# Alternative Perspectives on Psychiatric Validation

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# Alternative Perspectives on Psychiatric Validation

## DSM, ICD, RDoC, and Beyond

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# Part 1

# Prologue

Chapter 1

# Introduction: The concept of validation in psychiatry and psychology

Peter Zachar and Assen Jablensky

## 1.1 Introduction

The roots of validity lie in logic, referring to whether an instance of reasoning conforms to correct rules (formal validity) and to whether the conclusion is true (material validity). How we progressed from logical validity to a problem about the validity of diagnostic constructs is not a simple tale. Although the path from logic to the current notions of validation in psychiatry travels through the science of psychological measurement, one has to be careful about construing parallel developments in psychiatry and clinical psychology as causally related and thereby inferring connections that never existed.

Psychologists began using reliability and validity to think about the technology of measuring inferred psychological attributes as two interchangeable terms for "adequacy" (Leuba 1899; Starch 1915). Subsequently, they employed them to distinguish measuring a psychological attribute consistently—*reliability*—from measuring it accurately—*validity* (Thurstone 1931; Adams 1936). As we shall see, in psychology the problem of accurately measuring psychological attributes came to be seen as the problem of measuring theoretical constructs, whereas in psychiatry the primary concern was one of confirming disease status. Over the years, however, the validity problem in psychiatry has also evolved into a problem about theoretical constructs.

## 1.2 Validity in Mid-Twentieth-Century Science and Philosophy

In the middle years of the twentieth century, the school of logical positivism was the dominant approach in the philosophy of science. One of the goals of this school was to elucidate the logical structure of scientific reasoning. It therefore made sense for the logical positivists to refer to the *validity* of scientific theories. According to them, validity was largely formal. For example, on the logical positivist's account, confirmation and explanation depended on conforming to proper logical syntax.

The positivist (or empiricist) aspect of this school held that science seeks to discover and systematize regularities in the network of observations that are part of

experience. Logical positivism also updated empiricism to better conform to twentieth-century science (especially relativity theory and quantum physics). Networks of scientific concepts, the logical positivists agreed, also contain theoretical constructs such as force and electron (in physics) or general intelligence (in psychology).

What does psychiatric diagnostic classification look like from the perspective of such an empiricism? According to this particular empiricist view, in psychiatry a regular pattern of characteristic self-disturbances, hallucinations, delusions, and a decline in functioning is given a name such as "schizophrenia." In the most minimalist form of empiricism, schizophrenia is a descriptive term (or inductive summary) that refers only to the pattern of observed signs and reported symptoms.

Less minimally, schizophrenia is a theoretical construct that enables clinicians to organize signs and symptoms into a coherent framework. The construct of schizophrenia also has surplus meaning by virtue of its association with other theoretical constructs such "psychosis," and "disease." In general, empiricists are instrumentalist and anti-realist about theoretical constructs, viewing them like they do socioeconomic status. A person's socioeconomic status is not a cause of income level and educational attainment; rather, it is a handy abbreviation for income and educational attainment patterns in a population.

According to Markus and Borsboom (2013), the psychologists who introduced the notion of construct validity increasingly went beyond the empiricism of the logical positivists and adopted scientific realism about psychological attributes such as intelligence, extroversion, and schizophrenia. According to realism about constructs, differences in test scores are caused by people's position on the psychological attribute being measured. These attributes are considered to exist independently of being measured.

## 1.3 **Science and Validity in Psychiatry**

For nearly the entire twentieth century psychologists debated whether the latent variable of general intelligence is a real attribute/natural kind or a mathematical construct whose meaning changes depending upon how it is measured. Proposed mid-century largely to address the clinical constructs measured by instruments such as the *Rorschach Inkblot Test* and the *Minnesota Multiphasic Personality Inventory* (MMPI), the notion of construct validity redrew the lines of the ongoing debate. After the lines were redrawn, schizophrenia and hysteria were declared to be unproblematical constructs—but constructs that cannot be reduced to how they are measured and that can refer to something real.[1]

The term construct validity was introduced in an American Psychological Association Technical Report in 1954. The committee that prepared this report was chaired by Lee Cronbach. According to Cronbach (1989), the idea of construct validation was proposed by committee member Paul Meehl. It had been worked out in cooperation with Meehl's colleagues at the Minnesota Center for the Philosophy of Science. Meehl expanded on these ideas with Cronbach in a 1955 article titled *Construct validity in psychological tests*. One of the main ideas of this article was that the validation of a test is analogous to the validation of a theory in science (according

to the strictures of logical positivism/empiricism with scientific realism tacked on).

If Cronbach and Meehl's article was a watershed event for construct validity in psychology, Robins and Guze's (1970) article *The establishment of diagnostic validity in psychiatric illness: Its application to schizophrenia* played a similar role in psychiatry. In their article Robins and Guze said that diagnosis must be a scientific classification, and valid classification is essential to science. Rather than worry about the validity of the diagnosis of a single patient as would be typical in medicine, they were concerned about the validity of schizophrenia—and later about classification in general (Woodruff et al. 1974).

Most commentators consider this article to be an attempt to resurrect a psychiatry of disease entities similar to that advocated by Emil Kraepelin. Kraepelin proposed that dementia praecox (renamed schizophrenia by Bleuler in 1908) and manic depressive illness were two different entities, with the first having a deteriorating course and the second involving recovery and re-occurrence over time. In this tradition, Robins and Guze's over-arching construct was "psychiatric illness." They proposed five groups of validators—clinical description, laboratory studies, differentiation from other disorders, studies of outcome, and family studies—each of which were predictions about what would be observed if a diagnostic construct such as schizophrenia conformed to their illness construct.

In the 1950s there was little interest in diagnosis among American psychiatrists, with one important exception being a group of scientifically oriented psychiatrists at Washington University in St. Louis. Subsequently named the neo-Kraepelinians, this group included Robins and Guze. They introduced the concept of *diagnostic validity* to describe the research programs that nosologically oriented psychiatrists were already conducting (Goodwin et al. 1969; Purtell et al. 1951; Robins and Mensh 1954). Validity was also a helpful term for encouraging psychiatrists to conduct research that could disprove Szasz's (1961) claims about mental illness being a myth (or a theoretical fiction).

To what extent did the articulation of construct validity in clinical psychology influence the conceptualization of *diagnostic validity* in psychiatry? It is worth noting that Samuel Guze's early research included a study of the validity of *The Taylor Anxiety Scale* (Matarazzo et al. 1955). In that article Guze and his colleagues claimed to be evaluating construct validity (as described in the 1954 technical report), defining validity as confirming theory-based predictions. This mingles Robins' natural history of disease approach, the predictive validity notion that preceded the work of Cronbach and Meehl, and construct validation.

Another factor influencing the establishment of a psychiatric research program on *diagnostic validity* was the emphasis in the 1970s placed on the evaluation of reliability as it was assessed statistically by psychologists (Ash 1949; Kendler et al. 2010). The Washington University group's operationalization of diagnostic constructs (called the Feighner criteria) and Columbia University psychiatrist Robert Spitzer's advocacy of measuring reliability using Cohen's kappa culminated in the publication of the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) in 1980 (Feighner et al. 1972; Spitzer et al. 1967).[2]

After the DSM-III was published its proponents claimed that reliability had been achieved. Once the psychologists' more scientific approach to reliability was

implemented in psychiatry, the reliability–validity distinction came for free, and with it came the notion that securing validity is the next task.

> In principle, the problem of reliability has been solved. . . . However, reliability does not guarantee validity. While reliability is a necessary precursor to establishing the validity of psychopathologic classes, special efforts are required for validity research (Klerman 1986).

In making this claim, Klerman was relying upon the psychometric principle that reliability sets a ceiling on validity since the latter cannot be meaningfully explored unless the variable or entity under consideration can be defined in robust and reproducible terms. Despite this bridge back to psychometrics, the meaning of *construct validity* for psychologists and *diagnostic validity* for psychiatrists continued to differ. The nuts and bolts language of measuring abstract constructs (or latent variables) is not one that psychiatrists tended to use (Blashfield and Livesley 1991). Meehl's metaphysical elaborations such as "surplus meaning" and "nomological networks" were not carried over to psychiatry. Inspired by biomedicine and not physics, for psychiatrists diagnosis was about identifying disease *entities* (nosological realism in Rodrigues and Banzato's terms in Chapter 3). Yet as we will see, the notion that psychiatric classifications are constructs that may or may not represent real clinical entities has gradually been working its way into psychiatric thinking.

## 1.4 **The Failure to Validate as Expected**

Each of Robins and Guze's validators can be considered a standard of adequacy that a diagnostic construct must meet. Documenting that the construct does meet a standard is called validation. In recent years a variety of standards have been articulated.

1. A diagnosis is valid if it can be confirmed by a test that is independent of the diagnostic criteria (e.g., a biopsy validates a diagnosis of cancer).
2. A diagnostic criterion is valid if it is a sensitive indicator of a disorder.
3. A diagnostic criterion is valid if it is a specific indicator, distinguishing true cases of the disorder from other disorders.
4. A diagnostic construct is valid if it representatively samples the psychological and behavioral features of the disorder.
5. A diagnostic construct is valid if it refers to an integrated syndrome (a pattern of intercorrelated symptoms and a predictable time course) that supports a distinction between cases and non-cases (i.e., a natural clinical grouping).
6. A diagnostic construct is valid if it allows professionals to make non-trivial inferences about patients that contribute to the description, management, or treatment of the problem. Non-trivial means the inferences are not deducible from the definition of the construct.
7. A diagnostic construct is valid if it is psychometrically unidimensional.
8. A diagnostic construct is valid if it corresponds to a unique (identity-determining) etiology (preferably biological).
9. A diagnostic construct is valid if it refers to an objective dysfunction that is harmful to its bearer.
10. A diagnostic construct is valid if its internal structure corresponds to how symptoms are structured in the population.

Arguably, one of most significant developments of the past 30 years is how difficult it has been to decisively validate the constructs of the DSM using the Robins and Guze standards. As regards the mental disorders section of the *International Classification*