Child Psychopathology

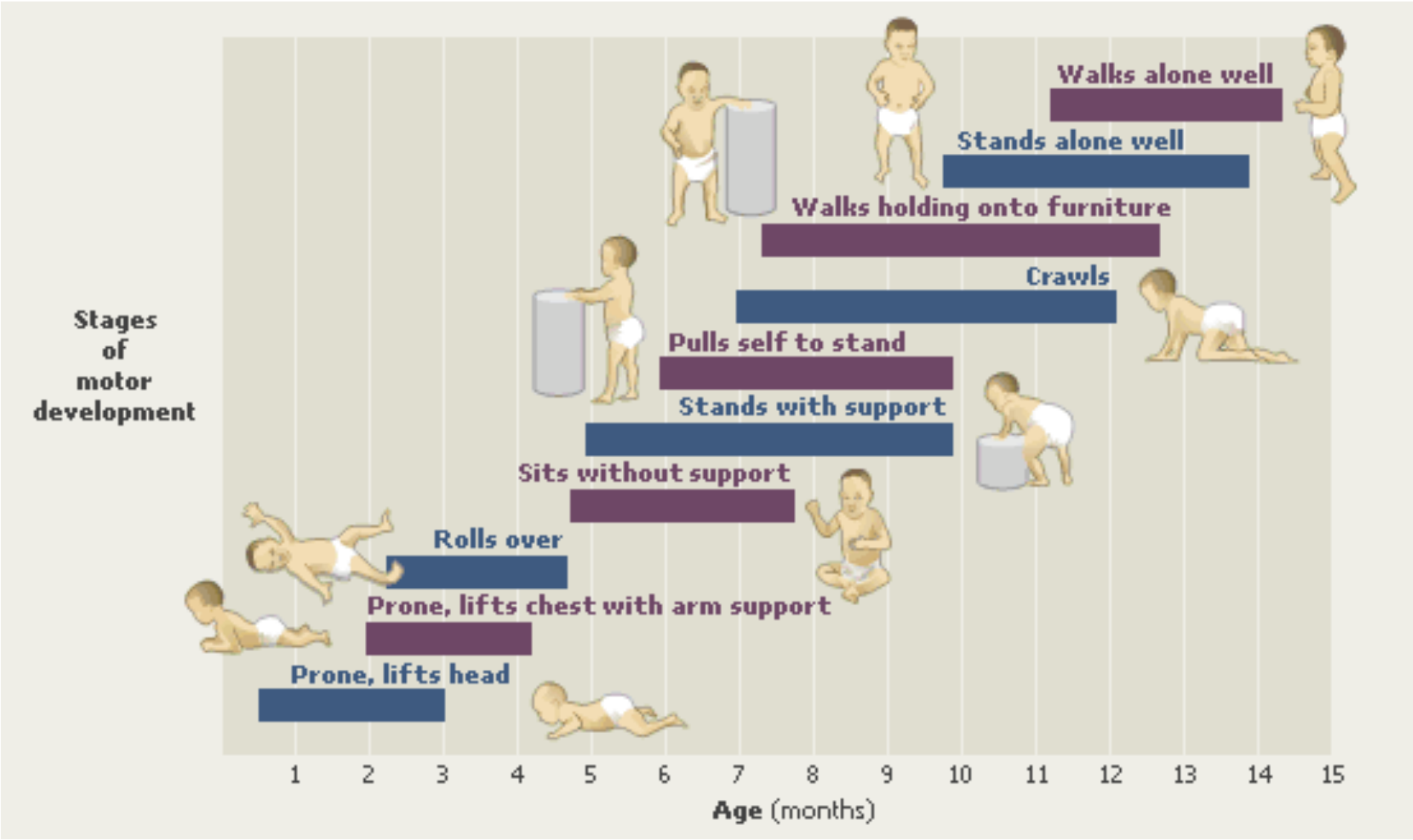
Week 2

Clinical Disorder

Working Definition of a Clinical Disorder: a constellation of symptoms that significantly impairs an individual's ability to function, and is characterized by a particular symptom picture with a specifiable onset, course, duration, outcome, and response to treatment, and associated familial, psychosocial, and biological correlates.

Onset: age of initial symptoms + insidious vs rapid
Course: slowing worsening or improving; episodic vs chronic; waxing & waning vs continuous
Duration: how long does a particular episode last?
Outcome: do you fully recover?

Developmental norms



Developmental Milestones Checklist from http://ecdc.syr.edu/ECDCpublications.html

DATE OBSERVED

LANGUAGE MILESTONES (cont)

- ✓ Babbles “dada” and “mama” (8-10 mos.)
- ✓ Says “dada” and “mama” for specific person (11-12 mos.)
- ✓ Uses exclamations such as “oh-oh”

SOCIAL/EMOTIONAL

- ✓ Shy or anxious with strangers (8-12 mos.)
- ✓ Cries when mother or father leaves (8-12 mos.)
- ✓ Enjoys imitating people in his play (10-12 mos.)
- ✓ Shows specific preferences for certain people and toys (8-12 mos.)
- ✓ Prefers mother and/or regular care provider over all others (8-12 mos.)
- ✓ Repeats sounds or gestures for attention (10-12 mos.)
- ✓ Finger-feeds himself (8-12 mos.)
- ✓ Extends arm or leg to help when being dressed

DEVELOPMENTAL RED FLAGS (8 TO 12 MONTHS)

- ✓ Does not crawl
- ✓ Drags one side of body while crawling (for over one month)
- ✓ Cannot stand when supported
- ✓ Does not search for objects that are hidden (10-12 mos.)
- ✓ Says no single words (“mama” or “dada”)
- ✓ Does not learn to use gestures such as waving or shaking head
- ✓ Does not sit steadily by 10 months
- ✓ Does not show interest in “peek-a-boo" or "patty cake” by 8 mos.
- ✓ Does not babble by 8 mos. (“dada,” “baba,” “mama”)

COMMENTS:

Conditional Probabilities as a means of understanding Clinical Symptoms:

The Role of Sensitivity, Specificity, PPP, and NPP

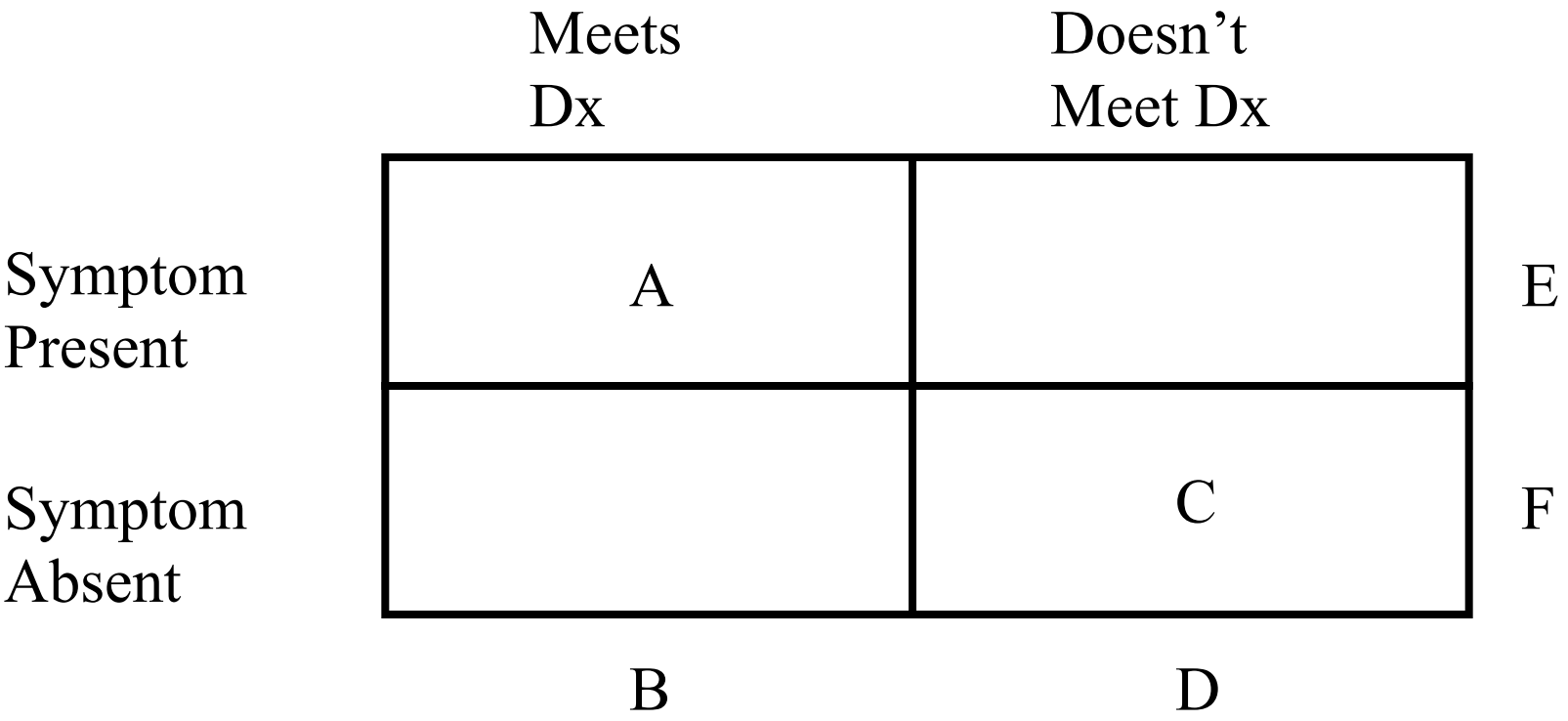
Sensitivity: what proportion of children with a particular disorder exhibit a specific symptom?

Specificity: what proportion of children without a clinical disorder do not exhibit that same symptom?

PPP: what proportion of children with a specific symptom meet full diagnostic for a specific clinical disorder?

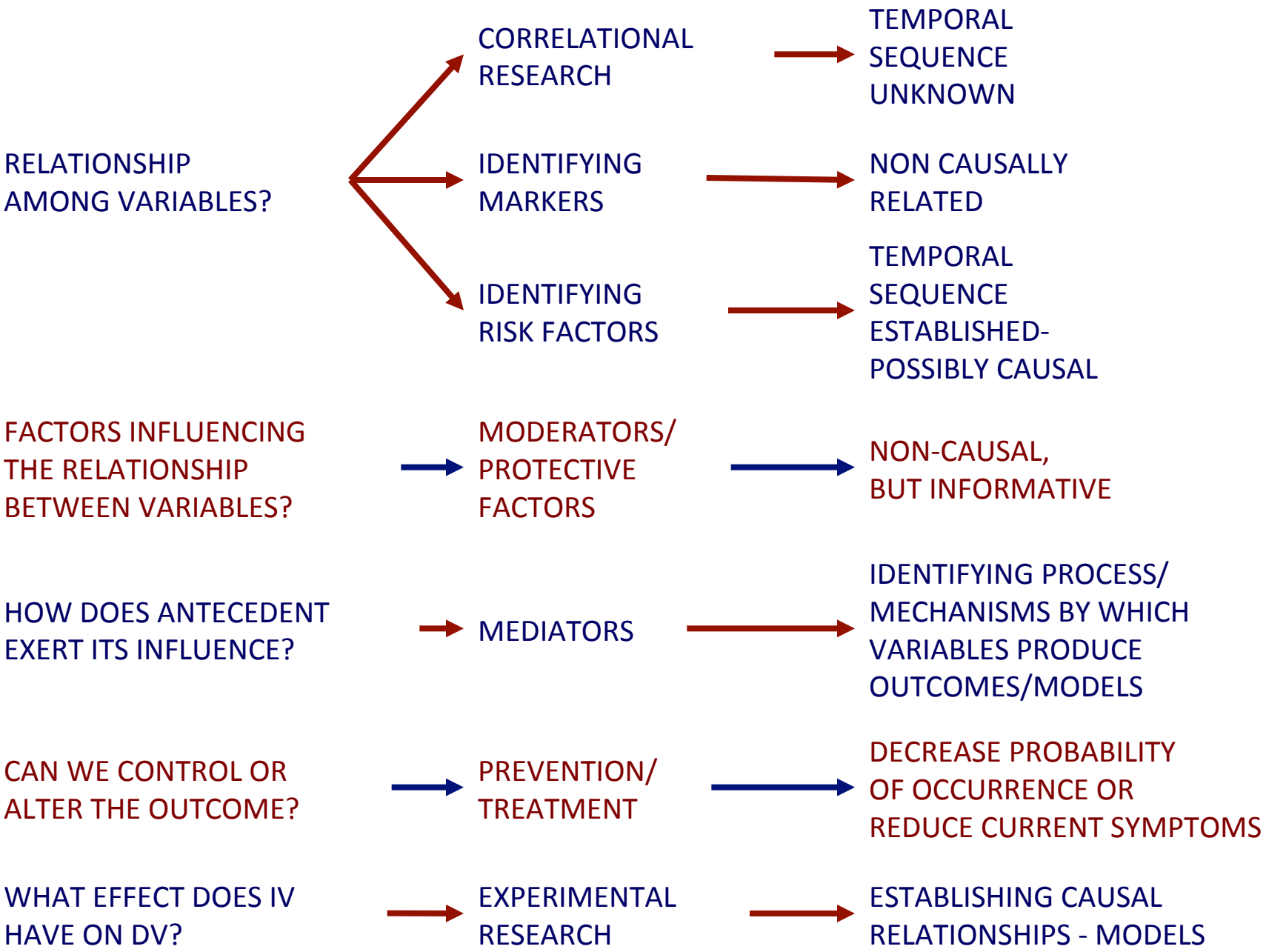
NPP: what proportion of children without that identical symptom do not meet full diagnostic criteria for that same disorder?

Differential Diagnosis & Conditional Probabilities



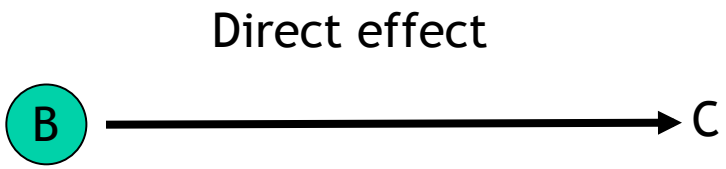
Sensitivity = A/B (true positive)
Specificity = C/D (true negative)

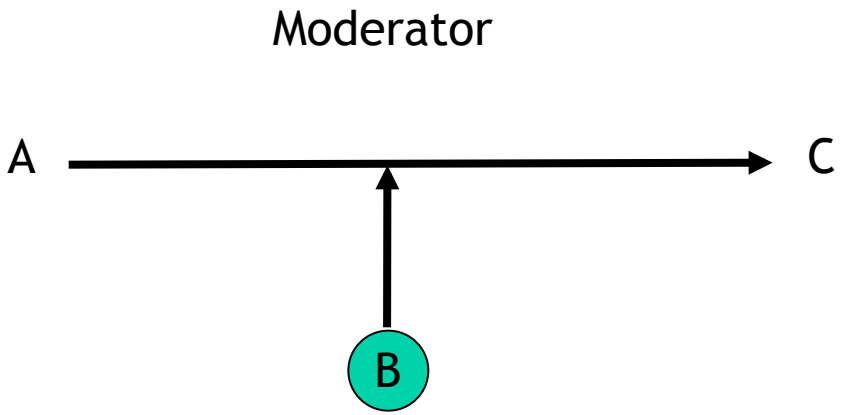
PPP = A/E
NPP = C/F

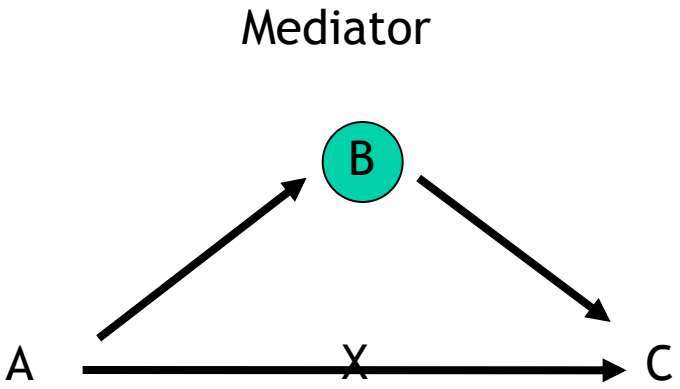

RELATIONSHIP AMONG VARIABLES?
CORRELATIONAL RESEARCH
TEMPORAL SEQUENCE UNKNOWN
IDENTIFYING MARKERS
NON CAUSALLY RELATED
IDENTIFYING RISK FACTORS
TEMPORAL SEQUENCE ESTABLISHED-POSSIBLY CAUSAL
FACTORS INFLUENCING THE RELATIONSHIP BETWEEN VARIABLES?
MODERATORS/ PROTECTIVE FACTORS
NON-CAUSAL, BUT INFORMATIVE
HOW DOES ANTECEDENT EXERT ITS INFLUENCE?
MEDIATORS
IDENTIFYING PROCESS/ MECHANISMS BY WHICH VARIABLES PRODUCE OUTCOMES/MODELS
CAN WE CONTROL OR ALTER THE OUTCOME?
PREVENTION/ TREATMENT
DECREASE PROBABILITY OF OCCURRENCE OR REDUCE CURRENT SYMPTOMS
WHAT EFFECT DOES IV HAVE ON DV?
EXPERIMENTAL RESEARCH
ESTABLISHING CAUSAL RELATIONSHIPS - MODELS

Developmental Psychopathology

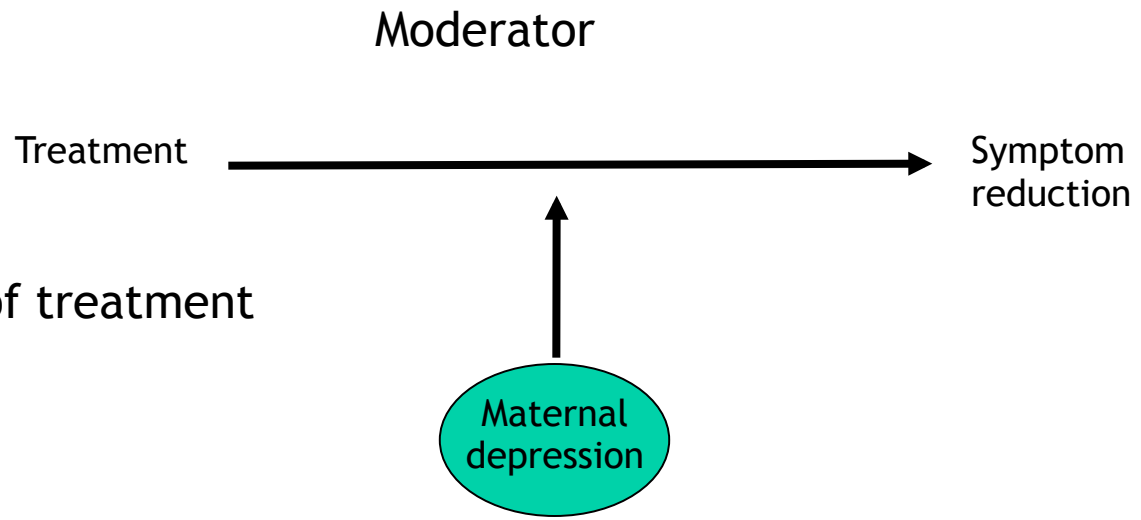
- A single cause?
- Direct vs. indirect effects:



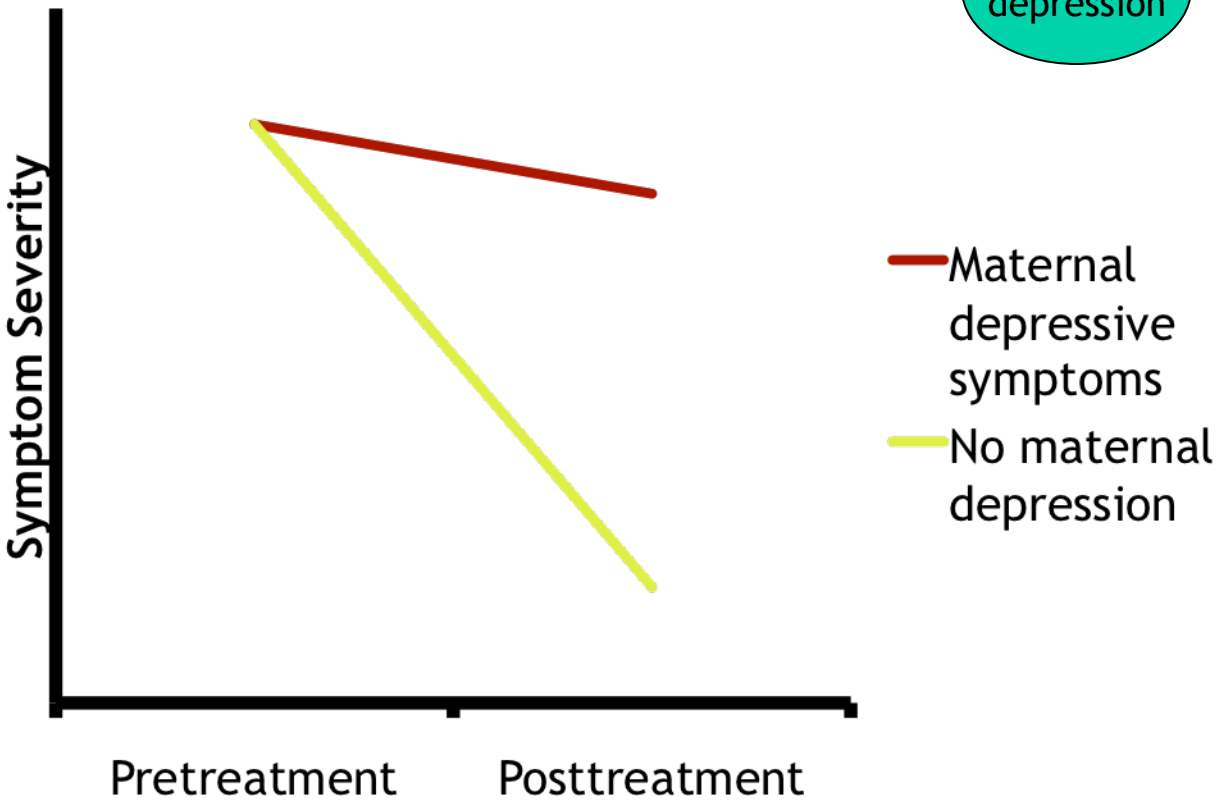




Moderators



Hinshaw (2007) – moderators of treatment response in ADHD



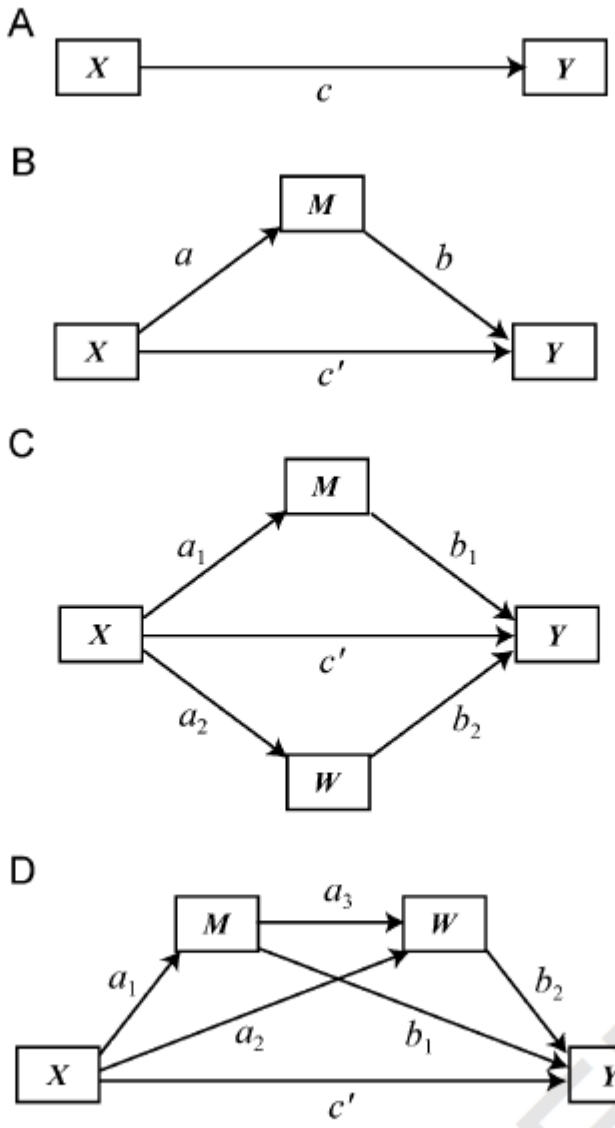
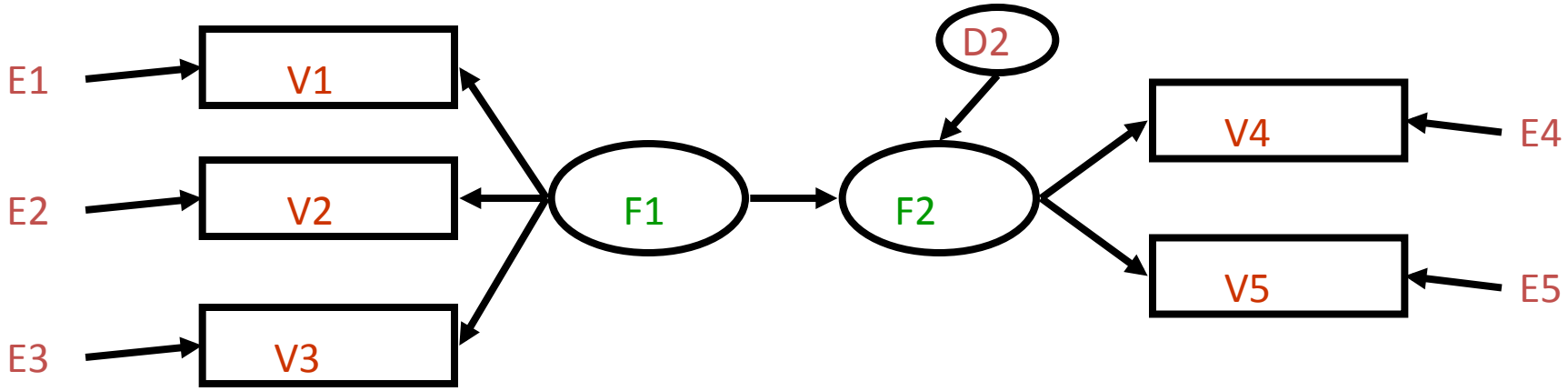
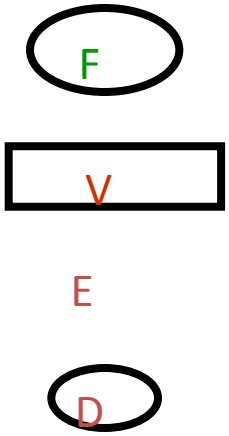


Figure 1 The total effect of X on Y (A), a simple mediation model (B), a single-step multiple mediator model (C), and a multiple-step multiple mediator model (D).

Structural Equation Modeling





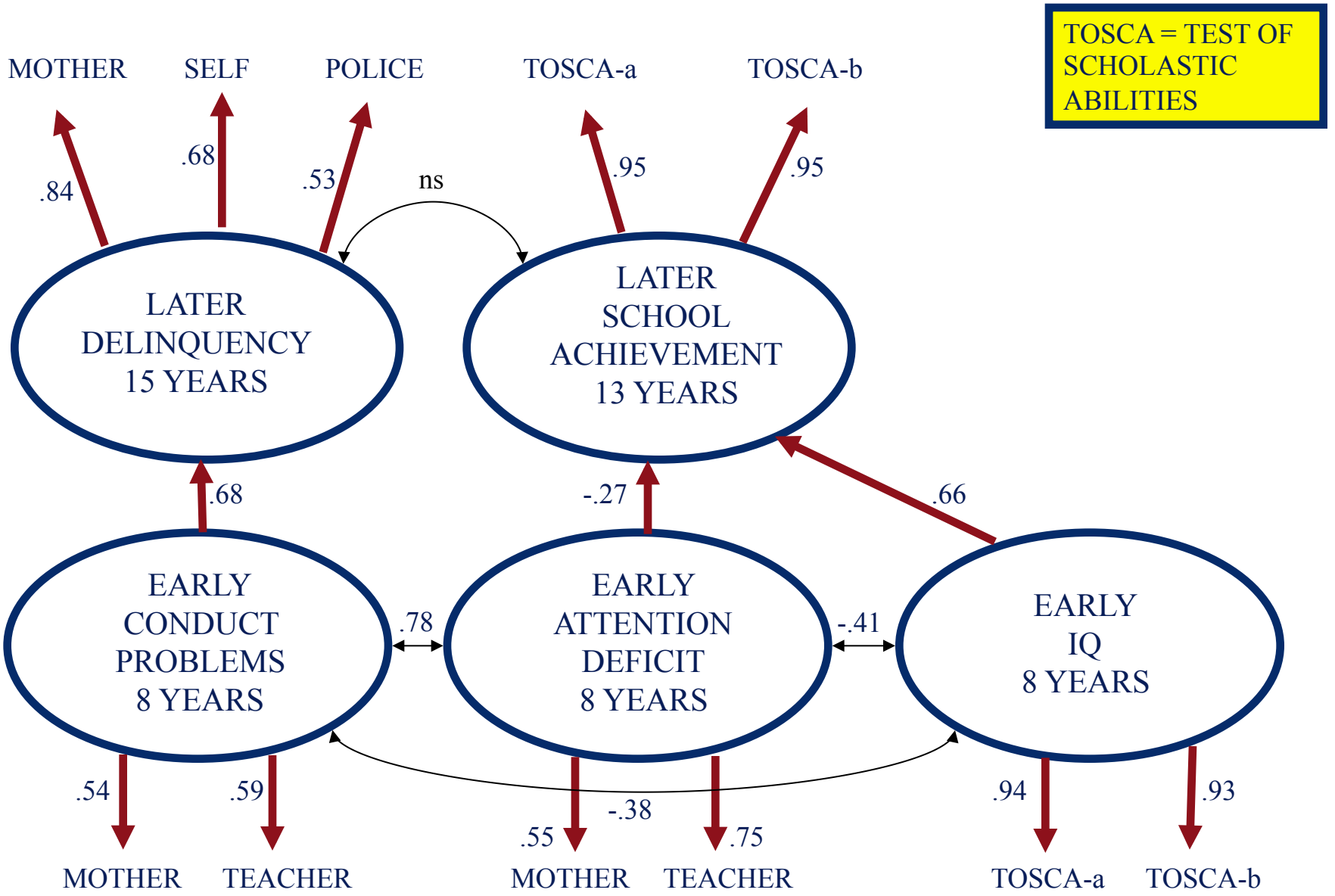
Unobserved (latent) factor.

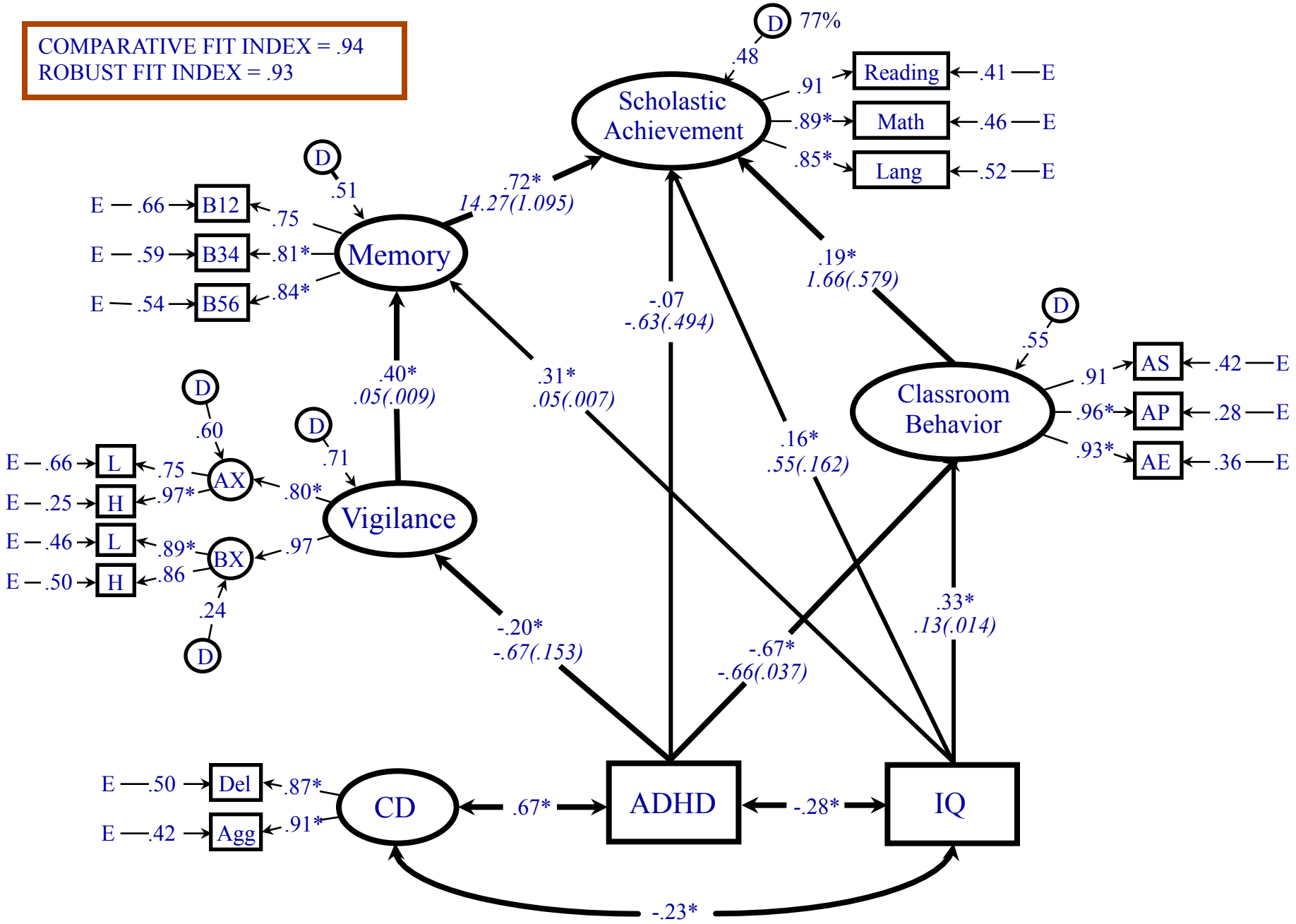
Observed (manifest) variables that serve as indicators of factors.

Measurement error associated with observed variables.

Residual error (disturbance) in the prediction of the unobserved factor by another factor.

FITTED STRUCTURAL EQUATION MODEL OF EARLY BEHAVIOR, EARLY IQ, AND LATER DELINQUENCY AND SCHOLASTIC ABILITY. [FERGUSSON & HORWOOD, 1995, *J OF ABNORM CHILD PSYCHOLOGY, 23*, 183-199]





Rapport, Scanlan & Denney (1999) J. of Child Psychiatry and Psychology

Assessing Therapeutic Change:

The Truax and Jacobson Model

Statistically significant change
vs
Clinically meaningful change

Statistical vs. clinical significance

- Clinical significance (Jacobson &Truax, 1991; Speer, 1992)
  - So what?

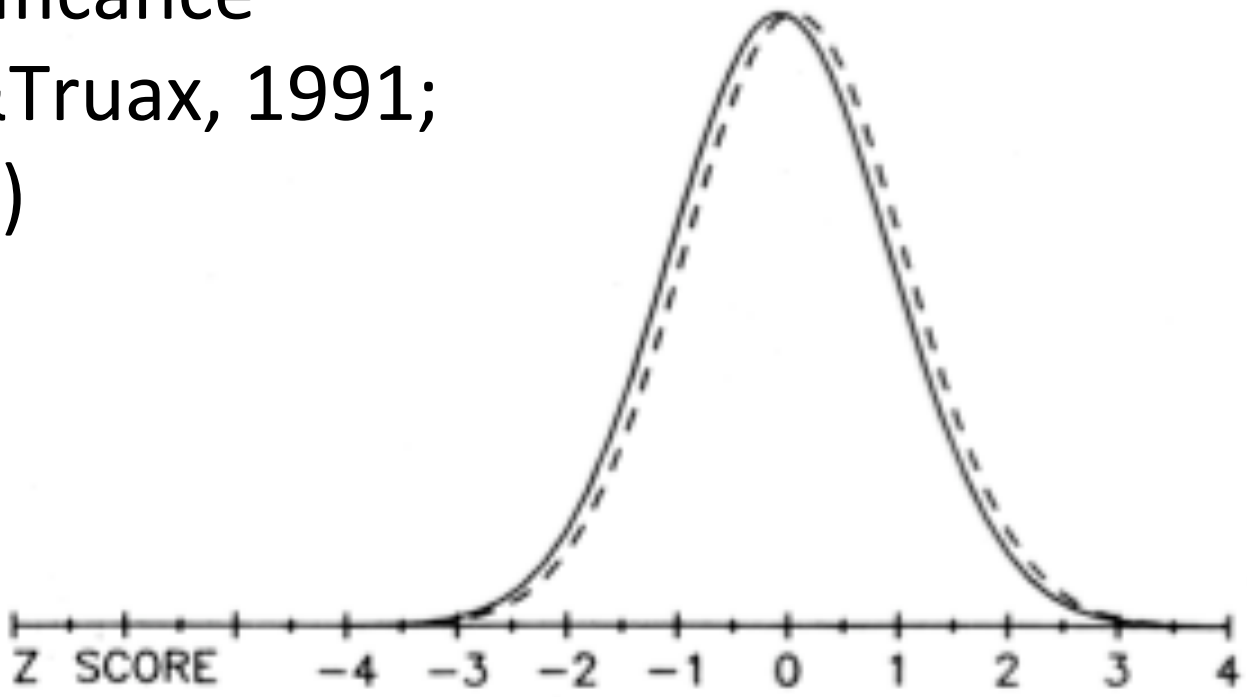
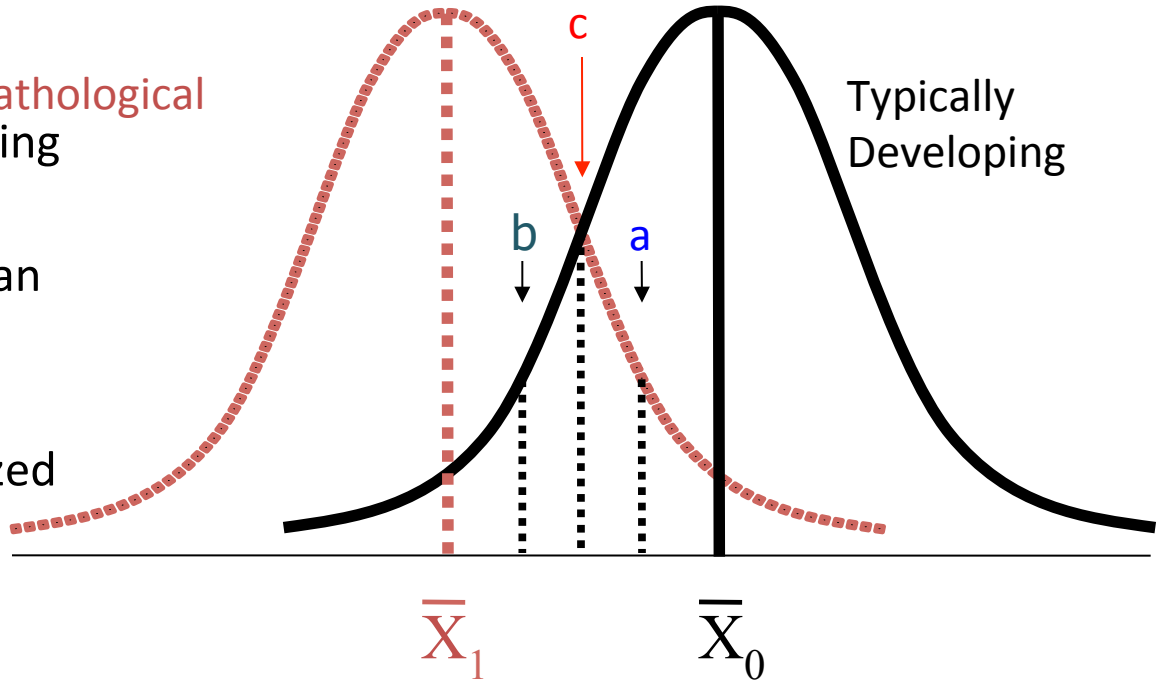


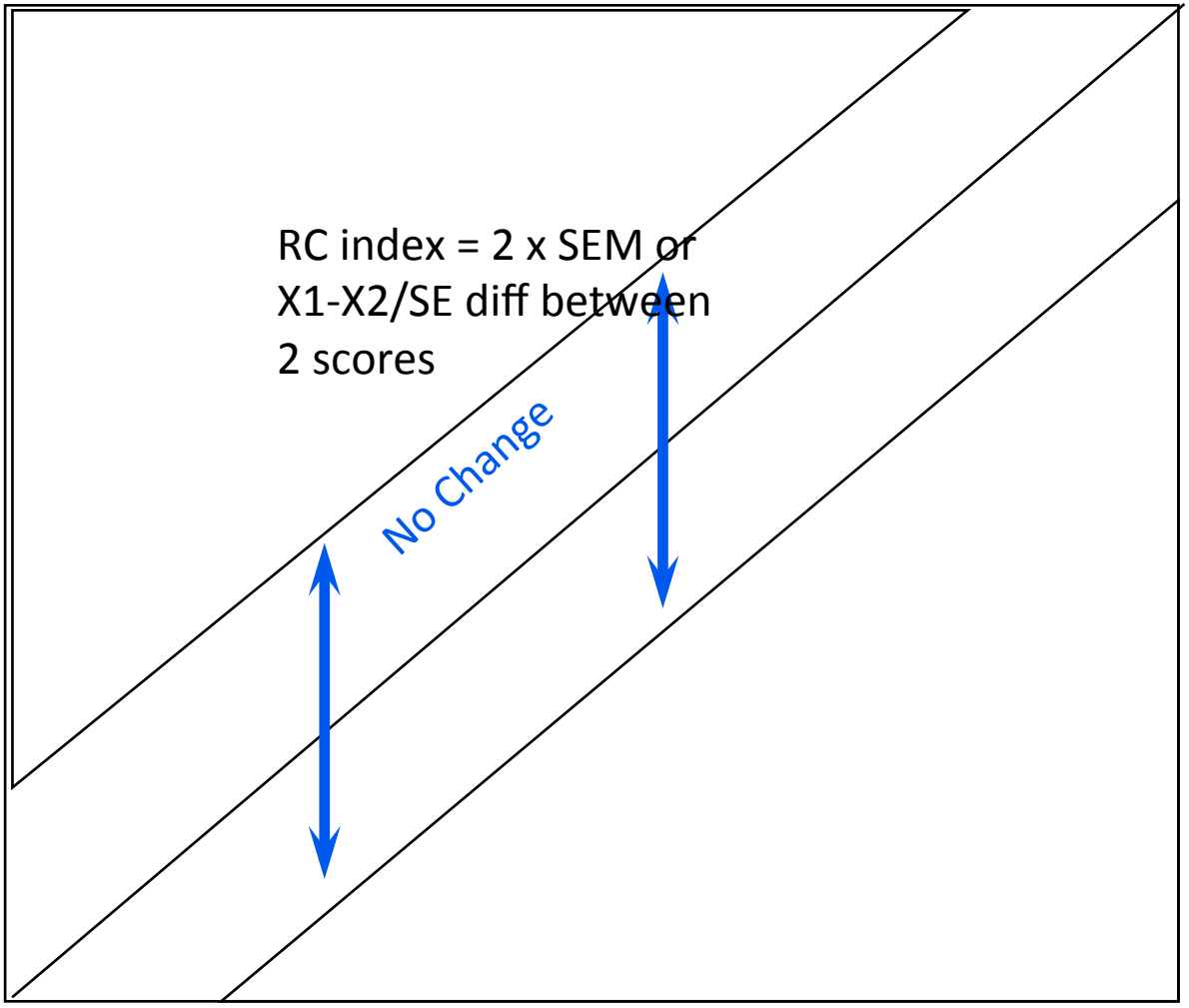
Figure 1. Two normal distributions that are 0.15 standard deviations apart (i.e., $d = 0.15$. This is the approximate magnitude of the gender difference in mathematics performance, averaging over all samples.)

Statistical vs. clinical significance

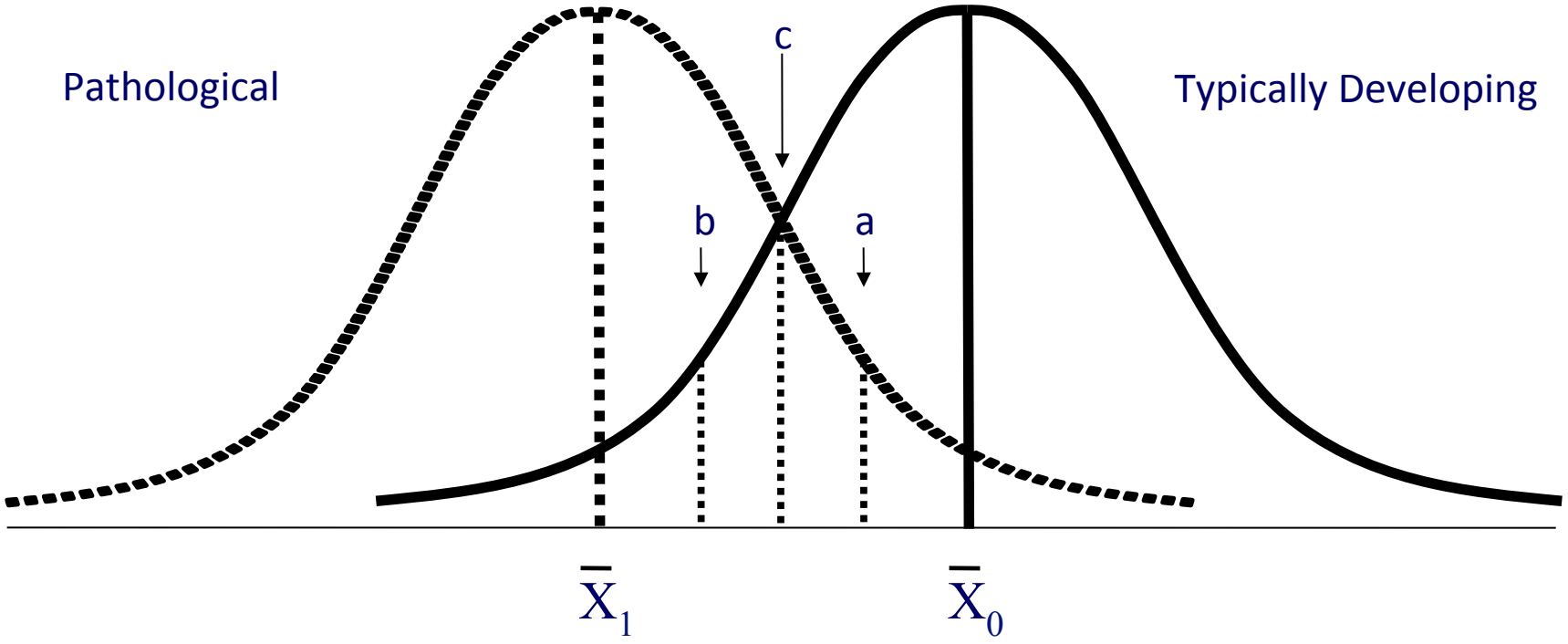
- Example: Your treatment significantly decreased depressive symptoms
  - So what?
  - Did you measure something meaningful?
  - Did the treatment make an impact on the children's functioning?
  - Are the children normalized with the treatment?



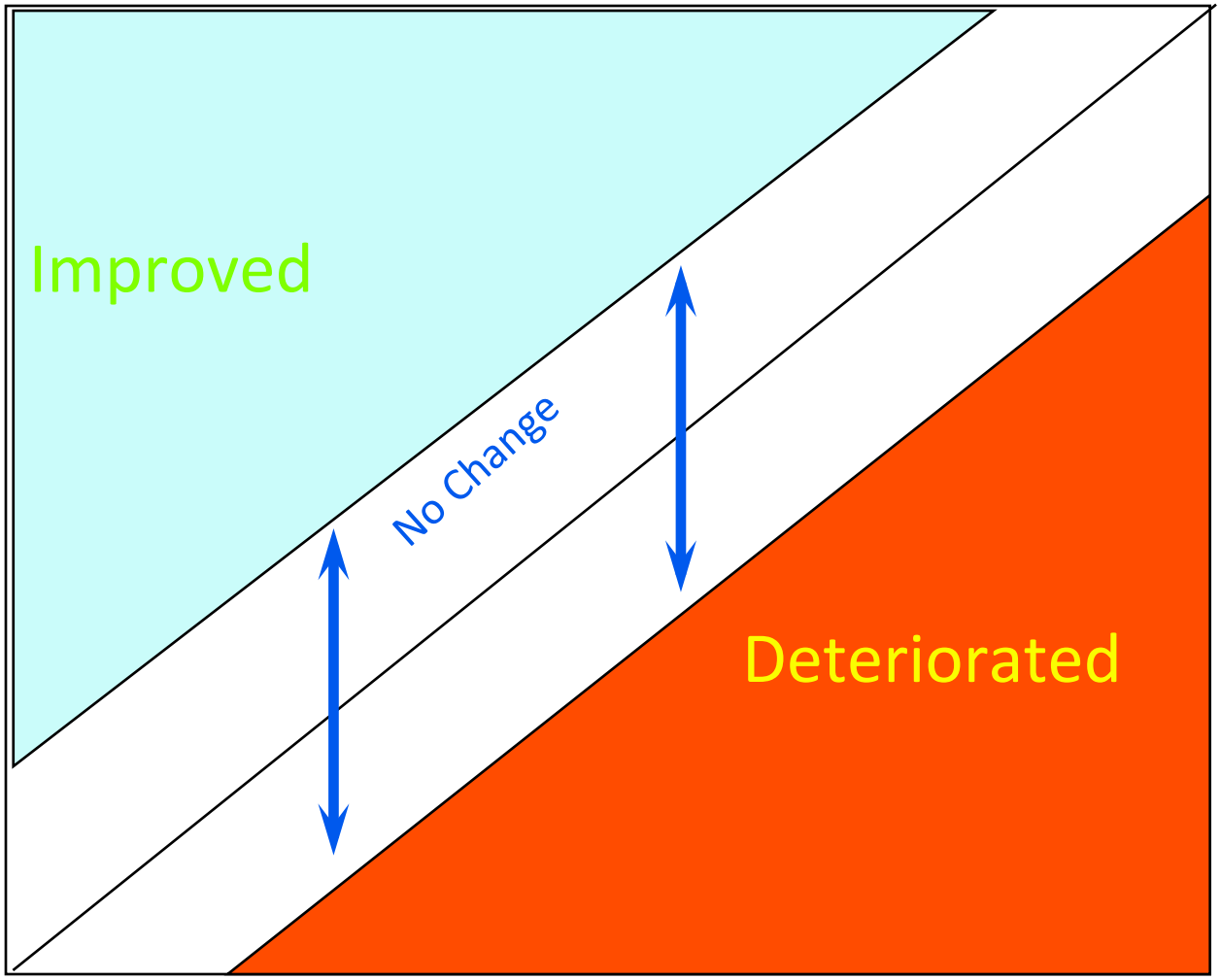
Normalization Paradigm



The standard error of measurement (SEm) estimates how repeated measures of a person on the same instrument tend to be distributed around his or her “true” score. The true score is always an unknown because no measure can be constructed that provides a perfect reflection of the true score.

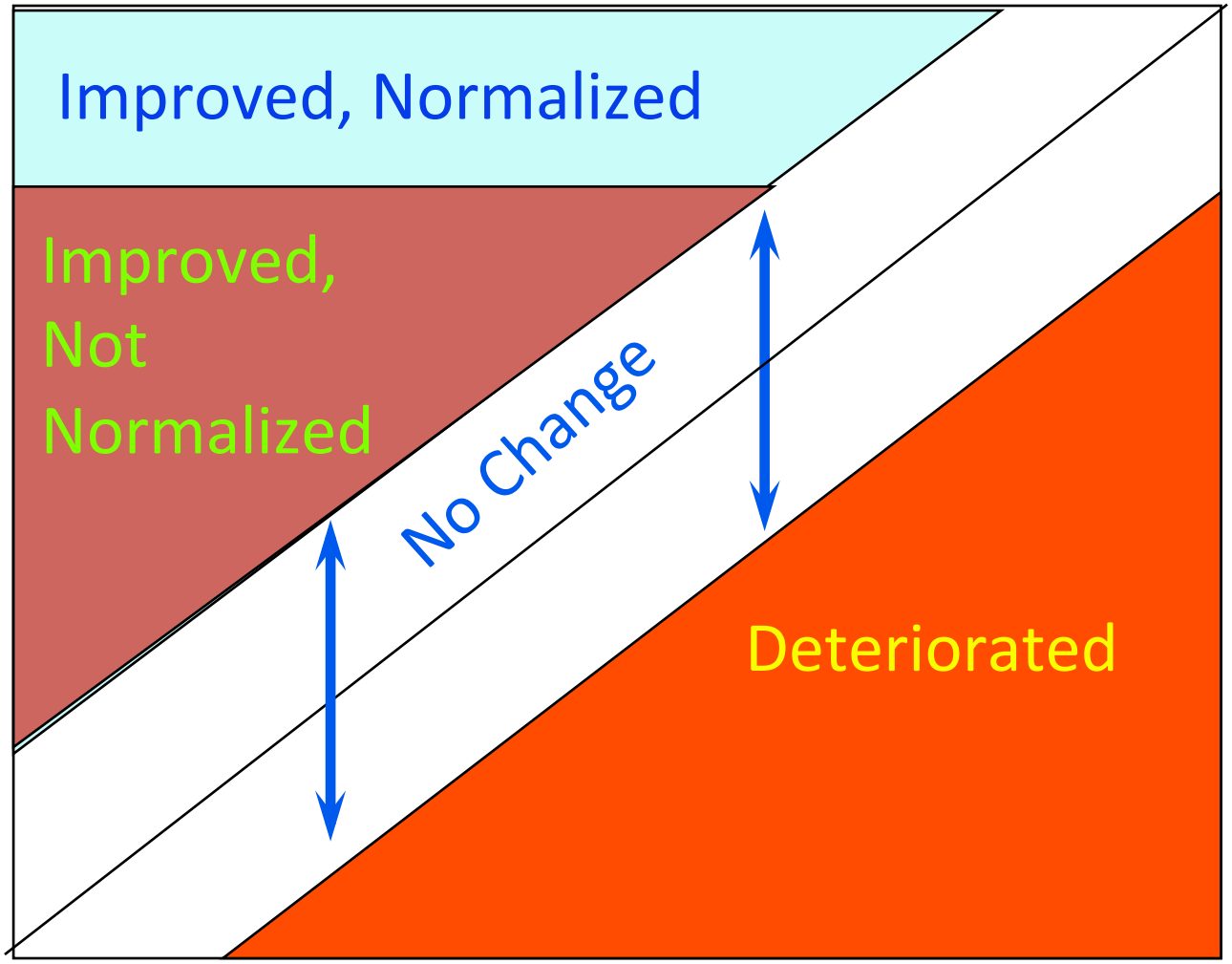

Pathological
Typically Developing
c
b
a
$\bar{X}_1$
$\bar{X}_0$

Normalization Paradigm



Normalization Paradigm

Change >2 x SEM + crosses 1 of 3 thresholds (a, b, c)



Rating Scales as Measures of Children's Behavior

Ratings Scales as Measures of Behavior

Positives:

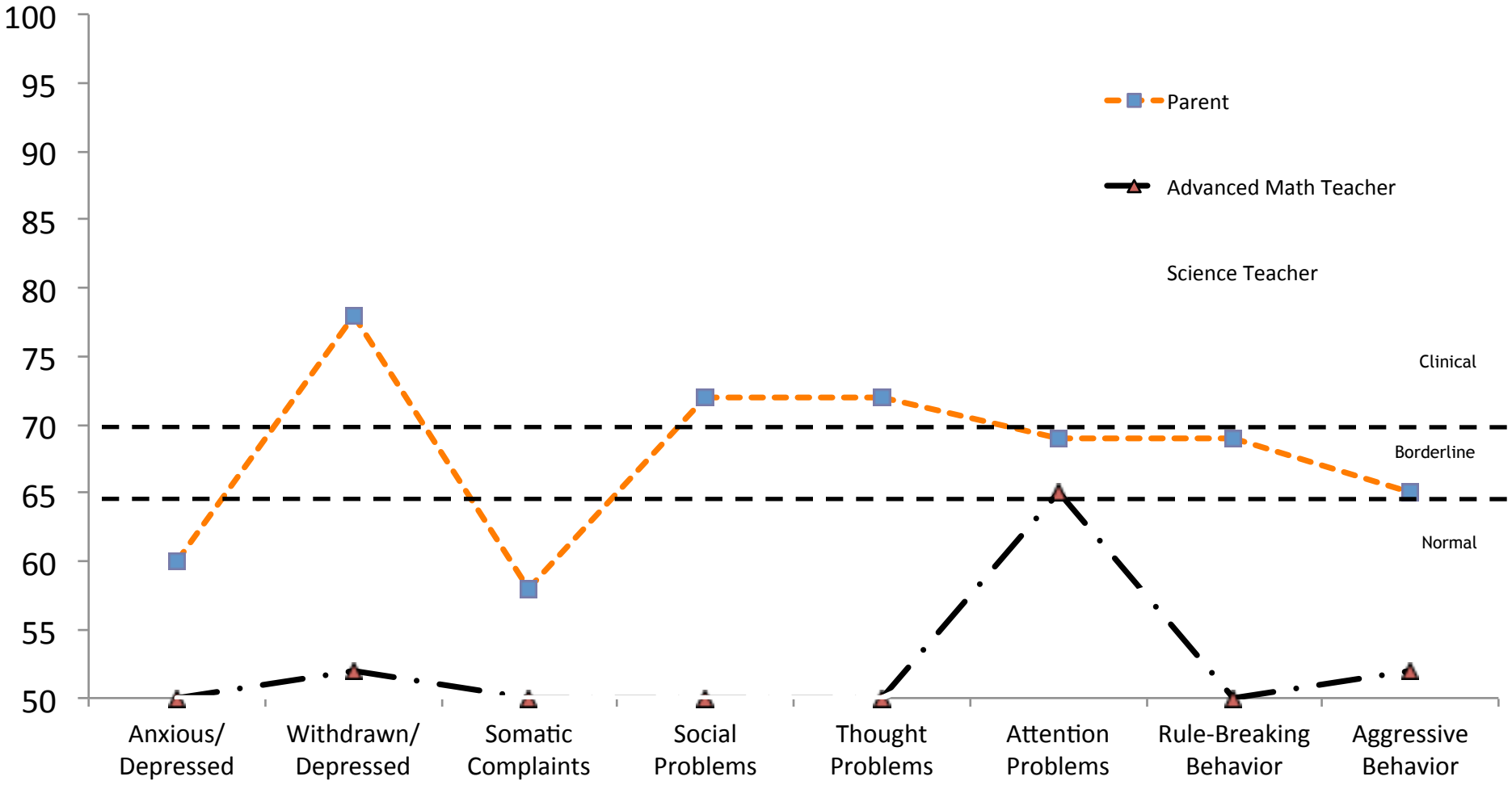
- ✓ ease of administration and scoring
- ✓ appropriate for examining underlying factor structure
- ✓ cost efficiency

Negatives:

- ✓ not real quantitative measures in the physical sense
- ✓ rely on retrospective recall
- ✓ subject to rater expectation biases & halo effects
- ✓ rarely constructed according to measurement theory
- ✓ weak or non-significant correlations with objective measures of the same construct (e.g., 66%-91% not linearly related between rating scales and actigraph measures of activity level)
- ✓ most fail to account for symptom severity in scoring

Child Behavior Checklist and Teacher Report Forms

Client: 12-y.o. Hispanic male



Item Response Theory

Item response theory is presently in widespread use in the development of intelligence and achievement tests.

Its use is specifically to help identify the hierarchy of items ranging from the easiest (or most often endorsed) to the most difficult (or least endorsed).

Item Response Theory and Rasche Modeling

Item Response Theory – based on the assumption that test responses reflect an underlying trait (or set of traits) & that the relation between response and trait can be described for each test item by a monotonically increasing function called an 'item characteristic curve' or ICC.

Individuals with higher levels of the trait have higher expected probabilities for answering an item correctly or in the expected direction and the ICC provides the precise values of these probabilities for each level of the trait.

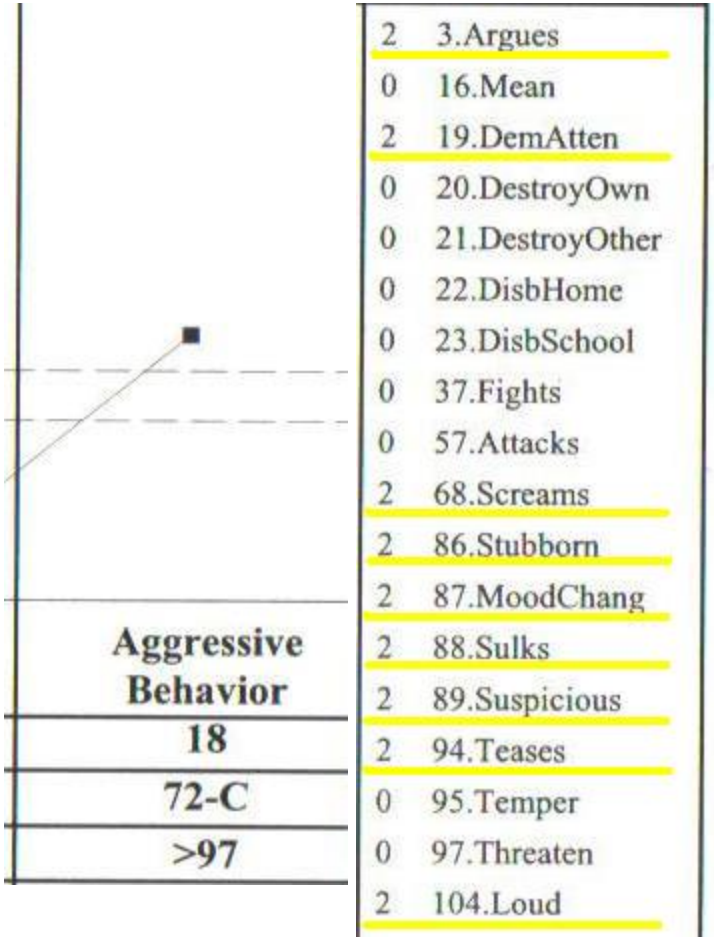
IRT also provides statistics indicating the precision with which an individual respondent's trait level is estimated, and also provides estimates to indicate the usefulness of a particular item for differentiating among different levels of the trait.

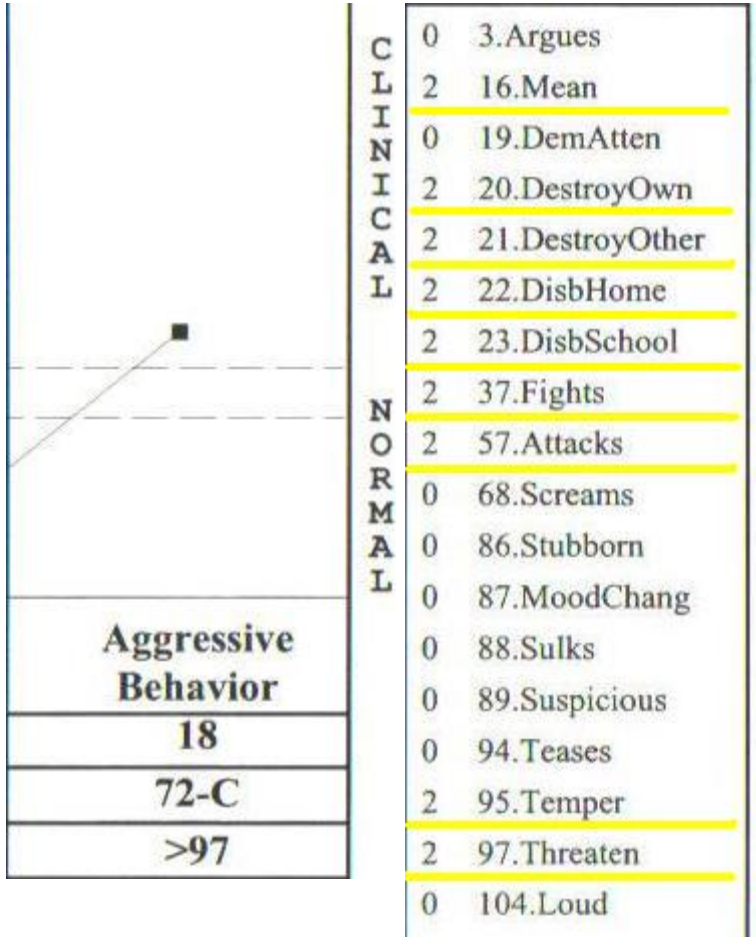
Rasche Modeling

Please print. Be sure to answer all items.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0	1	2	57.	Physically attacks people	0	1	2	84.	Strange behavior (describe): _____
0	1	2	58.	Picks nose, skin, or other parts of body (describe): _____	0	1	2	85.	Strange ideas (describe): _____
0	1	2	59.	Plays with own sex parts in public	0	1	2	86.	Stubborn, sullen, or irritable
0	1	2	60.	Plays with own sex parts too much	0	1	2	87.	Sudden changes in mood or feelings
0	1	2	61.	Poor school work	0	1	2	88.	Sulks a lot
0	1	2	62.	Poorly coordinated or clumsy	0	1	2	89.	Suspicious
0	1	2	63.	Prefers being with older kids	0	1	2	90.	Swearing or obscene language
0	1	2	64.	Prefers being with younger kids	0	1	2	91.	Talks about killing self
0	1	2	65.	Refuses to talk	0	1	2	92.	Talks or walks in sleep (describe): _____
0	1	2	66.	Repeats certain acts over and over; compulsions (describe): _____	0	1	2	93.	Talks too much


Aggressive Behavior
18
72-C
>97
2 3.Argues
0 16.Mean
2 19.DemAtten
0 20.DestroyOwn
0 21.DestroyOther
0 22.DisbHome
0 23.DisbSchool
0 37.Fights
0 57.Attacks
2 68.Screams
2 86.Stubborn
2 87.MoodChang
2 88.Sulks
2 89.Suspicious
2 94.Teases
0 95.Temper
0 97.Threaten
2 104.Loud


CLINICAL
NORMAL
Aggressive Behavior
18
72-C
>97
0 3.Argues
2 16.Mean
0 19.DemAtten
2 20.DestroyOwn
2 21.DestroyOther
2 22.DisbHome
2 23.DisbSchool
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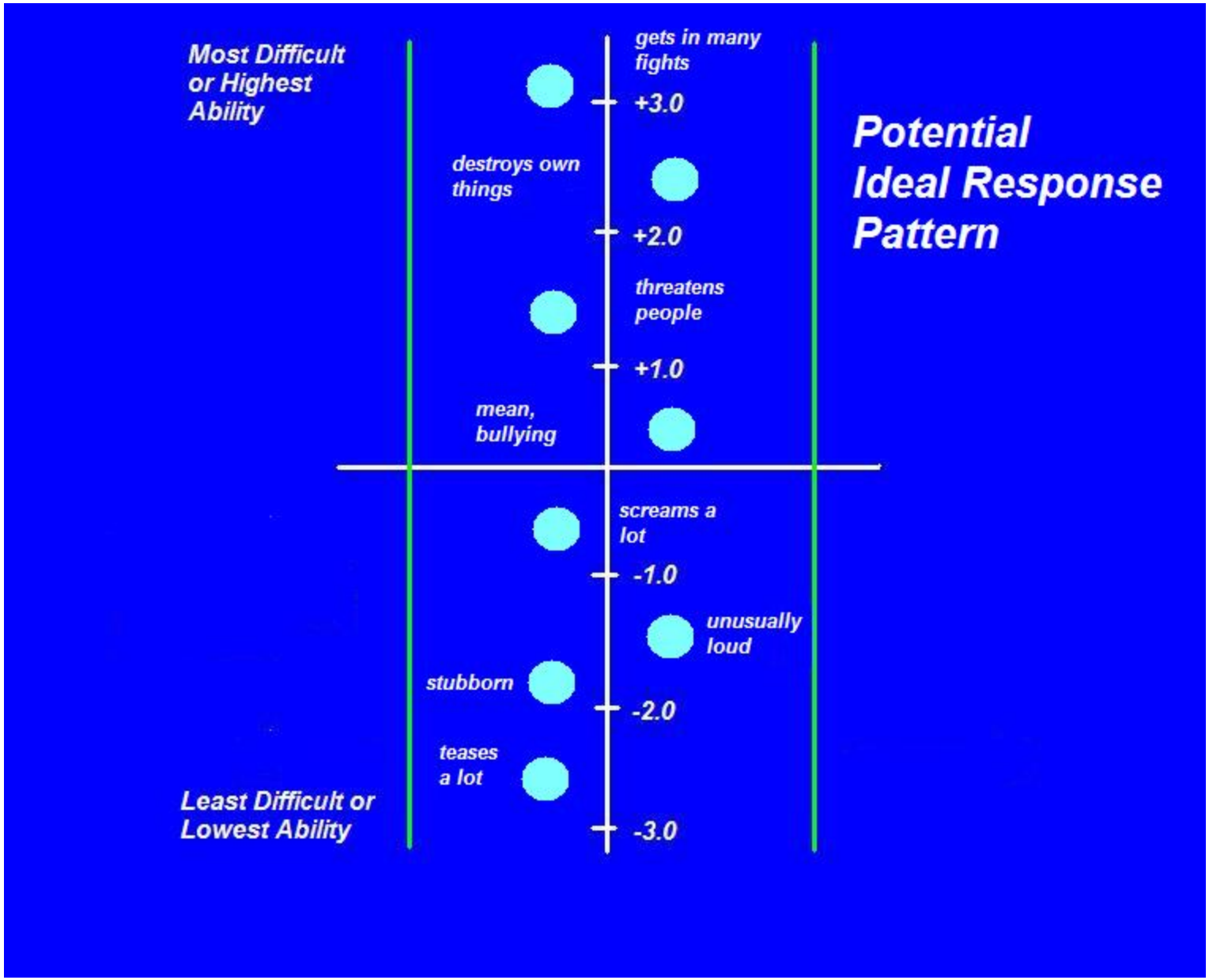
Most Difficult or Highest Ability
gets in many fights
+3.0
destroys own things
+2.0
threatens people
+1.0
mean, bullying
screams a lot
-1.0
unusually loud
stubborn
-2.0
teases a lot
-3.0
Least Difficult or Lowest Ability
Potential Ideal Response Pattern

WORKING MEMORY MODEL OF ADHD