Clinical Challenges for Functional Analysis Methodology

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Topics

Brief Review of Functional Analysis Methodology
Challenges to Implementation
Solutions to practical problems
Barriers to Implementation
Extensions (the future)

Structural vs. Functional Analysis

Structural analysis:
- Identification of parts or components
- General: Of what is this thing made?
- Environment & behavior: What events are happening?

Functional analysis:
- Identification of uses or purpose
- General: What does this thing do?
- Environment & behavior: Why are these events happening?
Functions of problem behavior

<table>
<thead>
<tr>
<th>Contingency</th>
<th>EO</th>
<th>Reinforcer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Sr+</td>
<td>Deprivation (no attention)</td>
<td>Attention</td>
</tr>
<tr>
<td>Automatic Sr+</td>
<td>Deprivation (no sensory stimulation)</td>
<td>Sensory stimulation</td>
</tr>
<tr>
<td>Social Sr-</td>
<td>Aversive stimulation (task demands)</td>
<td>Removal of task</td>
</tr>
<tr>
<td>Automatic Sr-</td>
<td>Aversive stimulation (pain or discomfort)</td>
<td>Alleviation of pain</td>
</tr>
</tbody>
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Functional Behavioral Assessment

<table>
<thead>
<tr>
<th>Precision</th>
<th>Simplicity</th>
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<tbody>
<tr>
<td>Least</td>
<td>Anecdotal (Indirect) Methods</td>
</tr>
<tr>
<td>Least</td>
<td>Descriptive (Naturalistic) Analysis</td>
</tr>
<tr>
<td>Most</td>
<td>Functional (Experimental) Analysis</td>
</tr>
<tr>
<td>Most</td>
<td></td>
</tr>
</tbody>
</table>

FBA in intervention studies
(Kahng, Iwata, & Lewin, AJMR, 2002)

Cumulative Number of Data Sets by Type of Assessment

- Experimental Analysis
- Descriptive Analysis
- Indirect Assessment
Characteristics of FBA Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect</td>
<td>Subjective</td>
<td>Structure &amp; Function</td>
</tr>
<tr>
<td>Descriptive</td>
<td>Objective</td>
<td>Structure</td>
</tr>
<tr>
<td>Experimental</td>
<td>Objective</td>
<td>Function</td>
</tr>
</tbody>
</table>

Functional (Experimental) Analysis

Separates influential from incidental features of the environment
- Identifies cause-effect relations
- Direct, repeated measures of behavior
- Conditions of observation controlled
  - Test: Variable of interest present
  - Control: Variable of interest absent

Some Key Terms

Antecedent event: Establishing operation (EO)
- Alters the effects of a reinforcer
- EO present: Sr more valuable
- EO absent: Sr less valuable
- Example: Food deprivation → food more valuable

Antecedent event: Discriminative stimulus (S^D)
- Stimulus in whose presence reinforcement is more likely
- S^D present: Sr available
- S^D absent: Sr unavailable
- Example: Traffic light → Stop/go more likely to be reinforced

Consequent event: Reinforcement contingency (Sr)
- If-then relation between a response and a consequence
- Contingency present: Behavior maintains
- Contingency absent: Behavior extinguishes
### Functional Analysis Protocol

<table>
<thead>
<tr>
<th>Condition</th>
<th>S0</th>
<th>EO</th>
<th>Consequence</th>
<th>Contingency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>S1</td>
<td>Th. ignores Cl.</td>
<td>Th. attends to beh. Problem</td>
<td>Positive rfmnt (attention)</td>
</tr>
<tr>
<td>Demand</td>
<td>S2</td>
<td>Th. presents learning trials</td>
<td>Timeout for beh. problem</td>
<td>Negative rfmnt (escape)</td>
</tr>
<tr>
<td>Alone</td>
<td>N/A</td>
<td>No stimulation</td>
<td>N/A</td>
<td>Automatic reinf</td>
</tr>
<tr>
<td>Play</td>
<td>S3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Attention**
- Th. ignores Cl.
- Th. attends to beh. Problem

**Demand**
- Th. presents learning trials
- Timeout for beh. problem

**Alone**
- No stimulation

**Play**
- N/A

**Contingency**
- Automatic reinf

**Function**
- Social Positive Reinforcement (attention)
- Social Negative Reinforcement (escape)
- Automatic Reinforcement (self-stimulation)

### Challenges to Functional Analysis Methodology

- Complexity of assessment: It’s too difficult
- Time constraints: It takes too much time
- Setting constraints: I don’t have a controlled setting
- High-risk behavior: It’s too dangerous
- Low-rate behavior: I rarely see the behavior
- Uninterpretable results: I can’t identify the function
- Ethical issues: Explicit worsening of behavior
Complexity of Assessment: Logic & Data

Logical analysis
- What skills are needed to conduct an FA?

Empirical analysis
- Undergraduate students (Iwata et al., 2000)
- B.A.-level therapists (Moore et al., 2002)
- Teachers (Bloom et al., 2013; Wallace et al., 2004)
- Teleconferencing (Barretto et al., 2006)

Conclusion
- Skills no different than those required to implement any intervention and are acquired easily

Time Constraints
Brief Functional Analysis (BFA)

- Northup et al. (1991): One, 5-min session of each condition
- Derby et al. (1992): 50% functions identified (40/79)

Evaluation of the “BFA”

Reduction in session duration AND number of sessions

Number of sessions (Kahng & Iwata, 1999)
- N=50, 15-min sessions, 1st session vs. full FA
- 33/50 correspondence

Session duration (Wallace & Iwata, 1999)
- N=46, repeated sessions, 5-, 10-, 15-min durations
  - 15 min vs. 10 min: 46/46 correspondence
  - 15 min vs. 5 min sessions: 43/46 correspondence

Conclusions
- Single-session assessments not a good idea
- Repeated, 5-min sessions may be adequate
Probable Functions of Specific Behavior Disorders

<table>
<thead>
<tr>
<th>Behavior Disorder</th>
<th>Positive Reinforcement</th>
<th>Negative Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Social</td>
<td>Automatic</td>
</tr>
<tr>
<td>Aggression</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td>Tantrums</td>
<td>+</td>
<td>ø</td>
</tr>
<tr>
<td>Noncompliance</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td>Property Destruction</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td>“Stereotypy”</td>
<td>?</td>
<td>+</td>
</tr>
<tr>
<td>SIB</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Time Constraints: Assessment Sequence

Poor reliability of indirect methods

- Subjective data – guesses
- Some questions irrelevant

Selective use of MAS, QABF, or FAST (2 informants)

- SIB: All questions relevant
- AGG: Social questions only
- STPY: Automatic questions only

Single function FA if indirect outcome reliable

- SIB: Alone, Attn, or Demand vs. Play
- AGG: Attn or Demand vs. Play
- STPY: Alone (or Alone vs. Play)

Examples of Single Function Tests
The "Alone" Condition as a No-Control Test?

Logic

- PB maintained by social Sr should not occur
- PB maintained by automatic Sr should persist

Studies

- Extended alone following unclear FA outcomes (Vollmer et al., 1994, N=3)
- Alone sessions 2:1 ratio with attn and demand sessions (Roscoe et al., 2013, N = 64)

A Screening Procedure for Behavior Maintained by Automatic Reinforcement

(Querim, Iwata, Roscoe, Schlechenmeyer, Virues-Ortega, & Hurl, 2013)

Question: Do "alone" probes predict auto Sr function of STPY?

Method

- N=30 (STPY, SIB, AGG)
- Varied responses allow for more errors
- Screening: Alone or "No interaction" probes (3 @ 5 min)
- FA: Typical FA protocol (10 min sessions)

Results

- Correspondence in 28 / 30 cases
Summary: Research on Efficiency

BFA: Single exposure to 5-min sessions
- ~50%-60% loss in precision
- Use only under severe time restrictions

Single exposure to 15-min sessions (Kahng & Iwata, 1999)
- ~30%-40% loss in precision
- Limited number of samples

Repeated exposure to 5-min sessions (Wallace & Iwata, 1999)
- ~10% loss in precision
- 5-min duration adequate; 10-min duration optimal

Single-function tests or probes (Querim et al., 2013)
- ~5% loss in precision, but depends on guess
- Use if single function highly likely (especially automatic Sr)

Setting Constraints

FA in the home?
- Day et al. (1994), Harding et al. (2001), Nadjowski et al. (2008)

FA in typical classroom?
- Berg et al. (2007); Derby et al. (1994); Dolezal & Kurtz (2010); Fresa & Hughes (1997); Grauvogel & Wallace (2010); Lang et al. (2008, 2009, 2010); McDonald et al. (2000, 2003); Mueller et al. (2003); O'Reilly et al. (2009)

Conclusion: Setting not a barrier if it can be controlled

Trial-Based (Classroom) FA
(Bloom et al., 2011, 2013; Kodak et al., 2013; Lambert et al., 2013)

Classroom restrictions
- Brief sessions
- Contiguous test-control comparison (control precedes test)
- Capitalize on naturally occurring transitions

Study arrangement: 4-min trial
- 2-min control → PB yes or no
- 2-min test → PB yes or no

Alternative arrangement: 5-min trial
- 1-min control → PB yes or no
- 4-min test → PB yes or no
**FA Trials**

**Attention (no tasks present)**
- Control: Stand near student; initiate pleasant conversation
- Test: Stand near student but ignore; deliver attention only following problem behavior

**Task Demand**
- Control: Observe while no task demands are present
- Test: Deliver frequent prompts to engage in difficult work; remove work following problem behavior

**Alone**
- Two consecutive test segments. Observe when student is not working, not interacting with others, and has no access to leisure items

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**Correspondence: Social Sr+**

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**Correspondence: Social Sr-**
High-Risk Behavior

Consequences follow every response
  > Should result in lower frequency (no data)

Consequences follow approximations to PB
  > Should result in lower intensity (no data)

Protective devices (Borrero et al., 2002; Le & Smith, 2002)
  > Caution: Protection may obscure assessment results, BUT unsure how often this may occur

Rate (frequency) vs Latency

Start
La\v{y}ncity = time from start to response

End

High rates → Short latencies
Low rates → Long latencies

Latency FA for High-Risk Behavior
(Thomason-Sassi, Iwata, Neidert, & Roscoe, 2011, Study 3)

> N=10, SIB or AGG
> Latency FA
  > Deliver consequence for 1st response and terminate session (or if no response in 5 min)
  > Measure: # seconds to occurrence of 1st response
> Typical FA: Standard protocol, 10-min sessions
> Results: 9/10 correspondence
**Correspondence: Social Sr+ (Attention)**

![Graph](image)

**Correspondence: Social Sr- (Escape)**

![Graph](image)

**Precursor Behavior & Response Classes**

**Precursor Behavior**
- Topographically different than target response
- Precedes and predicts occurrence of target

**Response chain (sequence of responses, different reinforcers)**
- Put on coat (stay warm) ➔ walk out door (go somewhere)
- Get out of chair (close to target) ➔ aggression (attention or escape)

**Response class (substitutable responses, same reinforcer)**
- Ask for water (water) ➔ go looking for water (water)
- Swear at teacher (escape) ➔ aggression (escape)
Analysis of Precursor Behavior  
(Smith & Churchill, 2002)

Method
- N= 4 (3 SIB, 1 AGG)
- FA #1: Contingencies on SIB / AGG
- FA #2: Contingencies on precursor Rs

Results
- 4/4 matched FAs
- PB lower during FA of precursor R

Implications
- If one can identify a precursor to PB, and
- If precursor and PB members of the same functional class
- FA of precursor ➔ function of PB and lower rate of PB
- Treatment of PB based on function of precursor

Question: How does one identify the precursor?

Empirical Identification of Behavior  
(Fritz, Iwata, Hammond, & Bloom, 2013, Study 1)

- N=16 (SIB, AGG, PD)
- Conducted FA trials ➔ 10 PBs (risk protection)
  - All trials videotaped
  - All trials (PB and no PB) scored for precursors from checklist
  - Precursors identified via probability analysis

- Results
  - 16 / 16 engaged in identifiable precursors
  - Less than 50% match with teacher reports

Precursor Checklist

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocalization</td>
<td>Scream, laugh, curse, squeal, request</td>
</tr>
<tr>
<td>Facial</td>
<td>Smile, grimace, frown, surprise</td>
</tr>
<tr>
<td>Posture</td>
<td>Slouch, drop, head down, stand</td>
</tr>
<tr>
<td>Repetitive motor</td>
<td>Fidget, finger tap, stomp, hand flap, head</td>
</tr>
<tr>
<td></td>
<td>weave, hair twirl, nail pick, clap</td>
</tr>
<tr>
<td>Object manipulation</td>
<td>Play, tap twirl</td>
</tr>
<tr>
<td>SIB (if not target)</td>
<td>Bite, body hit, hair pull, head hit, skin</td>
</tr>
<tr>
<td>AGG (if not target)</td>
<td>Hit, kick, grab, head butt, bite, scratch</td>
</tr>
<tr>
<td>PD (if not target)</td>
<td>Bang object, break object, hit surface, kick</td>
</tr>
<tr>
<td></td>
<td>surface, knock over furn.</td>
</tr>
</tbody>
</table>
FA of Precursor & Target Behavior
(Fritz, Iwata, Hammond, & Bloom, 2013, Study 2)
- N=8 (SIB, AGG, PD)
- Precursors identified using Study 1 procedures
- Two independent FAs
- Precursor FA: Contingencies on precursors only
- Target FA: Contingencies on target only
- Results: 7/8 correspondence

Functional Analysis of Precursors
(Fritz et al., 2013)

Why does Problem Behavior Occur at Low Rates?
- Insufficient exposure to test condition
  - Lengthen sessions (Davis et al., 2012)
  - Idiosyncratic EO or reinforcer
  - See retrospective review (Schlichenmeyer et al., 2013)
- Response class hierarchy
  - Do not aggregate PBs (Richman et al., 1999)
  - Combined EOs (same maintaining contingency)
  - Divided attention condition (Fahmie et al., 2013; Mace et al., 1986)
  - Combined contingencies (Sr+ and Sr- simultaneously)
  - Escape to tangible condition (Zarcone et al., 1996)
- Covert behavior
  - Hidden observation (Ringdahl et al., 2002)
  - Response product measures (Maglieri et al., 2000)
More Reasons for Low-Rate Behavior
(I'm making these up)

EO + Stimulus control (as in delayed "revenge")
- EO No R opportunity or S\textsuperscript{i} (punishment) present
- EO delay R now available or S\textsuperscript{i} (punishment) absent

Cumulative EOs (the straw the broke the camel's back)
- EO 1 Not a problem
- EO 2 Not a problem
- EO 3 Not a problem
- EO 1 EO 2 EO 3 Problem
- EO 1 EO 3 EO 2 \rightarrow Problem

Uninterpretable Results

Prevalence
- 5.35 of 152 FAs (Iwata et al., 1994)
- 6\% of 1051 published data sets (Beavers et al., 2013)

Potential causes
- Multielement interactions (Hagopian et al., 2013; Iwata et al., 1994)
- Discrimination failures (Conners et al., 2000)
- Stimulus selection (Kodak et al., 2007; Roscoe et al., 2008, 2009)
- Response aggregation (Derby et al., 1994, 2000)

Uninterpretable Results: Case Analysis
(Hagopian, Rooker, Jessel, & DeLeon, 2013)

Modifications to 82 undifferentiated FAs
- Design change (pairwise, extended "alone") most effective
- Consequent changes (separating aggregate responses)
- Antecedent changes (location, stimuli) least effective

Conclusions
- Simplify designs to facilitate discrimination
- Do not aggregate multiple PBs
**Pairwise test-control design**

```
<table>
<thead>
<tr>
<th>Attention v. Play</th>
<th>Demand v. Play</th>
<th>Alone v. Play</th>
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**“Producing meaningful improvements . . . synthesized analyses and treatments”**
(Hanley, Jin, Vansilow, & Hanratty 2014)

**Purpose:** “To increase efficiency while preserving scientific rigor”

**Logic and key components**
- Indirect assessment
  - Structured rating scales unreliable
  - Replace with open-ended interview (30-45 min)
- DA
  - Poor correspondence with FA outcomes
  - Replace with unstructured observation (15-30 min)
- FA
  - Multiple test conditions unnecessary
  - Replace with test derived from interview (caregiver driven)
  - Single test condition: “synthesized” (combined) contingencies

**Historical Basis for Assessment Components**

**Traditional FBA components**
- Rating scale: 50+ studies
- DA: 100+ studies
- FA: 500+ studies (10+ studies @ 20+ centers)

**Proposed model: SynFunAss**
- Hanley (2010): chapter
- Hanley (2011): chapter
- Hanley (2012): review article
Study Details

Subjects and responses
- N=3, all spoke in full sentences
- PB: “Tantrums” - scream, throw, AGG
- All PB likely to be maintained by social contingencies
- All PB aggregated

Assessment procedure
- Interview (30-45 min)
- Unstructured observation (15-30 min)
- FA test conditions (session duration?)
  - Gail: Attn + Tan (mother vs. therapist), Attn, Tan
  - Dale: Escape + Tan + Attn
  - Bob: Escape + Tan

Synthesized vs Individual FA Contingencies
(Fisher, Greer, Romani, Zangrillo, & Owen, 2016)

N=5 (AGG, SIB, PD)
- FA: Screen for auto Sr function → FA for social Sr function
- SA: IA (25 min) → DA (25 min) → Combined contingencies

Results:
- N=3:
  - Separate Sr+, Sr-
  - Combined control
- N=1:
  - No R

Conclusions:
- SA highly prone to combined control (4/4)
- SA highly prone to false + outcomes (4/4)
- SA failed to identify function when FA failed (1/1)
- SA-driven interventions → irrelevant components

Critique of SA Model
- Reliability of structured rating scale vs open-ended interview?
- Validity of DA vs unstructured observation?
- FA conditions based on interview . . . Why do any FA?
- FA: Confounded social contingencies
  - Aggregated PB maintained by social Sr MUST occur
  - PB maintained by auto Sr insensitive to FA conditions
  - Everything looks like combined control; cannot identify single control or multiple control
My conclusion

- SA model based on poor logic, scant data, and confounded analysis with a biased sample
- It resembles 1970s B Mod: Ask some questions, observe a bit, see if we can get PB to occur, and then throw a treatment package at it

Ethical Issues in the Functional Analysis of Problem Behavior

The issue: Exposure to conditions that increase risk

Questions about the use of functional analysis (FA)
1. Utility of the FA?
2. Explicit worsening of behavior?
3. Risk management and client protection?

1. Utility of the FA

What are the alternatives?

No assessment
- Make your best guess

Indirect assessment
- Poor reliability, questionable validity

Descriptive analysis (DA)
- Poor correspondence between DA and FA outcomes
- Attention bias

Functional analysis (FA)
- Data highly reliable
- Identifies cause-effect relations
- The gold standard of assessment
2. Explicit Worsening of Behavior

Baer, Wolf, & Risley (1968)
- It can be just as illuminating to demonstrate how a behavior may be worsened . . .
- Sometimes we can’t do much to make things better . . .

Behavior already “worse” under unknown conditions
- FA involves exposure to common, everyday conditions
- FA simply identifies influence of current contingencies
- FA facilitates effective and efficient intervention
- Analogy: Dermatologic patch test

Does problem behavior really “worsen” during an FA?

Problem Behavior in FA and non-FA Settings

Call et al. (2012): N=4 varied PB
- PB prior to vs. during FA (non-session): PB Δ- (2), PB Δ+ (1), PB no change (1)
- PB during FA (session vs non-session): PB Δ+ (all four)

Shabani et al. (2013): N = 4, varied PB
- PB during FA (pre-session vs. post session): PB no change (3), PB Δ+ during 3/15 sessions (1)

Kahng et al. (2015): N=99, all SIB
- Injuries during FA = 42, but only 1/3 during sessions

Conclusion: FA may increase PB during sessions but has little effect outside of sessions

Question: Does increased frequency = increased risk?

Force of Problem Behavior during Functional Analysis

(Rooker & Iwata, in prep)

FA of SIB or AGG
- Measurement of response rate and force
- FA videotaped, moment of response isolated
- Computer analysis of joint movement (HuMan system)
- Calculation of angular velocity (degrees rotation per sec)
3a. Risk Management for FA

FA Policy

- Rational for FA: To identify causes of problem behavior
- General description: Exposure to common conditions that may influence PB
- Risk assessment: Medical evaluation, HS of injuries
- Approval, oversight, review: Who is in charge?
- Informed consent: A must
- Staff qualifications and competency: CBA + experience?
- Safeguards: Periodic status checks

3b. Risk Management for FA

FA Protocol

Description of:
- Conditions: Tests and controls
- Design: Arrangement of conditions
- Duration: Arbitrary limit = 20 cycles of conditions?
Safety measures:
- Protective equipment (or blocking)
- Low-risk FA format: Latency, precursor
Session termination criteria
- Outcome (usually nature of injury)
- Response (type or rate)
Emergency procedures
Summary of Problems and Solutions

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>Sorry, I cannot help you</td>
</tr>
<tr>
<td>Time</td>
<td>BFA variant, Single-function test</td>
</tr>
<tr>
<td>Setting</td>
<td>Trial-based FA</td>
</tr>
<tr>
<td>Risk</td>
<td>All approximations and occurrences, Protective devices, Latency or Precursor FA</td>
</tr>
<tr>
<td>Low-rate</td>
<td>Lengthen sessions, find idiosyncratic EO or Sr, combine EOs or contingencies, unobtrusive observation</td>
</tr>
<tr>
<td>A mess</td>
<td>Simplify design, separate PBs</td>
</tr>
<tr>
<td>Ethics</td>
<td>No greater risk, PR issue</td>
</tr>
</tbody>
</table>

Barriers to Implementation

Current status of FA methods
- The standard in clinical research and practice, BUT not the most commonly used approach to assessment (Oliver et al., 2015; Roscoe et al., 2015)
  - Why the 30+ year lag in widespread application?

Commonly mentioned limitations
- Practical constraints
- Ethical issues

The real barriers (my guess)
- Instructors, students, practitioners: Experience deficit
- IA and DA easily learned
- No practice standards

Implications and Extensions: The big picture

Clinical diagnosis (DSM)
- Emphasis on structure (symptoms)
- Does not identify causes (functional characteristics) of disorder
  - Diagnosis = abbreviation for symptoms, not an explanation

Paranoid Schizophrenia
- Delusions + Hallucinations + Social withdrawal
  - Why does John have delusions? → Para Schizo
  - Why does John have Para Schizo? → He has delusions
  - How do we measure Para Schizo as a thing?
  - What produces symptoms (behavioral characteristics)?

Some extensions
- ADHD, Autism, OCD, Bipolar disorder, an endless list of others
"Interpretation of symptoms: Fact or fiction?"  
(Ayllon, Haughton, & Hughes, 1965)

- Hold broom ➝ cigarettes
- Dr. A: Regressed schizophrenic behavior analogous to the way infants refuse to be parted from a favorite toy
- Dr. B: Ritualistic and magical action by which she controls others; the broom is either a phallic symbol or the scepter of an omnipotent queen

"On Being Sane in Insane Places"  
(Rosenhan, 1973)

Study 1
- 8 pseudopatients requested appointment at 12 hospitals
- Symptom: Hearing vague noises and voices
- Outcome?

Study 2
- Teaching hospital professionals informed of results and told pseudopatients admitted in next 3 months
- 193 patients admitted, 60 tagged as "pseudopatients"
- How many actual pseudopatients?

Conclusions:
- Diagnosis heavily influence by context
- High rates of False + (Study 1) and False – (Study 2)

Psychiatrists on Diagnosis

McKinnon (2011)
- "Nature did not define the DSM’s official diagnostic criteria; committees negotiated them"

McHugh & Slavney (2012)
- "Identifying a disorder by its symptoms does not translate into understanding its nature, which is grasped in terms of cause or mechanism"

Insel (2013, current director NIH)
- "People think that everything has to match DSM criteria, but you know what? Biology never read that book"
Some new diagnoses

- Does your child have temper tantrums?
  - “Temper disregulation with dysphoria”

- Is your teenager somewhat eccentric?
  - “Psychosis risk syndrome”

- Do you have sex frequently?
  - “Hypersexual disorder”

ADHD

- Impulsivity
  - Can’t control impulses (?)
  - Preference for smaller immediate reward over larger delayed reward

  Parametric preference: immediacy > magnitude
  - Current problem: small NOW > large LATER
  - Eliminate delay: SMALL now vs. LARGE now
  - Introduce delay: SMALL now vs. LARGE (short delay)
  - Lengthen delay: SMALL now vs. LARGE (longer delay)

- Frequent activity change
  - Satiation to Sr+?
  - Low tolerance for aversive activity?

Summary

You SHOULD conduct a functional analysis
  - More reliable than a questionnaire or rating scale
  - More efficient and precise than a DA

You CAN conduct a functional analysis
  - Easy to do (control antecedent and consequent events)
  - Procedural variations for almost all limiting conditions

So just go do it!