

Validity: Conceptual Basis

I. Defining Validity

II. Types of Validity

I. Defining Validity

Meaning of a measure—does the measure capture the hypothetical construct it is intended to measure?

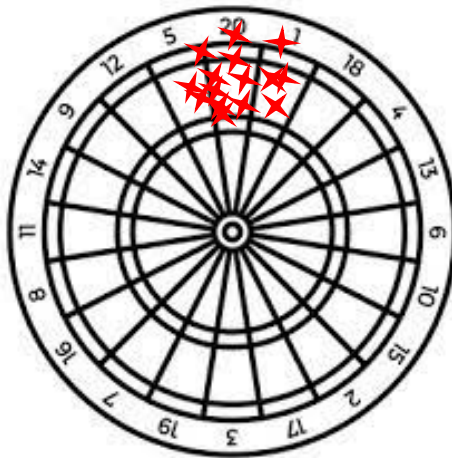
“the degree to which evidence and theory support the interpretations of test scores entailed by the proposed uses” (AERA, APA, NCME, 1999)

I. Defining Validity

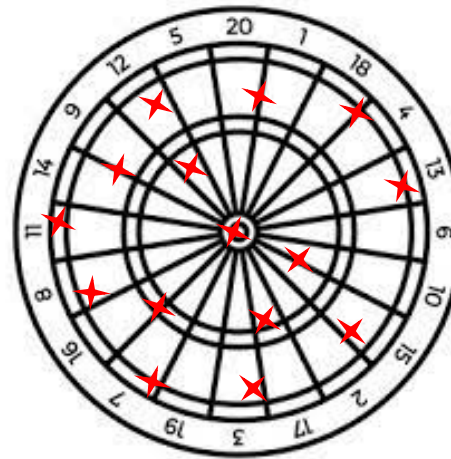
Contrast with meaning of reliability which concerns the consistency or precision of a measure

I. Defining Validity

Target analogy



Reliable but not valid



Valid but not reliable



Valid and reliable

I. Defining Validity

Validity refers to factual correctness or legality: **is the interpretation legitimate?**

A test nearly always has some meaning, but it is the researcher's or practitioner's **interpretation that has validity**

Example: I may have developed a set of items about internet use, but my interpretation could be invalid if I conclude they represent “addiction” when they really represent internet appreciation

I. Defining Validity

Validity is a matter of degree, not an all or nothing quality

Validity is not “proven”—a case is built for a measure’s meaning using a variety of sources of evidence

As with any other knowledge established by scientific method, the strength of the evidence is critically important

II. Types of Validity

Classic article by Cronbach and Meehl (1955) defines four types:

- Construct
 - Content
 - Concurrent
 - Predictive
- } Criterion

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological bulletin*, 52(4), 281.

II. Types of Validity

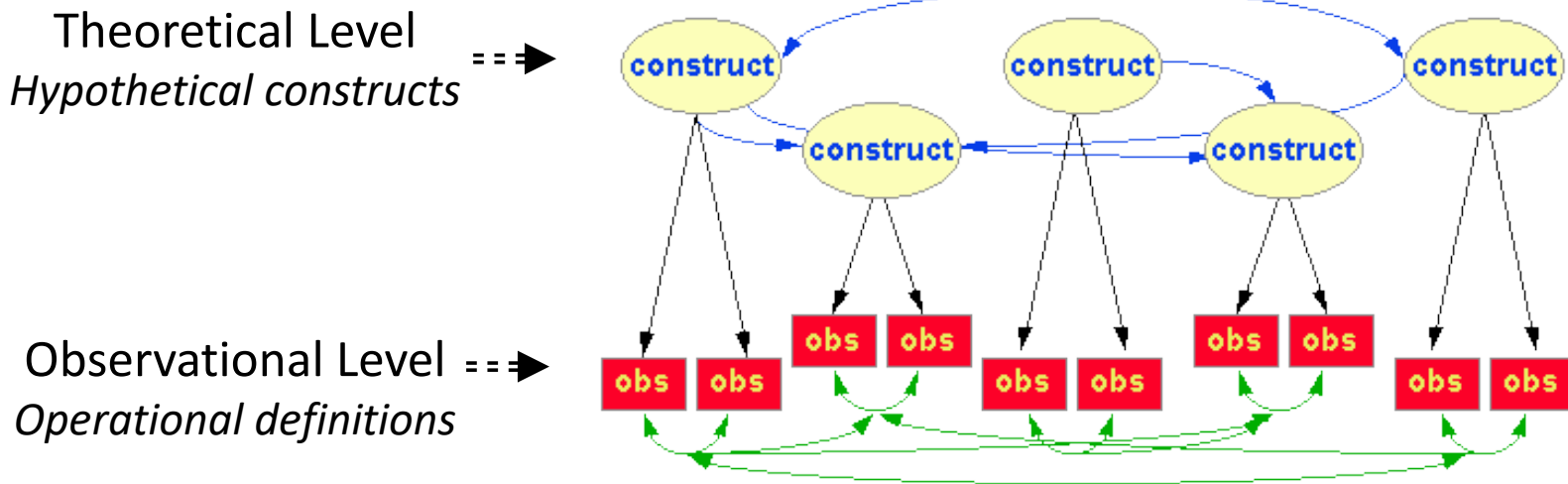
Construct validity concerns how well the scores reflect the intended hypothetical construct or psychological attribute

It is therefore a or *the* central concept of validity

Nomological network (or net) can be used to explain or elaborate the idea of construct validity

II. Types of Validity

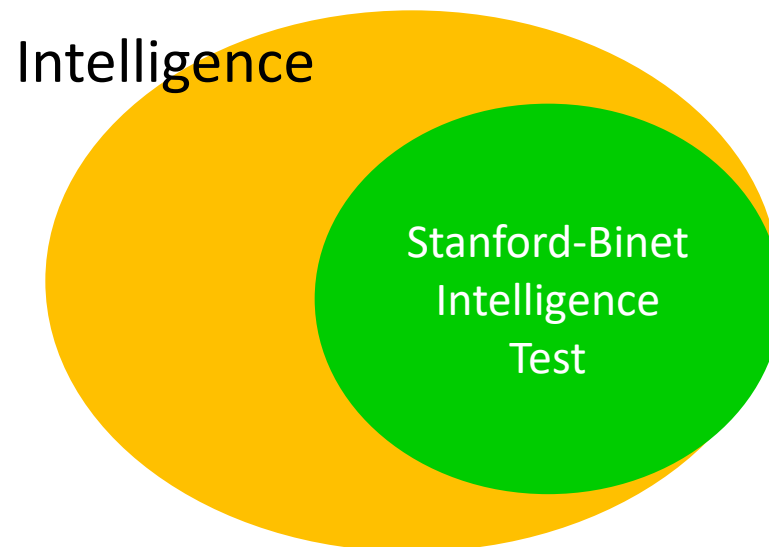
The nomological net is the theoretical framework that links the concepts to the operational definition



Source: William Trochim, <https://www.socialresearchmethods.net/kb/nomonet.php>

II. Types of Validity

Content validity concerns the amount or breadth of the hypothetical construct that the measure captures



II. Types of Validity

Criterion validity concerns the ability to distinguish one group of individuals from another

Example: depression inventory predicts clinician's diagnosis

Concurrent if simultaneous

How does self-rated measure compare to a clinician's diagnosis at the same time?

Predictive if future

Can we identify people who will later need treatment?

II. Types of Validity

Since the Cronbach and Meehl paper, it has been common to consider two other validity definitions related to criterion validity

- Convergent validity

- Discriminant (divergent) validity

II. Types of Validity

Convergent validity

The extent to which a measure is correlated with other measures of the same or similar constructs

Example: A measure of self-confidence should be related to measures of self-esteem and self-efficacy

II. Types of Validity

Discriminant (divergent) validity

The extent to which a measure is independent of other measures that assess unrelated constructs

Example: A measure of self-confidence should be unrelated to measures of grit, hardiness, or agreeableness

II. Types of Validity

We can therefore add these newer definitions to the general category of **criterion validity**

- Construct
- Content
- **Criterion**
 - Concurrent
 - Predictive
 - Convergent
 - Discriminant

II. Types of Validity

Yes, indeed, these concepts all overlap a great deal! Several things to keep in mind:

- Validity represents the theoretical **meaning** given to the measure
- The **nomological net** is a good way of thinking about how operational definitions relate to underlying hypothetical constructs
- **Construct validity** is the most important idea and can be thought of a broad idea that subsumes the other validity concepts, at least to some extent
- **We build a case** for the validity of a measure over time through predictive, convergent, and discriminant evidence

II. Types of Validity

Personal Need for Structure paper example of validating a scale

[Neuberg, S. L., & Newsom, J. T. \(1993\). Personal need for structure: Individual differences in the desire for simpler structure. Journal of personality and social psychology, 65\(1\), 113-131.](#)