Child Psychopathology

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✓ Syllabus Review (handout)
✓ Presentation assignment [see schematics: PDD; ADHD]
✓ Overview of the course
✓ Child Disorder Template (Word File: make available on-line)
✓ Introduction to Child Psychopathology and Core Concepts
✓ Week 2 reading assignment

“He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast” Leonardo da Vinci (1452-1519)
Foundational Concepts

- Controversies regarding what constitutes a clinical disorder
- What constitutes abnormality?
- The concept of ‘differential diagnosis’
- Conditional probabilities as a means of understanding clinical symptoms and disorders
- The importance of epidemiology for clinical decision making
- Empirical methods for investigating clinical phenomena
- The importance of understanding mediators and moderators
- Equifinality and multifinality
- Statistical and clinically meaningful change
Psychopathology: the study of individual differences, deviant or maladaptive behaviors and processes.

Scientific understanding is, in large measure, the ability to describe precisely the functional relations between entities or events.

The ability to set apart such entities or events from one another and to describe their properties in terms of observable phenomena is a precursor to understanding the relations between them.
Psychopathology
The science dealing with diseases and abnormalities of the mind.

Psycho
From the Greek, “psyche”; soul or mind.

Pathology
From the Greek, “patho”; that part of medicine that deals with the nature of diseases, their causes and symptoms, and especially the structure and functional changes caused by the disease.

Disease
Any departure from health.

Ology
The ‘study’ of any topic

Disorder
Irregularity, disturbance, or interruption of the normal functions, as in a mental disorder.
Defining and Identifying

• What is abnormal behavior?
  – Atypical
  – Harmful
  – Inappropriate
  – Depends on age, culture, gender, and situational factors
  – Parents may differ on their views of what is acceptable
  – Society has changing views of abnormality
What is abnormal?

• What is abnormal behavior?
  – Atypical
  – Harmful
  – Inappropriate
  – Depends of age, culture, gender, and situational factors
  – Parents may differ on their views of what is acceptable
  – Society has changing views of abnormality
How Common are Problems?

• Up to 35.5% of youth age 4-18 have mental health problems

• 15-20% have “clinic level” disorders** [this may be a gross underestimate based on the Kessler et al. (2005) findings]

• Variability in rates due to
  – Different methods (e.g., rating scales vs interviews)
  – Different populations (inpatient, outpatient, community-based epidemiology studies)
  – Different definitions
  – Increasing stress
Foundational Knowledge
What is a clinical disorder?
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?
## Clinical disorders

<table>
<thead>
<tr>
<th>Clinical Disorders</th>
<th>Onset</th>
<th>Course</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disruptive Behavior Disorders:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention-Deficit/ Hyperactivity Disorder (ADHD)</td>
<td>3.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Adolescence—Lifelong</td>
</tr>
<tr>
<td>Conduct Disorder (CD)</td>
<td>&lt;10&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Variable</td>
<td>Adulthood</td>
</tr>
<tr>
<td></td>
<td>&lt;16&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Variable</td>
<td>Early Adulthood</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder (ODD)</td>
<td>&lt;8&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Variable</td>
<td>Remits or Antecedent to CD</td>
</tr>
<tr>
<td><strong>Pervasive Developmental Disorders:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asperger's Disorder</td>
<td>3—6&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Autistic Disorder&lt;sup&gt;d&lt;/sup&gt;</td>
<td>&lt;3&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Childhood Disintegrative Disorder&lt;sup&gt;i&lt;/sup&gt;</td>
<td>3—4&lt;sup&gt;c&lt;/sup&gt; or 4&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Rett's Disorder&lt;sup&gt;e&lt;/sup&gt;</td>
<td>1—2 &amp; &lt;4&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Lifelong or Fatal</td>
</tr>
<tr>
<td><strong>Mood Disorders:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Depressive Disorder&lt;sup&gt;f&lt;/sup&gt;</td>
<td>5—10&lt;sup&gt;f&lt;/sup&gt; or 15&lt;sup&gt;f&lt;/sup&gt;</td>
<td>Variable</td>
<td>Remits or Vvariable</td>
</tr>
<tr>
<td>Dysthymic Disorder&lt;sup&gt;j&lt;/sup&gt;</td>
<td>8.5&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Variable</td>
<td>Remits or Vvariable</td>
</tr>
<tr>
<td>Manic Episode (In context of Bipolar Disorder)</td>
<td>5—14&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Variable</td>
<td>Lifelong</td>
</tr>
<tr>
<td><strong>Anxiety Disorders:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Stress Disorder</td>
<td>Any Age&lt;sup&gt;j&lt;/sup&gt;</td>
<td>1 Mmonth</td>
<td>2-3 days to 1-M month</td>
</tr>
<tr>
<td>Obsessive-Compulsive Disorder&lt;sup&gt;j&lt;/sup&gt;</td>
<td>6—15(m)&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Lifelong</td>
</tr>
<tr>
<td></td>
<td>20—29(fy)&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Posttraumatic Stress Disorder</td>
<td></td>
<td>Variable</td>
<td>2-M months to 2-3 Years</td>
</tr>
<tr>
<td>Acute or Delayed&lt;sup&gt;k&lt;/sup&gt;</td>
<td></td>
<td>Variable</td>
<td>2-3 Years—Adulthood</td>
</tr>
<tr>
<td>Separation Anxiety Disorder&lt;sup&gt;m&lt;/sup&gt;</td>
<td>9—13&lt;sup&gt;m&lt;/sup&gt;</td>
<td>Variable</td>
<td>Remits by Adulthood</td>
</tr>
<tr>
<td>Social Phobia&lt;sup&gt;n&lt;/sup&gt;</td>
<td>Mid-Teens&lt;sup&gt;n&lt;/sup&gt; or 1&lt;sup&gt;n&lt;/sup&gt;</td>
<td>Chronic</td>
<td>Remits by Adulthood</td>
</tr>
<tr>
<td>Specific Phobia&lt;sup&gt;o&lt;/sup&gt;</td>
<td>7—12&lt;sup&gt;o&lt;/sup&gt; or 1&lt;sup&gt;o&lt;/sup&gt;</td>
<td>Variable</td>
<td>Remits by Adulthood</td>
</tr>
<tr>
<td><strong>Other Clinical Disorders:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourette's Disorder</td>
<td>7&lt;sup&gt;p&lt;/sup&gt;</td>
<td>Variable</td>
<td>Lifelong</td>
</tr>
<tr>
<td>Early-Onset Schizophrenia</td>
<td>5—11&lt;sup&gt;q&lt;/sup&gt; or 15&lt;sup&gt;q&lt;/sup&gt;</td>
<td>Variable</td>
<td>Lifelong</td>
</tr>
</tbody>
</table>

<sup>a</sup>Age of onset indicates age in years at which symptoms are most frequently first reported in children;
<sup>b</sup>Acute onset; <sup>c</sup>Incessent onset; <sup>d</sup> At risk for Antisocial Personality Disorder and Substance Abuse Disorder as adults; <sup>e</sup>Typically associated with an Anxiety Disorder; <sup>f</sup> Commonly associated with Conduct Disorder; <sup>g</sup> Onset immediately following a traumatic event; <sup>h</sup>Slightly higher rates in females than males; <sup>i</sup>Slightly higher rates in females and dependent upon the type of phobia; <sup>j</sup>Significantly higher number of males versus females prior to age 10; <sup>k</sup>Frequently continuous with Adult Anxiety Disorder.
Impact of Developmental Level

Clinical disorders and age of onset

<table>
<thead>
<tr>
<th>Learning disorders</th>
<th>Conduct disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language disorders</td>
<td>Schizophrenia</td>
</tr>
<tr>
<td>Autism</td>
<td>Drug abuse</td>
</tr>
<tr>
<td>Rett's disorder</td>
<td>Bulimia</td>
</tr>
<tr>
<td>Asperger's disorder</td>
<td>Anorexia nervosa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Birth</th>
<th>6 Years</th>
<th>12 Years</th>
<th>18 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Developmental norms

Stages of motor development

- Prone, lifts head
- Prone, lifts chest with arm support
- Rolls over
- Sits without support
- Stands with support
- Pulls self to stand
- Walks holding onto furniture
- Stands alone well
- Walks alone well
- Crawls

Age (months)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
**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:**

__________________________
__________________________
__________________________
__________________________
__________________________
Differential Diagnosis

• The process of weighing the probability of one disease versus that of other diseases possibly accounting for a patient's symptom pattern.

• e.g., cold vs. flu
# Cold versus the Flu

## Colds
- Gradual onset over days
- Begins with scratchy throat, sneezing, and sniffles leading to congestion
- Fever is mild or not present
- Coughing is generally hacking and can be moist due to congestion
- Generally affects just the upper body

## Influenza
- Sudden onset
- Begins with fever, headache, and all over body aches (myalgia) – one feels exhausted or fatigued; can include stuffy nose, sneezing, sore-throat
- Fever develops quickly and is usually high (> 101 degrees)
- Coughing is usually dry and hacking and can last after other symptoms are gone
- Systemic illness – affects your entire body (more serious illness – can lead to complications)
Equifinality – multiple causes, one outcome

- ADHD
- Other psychiatric diagnosis
- Acute stressors
- Abrupt environmental changes
- Unrealistic expectations
- Working memory deficits
- Vision/hearing problems
- Classroom Inattention
- Physical/sexual abuse
- Mental retardation
- Learning disability
- Unsafe environment
- Unrealistic expectations
- Working memory deficits
- Vision/hearing problems
Multifinality – one cause, multiple outcomes

- Depression
- Anxiety
- Aggression
- PTSD/Acute Stress
- Resilience

Maltreatment during childhood
The Role of Factor Analysis in Understanding Clinical Disorders
WORRY
POOR CONCENTRATION
HIGH ACTIVITY LEVEL
POOR ACADEMICS
IMPULSIVE
IRRITABLE
INATTENTIVE
TEARFULNESS
NERVOUS
POOR APPETITE
PEER RELATION DIFFICULTIES
UNIQUE SYMPTOMS that correlate with one another

SHARED SYMPTOMS

INATTENTIVE

POOR ACADEMICS

POOR CONCENTRATION

UNIQUE SYMPTOMS that correlate with one another

WORRY

IRRITABLE

TEARFULNESS

NERVOUS

HIGH ACTIVITY LEVEL

IMPULSIVE

PEER RELATION DIFFICULTIES
Quantitative vs Qualitative Differences in child disorders [excess/deficit vs qualitative difference in presentation]

Externalizing vs Internalizing Disorders

ADHD
Conduct Disorder
ODD

Affective Disorders
Anxiety Disorders
Client: 12-y.o. Hispanic male
Conditional Probabilities as a means of understanding Clinical Symptoms:

The Role of Sensitivity, Specificity, PPP, and NPP
Differential Diagnosis & Conditional Probabilities

<table>
<thead>
<tr>
<th>Symptom Present</th>
<th>Meets Dx</th>
<th>Doesn’t Meet Dx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Absent</td>
<td>A</td>
<td>E</td>
</tr>
<tr>
<td>B</td>
<td>C</td>
<td>F</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sensitivity = A/B (true positive)
Specificity = C/D (true negative)
PPP = A/E
NPP = C/F
The importance of Symptoms Base Rates
**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?
PPP = A/B; GIVEN A POSITIVE RESPONSE IN ACADEMIC EFFICIENCY (B), THE PROBABILITY OF OBTAINING A POSITIVE RESPONSE IN ATTENTION (A).

NPP = C/D; GIVEN NO academic improvement (D), THE PROBABILITY OF NO improvement in ATTENTION (C).
a Positive Predictive Power
b Negative Predictive Power
The Role of Epidemiology for Understanding Child Psychopathology
What is epidemiology?

Epidemiology is concerned with the ways in which clinical disorders and diseases occur in human populations, and with factors that influence these patterns of occurrence.

Three interrelated components of epidemiological research involve:

1. Assessing the occurrence of new cases (incidence rate) or existing cases (prevalence rate) of the disorder at a given period of time or within a specific time period; [note: community vs clinic samples]

2. Assessing how the disorder is distributed in the population, which may include information concerning geographic location, gender, socioeconomic level, and race; and

3. Identifying factors associated with the variation and distribution of the disorder to enable etiological hypotheses to be generated.
The Role of Different Variables in Understanding Child Psychopathology
RELATIONSHIP AMONG VARIABLES?

- Correlational Research
  - Temporal Sequence Unknown
- Identifying Markers
  - Temporal Sequence Established—Possibly Causal
- Identifying Risk Factors
  - Non Causally Related

FACTORS INFLUENCING THE RELATIONSHIP BETWEEN VARIABLES?

- Mediators
  - Non-Causal, But Informative
- Moderators/Protective Factors
  - Identifying Process/Mechanisms by Which Variables Produce Outcomes/Models

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
- Experimental Research
  - Establishing Causal Relationships - Models

WHAT EFFECT DOES IV HAVE ON DV?

- Experimental Research
  - Establishing Causal Relationships - Models
The Formula for the Percent of Regression to the Mean

You can estimate exactly the percent of regression to the mean in any given situation. The formula is:

\[ P_{rm} = 100(1 - r) \]  

.....test/retest reliability or correlation between 2 variables

where:

Prm = the percent of regression to the mean
r = the correlation between the two measures

Consider the following four cases:

if r = 1, there is no (i.e., 0%) regression to the mean
if r = .5, there is 50% regression to the mean
if r = .2, there is 80% regression to the mean
if r = 0, there is 100% regression to the mean

In the first case, the two variables are perfectly correlated and there is no regression to the mean. With a correlation of .5, the sampled group moves fifty percent of the distance from the no-regression point to the mean of the population. If the correlation is a small .20, the sample will regress 80% of the distance. And, if there is no correlation between the measures, the sample will "regress" all the way back to the population mean! It's worth thinking about what this last case means. With zero correlation, knowing a score on one measure gives you absolutely no information about the likely score for that person on the other measure. In that case, your best guess for how any person would perform on the second measure will be the mean of that second measure.
Developmental Psychopathology

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

![Diagram showing mediator and moderator effects]
Hinshaw (2007) - moderators of treatment response in ADHD
Mediators

From: Journal of Irreproducible Results

Number of pirates

Global temp.

Mediator

B

Global Average Temperature Vs. Number of Pirates

From: Journal of Irreproducible
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.

TOSCA = TEST OF SCHOLASTIC ABILITIES
*J Child Psychology & Psychiatry*
Assessing Therapeutic Change: The Truax and Jacobson Model

Statistically significant change vs Clinically meaningful change
Statistical vs. clinical significance

• Statistical significance: $p < .05^*$
  – Power issues?
  – “The World is Round, $p < .05$” (Cohen)

• Clinical significance: so what?

• e.g., gender differences in IQ, achievement?
Statistical vs. clinical significance

- Hynd (2005) review of gender differences
- Statistical significance
  - Dependent on sample size
  - Large enough sample almost always means significant differences
- Effect size: estimate of the *magnitude* of group differences

*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

• 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?

Pathological

Typically Developing

$X_1$  $X_0$
Normalization Paradigm

No Change
Normalization Paradigm

- Improved
- No Change
- Deteriorated
Normalization Paradigm

- Improved, Normalized
- Improved, Not Normalized
- No Change
- Deteriorated
Pathological

Typically Developing
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
Rating Scale Construction
Client: 12-y.o. Hispanic male

Anxious/Depressed
Withdrawn/Depressed
Somatic Complaints
Social Problems
Thought Problems
Attention Problems
Rule-Breaking Behavior
Aggressive Behavior

Parent
Advanced Math Teacher
Science Teacher
Clinical
Borderline
Normal
### Rasche Modeling

**The Child Behavior Checklist**

113 items coded as 0 = "Not True", 1 = "Somewhat or sometimes true", and 2 = "Very True or Often True" that load onto 8 problem subscales.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>Physically attacks people</td>
<td>0 1 2</td>
</tr>
<tr>
<td>58</td>
<td>Picks nose, skin, or other parts of body (describe):</td>
<td>0 1 2</td>
</tr>
<tr>
<td>59</td>
<td>Plays with own sex parts in public</td>
<td>0 1 2</td>
</tr>
<tr>
<td>60</td>
<td>Plays with own sex parts too much</td>
<td>0 1 2</td>
</tr>
<tr>
<td>61</td>
<td>Poor school work</td>
<td>0 1 2</td>
</tr>
<tr>
<td>62</td>
<td>Poorly coordinated or clumsy</td>
<td>0 1 2</td>
</tr>
<tr>
<td>63</td>
<td>Prefers being with older kids</td>
<td>0 1 2</td>
</tr>
<tr>
<td>64</td>
<td>Prefers being with younger kids</td>
<td>0 1 2</td>
</tr>
<tr>
<td>65</td>
<td>Refuses to talk</td>
<td>0 1 2</td>
</tr>
<tr>
<td>66</td>
<td>Repeats certain acts over and over; compulsions (describe):</td>
<td>0 1 2</td>
</tr>
<tr>
<td>84</td>
<td>Strange behavior (describe):</td>
<td>0 1 2</td>
</tr>
<tr>
<td>85</td>
<td>Strange ideas (describe):</td>
<td>0 1 2</td>
</tr>
<tr>
<td>86</td>
<td>Stubborn, sullen, or irritable</td>
<td>0 1 2</td>
</tr>
<tr>
<td>87</td>
<td>Sudden changes in mood or feelings</td>
<td>0 1 2</td>
</tr>
<tr>
<td>88</td>
<td>Sulks a lot</td>
<td>0 1 2</td>
</tr>
<tr>
<td>89</td>
<td>Suspicious</td>
<td>0 1 2</td>
</tr>
<tr>
<td>90</td>
<td>Swearing or obscene language</td>
<td>0 1 2</td>
</tr>
<tr>
<td>91</td>
<td>Talks about killing self</td>
<td>0 1 2</td>
</tr>
<tr>
<td>92</td>
<td>Talks or walks in sleep (describe):</td>
<td>0 1 2</td>
</tr>
<tr>
<td>93</td>
<td>Talks too much</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Aggressive Behavior</td>
<td>18</td>
<td>72-C</td>
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<tr>
<td>---------------------</td>
<td>----</td>
<td>------</td>
</tr>
<tr>
<td>3. Argues</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>16. Mean</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>19. DemAttten</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>20. DestroyOwn</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>21. DestroyOther</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22. DisbHome</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23. DisbSchool</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>37. Fights</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>57. Attacks</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>68. Screams</td>
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<td>2</td>
</tr>
<tr>
<td>86. Stubborn</td>
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<td>2</td>
</tr>
<tr>
<td>87. MoodChang</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>88. Sulks</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>89. Suspicious</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>94. Teases</td>
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<td>2</td>
</tr>
<tr>
<td>95. Temper</td>
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<td>0</td>
</tr>
<tr>
<td>97. Threaten</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>104. Loud</td>
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<td>2</td>
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**CLINICAL NORMAL**

<table>
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<th>Aggressive Behavior</th>
<th>18</th>
<th>72-C</th>
<th>&gt;97</th>
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<tr>
<td>19. DemAttten</td>
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<td>2</td>
</tr>
<tr>
<td>20. DestroyOwn</td>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>21. DestroyOther</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>22. DisbHome</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>23. DisbSchool</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>37. Fights</td>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>57. Attacks</td>
<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>68. Screams</td>
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<td>0</td>
<td>0</td>
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<tr>
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<td>0</td>
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<td>104. Loud</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>
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.
Potential Ideal Response Pattern

- Most Difficult or Highest Ability:
  - destroys own things
  - mean, bullying
  - threatens people
  - gets in many fights

- Least Difficult or Lowest Ability:
  - screams a lot
  - unusually loud
  - teas a lot
  - stubborn

Values:
- +3.0
- +2.0
- +1.0
- -1.0
- -2.0
- -3.0
MetaThought 1:
Language Biases in Psychopathology: Descriptions vs Evaluations

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>pushy</td>
<td>assertive</td>
</tr>
<tr>
<td>greedy</td>
<td>ambitious</td>
</tr>
<tr>
<td>manipulative</td>
<td>persuasive</td>
</tr>
<tr>
<td>ruthless</td>
<td>driven</td>
</tr>
<tr>
<td>stubborn</td>
<td>tenacious</td>
</tr>
<tr>
<td>intrusive</td>
<td>concerned</td>
</tr>
<tr>
<td>exhibitionist</td>
<td>outgoing</td>
</tr>
<tr>
<td>reckless</td>
<td>brave</td>
</tr>
<tr>
<td>troublemaker</td>
<td>feisty</td>
</tr>
<tr>
<td>cheap</td>
<td>frugal</td>
</tr>
<tr>
<td>rigid</td>
<td>steadfast</td>
</tr>
<tr>
<td>unfeeling</td>
<td>nerves of steel</td>
</tr>
<tr>
<td>oversensitive</td>
<td>vulnerable</td>
</tr>
<tr>
<td>cowardly</td>
<td>self-protective</td>
</tr>
<tr>
<td>overly emotional</td>
<td>passionate</td>
</tr>
<tr>
<td>abnormal</td>
<td>unique</td>
</tr>
<tr>
<td>weird</td>
<td>interesting</td>
</tr>
<tr>
<td>dead</td>
<td>ontologically impaired</td>
</tr>
<tr>
<td>sociopath</td>
<td>morally challenged</td>
</tr>
</tbody>
</table>

Underscores the reciprocal influence of attitudes & language
Meta-thought 2: Reification Errors

- The error of regarding abstract concepts as if they were concrete objects.
- To reify is to invent a concept (or construct), name it, and then convince ourselves that such a thing exists in the world.
- Example: ‘self-esteem’ – people don’t actually have ‘self-esteem’ – it is merely a concept we have created to help us organize and make sense out of other people’s behavior.
- Therapist: ‘Your self-esteem is too low...you need to get more of it’...as if self-esteem were a commodity that can be purchased at the store.
- Examples of commonly reified constructs:
  - the mind
cognition
  - intelligence
personality
  - emotions
the unconscious
  - motivation
personality traits
  - complexes
mental illnesses
Meta-Thought 3: The Reification of Theories

✓ Theory: a proposed explanation of observed phenomena

✓ Two types: Event Theory and Construct Theory

a. Event theory – theories that provide explanations that lend themselves to direct measurement...and under the right circumstances, can be proven or disproven...in the former case, it is no longer a theory (e.g., how the patient acquires an infection? Did humans evolve from apes?).

b. Construct theory – theories that provide explanations that, by their very nature, are not directly measurable. As a consequence, even under ideal conditions, a Construct Theory can never be proven because the explanations themselves are intangible abstractions (e.g., the phenomena under investigation may be observable, but the underlying explanation is not – gravity, motivation, personality, psychopathology).
Meta-thought 4: Multiple levels of description: the simultaneity of physical and psychological events (mental vs physical)

✓ Mind & body relationships – which comes first and does one cause the other?

✓ Physical and mental are non-comparable terms & represent an error of reification – treats a theoretical construct (mental) as if it were a concrete object (physical).

✓ Mental events all have physical correlates – if one causes the other at least two conditions must occur:
  1. Event A must precede Event B
  2. When Event A changes or is manipulated, Event B changes accordingly; similarly, when Event A stops changing, Event B changes accordingly.

Can a physical event occur in the absence of a psychological event?
Biochemical activity exists in a deceased person.

Can a psychological event occur in the absence of a physical event?
Probably not – every mental event corresponds with a physical event (basis of fMRI and other scans).
Anxiety as an example

At the biological level, anxiety involves specific neurochemical activity (viz., arousal of the sympathetic division of the autonomic nervous system along with other particular neurological configurations).

Concurrently, at the psychological level, anxiety involves the subjective perception and experience of apprehension or fear.

Thus, neurochemistry doesn’t cause fear, and fear doesn’t cause neurochemistry – they are equivalent and simultaneous phenomena, merely described in two different ways and at two different levels of analysis (i.e., they are a singular event).

Implication: psychotherapy is no less biochemical than medication!
The Relevance of Historical Influences for Understanding Child Psychopathology and Treatments
Historical Influences

• Behaviorism and Social Learning Theory
• Behavior is learned-caused by interactions with the environment
  – Classical Conditioning
    • Pavlov
    • Watson
  – Operant Learning
    • Skinner
  – Modeling
    • Bandura
## Schematic of Operant Conditioning Relationships

<table>
<thead>
<tr>
<th>Positive Stimulus</th>
<th>Increase Behavior</th>
<th>Decrease Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Reinforcement (add stimulus)</td>
<td>Response Cost (remove stimulus)</td>
</tr>
<tr>
<td>Negative Stimulus</td>
<td>Negative Reinforcement (remove stimulus)</td>
<td>Punishment (add stimulus)</td>
</tr>
</tbody>
</table>
**Positive Reinforcement** – a positively viewed stimulus follows a particular behavior and strengthens or increases the behavior.

**Negative Reinforcement** – a negatively viewed stimulus is removed or avoided and strengthens or increases the behavior (e.g., carrying an umbrella); 2 primary types: avoidance and escape behavior.

**Punishment** – a negatively viewed stimulus is presented or occurs following a behavior and weakens or reduces future occurrences of the behavior (e.g., spanking).

**Response Cost** – a positive stimulus is removed and strengthens or increases a particular behavior.

**Extinction** – behavior is no longer followed by reinforcement and decreases and eventually ceases in frequency.
• **S-d’s** – discriminative stimuli that indicate the likely occurrence of reinforcement.

• **S-delta’s** – stimuli that indicate the unlikely occurrence of reinforcement.
Basic Classical Conditioning Learning

UCS: Food [unconditioned Stimulus]

UCR: Salivation [unconditioned response becomes a conditioned response]

Neutral Stimulus: Bell [becomes a CS or conditioned stimulus after pairing]

Paired temporally

Conditioning required

No conditioning required
Unconditioned Stimulus (e.g., Shock) Elicits UCR

Neutral Stimulus Tone

Repeated pairings

Memory representation

Unconditioned Response (pain response/anxiety/escape behavior)

Now elicits a conditioned response (CR)

NS becomes a conditioned stimulus (CS)

Conditioned stimulus is also associated with a memory representation of the US, which then leads to the production of the CR – the CS predicts the onset of the US and thus elicits a CR
ADHD WORKING MEMORY MODEL

Aetiological Factors
- COMT alterations
- DA transporter polymorphism

Brain Abnormalities
- Cortical Under Arousal
  (excess theta-slow wave activity & hippocampal gating; DA deficiency)

Brain Abnormalities

Cortical Under Arousal
- Cortical Under Arousal
- (excess theta-slow wave activity & hippocampal gating; DA deficiency)

Aetiological Factors
- COMT alterations
- DA transporter polymorphism

Autonomic Compensatory Mechanism

Cognitive/Behavioral Outcomes
- Immature private speech
- Impulsivity
- Inattentiveness
- Hyperactivity/Motor Activity
- Poor interpersonal skills
- Disorganization
- Executive dysfunction
- Delay aversion

Endophenotype
- Working Memory:
  - Central Executive Controller
  - Visuospatial Subsystem
  - Phonological Subsystem
- (including subvocal speech and/or buffer mechanisms)

Fig. 3
WORKING MEMORY  MODEL OF ADHD

Biological Influences, e.g., genetics

NEUROBIOLOGICAL SUBSTRATE

ENVIRONMENTAL/ COGNITIVE DEMANDS

CORE FEATURES: INATTENTION HYPERACTIVITY IMPULSIVITY

SECONDARY FEATURES
Working Memory Model of ADHD

Biological Influences (e.g., genetics) → Neurobiological Substrate

Environmental/Cognitive Demands → Working Memory Deficits

(Core Feature) Working Memory Deficits

(Secondary Features) Inattentiveness, Hyperactivity, Impulsivity

(Associated Features and Outcomes)
- Impaired
  - Cognitive Test Performance
  - Academic Achievement
  - Social Skills
  - Organizational Skills
  - Classroom Deportment
  - Delay Aversion