within a practice. We need not say the model is “true”.

Circularity?

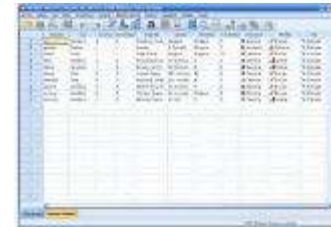
Constructing a statistical model involves simultaneous changes to model and target. It shares this dynamic with model organisms.



Rattus Norvegicus



Arabidopsis Thaliana

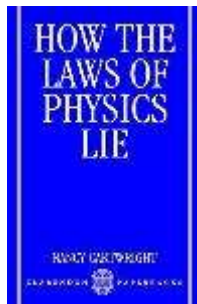


SPSS

This dynamic is threatened by circularity: models define the target, and at the same time provide epistemic access to it.

Choosing conventions

A crucial role is played by *conventions*: they allow us to coordinate model and reality by means of *epistemic iteration*.



The process of reaching equilibrium between theory and practice has been widely studied; socially, historically and conceptually.

④ Model selection

When viewed in this way, the problem of disease classification comes within the reach of *statistical model selection*.

- › The search for salient characteristics comes down to the choice for a distinct set of statistical variables, and hence the determination of a statistical model.
- › In statistical model selection, the choice of variables is regulated by expected predictive performance. The choice of a model is therefore by-and-large *data-driven*.

The link with model selection offers a concrete empirical method for disease classification.

Model selection methods

Statistical model selection tools determine a middle road between overfitting and oversimplification.



This helps us towards data-driven classifications and avoids tailoring to different aims simultaneously.

Real chances?

Ideas on reductionism help us to ground the requisite notion of chance conceptually.



That certain probability assignments are robust indicates that they are in some relative sense “real”.

⑤ Causal modeling

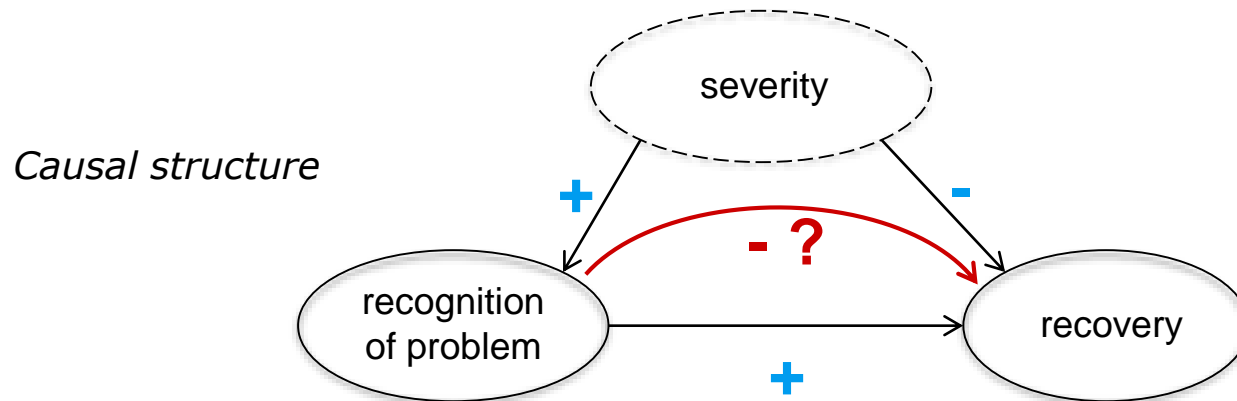
A key goal of classification is *clinical intervention*: the allocation of individuals to treatment programs.

- › We want to define disorders in order to facilitate maximally effective treatments.
- › Such interventions have to be based on the causal structure among patient characteristics.
- › And they are mostly stochastic, i.e., they merely raise the chance of some desired outcome.

How can we adapt classification to the goal of facilitating interventions with good stochastic properties?

Causal networks

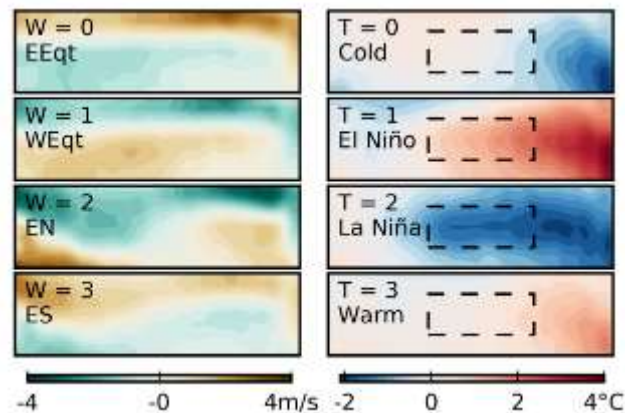
Causal networks help to determine classifications that support better predictions and interventions.



This criterion for classification is applicable *across all levels of description*.

Defining causal macro-variables

Next to identifying causal factors, we want to construct global characteristics that are causally salient.



Recent work by Chalupka, Eberhardt and others on causal feature learning may serve as an inspiration.

⑥ **Perspectival realism**

Data-driven classification may employ characteristics from several different levels of description.



This offers an alternative to classifications that are based on an assumed metaphysics, e.g., strictly neuro-scientific.

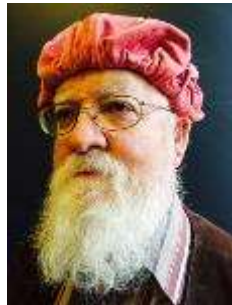
Smallism, physics envy, etc.

We need not suppose that our statistical classification efforts will pick characteristics from a single level.

- › The range of eligible properties includes bio-markers, socio-economic factors, and everything in between.
- › Psychiatry's desire may be to resemble the natural sciences, and so resort to a smallest level of description.
- › But the search for adequate concepts is ultimately an empirical matter.
- › From the empiricist point of view, characteristics from different levels are on a par.

Surface realism

Some disease definitions help us to identify stable patterns or structures in the data. Following Dennett, we call such patterns “real”.



Notice that these patterns are perspectival: they manifest once we have laid down conventions on the definitions of disorders.

Conventional causal powers?

If the causal factors are decided on through mere convention, how can they be carriers of causal power?



Causal efficacy of the factors derives from robust empirical patterns. They are there independently of us but they can only be identified relative to conventions.

Loss of reality

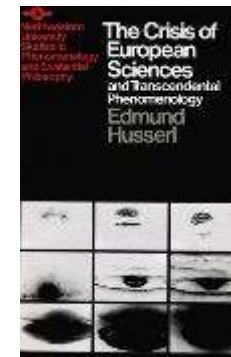
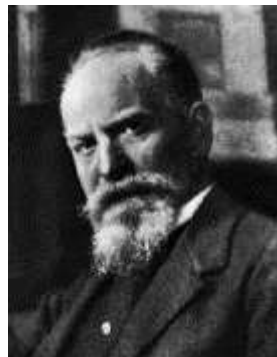
Acknowledging the perspectival nature of psychiatric science does not resolve all our problems.



How do we relate the classification scheme to the reality that it is supposed to be about? How does it apply?

Phenomenology?

The fact that a basis for scientific knowledge is sought in direct experience and a lived practice is reminiscent of the phenomenological project of Husserl.



Despite the opaque writing, Husserl engaged in “scientific philosophy”!

⑦ Conclusions

I hope that the above insights can be of use in the hunt for improvements in disease classification.

- > A *conventionalist* view clears the way for trying out revisions to disease classification.
- > Viewing disease classification as a reference class problem directs us to the use of *model selection* and *causal modeling*.
- > It invites an *a-reductionist* view on the task of finding good classifications, and suggests a *perspectival realism* about patterns in the data.

Some topics for discussion

Clearly statistical tools alone will not deliver all the answers to the classification question.

- > Classification serves many different goals. I have focused on prediction and intervention but this presents a substantive choice.
- > The above statistical methods are too generic and abstract. They need to be tailored to the case at hand.
- > For the purpose of long-term improvements it may be beneficial to adhere to a metaphysics, or a specific disciplinary matrix, when designing a classification.

Thanks for your attention

Some references:

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- > “Measuring and defining: the double role of the DSM-criteria for psychiatric disorders”, with H. van Loo, *Psychological Medicine*, 2017.
- > “Psychiatric comorbidity does not only depend on diagnostic thresholds: an illustration with major depressive disorder and generalized anxiety disorder”, with H. van Loo, P. de Jonge, K.S. Kendler, and R.S. Schoevers, *Depression and Anxiety*, DOI 10.1002/da.22453, 2015.
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