Results of a Survey of Expert Clinicians on Psychosis Symptoms in Deaf Individuals

Robert Pollard, Ph.D.

Deaf Wellness Center
URMC Department of Psychiatry

Deaf Wellness Center Staff

Bob Pollard

Amanda O'Hearn

Sharon Haynes

Susan Chapel

Robyn Dean

Julianne Gold Brunson

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Data Analysis

Vince Samar, Ph.D.
Associate Professor
Department of Research
National Technical Institute for the Deaf

NIDRR Grant

- 5 years, 7/03 – 6/08
- 3 mental health research themes:
  - Interpreter Training – Robyn Dean
  - Dialectical Behavior Therapy – Amanda O'Hearn
  - Psychological Testing – Robert Pollard
- 4 psychological testing projects
  - √ Signed Paired Associates Test
  - √ ASL Stories Test
  - Psychosis symptom rating scale
  - Psychological testing case book

What is psychosis?

- Historically, mental illnesses divided between psychotic and neurotic illnesses
- Psychotic illnesses involve a more severe “break with reality” than neurotic illnesses
- Hallucinations and delusions are well-known signs but psychosis includes other symptoms, too.
- Psychosis is not a diagnosis itself, but a characteristic of a number of mental illnesses
- Important treatment implications, esp. medications

Why Develop a Scale Like This?

- Manifestations of psychosis in hearing people often evidenced through abnormal auditory and linguistic phenomena – how might deafness and sign language use change these manifestations?
- Clinical experience, some research on differential manifestation of psychosis in deaf individuals but no tools to document it
- Gallaudet murders trail

Main Research Questions

- Can the scale reliably differentiate psychotic from non-psychotic deaf individuals in “blind” samples (where treating clinicians agree on presence or absence of psychosis)?
- Can it avoid mislabeling non-psychotic deaf individuals with limited or atypical sign language abilities?
- Calculate norms and inter-rater reliability

Steps Taken To Date

- Literature review
- Established “Psychosis-Deaf” listserve
- Conducted survey of experts’ opinions on the prevalence and significance of various symptoms potentially indicative of psychosis in deaf individuals
- Data analysis just completed; will discuss with colleagues, publish two papers
- Next – first draft & trial of psychosis scale

Expert Clinicians' Survey:

A major step toward development of a Psychosis Symptom Rating Scale

Expert Clinicians' Survey

- What experience do experts in our field have with psychosis symptoms in deaf people?
- What symptoms do they think suggest psychosis in deaf people?
- How common are various symptoms in deaf people with psychotic disorders?
- How does clinical experience and sign fluency affect clinicians' opinions?

Survey Construction

- 40 symptoms selected from literature review, experience, and correspondence
- Included symptoms experienced by hearing people as well as deaf people
- Symptoms grouped into 7 categories
- Symptoms defined as clearly as possible
- Exclude symptoms judged to be due to low IQ, MLS, or low fund of information
- Write-in symptoms, comments accepted

Symptom Categories

- Auditory hallucinations (4)
- Visual hallucinations (2)
- Other hallucinations (3)
- Delusions (8)
- Other ideational symptoms (3)
- Linguistic symptoms (8)
- Behavioral symptoms (12)

The 40 Symptoms - Hallucinations

- Hearing voices, words clear
- Hearing voices, words unclear
- Hearing music
- Other auditory hallucinations
- Visual perceptions of sign language
- Other visual hallucinations
- Olfactory (smell) hallucinations
- Gustatory (taste) hallucinations
- Tactile (touch) hallucinations

The 40 Symptoms – Delusions

- Paranoid or persecutory delusions
- Somatic delusions
- Delusions of reference
- Religious delusions
- Grandiose delusions
- Delusions of being controlled
- Thought insertion
- Thought broadcasting

The 40 Symptoms – Other Ideational Symptoms

- Loose associations
- Special meaning attributed to colors, patterns or other actual visual stimuli
- Other bizarre, odd, or illogical ideas or comments

The 40 Symptoms – Linguistic Symptoms

- Clanging
- Loss/deterioration of prior language skills
- Pressured speech or signing
- Echolalia/echopraxia
- Perseveration
- Neologisms
- Fingerspelling backwards
- Other unusual, impoverished or dysfluent communication (not explained by IQ or history)

The 40 Symptoms – Behavioral Symptoms

- Blunted, restricted or flat affect
- Inappropriate affect
- Volatile mood or behavior
- Talking or signing to oneself
- Poor eye contact
- Unusual mannerisms, movements, postures
- Unusual personal habits
- Psychomotor retardation
- Emotional withdrawal
- Social isolation
- Lack of a sense of humor
- Failure to maintain basic hygiene and grooming

Clinicians Were Asked:

- Have you seen this symptom in any deaf individual before? (Y/N/Maybe)
- To what degree would you consider this symptom indicative of (exclusive to) a psychotic disorder or a psychotic aspect of another mental disorder? (1 – 4)
- How frequently have you observed this symptom in deaf individuals with psychosis (1 – 4)

AUDITORY HALLUCINATIONS		
1. Hallucinations of hearing voices – where the words/meaning are clear to the deaf individual *(do not respond "yes" if the only evidence is "signing to themselves;" see items 5 and 32)*	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent
2. Hallucinations of hearing voices – where the words/meaning are unclear to the deaf individual *(do not respond "yes" if the only evidence is "signing to themselves;" see items 5 and 32)*	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent
3. Hallucinations of hearing music	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent
4. Other auditory hallucinations	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent
VISUAL HALLUCINATIONS		
5. Hallucinations involving <u>visual</u> perceptions of sign language *(do not include when someone is "signing to themselves" unless they report they are responding to actual visual perceptions of another's signing; see item 32)*	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent
6. Hallucinations involving other visual content *(also see item 19)*	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent
OTHER HALLUCINATIONS		
7. Olfactory (smell) hallucinations	Have you seen this in <u>any</u> deaf person before? ☐Yes ☐No ☐ Unsure	Not exclusive to psychosis 1 2 3 4 Exclusive to psychosis How common in psychotic deaf? Rare 1 2 3 4 Frequent

Clinician-Related Variables

- Number of deaf individuals with (any) mental illness served over their career
- Number of deaf individuals with psychotic symptoms or illnesses (in their opinion) served over their career
- Sign language fluency self-rating (expressive and receptive)

Survey on Psychosis Symptoms and Characteristics in Deaf Individuals

Dr. Bob Pollard of the URMC Deaf Wellness Center in Rochester, NY, is conducting this brief, anonymous clinician survey in order to improve the design of the Psychosis Symptom Rating Scale, now under development. This survey presents a list of 40 symptoms that might pertain to psychosis in deaf individuals and asks you (1) whether you have ever observed that symptom in a deaf individual, (2) to what degree you think that symptom indicates the presence of psychosis in a deaf individual, and (3) how frequently deaf individuals with psychosis manifest that symptom. The survey should take about **10 minutes** to complete. For further information about the broader project, see: http://www.urmc.rochester.edu/dwc/scholarship/Scale.htm.

Return electronic copies to: Robert_Pollard@urmc.rochester.edu.
Return copies by fax to Bob's attention at: 585-273-1117.
Return copies by mail to Bob's attention at:
Deaf Wellness Center, 300 Crittenden Blvd., Rochester, NY 14642.

PLEASE RETURN SURVEYS BY DECEMBER 31, 2005

About You:

A. Please estimate the number of mentally ill deaf individuals (any disorder) you have worked with, in any capacity, throughout your entire career [circle or mark one of these four answers]:

0 – 50	51 – 200	201 – 500	>500

B. Please estimate the number of deaf individuals you have worked with, in any capacity, throughout your entire career, who in your opinion had psychotic symptoms or a psychotic illness. (A list of psychotic illnesses is shown in italics in the instructions paragraph below.)

0 – 10	11 – 20	21 – 50	>50

C. Please rate your combined expressive and receptive fluency in American Sign Language:

No sign ability	Beginner	Moderate	Advanced	*Fluent* in ASL
1	2	3	4	5

Survey Instructions: For each symptom or characteristic described on the pages that follow, please indicate whether you have observed that symptom or characteristic in any deaf individual before (not just those persons who have been under your care). Then, regardless of whether or not you've seen that symptom in deaf people, rate the degree [from 1 to 4] to which you would consider that symptom or characteristic indicative of (i.e., exclusive to) a psychotic disorder or the psychotic aspect of another mental disorder if you did see it (including *schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, depression with psychotic features, bipolar disorder with psychotic features, psychotic disorder NOS*). Finally, rate the frequency [from 1 to 4] with which that symptom or characteristic, in your experience, is found in deaf persons with psychosis. The symptoms are grouped into the following seven categories: (1) auditory hallucinations, (2) visual hallucinations, (3) other hallucinations, (4) delusions, (5) other ideational symptoms, (6) linguistic symptoms, and (7) behavioral symptoms.

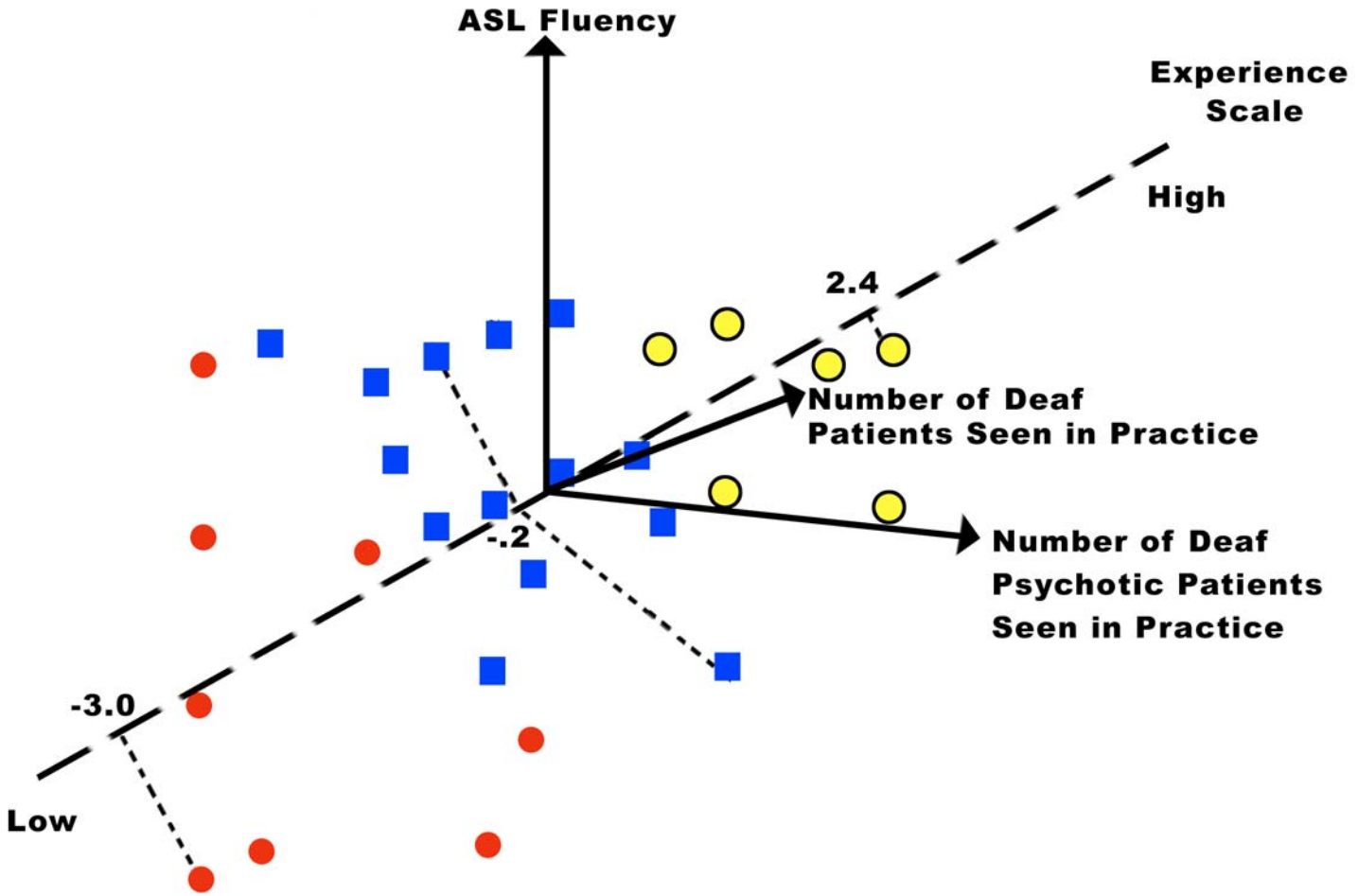
Survey Distribution and Response

- Distributed electronically only, via:
  - Psychosis-Deaf listserve (~70 professionals)
  - My address book of colleagues in the field
  - Posted on DWC website (www.urmc.rochester.edu)
  - Requested others to distribute it
- No control over qualifications other than clinician independent variable questions
- 42 respondents, several international

Results

Clinician Experience

Factor analysis of the three clinician experience variables showed that they all correlated substantially with one another (they interact), allowing the creation of a single experience scale, on which all clinicians could be compared.



Experience factor accounts for 60% of rating variance.

Clinician Experience, cont.

We found strong statistical evidence of experience-related differences in clinicians' opinions when comparing low, medium-low, medium high, and high experience groups' ratings of symptom exclusivity and commonness.

Naturally, for development of the scale, we'll rely most on the high experience group's opinions.

Experience Scale

All Deaf Patients Scale

Please estimate the number of mentally ill deaf individuals (any disorder) you have worked with, in any capacity, throughout your entire career:

1	2	3	4
0-50	51-200	201-500	>500

Deaf Psychotics Scale

Please estimate the number of deaf individuals you have worked with, in any capacity, throughout your entire career, who in your opinion had psychotic symptoms or a psychotic illness:

1	2	3	4
0-10	10-20	20-50	>50

ASL Scale

Please rate your combined expressive and receptive fluency in American Sign Language:

1	2	3	4	5
No Sign Ability	Beginner	Moderate	Advanced	Fluent in ASL

All Deaf Patients Scale	Deaf Psychotics Scale	ASL Fluency Scale 1	2	3	4	5
1	1	L	L	L	L	L
	2	L	L	L	L	ML
	3	L	L	L	ML	ML
	4					
2	1	L	L	L	L	ML
	2	L	L	L	ML	ML
	3	L	L	ML	MH	MH
	4	L	ML	MH	MH	MH
3	1	L	L	L	ML	MH
	2	L	L	ML	MH	MH
	3	L	ML	MH	MH	H
	4	ML	MH	MH	H	H
4	1	L	ML	ML	MH	MH
	2	ML	ML	MH	MH	H
	3	ML	MH	MH	H	H
	4	MH	MH	H	H	H

L=Low Experience ML=Moderate Low Experience

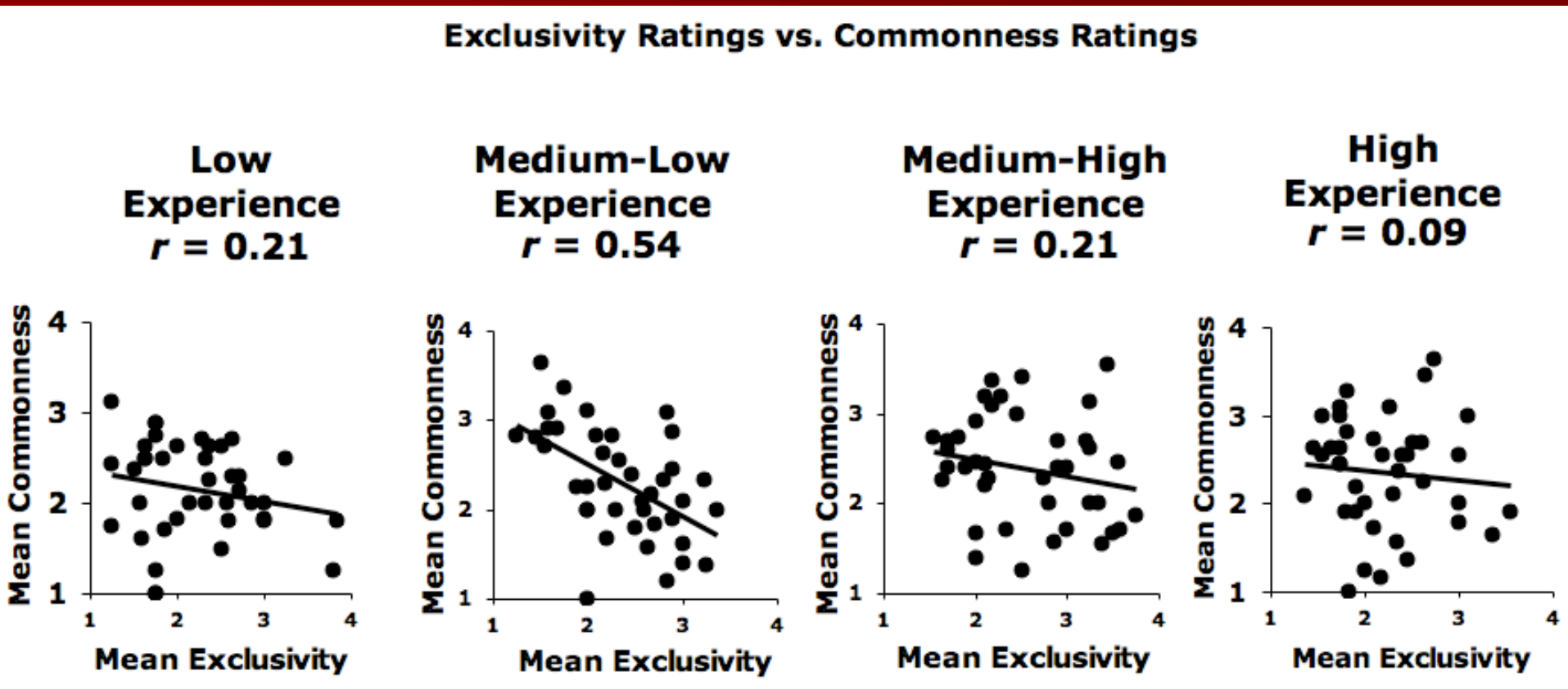
MH=Moderate High Experience H=High Experience

Clinician Experience, cont.

Though sign language fluency contributed significantly to the overall experience factor, it was less significant (statistically) than the other two experience factors. This is likely due to the fact that the clinicians were already quite skilled in sign language – 82% reported fluent or near-fluent sign proficiency. Thus, sign fluency appears to be a prerequisite clinical skill, after which experience with mentally ill people and people with psychotic illness prompts further growth in clinical acumen.

Exclusivity vs. Commonness

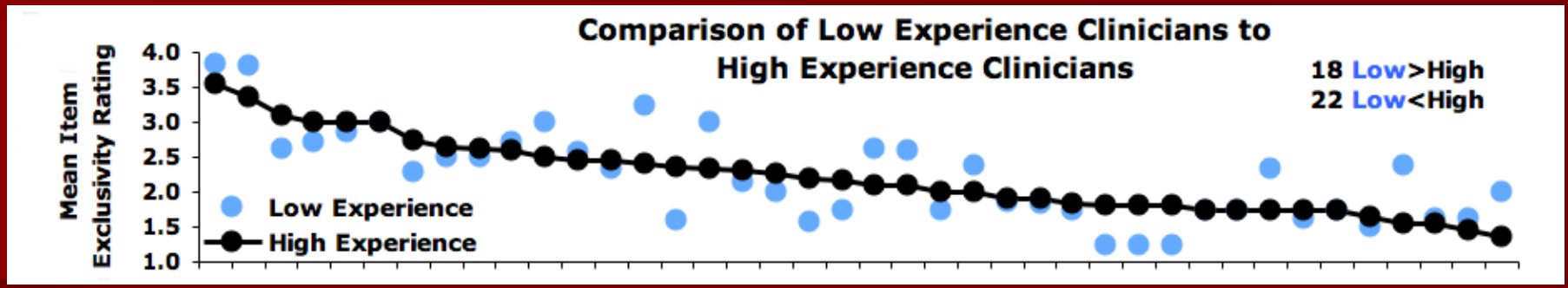
- There is no reason to expect that symptoms that are more or less common should be more or less exclusive to psychosis.
- Yet symptoms that are rare might tempt one to conclude that they are more indicative of psychosis.
- This bias is evidenced, in particular for the medium-low experience clinician group.
- The least evidence of this type of bias is in the high experience group.
- Reliance on this bias, and then release from it, may be a developmental progression among clinicians.

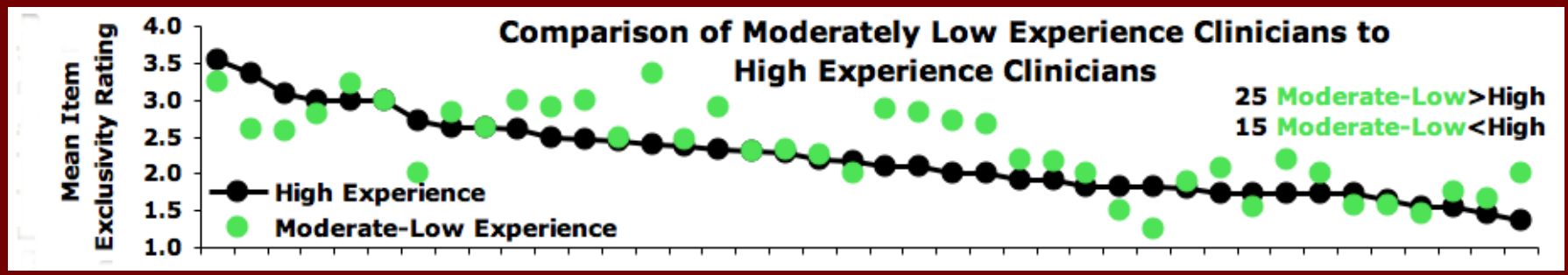


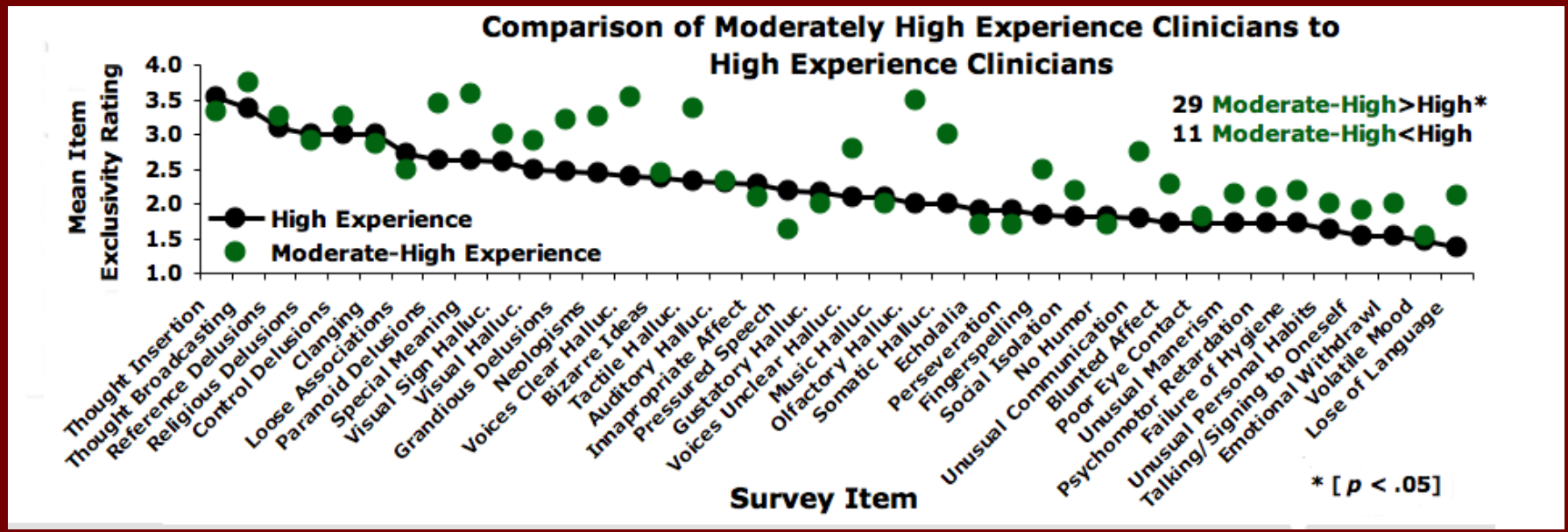
In addition to correlations, note patterns in data “clouds”:

Exclusivity Judgment Pattern

There also appears to be an experience-related developmental progression in clinicians' judgments about symptom exclusivity. Clinicians with the least experience equally over- and under-estimate symptom exclusivity compared to the high experience group. The medium-low experience group and the medium-high experience group shows increasing bias toward over-estimating the exclusiveness of symptoms compared to the high experience group.


Comparison of Low Experience Clinicians to High Experience Clinicians
Mean Item Exclusivity Rating
4.0
3.5
3.0
2.5
2.0
1.5
1.0
18 Low>High
22 Low<High
Low Experience
High Experience


Comparison of Moderately Low Experience Clinicians to High Experience Clinicians
Mean Item Exclusivity Rating
4.0
3.5
3.0
2.5
2.0
1.5
1.0
25 Moderate-Low>High
15 Moderate-Low<High
High Experience
Moderate-Low Experience

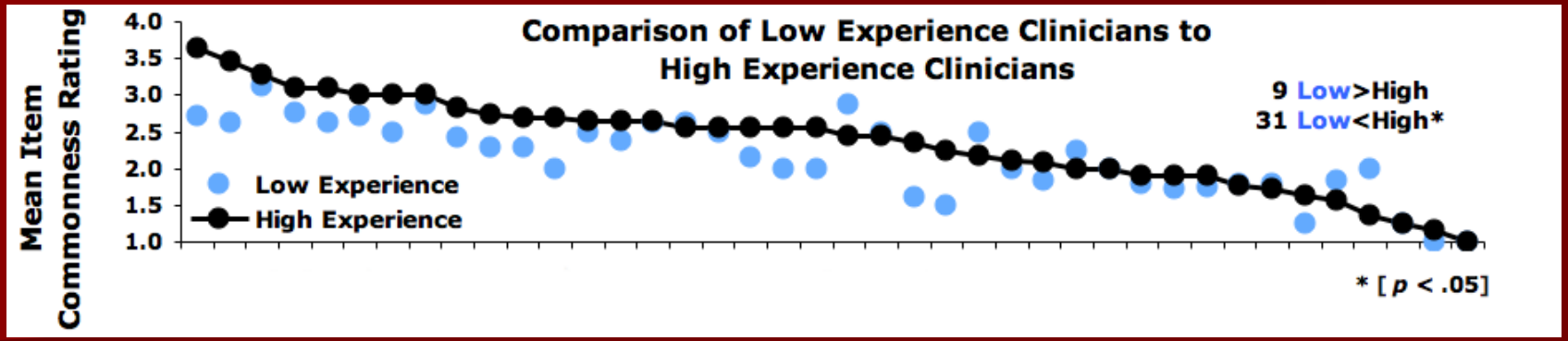

Comparison of Moderately High Experience Clinicians to High Experience Clinicians
Mean Item Exclusivity Rating
4.0
3.5
3.0
2.5
2.0
1.5
1.0
29 Moderate-High>High*
11 Moderate-High<High
High Experience
Moderate-High Experience
Thought Insertion
Thought Broadcasting
Reference Delusions
Religious Delusions
Control Delusions
Clanging
Loose Associations
Paranoid Delusions
Special Meaning
Visual Sign Halluc.
Visual Halluc.
Grandious Delusions
Neologisms
Voices Clear Halluc.
Bizarre Ideas
Tactile Halluc.
Auditory Halluc.
Inappropriate Affect
Pressured Speech
Gustatory Halluc.
Voices Unclear Halluc.
Music Halluc.
Olfactory Halluc.
Somatic Halluc.
Echolalia
Perseveration
Fingerspelling
Social Isolation
No Humor
Unusual Communication
Blunted Affect
Poor Eye Contact
Unusual Manerism
Psychomotor Retardation
Failure of Hygiene
Unusual Personal Habits
Talking/Signing to Oneself
Emotional Withdrawl
Volatile Mood
Lose of Language
Survey Item
* [p < .05]

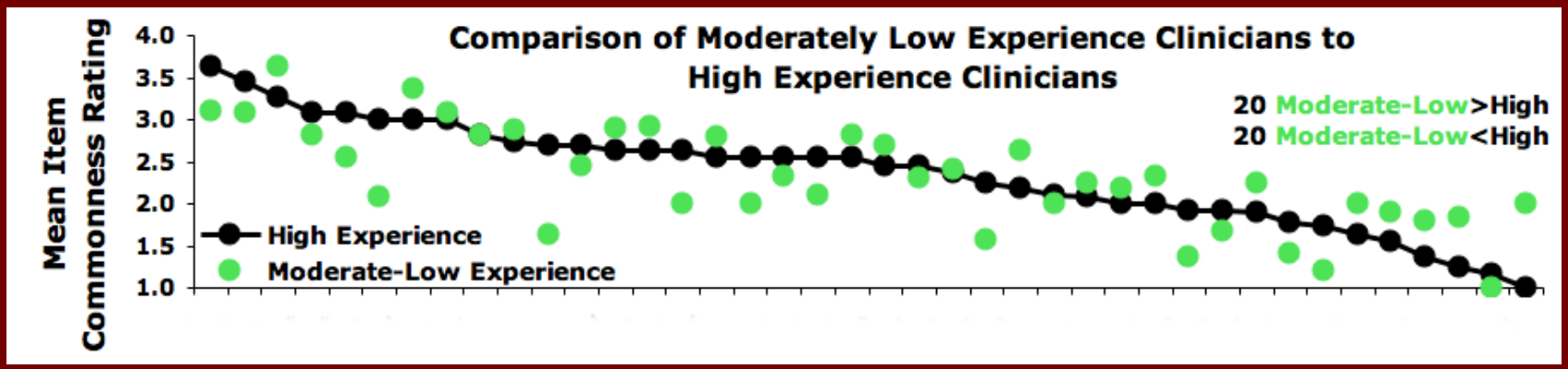
Exclusivity Judgment Pattern, cont.

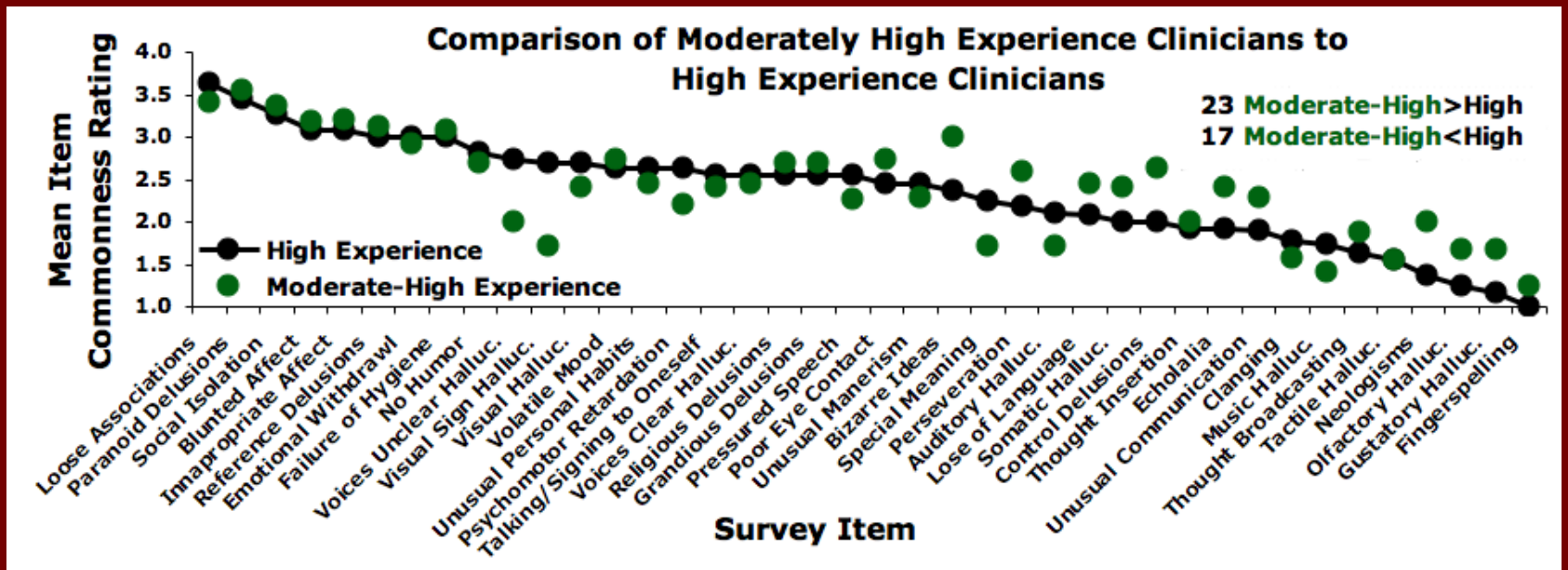
Thus a second type of developmental progression appears to be occurring as clinicians gain experience. This second pattern is one of unsystematic judgment deviation (from high experience clinicians) shifting to an increasing over-pathologizing bias in clinicians with medium degrees of experience and then resolution of this bias when experience is substantial.

Commonness Judgment Pattern

We've already seen that symptom commonness will bias low and especially medium experience clinicians' judgments of symptom exclusivity (more rare = more exclusive to psychosis). Another analysis shows a logical pattern of low experience clinicians over-estimating symptom rarity (under-estimating commonness), a bias which diminishes steadily and consistently with increasing clinical experience – a third developmental pattern evidenced in this study.


Comparison of Low Experience Clinicians to High Experience Clinicians
Mean Item Commonness Rating
4.0
3.5
3.0
2.5
2.0
1.5
1.0
Low Experience
High Experience
9 Low>High
31 Low<High*
* [p < .05]


Comparison of Moderately Low Experience Clinicians to High Experience Clinicians
Mean Item Commonness Rating
4.0
3.5
3.0
2.5
2.0
1.5
1.0
High Experience
Moderate-Low Experience
20 Moderate-Low>High
20 Moderate-Low<High

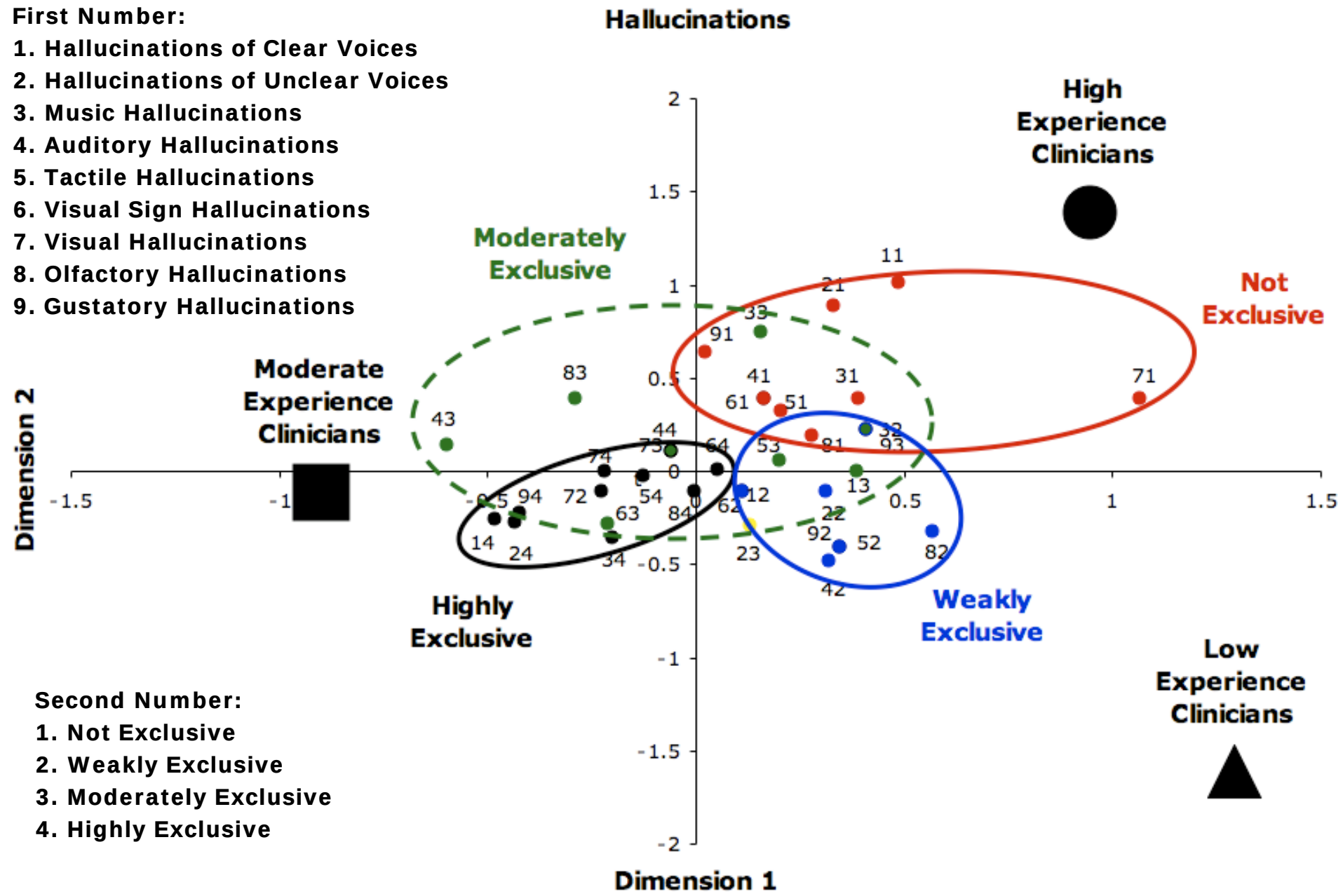

Comparison of Moderately High Experience Clinicians to High Experience Clinicians
Mean Item Commonness Rating
4.0
3.5
3.0
2.5
2.0
1.5
1.0
High Experience
Moderate-High Experience
23 Moderate-High>High
17 Moderate-High<High
Loose Associations
Paranoid Delusions
Social Isolation
Blunted Affect
Inappropriate Affect
Reference Delusions
Emotional Withdrawl
Failure of Hygiene
No Humor
Voices Unclear Halluc.
Visual Sign Halluc.
Visual Halluc.
Volatile Mood
Unusual Personal Habits
Psychomotor Retardation
Talking/Signing to Oneself
Voices Clear Halluc.
Religious Delusions
Grandious Delusions
Pressured Speech
Poor Eye Contact
Unusual Manerism
Bizarre Ideas
Special Meaning
Perseveration
Auditory Halluc.
Lose of Language
Somatic Halluc.
Control Delusions
Thought Insertion
Echolalia
Unusual Communication
Clanging
Music Halluc.
Thought Broadcasting
Tactile Halluc.
Neologisms
Olfactory Halluc.
Gustatory Halluc.
Fingerspelling
Survey Item

Toward Development of the Scale

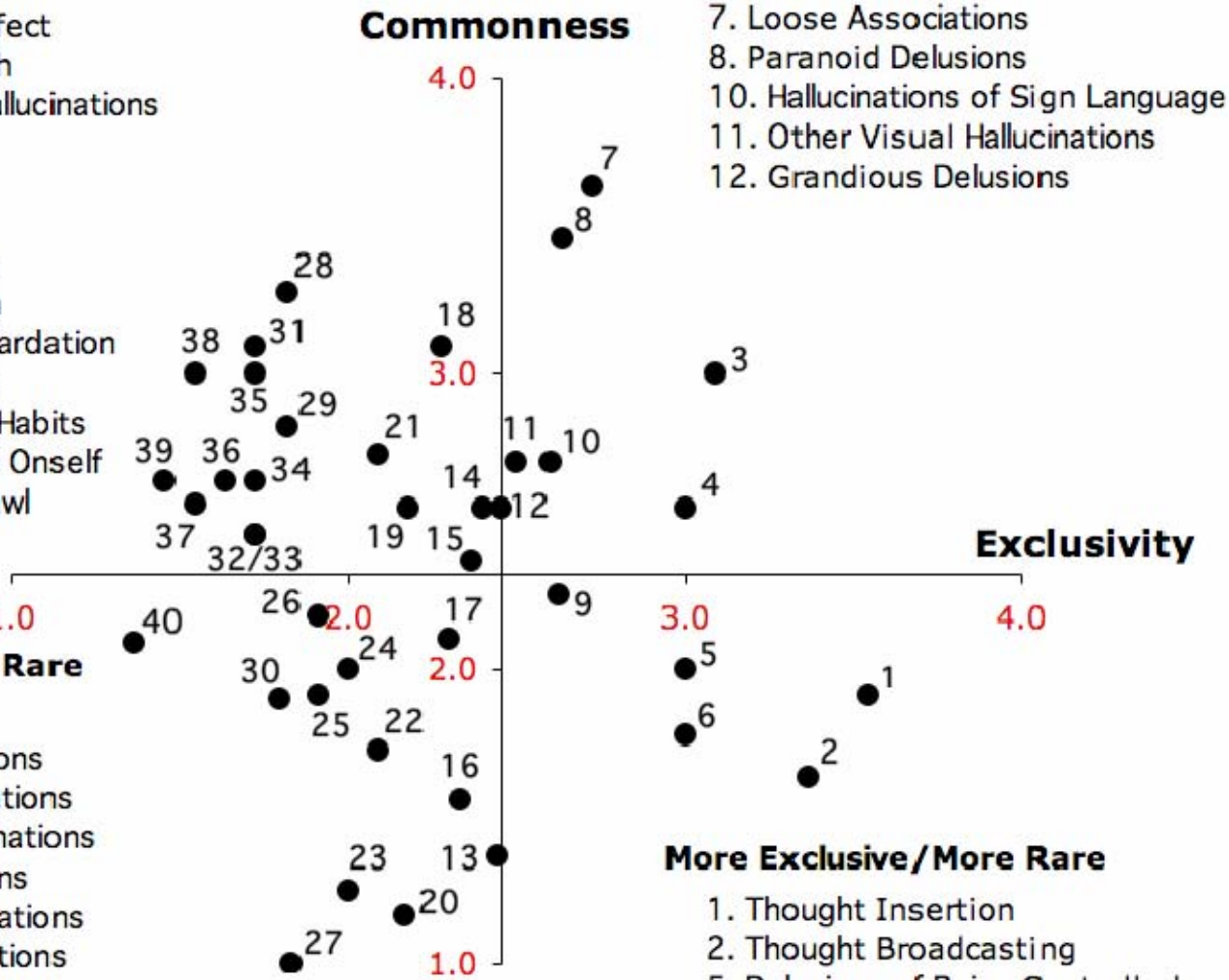
Which symptoms should be the focus of the psychosis symptom rating scale and how should the presence or absence of such symptoms be “weighted?”

Dual scale analysis followed by multivariate analyses of variance that optimized detection of clinician opinion differences based on experience.

Dual Scale Analysis



High Experience Group



Less Exclusive/More Common

14. Clear Voices Hallucinations
15. Bizarre Ideas
18. Innapropriate Affect
19. Pressured Speech
21. Unclear Voices Hallucinations
28. Social Isolation
29. No Humor
31. Blunted Affect
32. Poor Eye Contact
33. Unusual Manerism
34. Psychomotor Retardation
35. Failure of Hygiene
36. Unusual Personal Habits
37. Talking/Signing to Onself
38. Emotional Withdrawl
39. Volatile Mood

More Exclusive/More Common

3. Delusions of Reference
4. Religious Delusions
7. Loose Associations
8. Paranoid Delusions
10. Hallucinations of Sign Language
11. Other Visual Hallucinations
12. Grandious Delusions

Less Exclusive/More Rare

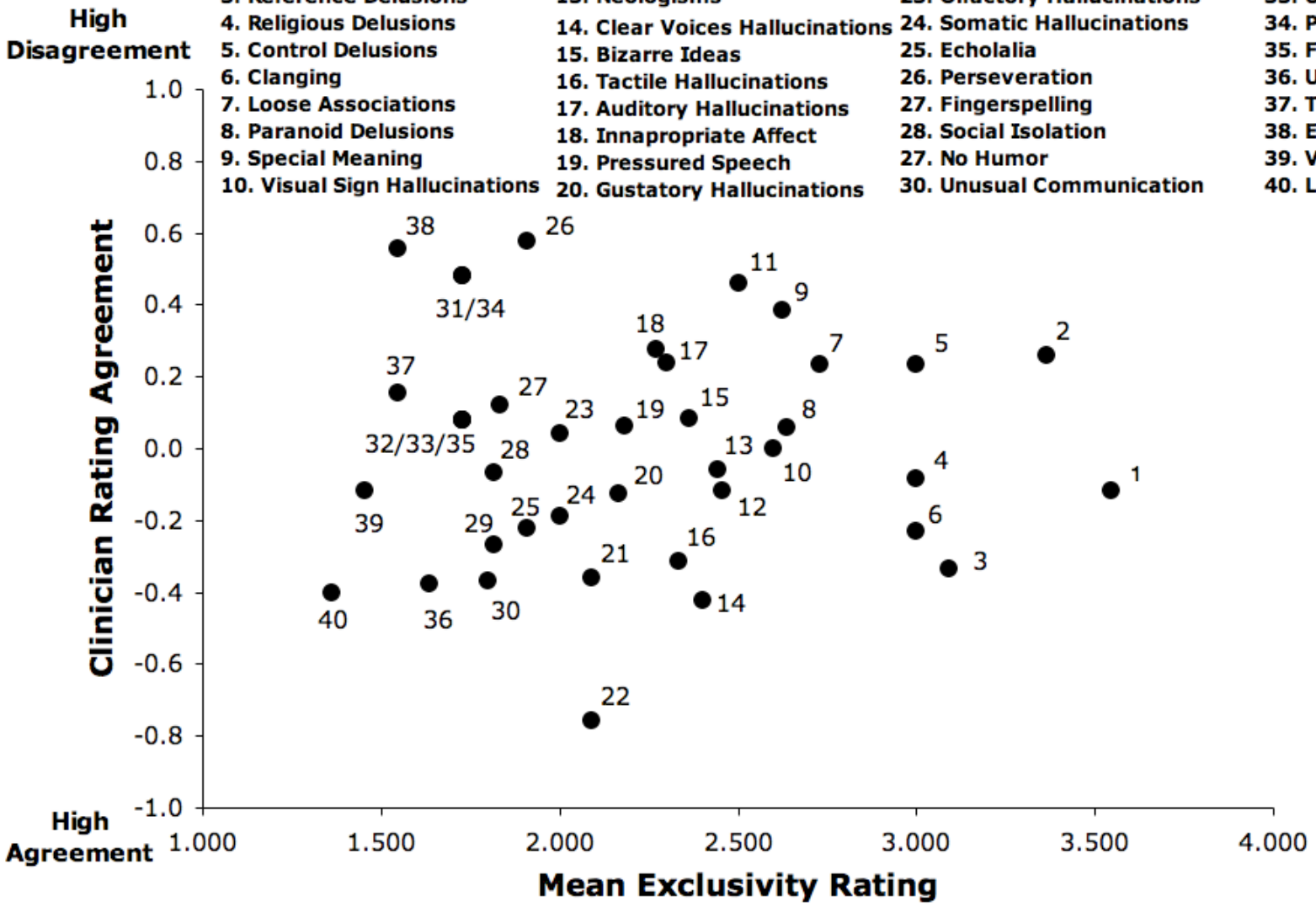
13. Neologisms
16. Tactile Hallucinations
17. Auditory Hallucinations
20. Gustatory Hallucinations
22. Music Hallucinations
23. Olfactory Hallucinations
24. Somatic Hallucinations
25. Echolalia
26. Perseveration
27. Fingerspelling Backward
30. UnusualCommunication
40. Lose Of Language

More Exclusive/More Rare

1. Thought Insertion
2. Thought Broadcasting
5. Delusions of Being Controlled
6. Clanging
9. Attributing SpecialMeaning

Mean High-Experience Clinician Exclusivity Rating Versus Clinician Rating Agreement

1. Thought Insertion
2. Thought Broadcasting
3. Reference Delusions
4. Religious Delusions
5. Control Delusions
6. Clanging
7. Loose Associations
8. Paranoid Delusions
9. Special Meaning
10. Visual Sign Hallucinations
11. Visual Hallucinations
12. Grandious Delusions
13. Neologisms
14. Clear Voices Hallucinations
15. Bizarre Ideas
16. Tactile Hallucinations
17. Auditory Hallucinations
18. Innapropriate Affect
19. Pressured Speech
20. Gustatory Hallucinations
21. Unclear Voices Hallucinations
22. Music Hallucinations
23. Olfactory Hallucinations
24. Somatic Hallucinations
25. Echolalia
26. Perseveration
27. Fingerspelling
28. Social Isolation
27. No Humor
30. Unusual Communication
31. Blunted Affect
32. Poor Eye Contact
33. Unusual Manerism
34. Psychomotor Retardation
35. Failure of Hygiene
36. Unusual Personal Habits
37. Talking/Signing to Oneself
38. Emotional Withdrawl
39. Volatile Mood
40. Lose of Language



How Experience Impacts Judgments Regarding Specific Symptoms

1 = Experience dependent ($p < .05$)

2 = Provisionally dependent on experience ($p < .1$)

3 = Not dependent on experience

Hallucinations

1: hearing voices (clear meaning), olfactory

2: hearing voices (unclear meaning), music, tactile, “other auditory”

3: visual perceptions of sign language, “other visual,” gustatory

Delusions

1: somatic

2: paranoid

3: reference, religious, grandiose, being controlled, insertion, broadcasting

How Experience Impacts Judgments Regarding Specific Symptoms, cont.

1 = Experience dependent ($p < .05$)

2 = Provisionally dependent on experience ($p < .1$)

3 = Not dependent on experience

Other Ideational Symptoms

1: none
2: special meaning attributed to colors or patterns
3: loose associations, bizarre ideas

Language Symptoms

1: perseveration, neologisms
2: loss of prior language ability
3: clanging, pressured speech/signing, echolalia, fingerspelling backward

How Experience Impacts Judgments Regarding Specific Symptoms, cont.

1 = Experience dependent ($p < .05$)

2 = Provisionally dependent on experience ($p < .1$)

3 = Not dependent on experience

Overt Behavioral Symptoms

1: psychomotor retardation

2: talking or signing to oneself, unusual mannerisms

3: poor eye contact, unusual habits, poor hygiene

Mood Behavioral Symptoms

1: blunted affect, inappropriate affect, emotional withdrawal

2: none

3: volatile mood, social isolation, no sense of humor

Take Away Points - Experience

- Experience matters greatly in clinicians' diagnostic opinions.
- Low experience clinicians are equally likely to over- or under-diagnose psychosis, depending on the symptom pattern.
- Medium experience clinicians are more likely to over-diagnose psychosis, regardless of the symptom pattern.
- Sign fluency is a necessary component of experience but volume of general clinical service experience and experience with psychotic illness both contribute significantly to diagnostic acumen
- Experience differentially impacts clinical judgment regarding individual symptoms

Take Away Points – Psychosis

- Most exclusive (least disagreement):
  - thought insertion, ideas of reference, religious delusions, clanging, delusions of control, thought broadcasting
- Most exclusive (some disagreement):
  - Rare: thought insertion, thought broadcasting, delusions of being controlled, clanging, attributing special meaning to colors/patterns
  - More common: ideas of reference, religious delusions, loose associations, paranoia, sign language hallucinations, other visual hallucinations, grandiose delusions
- Difference from hearing psychotic symptom patterns is notable (e.g. auditory hallucin.)

Robert_Pollard@urmc.rochester.edu

www.urmc.rochester.edu/dwc