

Faculty Psychology, Psychological Causation and the Impact of Understanding on Psychiatric Nosology

Kenneth S. Kendler 5/29/18

**Philosophical Issues in Psychiatry V: The
Problems of Multiple Levels, Explanatory
Pluralism, Reduction and Emergence**

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Introduction

- The main focus of this conference is on the problem of “levels,” explanatory pluralism and reduction. When we worked out the program, I had in mind talking about these problems as they apply to my current research programs – that is assuming a synchronic model of trying to deal with these problems in the “now.”

Introduction

- But, in the last several years, I have taken an intense turn into the history of psychiatry – with a nosologic focus – mostly in the late 19th century when our current framework was being worked out.
- Without initially intending to, this lead me to an historical or diachronic view of the “levels problem” – not an expected path.

Outline of Talk

- Review historical documents that support the follow two hypotheses:
- 1. During the formation of psychiatric nosology during the 19th century, faculty psychology typologies played a strong role in the conceptualization of diagnostic categories. These typologies were often derived from the work of philosophers.
- 2. In understanding how possible dysfunctions in different “faculties” might inter-relate, clinicians made frequent references to “Psychological” causal effects using the implicit criteria of understandability.

Outline of Talk

- Then I want to generalize these historical lessons. I argue that it is nearly inevitable as clinicians struggled with trying to develop classifications of psychiatric disorders, that they would use common-sense folk faculty psychology to “reverse engineer” the disorders they were seeing.
- But part of that has to be to hypothesize causal relationships between these various faculties since some individuals will demonstrate abnormalities in multiple faculties.

Outline of Talk

- So, I argue that in psychiatry we find ourselves in this conundrum.
 - Our psychiatric diagnosis are based on our ways of understanding the mental world – the faculties at work, the causal inter-relations between them.
 - However, circa 2018, we have a quite sophisticated research community using molecular and systems neuroscience and genetic tools committed to understanding these disorders in biological terms.
- This leads to (at least) two troubling questions:
 - Is it reasonable to expect any substantial mapping of our reversed engineered diagnostic categories and their biological substrates?
 - How would psychological causality be presented at the level of brain?

Wyman: A Discourse of Mental Philosophy, 1830 Boston

Writers on mental philosophy arrange the mental operations or states under two heads, one of which regards our knowledge, the other our feelings. The former includes the functions of intellect, or the intellectual powers or states. The latter includes the affections, emotions or passions, or the pathological powers or states. Pope, in his Essay on Man, has

This division of the mental states or functions has suggested a corresponding division of mental diseases—diseases of the intellect and diseases of the passions.*

¢

ELEMENTS
OF
PSYCHOLOGICAL MEDICINE.

AN INTRODUCTION
TO THE
PRACTICAL STUDY OF INSANITY,
ADAPTED FOR STUDENTS AND JUNIOR PRACTITIONERS.

BY
DANIEL NOBLE, F.R.C.S.,
MEDICAL OFFICER TO THE CLIFTON HALL RETREAT; AND
LECTURER ON PSYCHOLOGICAL MEDICINE AT THE
CHATHAM-STREET SCHOOL OF MEDICINE,
MANCHESTER.

LONDON:
JOHN CHURCHILL.
1853.

propose, then, in the further discussion of the symptoms of mental disease, to recognise **three divisions**. In the first place, I shall group together those cases in which some false or perverted idea so rivets itself in the mind as to constitute an illusion which gives rise to confusion between the products of imagination and positive realities, — erroneous notions, in fact, of which the mind by no effort of reason can get rid: such a state of things, for my present purpose, may be called **notional insanity**, involving some derangement of the hemispherical ganglia. Next, I shall speak of instances in which, from some weakening or depravation of intellectual energy, there is a primary perversion of the intelligence, quite irrespective of any fixed or characteristic delusion; and this mental condition we may designate **intelligential insanity**. In this class of cases also, the hemispherical ganglia form the seat of the affection; in what way,

however, the pathological state of these ganglia differs from that which obtains in the former category, I do not form any opinion. Lastly, I shall treat of that larger class which comprises the great majority of cases, where the prominent derangement is obviously in the emotive sense and correlated ganglia, and which may be said to constitute **emotional insanity**. These particular conditions, I may repeat, are seldom found isolated and present uniformly through the entire course of any one case; they are mixed, and run into each other. I only distinguish and separate them, for the purpose of engaging your attention with the more notable features which prevail in mental maladies, and which may be taken as representative of the various morbid states of consciousness.

An illustration of the **threefold division** just made is readily afforded. I will take for the example the varying circumstances



TYPES OF INSANITY.

FROM PHOTOGRAPHS TAKEN IN THE DEVON COUNTY LUNATIC ASYLUM
for description see the first seven cases in the Appendix

T. Smecher's Lith. Phila.

A MANUAL

OF

PSYCHOLOGICAL MEDICINE:

CONTAINING

THE HISTORY, NOSOLOGY, DESCRIPTION, STATISTICS,
DIAGNOSIS, PATHOLOGY, AND TREATMENT

OF

INSANITY.

With an Appendix of Cases.

BY

JOHN CHARLES BUCKNILL, M.D., LOND.,

LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS; FELLOW OF UNIVERSITY
COLLEGE, LONDON; FELLOW OF THE MEDICO-CHIRURGICAL SOCIETY; MEDICAL SUPERINTENDENT OF
THE DEVON COUNTY LUNATIC ASYLUM; AND EDITOR OF THE ASYLUM
JOURNAL OF MENTAL SCIENCE:

AND BY

DANIEL H. TUKE, M.D.,

LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON; LECTURER ON PSYCHOLOGICAL
MEDICINE AT THE YORK SCHOOL OF MEDICINE; AND VISITING MEDICAL
OFFICER TO THE YORK RETREAT.



PHILADELPHIA:

BLANCHARD AND LEA.

1858.

Bucknill and Tuke, 1858

- In their section on classification, they write

Could we determine with certainty the fundamental, radical, faculties of the mind, we might then, and only then, hope to possess a detailed and systematic nomenclature, according as one or more of them are involved. Did we possess a perfect knowledge of the physiology of the organ of the mind, we should naturally, as in other diseases, endeavor to adapt our terms to the *structure* affected; but, in the absence of this knowledge, it would seem reasonable to adapt them to the affected *function*; indeed, we do this to some extent in strictly physical diseases, for we speak of disorders of digestion, &c., as well as of the organs by which such processes are carried on. In the same way, we might speak of disorders of the intellect, sentiments, &c., instead of basing our classification exclusively on prominent symptoms, as is the case when mania, dementia, and similar terms, are alone employed. Accustomed as we are, however, to these expressions, it would be

Bucknill and Tuke, 1858

Were we to attempt, in this volume, to arrange the forms of insanity on a metaphysical basis, we should treat of them under three heads. It might be sufficient to regard them under two—the one comprising disorders of the intellectual faculties, the other those of the feeling or emotions; but some convenience would attach to subdividing the latter class—the affective—into those sentiments which we are accustomed to regard as “moral,” and as belonging more especially to man; and those propensities sometimes called “animal,” which we would describe, rather than define, by saying, that when exhibited in excess they produce immoral acts. Indeed, animals pos-

- They go on to discuss the faculty psychological systems of Plato, Reid, Brown, Stewart, Fichte and, as a school, the “Scottish metaphysicians.”

If we were ourselves to attempt any analogous scheme, we should adopt the threefold classification of the mental faculties, which, although based on no certainly proved physiological system, has, as we have seen, the support of not a few analyzers of the human mind. Thus :

DISORDERS OF THE MIND, INVOLVING—

CLASS I.—*The Intellect.*

FORMS OF INSANITY.

Order 1. Development incomplete.

{ IDIOCY.
IMBECILITY.

Order 2. Invasion of Disease after development.

{ DEMENTIA.
MONOMANIA (Intellectual).

INCLUDING
Delusions. Illusions.
Hallucinations.

CLASS II.—*The Moral Sentiments.*

Order 1. Development incomplete.

{ MORAL IDIOCY. (?)
MORAL IMBECILITY.

Order 2. Invasion of Disease after development.

{ MORAL INSANITY
MELANCHOLIA—
1. Religious.
2. Hypochondriacal.
3. Nostalgia.
EXALTATION, regarding
1. Religion.
2. Pride.
3. Vanity.
4. Ambition.

CLASS III.—*The Propensities.*

Order 1. General.

{ MANIA (Usually a disorder of all
the faculties).

Order 2. Partial.

{ HOMICIDAL MANIA.
SUICIDAL MANIA.
KLEPTOMANIA.
EROTOMANIA.
PYROMANIA.
DIPSOMANIA.

Historical Review – TOC Hammond 1883 – Treatise on Insanity

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Historical Review – TOC Kellogg 1897

– Textbook on Mental Disorders

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PSYCHICAL SYMPTOMATOLOGY, 142

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SECTION II.—*Disorders of the Emotions*.—The organic sensations and the resultant cœnæsthesia—The physiological basis of the prevailing emotional mood in Insanity—The rationale of the fundamental emotional tone in states of exaltation and of depression—Cortical disease and the spasmodic liberation of emotions—Generic division of emotions as manifested in Insanity—Egoistic and altruistic feelings—Fear resulting from psychical disintegration the predominant emotion—Other emotions considered in the relative order of their frequency.

SECTION III.—*Disorders of Volition*.—Abulia, hyperbulia, parabulia, impellent ideas—Irresistible impulses—Nature of the loss

- There is a German part to this story I will not review.
- Berrios and Radden have written about how Kant's faculty psychology had a strong influence on Kraepelin's diagnostic thinking.

Psychological Medicine, 1988, **18**, 813–821

Printed in Great Britain

The early development of Kraepelin's ideas on classification: a conceptual history

G. E. BERRIOS¹ AND R. HAUSER

From the Department of Psychiatry, University of Cambridge

Lumps and Bumps: Kantian Faculty Psychology, Phrenology, and Twentieth-Century Psychiatric Classification

[Jennifer Radden](#)

seventeenth, eighteenth and nineteenth century thought in the West, in particular, the contrast between Passion or Emotion, and Reason or Cognition. In Kantian theory and subsequent "Kantianism," this duality is associated with--and often reified through--a pervasive faculty psychology. The distinct categories of affect and cognition were understood to reflect distinct, independent functions. Increasingly these came to be regarded as distinct parts of the human mind, and later, to be identified with distinct areas of the brain.

On the Second Point – Need for Causal Inference within Faculty Psychological Systems

- If individuals manifest symptoms both of intellectual dysfunction (e.g. delusions) and mood (e.g. depression), how would our 19th century psychiatrists understand this process?
- I suggest that adapted folk understanding about psychological functions.
- I now give examples

Examples of Causal Statements: Mood to Cognition

- Dr. Wilhelm Greisinger 1867 Section on Elementary Disorders in Mental Disease p. 71

As to their contents, two leading differences are particularly to be observed in insane conceptions—first, joyous, sublime, brilliant ideas ; secondly, sombre, sad, and painful thoughts. **The former arise from the expansive emotions** and from cheerful joyous hallucinations, **the latter from depressed states of the disposition**, and gloomy ill-boding hallucinations, as language of abuse and mockery which the patient is always hearing, diabolical grimaces which he sees, &c.

The false ideas and conclusions, which are attempts at explanation and vindications of the actual disposition in its effects, are spontaneously developed in the diseased mind according to the law of casuality ; on the part of the individual the explanations do not imply reflection, still less are such conclusions formed by the tedious form of syllogism. At first the delirious conceptions are fleeting ; the *I* perceives them, it may be terrified by them, acknowledge their absurdity, and yet feel quite unable to rid itself of them, and struggles with them ; **gradually, by continued repetition, they gain more body and form, repel opposing ideas and form connections with similar masses of perceptions of the *I* ; then they become constituent parts of it,** and the patient cannot divest himself of them, or only in some degree by exchange with similar false perceptions. **The excited, lively, and happy insane ideas are naturally received by the *I* much more easily and completely ; it yields to them after a short resistance,** and then it occasionally gives itself over to the insane perceptions, half-conscious imagination in a world of happy dreams arises.

Examples of Causal Statements:

Cognition to Mood

- Dr. Friedrich Scholz: Lehrbuch der Irrenheilkunde für Aerzte und Studirende (1892) Chapter on Paranoia p 122
- There is a distinction between primary and secondary paranoia. Secondary paranoia (secondary Verrücktheit), as has already been demonstrated, is an outcome stage for the unhealed affective insanity (Affekt-Irresein) and as such has thus already been discussed (See Chapter 13, E).
- In the following, paranoia always refers to the primary form.
- Paranoia is distinct from melancholia and mania mainly in its lack of affect. This, of course, does not mean that there is no change in mood at all. Instead, all perceptions as a whole and the vehemence with which they impose themselves onto consciousness are always determined by the contents of the delusions (Wahnvorstellungen). The paranoid patient may also be sad, cheerful or angry, like a healthy person who reacts naturally to perceptions, irrespective of whether they are objectively true or erroneous. However, pathological affects with inhibition or acceleration of psychological activity do not occur. Due to the lack of affective foundation, paranoid delusions (Wahnideen) are distinct from melancholic and manic delusions (Wahnideen).

Examples of Causal Statements

- Dr. Emil Kraepelin 6th Edition 1899 Chapter on Paranoia p 323

of its origin. According to Griesinger's older theory, paranoia was always the outcome of a preceding affective mental disorder. Only the investigations of Snell, Westphal and Sander resulted in the general recognition of a "primary" form of paranoia. Under the influence of this undeniable progress the new form of disease as a primary illness of the mind was opposed to mania and melancholia where the decisive disorders were considered to be in the field of emotional life. [The emotional variations occasionally observed in the first form were supposed to be exclusively brought about "secondarily" through the intervention of delusions or hallucinations, just as the occurrence of the disorders of reason in affective diseases were believed to be derived as mere consequences from the primary cheerful or sad changes in mood.] This is why it was of major importance for the prognosis to know in the individual case whether disorders in affect or in reason had formed the starting point of the pathological symptoms.

Causal Inference DSM-5 style

- For major depression, captures old idea of delusions which can be understood as arising from disorders mood versus those that cannot.

With psychotic features: Delusions and/or hallucinations are present.

With mood-congruent psychotic features: The content of all delusions and hallucinations is consistent with the typical depressive themes of personal inadequacy, guilt, disease, death, nihilism, or deserved punishment.

With mood-incongruent psychotic features: The content of the delusions or hallucinations does not involve typical depressive themes of personal inadequacy, guilt, disease, death, nihilism, or deserved punishment, or the content is a mixture of mood-incongruent and mood-congruent themes.

- I could replicate examples many times over, but I have made my point.
- What conclusion can we draw?
- When, in Western Europe and North American, we first began to see the mentally ill in large numbers and think about nosology (probably end of 18th century), I suggest that it is entirely predictable that faculty psychology and mental causal reasoning played a major role in their nosologic deliberations.
- Imagine yourself walking into an insane asylum for the first time with the goal of developing a nosology?
- Here is now this scene was described by Esquirol in 1845:

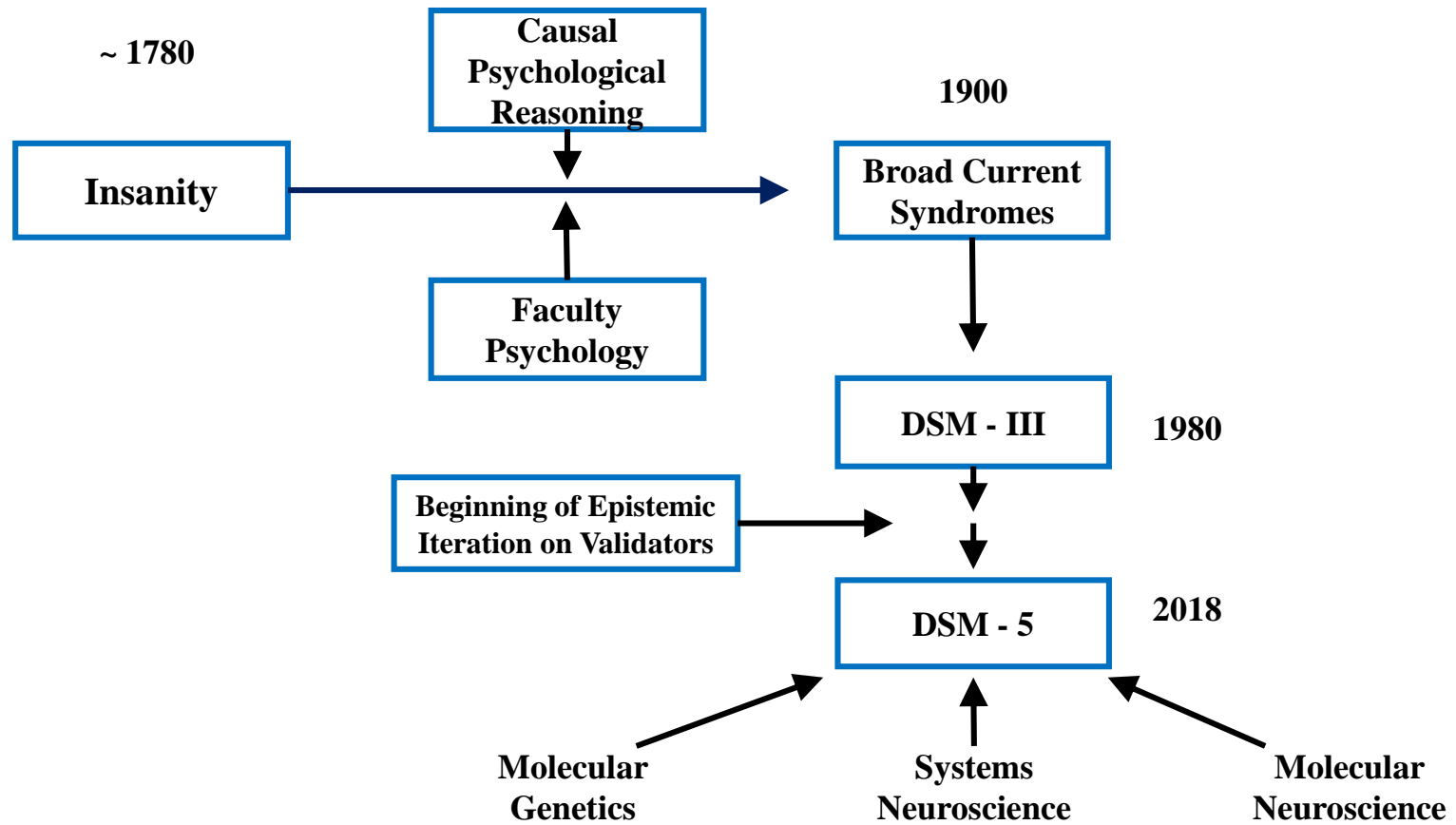
WHAT reflections engage the mind of the philosopher, who, turning aside from the tumult of the world, makes the circuit of a House for the insane ! He finds there the same ideas, the same errors, the same passions, the same misfortunes, that elsewhere prevail. It is the same world ; but its distinctive characters are more noticeable, its features more marked, its colors more vivid, its effects more striking, because man there displays himself in all his nakedness ; dissimulating not his thoughts, nor concealing his defects ; lending not to his passions seductive charms, nor to his vices deceitful appearances.

Every House for the insane has its gods, its priests, its faithful, its fanatics. It has its emperors, its kings, its ministers, its courtiers, its opulent, its generals, its soldiers, and a people who obey. One believes himself inspired of God, and in communication with the Holy Spirit. He is charged with the conversion of the world ; whilst another, possessed of a demon, given over to all the torments of hell, groans, and is frantic with despair ; cursing heaven, earth, and his own existence. Another, bold and audacious, commands the

universe, and makes war with the four quarters of the globe ; which he has subjected to his laws, or delivered over to the chains of despotism. A third, proud of the name he has given himself, looks with disdain upon his companions in affliction ; lives alone, retired, and preserves a seriousness, as affecting as it is vain. *This one*, in the pride of his heart, thinks himself to possess the science of Newton, and the eloquence of Bossuet ; and requires the applauses of those about him to the productions of his genius, with a comic pretension and assurance. *That*, stirs not ; nor makes the least movement ; always in the same place, and in the same position, he utters not a word. We might take him for a statue. He lives within himself ; his inaction is destroying him. Withered by remorse, his neighbor drags out the feeble remnant of a life, which he with difficulty sustains. Uttering reproaches, he curses himself, and invokes death, as terminating the evils that are preying upon him. Near him, is a man who, appearing happy and in the perfect enjoyment of his reason, calculates the moment of his dissolution with frightful indifference. He prepares with calmness, and even joy, the means of terminating his existence. This wretched man, both day and night, with eye and ear, watches for secret enemies. Darkness and light, sound and silence, motion and repose, all frighten and terrify him ; he fears himself. How many imaginary terrors, consume the days and nights of this lypemaniac ! Proceeding onward, we see one who, believing himself betrayed, persecuted and dishonored, has become agitated, exasperated, furious. Suspicion and hatred raise up enemies

Where Does this Leave Us?

- First, a graphical summary of my major points:



Where Does this Leave Us?

- What questions can we pose assuming that my view of the unusual state of modern biological psychiatry is approximately accurate?
- That is, that we developed a nosology for psychiatric illness that reflects our internal folk psychological beliefs about how the mind works.
- Is it a problem?
- Well, what happens when we want to learn the biology of these syndromes.
- Two immediate thoughts:

- First, what would happen if we had the same mind-brain system (e.g. from evolution) but had developed different cultural models of mental functioning?
- Would that predict that we would have different psychiatric nosologies? That would be a problem.
- Second, if my thesis is broadly correct, is it reasonable to assume that our nosology could or should match underlying brain mechanisms?
- We have a potential disconnect of “levels” in which our nosology emerges from our mental world extrapolated onto our psychiatric patients. Can we expect this to “connect” that up to how our brains work?

- An optimistic response would be “Well maybe we got it right. We sense our feelings of anxiety, can give that as a diagnostic category (anxiety disorders) because there is an underlying anxiety “circuit.”
- Our tendency to divide our disorders into those that are primarily disorders of thinking (e.g. schizophrenia”) and mood (e.g. depression and bipolar illness) also reflects fundamentally different brain pathways.
- Why might this be true? Did we evolve to detect and predict the internal workings of our con-specifics high accuracy? That is very adaptive.
- That is the mind seen from the inside (mental life) well maps the brain which we see from the outside and the mapping of normal functioning and psychopathology has high congruence.

- A more pessimistic response would be “Systems of faculty psychology and mental causation are highly culture and history dependent and there is no a priori reason why they should, in any particular culture at a particular time, map well onto the underlying biological processes.”
- While we want to believe that our folk psychology well mimics that way the brain really works, how plausible is that? The Churchlands certainly did not think it was.
- I am no expert but some work (e.g. Kurt Danziger, “Naming the Mind”) in cross cultural psychology suggests substantial cultural differences in how we conceptualize the key faculties of the mind.
- But work of Ekman and relative universality of facial emotions.

Historical Analogy

- Think of the evolution of botany and zoology
- Some key decisions were made in early classification systems – 16th -17th centuries:
 - Downward classification by logical division
- A guess about the essential features:
- For plants, focus on flowers or general growth patterns (trees, shrubs and grasses)
- For animals, with blood or without, hairy or hairless, two-footed or four-footed, warm vs. cold blooded, etc.
- Is our choice of cognition, emotion and volition analogous?

How else could we have done it?

- Interesting to pose scenarios – we could have decided on all the key variables, collected a huge amount of data and applied some multivariate statistical model (e.g. latent class analysis) to get our diagnoses.
- Not historically realistic – not the way medicine has worked.
- But, see potent quote from Mayr about biological classification:
 - Eventually, it became clear that it was futile to attempt to salvage downward, divisional classification by modifying it and that the only way out was to replace it by a completely different method: upward or compositional classification ... Not only was the direction of the classificatory steps reversed, but reliance on a single character was replaced by the utilization and simultaneous consideration of numerous characters. (Mayr, 1982, p. 192)

Conclusions

- This project is clearly incomplete.
- I have tried to relate the historical origins of the major outlines of our psychiatric nosology – the “level” of descriptive psychopathology – to current ongoing efforts to understand the etiology of these disorders from both neuroscience and molecular genetic perspectives.

Conclusions

- I have focused on the roles of faculty psychology and psychological causal reasoning in the creation of our nosology.
- I realize that this is yet another way to formulate the impact of the mind-body problem on the field of psychiatry. We come back to this again and again.
- The main question that I leave you with is – given that there is a discernable underlying neuroscience level explanation for our major psychiatric disorders, how good a “sketch” have we obtained from our historical traditions?

Conclusions

- Three broad options:
- 1. **Spot on** - so our clinical categories created in part from our folk psychological constructs very accurately reflect the underlying neurobiology.
- 2. **Roughly in the right ball-park** - so we can start the iterative process (i.e. DSM revisions, increased scientific sophistication) to align the descriptive and etiological levels.

Conclusions

- 3. **Way off** - I would suggest two ways to be “way off.”
- A. Just widely missed our target. Our mental constructs are seriously mismatched with the underlying neurobiology.
- B. Heterogeneity – No one to one mapping of mental to neurobiological states. One analogy – biological psychiatrists are like zoologists who study
 - winged creatures – birds, bats, butterflies
 - flippered creatures – fish, sharks, dolphins and penguins.
- This is another way of raising the old nemesis of multiple realizability. That is how many brain states might be able to create a given mental state – of abnormalities in cognition (e.g. delusions), mood (e.g. euphoria) or volition (amotivation)?

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