Behavioral and Cognitive Assessment of Individuals with Autism Spectrum Disorders

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Resources

FOR MORE INFORMATION, PLEASE GO TO MY WEB PAGE

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Disclosures

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The **BIG** picture

- The evaluations we provide can alter the course of a student's life; making this one of the most important tasks we have.

- We want assessment tools that
  - Helps us understand WHY a student fails
  - Informs us about strengths & weaknesses
  - Helps us determine intervention targets
  - Is fair for students from diverse populations

- These goals can be achieved if we use well developed measures

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Presentation Outline

➤**An understanding of Autism Spectrum Disorders (ASD)**
➤Symptoms of ASD: Building the ASRS
➤Importance of a national standardization sample
➤Autism Spectrum Rating Scale
  • Structure, Reliability, & Validity
➤Autism Spectrum Rating Scale Short Form
  • Structure, Reliability, & Validity
➤ASRS Interpretation with other measures
➤Conclusions

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Kanner's Description (1943)

➤Wrote *Child Psychiatry* (1935), the first English language textbook to focus on the psychiatric problems of children

➤Kanner, together with Hans Asperger, initiated the modern study of autism.

➤He introduced the label *early infantile autism* in 1943 in his paper : Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child, 2,* 217-250.

Hans Asperger   Leo Kanner

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Slide 7

http://affect.media.mit.edu/Rgrads/Articles/pdfs/Kanner-1943-OrigPaper.pdf

Case 1. Donald T. was first seen in October, 1938, at the age of 5 years, 1 month. Before the family's arrival from their home town, the father sent a thirty-three-page typewritten history that, though filled with much obsessive detail, gave an excellent account of Donald's background.

To understand and measure emotional qualities is very difficult. Psychologists and educators have been struggling with that problem for years but we are still unable to measure emotional and personality traits with the exactness with which we can measure intelligence.
—Rose Zelion in *Glimpses into Child Life**

AUTISTIC DISTURBANCES OF AFFECTIVE CONTACT

By Leo Kanner

SINCE 1938, there have come to our attention a number of children whose condition differs so markedly and uniquely from anything reported so far, that each case merits—and, I hope, will eventually receive—a detailed consideration of its fascinating peculiarities. In this place, the limitations necessarily imposed by space call for a condensed presentation of the case material. For the same reason, photographs have also been omitted. Since none of the children of this group has as yet attained an age beyond 11 years, this must be considered a preliminary report, to be enlarged upon as the patients grow older and further observation of their development is made.

Case 1. Donald T. was first seen in October, 1938, at the age of 5 years, 1 month. Before the family's arrival from their home town, the father sent a thirty-three-page typewritten history that, though filled with much obsessive detail, gave an excellent account of Donald's background. Donald was born at full term on September 8, 1933. He weighed nearly 7 pounds at birth. He was breast fed, with supplementary feeding, until the end of the eighth month; there were frequent changes of formulas. "Eating," the report said, "has always been a problem with him. He has never shown a normal appetite. Seeing children eating candy and ice cream has never been a temptation to him." Dentition proceeded satisfactorily. He walked at 13 months.

*the*Atlantic

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Slide 8

http://affect.media.mit.edu/Rgrads/Articles/pdfs/Kanner-1943-OrigPaper.pdf

He became interested in pictures and very soon knew an inordinate number of the pictures in a set of *Compton's Encyclopedia.*" He knew the pictures of the presidents "and knew most of the pictures of his ancestors and kinfolks on both sides of the house." He quickly learned the whole alphabet "backward as well as forward" and to count to 100.

➢ Donald possessed flawless ability to name musical notes as they were played on a piano and a genius for multiplying numbers in his head.

▸ When asked what is "87 times 23," with his eyes closed and not a hint of hesitation, Donald correctly answered "2,001."

▸ He calculated the number of bricks in the facade of the high school merely by glancing at it.

*the*Atlantic

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http://affect.media.mit.edu/Rgrads/Articles/pdfs/Kanner-1943-OrigPaper.pdf

It was observed at an early time that he was happiest when left alone, almost never cried to go with his mother, did not seem to notice his father's home-comings, and was indifferent to visiting relatives. The father made a special point of mentioning that Donald even failed to pay the slightest attention to Santa Claus in full regalia.

➢What is he doing now…?

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Meet Donald Gray Triplett, 77, of Forest, Mississippi. He was the first person ever diagnosed with autism.

the **Atlantic**

OCTOBER 2010 ATLANTIC MAGAZINE

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Autism's First Child

➤ Donald drives his car with a distinct rhythm.
  - After pressing on the gas pedal for a second, he lets up briefly, and then presses back down again. Down. Release. Down. Release. The tempo doesn't vary.

➤ Though his forward posture and two-fisted grip on the wheel are those of an old man, his face beams like a boy's. He wears the expression, at once relaxed and resolute, of a man who is doing precisely what he wants to be doing.

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Kanner's Description (1943)

➤ Inability to relate to others
➤ Disinterest in parents and people
➤ Language difficulties
➤ fascination with inanimate objects
➤ Resistance to change in routine
➤ Purposeless repetitive movements
▸ A wide range of cognitive skills
▸ Where they possess an innate inability for emotional contact

Leo Kanner

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➢Conclusions

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DSM V

➢ Social Interactions / Communication

Unusual Behaviors

DSM-5
New Criteria:

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):	1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
	2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
	3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity: Severity is based on social communication impairments and restricted, repetitive patterns of behavior. See handout page 2 for the table.

(delay in communication criteria removed)

DSM-5

	1. Stereotyped or repetitive speech, motor movements, or use of objects; (such as simple motor stereotypies, echolalia, repetitive use of objects, or idiosyncratic phrases).
B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least two of the following:	2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change; (such as motoric rituals, insistence on same route or food, repetitive questioning or extreme distress at small changes).
	3. Highly restricted, fixated interests that are abnormal in intensity or focus; (such as strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
	NEW 4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment; (such as apparent indifference to pain/heat/cold, adverse response to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects).

Specify current severity: Severity is based on social communication impairments and restricted, repetitive patterns of behavior. See handout page 2 for the table.

C. Symptoms must be present in early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).
D. Symtoms cause clinically significant impairment in social occupational, or other important areas of current functioning.
(Revised. See below)
E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequency co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

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Goal #1

➢ Develop an empirically supported multi-factor scale that reflects the Autism spectrum

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Factor Analysis for 2-5 Years

A two-factor solution was best for parent and teacher raters

- **Factor I:** included primarily items related to both socialization and communication (e.g., keep a conversation going, understand how someone else felt) - **Social/Communication**

- **Factor II:** included items related to behavioral rigidity (e.g., insist on doing things the same way each time), stereotypical behaviors (e.g., flap his/her hands when excited), and overreactions to sensory stimulation (e.g., overreact to common smells)- **Unusual Behaviors**

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Factor Analysis for 6-18 Years

➢A three-factor solution was best for both parent and teachers versions of the ASRS
- **Factor I:** included primarily items related to both socialization and communication -**Social/Communication**
- **Factor II:** included items related to behavioral rigidity, stereotypical behaviors and overreactions to sensory -**Unusual Behaviors**
- **Factor III**: included items related to attention problems (e.g., become distracted), impulsivity (e.g., have problems waiting his/her turn), and compliance (e.g., get into trouble with adults, argue and fight with other children) -**Self-Regulation**.

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Factor Consistency Ages 2-5

Demographic	Form	Coefficient of Congruence		Level	Level
		SC	UB		
Gender	Parent	.98	.97	Male	Female
	Teacher	.98	.96		
Age Group	Parent	.97	.96	2–3 Years	4–5 Years
	Teacher	.98	.95		
Race	Parent	.98	.96	White	Non-White
	Teacher	.98	.96		
Clinical Status	Parent	.95	.94	Non-Clinical	Clinical
	Teacher	.95	.87		

Note. SC = Social/Communication; UB = Unusual Behaviors.

Factor Consistency Ages 6-18

Demographic	Form	Coefficient of Congruence			Level	Level
		SC	UB	SR		
Gender	Parent	.98	.98	.98	Male	Female
	Teacher	.99	.99	.98		
Age Group	Parent	.89	.9	.93	6–11 Years	12–18 Years
	Teacher	.94	.96	.96		
Race	Parent	.97	.97	.98	White	Non-White
	Teacher	.98	.99	.98		
Clinical Status	Parent	.96	.96	.97	Non-Clinical	Clinical
	Teacher	.97	.97	.97		

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For More on Factor Analysis of ASRS

A NATIONAL STUDY OF AUTISTIC SYMPTOMS IN THE GENERAL POPULATION OF SCHOOL-AGE CHILDREN AND THOSE DIAGNOSED WITH AUTISM SPECTRUM DISORDERS

SAM GOLDSTEIN

University of Utah

JACK A. NAGLIERI

University of Virginia and The Devereux Center for Resilient Children

SARA RZEPA AND KEVIN M. WILLIAMS

Multi-Health Systems

We examined the interrelationships among symptoms related to autism spectrum disorders (ASD) using a large representative sample and clinical groups of children aged 6 to 11 and youth aged 12 to 18 years rated by parents ($N = 1,881$) or teachers ($N = 2,171$). The samples included individuals from the United States and Canada from the standardization and validity studies for the Autism Spectrum Rating Scales. A three-factor solution comprising Social/Communication, Unusual Behaviors, and Self-Regulation provided the best fit to the data and was replicated across parent and teacher ratings. High coefficients of congruence across sexes, raters, ethnic groups, and age groups and for clinical groups were obtained. Implications for understanding the symptoms related to ASD and their use in practice are provided. © 2012 Wiley Periodicals, Inc.

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Current View of ASD In ASRS

➢ Based on the factor analysis, we suggested that ASD is best described as having two clusters of behaviors for children ages 2-5 and three for those aged 6 to 18 years of age

- Ages 2 – 5 years
  - Social / Communication
  - Unusual Behaviors
- Ages 6 – 18 years
  - Social / Communication
  - Unusual Behaviors
  - Self-Regulation

➢ This is the organizational form of the ASRS

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Goal #2

Develop scales that were organized on the basis of the content of items for Treatment Planning

➢ Ages 2-5 Years	➢ 6- 18 Years
▪ Peer Socialization	▪ Peer Socialization
▪ Adult Socialization	▪ Adult Socialization
▪ Social/Emotional Reciprocity	▪ Social/Emotional Reciprocity
▪ Atypical Language	▪ Atypical Language
▪ Stereotypy	▪ Stereotypy
▪ Behavioral Rigidity	▪ Behavioral Rigidity
▪ Sensory Sensitivity	▪ Sensory Sensitivity
▪ Attention / Self Regulation	▪ Attention

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Questions and Thoughts Please

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Goal #3

➢ Base standard scores on a national sample of individuals aged 2 – 18 years who represent the US on a number of key variables.

➢ Why compare children's scores to a nationally representative sample?

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Importance of a National Norm

➢The way we calibrate a psychological test or rating scale score has a direct impact on the reliability and validity of the instrument

➢The composition of the comparison and characteristics of the group is especially important whenever diagnostic decisions are being made.

➢Psychometric Issues by Naglieri & Chambers

Assessment of
AUTISM
SPECTRUM
DISORDER
SECOND EDITION

edited by
Sam Goldstein
Sally Ozonoff
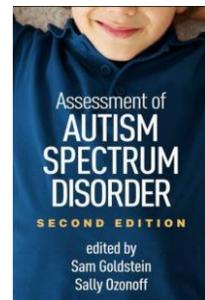
Psychometric Issues and Current Scales
for Assessing Autism Spectrum Disorder

Jack A. Naglieri
Kimberly M. Chambers

The study of any psychological disorder is dependent upon the tools that are used, as these tools directly influence what is learned about the subject in research as well as clinical practice. As in all areas of science, what we discover depends upon the quality of the instruments we use and the information they provide. Better-made instruments yield more accurate and reliable information. Instruments that uncover more information relevant to the subject being examined will have better validity, and ultimately

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Importance of a National Norm

➢ What is the problem with not having a national norm?
  • You don't know how typical children perform
    • Typical means a wide variety of individuals who vary on important demographic variables

➢ What is the problem with not having a standard score like a T-score (mean of 50 and *SD* of 10)?
  • You don't know how similar a child's behavior is in relation to the norm
  • Let's look at some data …

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Diagnostic Reference Groups

➢ Naglieri, J. A. (2012). Psychological Assessment by School Psychologists: Opportunities and Challenges of A Changing Landscape. In K. Geisinger & B. A. Bracken (Eds.) *APA Handbook of Testing and Assessment in Psychology*. Washington, D.C.: American Psychological Association.

➢ I studied the differences between results when using a nationally representative sample versus a sample of children identified as having Autism as a reference group

➢ Raw score to standard score (T-scores) conversion table was constructed based on two different reference groups
  • Children with ASD
  • Nationally representative sample
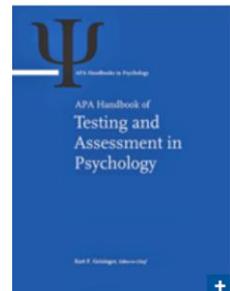
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Comparison Groups

➢The **sample of children with ASD (N = 243)**

- Autism (*n* = 137), Asperger Syndrome (*n* = 80), or Pervasive Developmental Disorder-Not Otherwise Specified (*n* = 26).
- according to the DSM-IV-TR (APA, 2000) or ICD-10 (WHO, 2007)) using appropriate methods (e.g., record review, rating scales, observation, and interview).

➢The **sample, representative of the US** population, included males and females from each of the four geographic regions of the US and racial-ethnic groups

➢The **N = 1,828** (See Goldstein & Naglieri (2009) for more details

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Raw Scores to T scores

Shaded boxes = MEAN of the ASD and National Samples

A Raw Score of 130 is a T of 50 based on ASD sample

A Raw Score of 90 is a T of 42 based on the ASD sample

A Raw Score of 90 is a T of 42 based on ASD sample; but a T score of 60 (1 SD above the national reference group

ASRS Raw Score	ASD Comparison	National Comparison
145	53	75
140	52	74
135	51	73
130	50	71
125	49	70
120	48	69
115	47	67
110	46	66
105	45	64
100	44	63
95	43	62
90	42	60
85	41	59
80	40	57
75	38	56
70	37	55
65	36	53
60	35	52
55	34	51
50	33	49
45	32	48
40	31	46

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Importance of a National Norm

➤ Section Conclusions
- The diagnostic conclusions we reach are greatly influenced by the tools we use
- The composition of the reference group can make a substantial difference in the conclusions reached
- Norms that represent a typical population are needed for all assessment tools
- Standard scores based on a representative normal sample should be used in clinical practice.
- A comparison of ASD symptoms to a normative group is very helpful

Conclusion

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ASRS National Norm

ASRS Standardization Samples by Age and Rater		
Age Groups	**Parent Raters**	**Teacher Raters**
2 - 5 Years	320	320
6 - 11 Years	480	480
12 - 18 Years	480	480
Sub Total n	**1,280**	**1,280**
TOTAL N	**2,560**	

Note: at ages 2-16 years there were 80 subjects (40 girls and 40 boys) per one year age group. At ages 17-18 there were 80 subjects (40 girls and 40 boys) across this two year interval.

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Importance of a National Norm

➢Sample was stratified by

- Sex, age, race/ethnicity, parental education level (PEL; for cases rated by parents), geographic region
- Race/ethnicity of the child (Asian/Pacific Islander, Black/African American/African Canadian, Hispanic, White/Caucasian, Multiracial by the rater
- Parents provided PEL of both parents
  - the higher of the two levels was used to classify the parental education level of the child
- All raters completed the ASRS via the paper-and-pencil or online methods.

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Questions and Thoughts Please

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Forms

➢Instructions to the raters (parents and teachers) for ages 2 – 18 years

Instructions for Raters: Read each statement that follows the phrase, "*During the past four weeks, how often did the student...,*" then circle the number under the word that tells how often you saw the behavior. Read each question carefully, then mark how often you saw the behavior in the past four weeks. Answer every question without skipping any. If you want to change your answer, put an X through it and circle your new choice. Be sure to answer every question.

ASRS™

(6–18 Years)
TEACHER RATINGS
Sam Goldstein, Ph.D. & Jack A. Naglieri, Ph.D.

Instructions for Raters: Read each statement that follows the phrase, "*During the past four weeks, how often did the student...,*" then circle the number under the word that tells how often you saw the behavior. Read each question carefully, then mark how often you saw the behavior in the past four weeks. Answer every question without skipping any. If you want to change your answer, put an X through it and circle your new choice. Be sure to answer every question.

MHS

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Figure 3.2. Sample Full-Length ASRS (6–18 Years) Parent Ratings

ASRS™ (6–18 Years)
PARENT RATINGS
Sam Goldstein, Ph.D. & Jack A. Naglieri, Ph.D.

Ratings Form: P

During the past four weeks, how often did the child...	Never	Rarely	Occasionally	Frequently	Very Frequently
1. appear disorganized?	0	1	2	(3)	4
2. become bothered by some fabrics or tags in clothes?	(0)	1	2	3	4
3. seek the company of other children?	0	1	2	(3)	4
4. show little emotion?	0	1	2	(3)	4
5. follow instructions that he/she understood?	0	(1)	2	3	4
6. argue and fight with other children?	0	1	(2)	3	4
7. have problems waiting his/her turn?	0	1	2	3	(4)
8. share fun activities with others?	0	1	(2)	3	4

es in each column
he Raw Score.

SER AL ST BR SS AT

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Raw , T, Percentile, Classification

Child's Name/ID: Joey D   Gender: (M) F (Circle One)   Today's Date: 2009 / 07 / 02 (Year Month Day)

Parent's Name/ID: Mrs. D   Grade: 5   Birth Date: 1999 / 01 / 02 (Year Month Day)

Did your child acquire language before age 3? (Delay of Communication 1)   (Yes)   No   Don't Know   Age: 10 / 6 / 0 (Years Months Days)

If Yes, did your child speak in 3 word sentences by age 3? (Delay of Communication 2)   (Yes)   No   Don't Know

Raw Score to T–Score and Percentile Rank Conversion Table for Ages 6–11 Years

Percentile Rank	T–Score	ASRS Scales			TOT	DSM	Treatment Scales								T–Score	Percentile Rank	Classification
		SC	UB	SR			PS	AS	SER	AL	ST	BR	SS	AT			
99	85	64–76				239–250	125–136	36	24	45–52				22–24	44	85	99	
99	84	62–63				236–238	122–124	35	23					21	43	84	99	
99	83	60–61	96			233–235	119–121	34	22	44				20	42	83	99	
99	82	58–59	94–95	67–68		230–232	116–118	33	21	43	24	20		19	41	82	99	
99	81	56–57	92–93	65–66		227–229	113–115	32		42	23		32	18	40	81	99	
99	80	54–55	90–91	64		224–226	110–112	31	20	40–41	22	19	31	17	39	80	99	
99	79	52–53	88–89	63		221–223	108–109	30		38–39			30	16		79	99	
99	78	50–51	86–87	61–62		218–220	105–107	29	19	37	21	18	29	15	38	78	99	Very Elevated
99	77	48–49	84–85	59–60		215–217	102–104	28		36				14		77	99	
99	76	46–47	81–83	57–58		213–214	98–101	27	18	35	20	17	28		37	76	99	
99	75	45	77–80	56		211–212	94–97	25–26		34	19		27	13		75	99	
99	74	44	72–76	55		209–210	90–93	24	17		18	16	26		36	74	99	
99	73	42–43	66–71	54		207–208	87–89	23		33	17		25	12		73	99	
99	72	41	61–65	53		205–206	84–86	22	16	32	16	15	24		35	72	99	
98	71	39–40	58–60	52		203–204	81–83	21		31	15		23	11	34	71	98	
98	70	38	55–57	50–51		201–202	78–80	20	15	30	14	14	22		33	70	98	
97	69	37	52–54	49		199–200	75–77	19		29	13		21	10	32	69	97	
96	68	35–36	48–51	47–48		198	72–74	18	14	28	12	13	20		31	68	96	
96	67	34	46–47	46		195–197	69–71	17		27			19	9	30	67	96	Elevated
95	66	33	44–45	45		192–194	66–68	16	13	26	11	12	18		29	66	95	
93	65	32	42–43	44		189–191	63–65	15		25			17		28	65	93	
92	64	31	40–41	41–43		187–188	60–62		12	24	10	11	16	8	27	64	92	
90	63	29–30	38–39	40		185–186	57–59	14		23					25–26	63	90	
88	62	28	36–37	37–39		182–184	53–56		11	22	9	10	15		24	62	88	Slightly Elevated
86	61	27	34–35	35–36		179–181	50–52	13		21			14	7	23	61	86	
84	60	26	32–33	33–34		175–178	47–49		10	20	8	9			22	60	84	

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ASRS Forms

➤ Raw scores are converted to T-scores

Scale Score Summary Table: Ages 6–11 Years

ASRS Scales

Scales	Raw Score	T-Score	Percentile Rank	Classification	90/95% T-score CI (circle one)
Social/Communication (SC)	49	77	99	Very Elevated	72 to 79
Unusual Behaviors (UB)	33	60	84	Slightly Elevated	56 to 63
Self-Regulation (SR)	50	70	98	Very Elevated	64 to 73

Total Score

SC T-Score		UB T-Score		SR T-Score		Sum of SC, UB, & SR T-Scores	T-Score	Percentile Rank	Classification	90/95% T-score CI (circle one)
77	+	60	+	70	=	207	73	99	Very Elevated	70 to 75

DSM-IV-TR Scale

Scale	Raw Score	T-Score	Percentile Rank	Classification	90/95% T-score CI (circle one)
DSM-IV-TR Scale (DSM)	77	69	97	Elevated	65 to 71

Treatment Scales

Scales	Raw Score	T-Score	Percentile Rank	Classification	90/95% T-score CI (circle one)
Peer Socialization (PS)	20	70	98	Very Elevated	62 to 73
Adult Socialization (AS)	9	58	79	Average	49 to 63
Social/Emotional Reciprocity (SER)	36	77	99	Very Elevated	69 to 79
Atypical Language (AL)	4	52	58	Average	46 to 58
Stereotypy (ST)	4	49	46	Average	43 to 56
Behavioral Rigidity (BR)	24	72	99	Very Elevated	65 to 75
Sensory Sensitivity (SS)	1	44	27	Average	39 to 51
Attention (AT)	35	72	99	Very Elevated	65 to 75

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Reading Level of the ASRS

Table 3.1. ASRS Readability Levels by Form

Form		Readability Score		
		Overall	Instructions	Items
ASRS (2–5 Years)	Full-length	6.0	7.4	6.0
	Short	6.2	7.4	6.2
ASRS (6–18 Years)	Full-length	6.2	7.4	6.2
	Short	6.0	7.4	6.1

Note. Reading levels are identical for parent and teacher versions, as the item content is the same across both rater types.

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Validity of the Factors

➢ Factor analysis is a valuable tool to understand how items group

➢ But we also need to know if the items have validity

➢ Discriminating children with ASD from the regular population is important

➢ Discriminating children with ASD from those who are not in the regular population but not ASD is very important

  • These data will be presented

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ASRS Profiles

➢ A scale like the ASRS should differentiate children with ASD from the normal population.

➢ Comparison to regular children should show that those with ASDs have high scores.

➢ Comparisons to other clinical groups should also show differences from those with ASDs.

➢ Comparisons of the ASD to regular and other clinical samples gives an essential examination of validity .

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Validity Studies

➢ Validity samples were collected
- a single primary diagnosis was indicated
- a qualified professional (e.g., psychiatrist, psychologist) had made the diagnosis
- Criteria were made using DSM-IV-TR or ICD-10
- Clinical samples include
  - ASD (N = 580), ADHD (N = 250), Communication Delay (N = 180), Developmental Delay (N = 140) and Anxiety / Depression (N = 100)

45

45

ASRS Validity: Parents 2-5
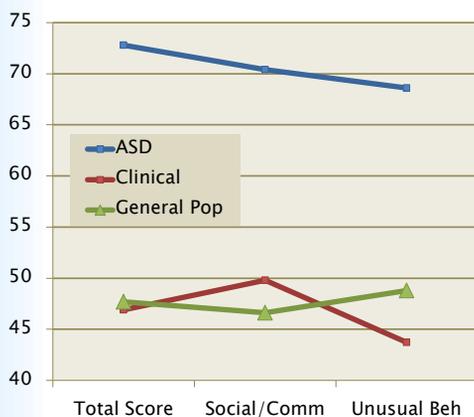
ASRS Validity: Teachers 2-5
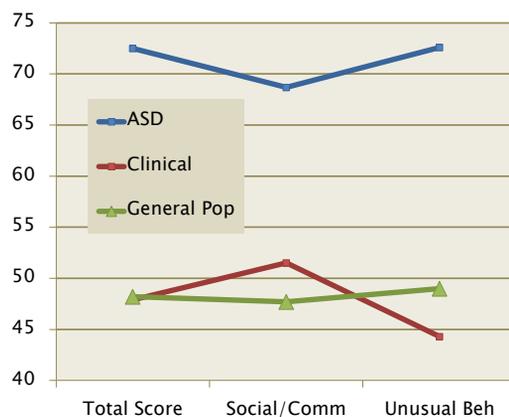
Note: Values from ASRS Manual (Goldstein & Naglieri, 2009) pages 66 – 67.

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ASRS Validity: Parents 6-18
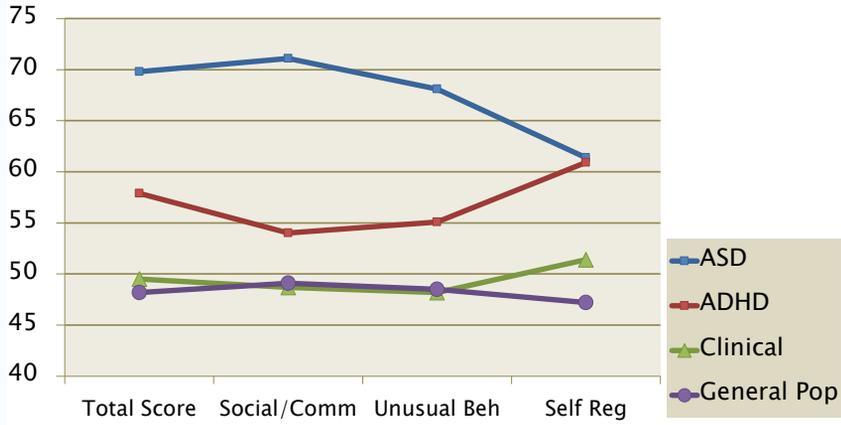
Note: Values from ASRS Manual (Goldstein & Naglieri, 2009) page 67.

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ASRS Validity: Teachers 6-18

Note: Values from ASRS Manual (Goldstein & Naglieri, 2009) page 67.

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Slide 49
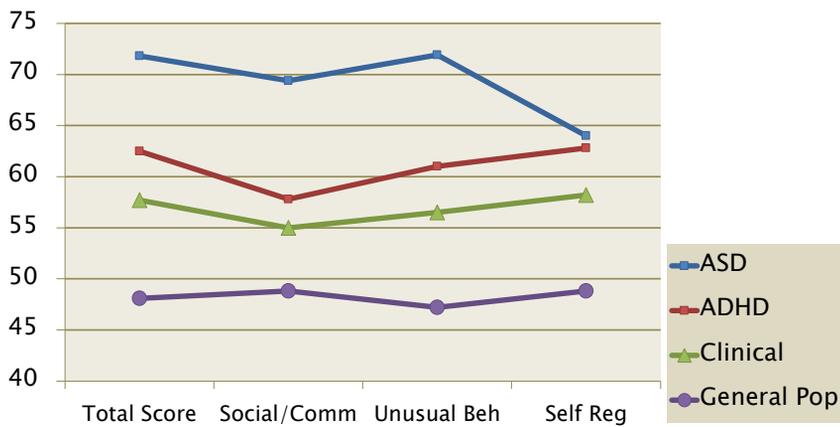
2013 Technical Report for Nonverbal Cases

➢Scoring the ASRS for those who do not speak or speak infrequently

AUTISM SPECTRUM RATING SCALES (ASRS™)

Scoring the ASRS for Individuals Who Do Not Speak or Speak Infrequently
Sam Goldstein, Ph.D. & Jack A. Naglieri, Ph.D.

Technical Report #1   MHS

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Slide 50
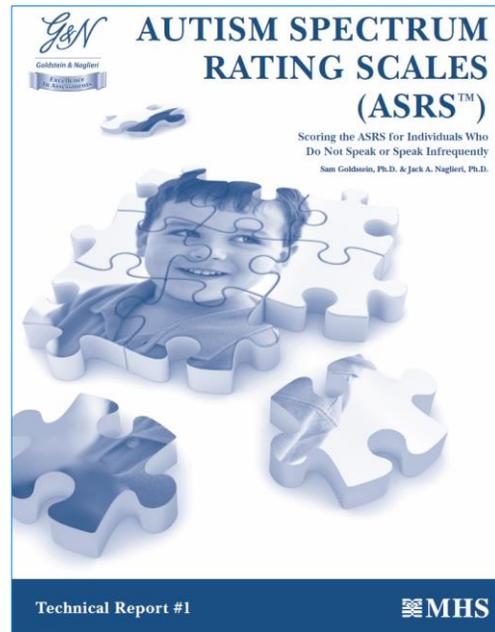
Naglieri & Goldstein (2012)

➢Reliabilities are still high
➢Factor structure is unchanged
➢ASRS prorating method works well for those with limited or no language

	Parent Raters				Teacher Raters			
	2-5	6-11	12-18	Median	2-5	6-11	12-18	Median
Total Scale	.95	.97	.97	**.97**	.94	.97	.97	**.97**
Social/Communication	.94	.91	.92	**.92**	.95	.93	.92	**.93**
Unusual Behaviors	.91	.94	.93	**.93**	.85	.93	.94	**.93**
Self-Regulation	-	.92	.93	**.93**	-	.94	.93	**.94**
Treatment Scales								
Peer Socialization	.77	.84	.84	**.84**	.85	.84	.83	**.84**
Adult Socialization	.67	.77	.79	**.77**	.78	.80	.77	**.78**
Social/Emotional Reciprocity	.83	.85	.88	**.85**	.88	.89	.89	**.89**
Atypical Language	.71	.81	.82	**.81**	.59	.75	.80	**.75**
Stereotypy	.75	.79	.77	**.77**	.67	.69	.72	**.69**
Behavioral Rigidity	.85	.89	.86	**.86**	.82	.90	.90	**.90**
Sensory Sensitivity	.71	.79	.77	**.77**	.59	.77	.84	**.77**
Attention/Self-Regulation (2-5) or Attention (6-18)	.83	.90	.89	**.89**	.83	.92	.91	**.91**

Note: The ASRS form for ages 2-5 has two empirically derived scales (Social/Communication and Unusual Behaviors).

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Administration Scoring Options

Figure 3.1. Overview of Administration and Scoring Options
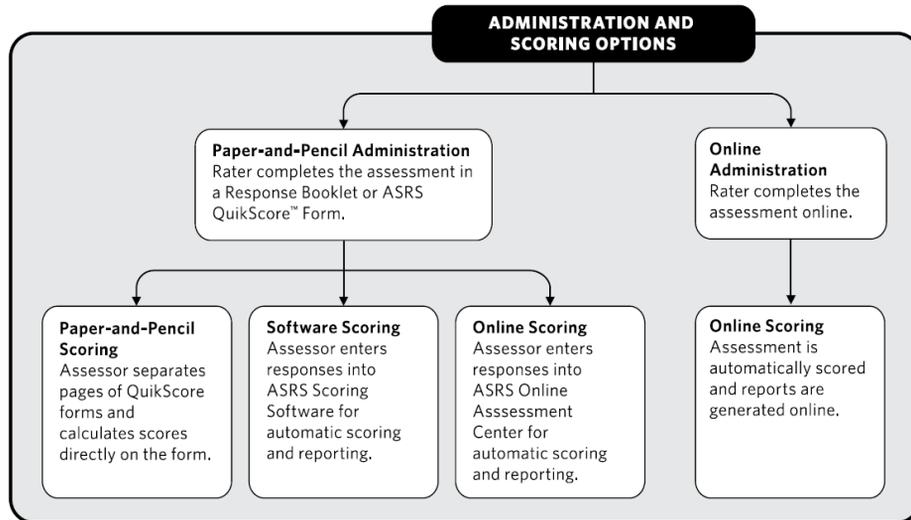
51

ASRS Interpretation

➢ The **DSM-IV-TR Scale** includes items that represent the symptoms used as part of the diagnostic criteria for ASD.

➢ Additional criteria (e.g., age of onset, differential diagnosis, and level of impairment) must be met before a DSM-IV-TR diagnosis can be assigned

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ASRS Interpretive Report

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ASRS Interpretive Report
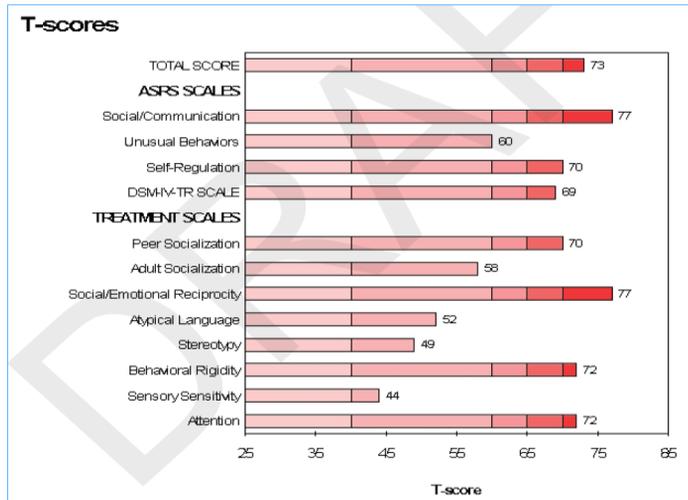
54

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ASRS Interpretive Report

ASRS (6-18 Years) Parent Interpretive Report for Joey D   Admin Date: 07/02/2009

Summary of Results

The following section summarizes the rater's observations of Joey D on the ASRS (6-18 Years) Parent form. Scores reported in this section include the obtained T-score, along with the 90% confidence interval (i.e., there is a 90% probability that the true T-score falls within this range), as well as the percentile ranking of the score. Higher T-scores indicate greater problems. **Note:** CI = Confidence Interval.

ASRS Scales

Ratings on the **Social/Communication** scale indicate the extent to which the youth uses verbal and non-verbal communication to initiate, engage in, and maintain social contact. Ratings on this scale yielded a T-score of 77 (90% CI = 72-79), which is ranked at the 99th percentile and falls in the Very Elevated Score range.

Ratings on the **Unusual Behaviors** scale indicate the youth's level of tolerance for changes in routine, engagement in apparently purposeless and stereotypical behaviors, and overreaction to certain sensory experiences. Ratings on this scale yielded a T-score of 60 (90% CI = 56-63), which is ranked at the 84th percentile and falls in the Slightly Elevated Score range.

Ratings on the **Self-Regulation** scale indicate how well the youth manages his behavior using a set of internalized rules to efficiently negotiate the environment. Ratings on this scale yielded a T-score of 70 (90% CI = 64-73), which is ranked at the 98th percentile and falls in the Very Elevated Score range.

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ASRS Interpretation

➢Description of T scores

Table 4.1. Understanding *T*-scores and Percentiles

T-Score	Percentile	Guideline
70+	98+	Very Elevated Score (Many more concerns than are typically reported)
65–69	93–97	Elevated Score (More concerns than are typically reported)
60–64	84–92	Slightly Elevated Score (Somewhat more concerns than are typically reported)
40–59	16–83	Average Score (Typical levels of concern)
< 40	<16	Low Score (Fewer concerns than are typically reported)

➢Estimated true score confidence intervals are provided for all scales

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ASRS Interpretive Report

Detailed Scores

The following table summarizes the rater's observations of Joey D and provides general information about how he compares to the normative group. Please refer to the *ASRS Technical Manual* for more information on the interpretation of these results.

Scale	T-score (90% CI)	Percentile	Guideline	Interpretive Guideline
TOTAL SCORE				
Total Score	73 (70-75)	99	Very Elevated Score	Has many behavioral characteristics similar to individuals diagnosed with an Autism Spectrum Disorder.
ASRS SCALES				
Social/ Communication	77 (72-79)	99	Very Elevated Score	Has difficulty using verbal and non-verbal communication appropriately, to initiate, engage in, and maintain social contact.
Unusual Behaviors	60 (56-63)	84	Slightly Elevated Score	Has trouble tolerating changes in routine. Engages in apparently purposeless, stereotypical behaviors. Overreacts to certain sensory experiences.
Self-Regulation	70 (64-73)	98	Very Elevated Score	Has deficits in attention and/or motor/impulse control; is argumentative.
DSM-IV-TR SCALE				
DSM-IV-TR Scale	69 (65-71)	97	Elevated Score	Has symptoms related to the DSM-IV-TR diagnostic criteria for an Autism Spectrum Disorder.

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ASRS Interpretation

➢ SS

Treatment Scales		
	Peer Socialization	Has limited interest and capacity to successfully engage in activities that develop and maintain relationships with other children.
	Adult Socialization	Has limited interest and capacity to successfully engage in activities that develop and maintain relationships with adults.
	Social/Emotional Reciprocity	Has limited ability to provide an appropriate emotional response to another person in a social situation.
	Atypical Language	Spoken communication may be repetitive, unstructured, or unconventional.
	Stereotypy	Engages in apparently purposeless, repeated movements, noises, or behaviors.
	Behavioral Rigidity	Has difficulty tolerating changes in routine, activities, or behavior; aspects of the environment must remain unchanged.
	Sensory Sensitivity	Overreacts to certain experiences conveyed through touch, sound, vision, smell, or taste.
	Attention/Self-Regulation (ASRS [2–5 Years] only)	Has trouble appropriately focusing attention on one thing while ignoring distractions; appears disorganized. May have deficits in motor/impulse control; is argumentative.
	Attention (ASRS [6–18 Years] only)	Has trouble appropriately focusing attention on one thing while ignoring distractions; appears disorganized.

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ASRS Comparative Report

ASRS™

Autism Spectrum Rating Scales (6-18 Years)
By Sam Goldstein, Ph.D. & Jack A. Naglieri, Ph.D.

Comparative Report

Youth's Name/ID: **Joey D**
Gender: Male
Birth Date: January 02, 1999

	Parent	Teacher
Youth's Name/ID:	Joey D	Joey D
Administration Date:	Jul 02, 2009	Jul 02, 2009
Age:	10 years	10 years
Grade:	5	5
Rater Name/ID:	Mrs. D	Mr. J
Assessor Name:	Dr. G	Dr. G
Data Entered By:	Maria	Maria

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ASRS Comparative Report

T-scores: Scale-Level Comparisons across Raters
Note: P = Parent and T = Teacher.

Total Score

73 (P), 73 (T)

No significant differences between raters.

Social/Communication

77 (P), 78 (T)
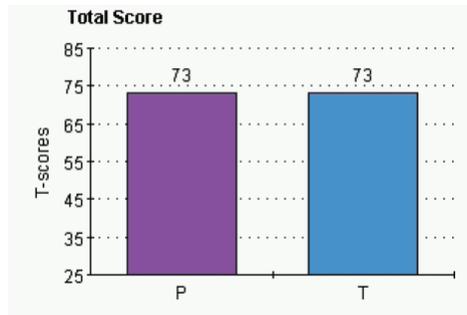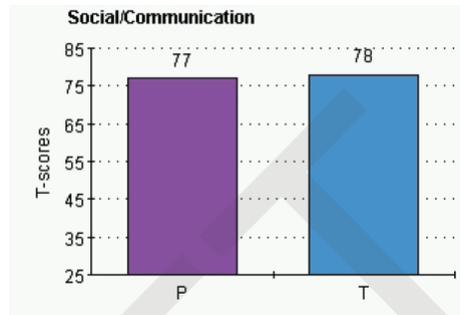
No significant differences between raters.

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ASRS Comparative Report

Values Needed for Significance When Comparing ASRS T-scores Across Raters for children Aged 2 to 5 Years.

Scale		90% (p = .10)			95% (p = .05)			Adjusted 90% (p = .008)		
		Parent to Parent	Teacher to Teacher	Parent to Teacher	Parent to Parent	Teacher to Teacher	Parent to Teacher	Parent to Parent	Teacher to Teacher	Parent to Teacher
Total Score		5	5	5	5	5	5	7	7	7
ASRS Scales	Social/Communication	5	5	5	6	5	6	8	7	8
	Unusual Behaviors	6	7	6	7	8	8	10	10	10
DSM-IV-TR Scale		6	6	6	7	7	7	9	9	9
Treatment Scales	Peer Socialization	8	7	8	10	9	9	13	12	12
	Adult Socialization	12	10	11	14	12	13	18	17	17
	Social/Emotional Reciprocity	7	7	7	9	8	8	12	10	11
	Atypical Language	12	13	13	15	16	15	19	21	20
	Stereotypy	11	11	11	13	13	13	17	18	18
	Behavioral Rigidity	8	8	8	9	9	9	12	12	12
	Sensory Sensitivity	11	12	11	13	14	13	17	18	18
	Attention/Self-Regulation	9	9	9	11	11	11	15	14	15

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ASRS Comparative Report

TREATMENT SCALES				
Peer Socialization	T-score	70	73	No significant difference
	90% CI	62-73	65-75	
	Percentile	98	99	
Adult Socialization	T-score	58	63	No significant difference
	90% CI	49-63	54-67	
	Percentile	79	90	
Social/Emotional Reciprocity	T-score	77	76	No significant difference
	90% CI	69-79	69-78	
	Percentile	99	99	
Atypical Language	T-score	52	44	No significant difference
	90% CI	46-58	39-51	
	Percentile	58	27	
Stereotypy	T-score	49	54	No significant difference
	90% CI	43-56	46-60	
	Percentile	46	66	
Behavioral Rigidity	T-score	72	48	P > T
	90% CI	65-75	44-53	
	Percentile	99	42	
Sensory Sensitivity	T-score	44	48	No significant difference
	90% CI	39-51	42-55	
	Percentile	27	42	
Attention	T-score	72	73	No significant difference
	90% CI	65-75	67-76	
	Percentile	99	99	

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ASRS Comparative Report

ASRS (6-18 Years) Comparative Report for Joey D

Summary of Significant Differences Between Raters
The following section summarizes significant differences between raters' assessments of Joey D. **Note:** T = T-score, CI = Confidence Interval.

Total Score
Ratings on the **Total Score** scale indicate the extent to which the youth's behavioral characteristics are similar to the behaviors of individuals diagnosed with an Autism Spectrum Disorder. Ratings on this scale did not result in any significant differences between raters.

ASRS Scales
Ratings on the **Social/Communication** scale indicate the extent to which the youth uses verbal and non-verbal communication to initiate, engage in and maintain social contact. Ratings on this scale did not result in any significant differences between raters.

Ratings on the **Unusual Behaviors** scale indicate the youth's level of tolerance for changes in routine, engagement in apparently purposeless and stereotypical behaviors, and overreaction to certain sensory experiences. Ratings on this scale did not result in any significant differences between raters.

Ratings on the **Self-Regulation** scale indicate how well the youth manages his behavior using a set of internalized rules to efficiently negotiate the environment. Ratings on this scale did not result in any significant differences between raters.

DSM-IV-TR Scale
Ratings on the **DSM-IV-TR Scale** indicate how closely the youth's symptoms match the DSM-IV-TR criteria for an Autism Spectrum Disorder. Ratings on this scale did not result in any significant differences between raters.

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ASRS Comparative Report

Scale		Parent (Mrs. D)				Teacher (Mr. J)				Significant Differences
		T-score	90% CI	Percentile Rank	Classification	T-score	90% CI	Percentile Rank	Classification	
Total Score		73	70–75	99	Very Elevated	73	70–75	99	Very Elevated	Parent = Teacher
ASRS Scales	Social/Communication	77	72–79	99	Very Elevated	79	74–81	99	Very Elevated	Parent = Teacher
	Unusual Behaviors	60	56–63	84	Slightly Elevated	51	47–55	54	Average	Parent > Teacher
	Self-Regulation	70	64–73	98	Very Elevated	75	70–77	99	Very Elevated	Parent = Teacher
DSM-IV-TR Scale		69	65–71	97	Elevated	68	64–71	96	Elevated	Parent = Teacher
Treatment Scales	Peer Socialization	70	62–73	98	Very Elevated	73	65–75	99	Very Elevated	Parent = Teacher
	Adult Socialization	58	49–63	79	Average	63	54–67	90	Slightly Elevated	Parent = Teacher
	Social/Emotional Reciprocity	77	69–79	99	Very Elevated	76	69–78	99	Very Elevated	Parent = Teacher
	Atypical Language	52	46–58	58	Average	44	39–51	27	Average	Parent = Teacher
	Stereotypy	49	43–56	46	Average	54	46–60	66	Average	Parent = Teacher
	Behavioral Rigidity	72	65–75	99	Very Elevated	48	44–52	42	Average	Parent > Teacher

71/7,867   120%   64

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ASRS Comparative Report

ASRS (6-18 Years) Comparative Report for Joey D

Detailed Scores: Comparisons across Raters

The following table displays T-scores, Confidence Intervals, and Percentiles for each scale, as well as any statistically significant (p = .10, adjusted for multiple comparisons) changes in T-scores between pairs of raters. If a pair of ratings is not noted in the "Statistically Significant Differences Between Raters" column, then the difference between those two raters did not reach statistical significance. **Note:** CI = Confidence Interval, P = Parent and T = Teacher.

Scale		P	T	Statistically Significant Differences Between Raters
TOTAL SCORE				
Total Score	T-score	73	73	No significant difference
	90% CI	70-75	70-75	
	Percentile	99	99	
ASRS SCALES				
Social/ Communication	T-score	77	78	No significant difference
	90% CI	72-79	73-80	
	Percentile	99	99	
Unusual Behaviors	T-score	60	53	No significant difference
	90% CI	56-63	49-57	
	Percentile	84	62	
Self-Regulation	T-score	70	74	No significant difference
	90% CI	64-73	69-76	
	Percentile	98	99	
DSM-IV-TR Scale				
DSM-IV-TR SCALE	T-score	69	68	No significant difference
	90% CI	65-71	64-71	
	Percentile	97	96	
TREATMENT SCALES				
	T-score	70	73	

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Inter-Rater Consistency: 6-18 Yrs

General Population Sample	Obt r	Cor r	N	Parent		Teacher		d - ratio
				M	SD	M	SD	
Total Score	.51	.57	234	46.3	9.1	46.2	9.4	.01
Social/Communication	.60	.68	266	46.2	9.1	46.9	9.0	.08
Unusual Behaviors	.44	.50	252	48.0	9.2	46.2	9.2	.20
Self-Regulation	.57	.62	276	46.7	8.9	46.1	10.0	.06
DSM-IV-TR Scale	.55	.61	251	46.7	9.0	47.1	9.6	.04

Clinical Sample	Obt r	Cor r	N	Parent		Teacher		d – ratio
				M	SD	M	SD	
Total Score	.84	.67	210	65.4	13.0	63.0	13.1	.18
Social/Communication	.84	.61	232	62.2	14.1	62.4	14.4	.01
Unusual Behaviors	.78	.63	238	64.9	12.4	60.4	12.5	.36
Self-Regulation	.80	.75	233	62.1	11.1	60.9	10.7	.11
DSM-IV-TR Scale	.83	.62	231	65.6	13.9	62.6	13.5	.22

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Your Questions or Thoughts?

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Presentation Outline

➢An understanding of Autism Spectrum Disorders (ASD)

➢Symptoms of ASD: Building the ASRS

➢Importance of a national standardization sample

➢Autism Spectrum Rating Scale

• Structure, Reliability, & Validity

➢**Autism Spectrum Rating Scale Short Form**

• **Structure, Reliability, & Validity**

➢ASRS Interpretation with other measures

➢Conclusions

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Short Form

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ASRS Spanish Short Forms

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Short Form - Validity 2-5 Yrs

Left chart legend: ASD, Other Clinical, General Population (x-axis: Parents, Teachers; y-axis: 40–80)

Right chart legend: ASD, Other Clinical, General Population, ADHD (x-axis: Parents, Teachers; y-axis: 40–80)
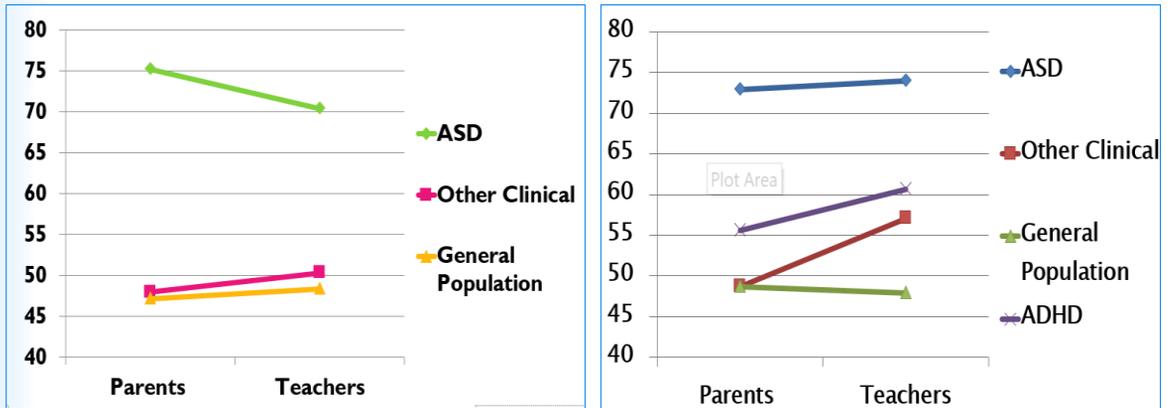
71

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ASRS Short Form - Reliability

Table 9.2.   Internal Consistency

Age	Rater	Cronbach's Alpha		
		Norm	Clinical	Average
2–5 Years	Parent	.86	.96	.92
	Teacher/Childcare Provider	.89	.96	.93
6–11 Years	Parent	.90	.94	.92
	Teacher	.89	.92	.91
12–18 Years	Parent	.88	.95	.92
	Teacher	.90	.93	.92

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Presentation Outline

➤An understanding of Autism Spectrum Disorders (ASD)
➤Symptoms of ASD: Building the ASRS
➤Importance of a national standardization sample
➤Autism Spectrum Rating Scale
  • Structure, Reliability, & Validity
➤Autism Spectrum Rating Scale Short Form
  • Structure, Reliability, & Validity
➤**ASRS Interpretation with other measures**
➤Conclusions

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ADOS and ASRS Sample Description

➤University of Virginia *Autism Genetic Resource Exchange*
  (*AGRE*) project data
➤Sample selection
  • If the child met criteria for ASD or Autism on the ADOS <u>and</u> met
    criteria for Autism on the ADI-R, they were considered to be on the
    autism spectrum - ASD or Autism - (whichever they met according
    to the ADOS).
  • In the AGRE dataset the ADOS is used in conjunction with the ADI
    to classify the child

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Sample Description

➤ Ages 6-18 (Mean = 10.3; SD = 3.1)

➤ N = 90

➤ 82% (N = 74) Males, 18% (N = 16) Females

	ADOS Diagnosis	ASRS Total (T > 59)
Autism or ASD	81	80
No Diagnosis	9	10

ASRS & Attention Difficulty

➤ Individuals with ASD have been described as having "***difficulties in disengaging and shifting attention***" (p. 214) (see Klinger, O'Kelley, & Mussey's chapter 8 in *Assessment of Autism Spectrum Disorders* (Goldstein, Naglieri, & Ozonoff, 2009)

➤ the ASRS (6–18 Years) and Cognitive Assessment System (CAS; Naglieri & Das, 1997) was administered to children diagnosed with an ASD
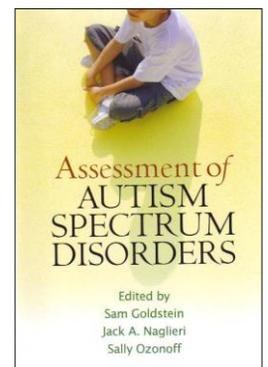
76

PASS Neurocognitive Theory
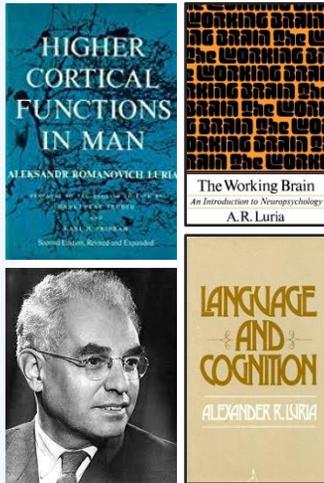
➢ **P**lanning = THINKING ABOUT HOW YOU DO WHAT YOU DECIDE TO DO

➢ **A**ttention = BEING ALERT AND RESISTING DISTRACTIONS

➢ **S**imultaneous = GETTING THE BIG PICTURE

➢ **S**uccessive = FOLLOWING A SEQUENCE

PASS = 'basic psychological processes'

NOTE: Easy to understand concepts!

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PASS is a Brain Based Approach to Intelligence

➢ Psychologists, teachers, parents, and students can all use a common language to describe abilities without the esoteric terms we have used for years – NO psychobabble
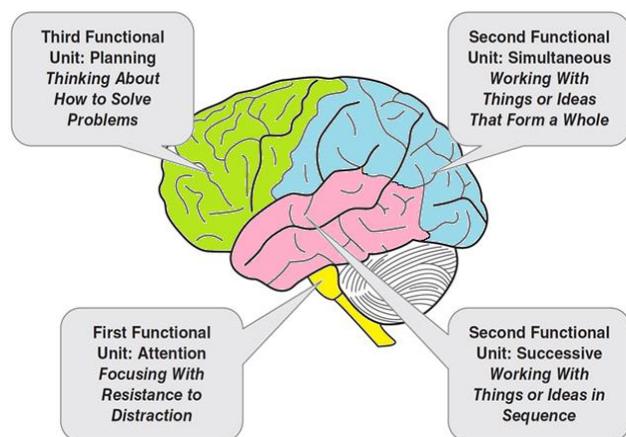
Figure 1.2 Three Functional Units and Associated Brain Structures

From: *Essentials of CAS2 Assessment.* Naglieri & Otero, 2017

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PASS Theory: Planning

➢ Planning is a neurocognitive function similar to executive function

➢ Planning is needed for setting goals, making decisions, predicting the outcome of peoples' actions, impulse control, strategy use

➢ Planning is used when we decide how to solve any problem from academics to social situations and life in general

A	B	C	D
X O	O O	X X	O X

A	B	C	D	A
X O	O O	X X		

A	B	C	D	A
X O	O O			

A	B	C	D	A
X O	O O			

A	B	C	D	A
X O	O O			

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PASS Theory: Attention

➢ Attention is a basic psychological process we use to
- selectively attend to some stimuli and ignores others
- Focus our cognitive activity
- Selective attention
- Resistance to distraction
- Listening, as opposed to hearing

RED	RED	BLUE
YELLOW	YELLOW	RED
BLUE	RED	YELLOW
BLUE	BLUE	BLUE
YELLOW	BLUE	YELLOW

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PASS Theory: Simultaneous

➢**Simultaneous** processing is used to integrate stimuli into groups
  - Each piece must be related to the other
  - Stimuli are seen as a whole

➢Academics:
  - Reading comprehension
  - geometry
  - math word problems
  - whole language
  - verbal concepts

Which picture shows a boy behind a girl?
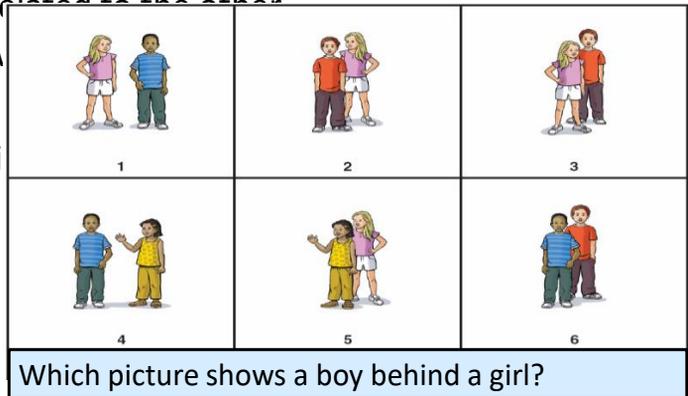
81

PASS Theory: Successive

▶ **Successive** processing is a basic psychological process we use to manage stimuli in a specific serial order
  - Stimuli form a chain-like progression
  - Recall a series of words
  - Decoding words
  - Letter-sound correspondence
  - Phonological tasks
  - Understanding the syntax of sentences
  - Comprehension of written instructions

Recall of Numbers in Order
Successive Processing

4 3 8 6 1

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Differentiate ASD from ADHD and SLD

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ASRS & Attention Difficulty
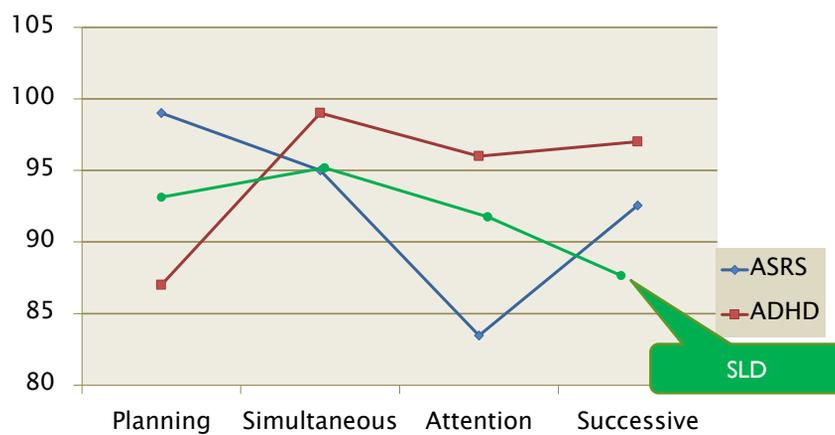
Note: Values for CAS for children with ADHD from Naglieri & Das (1997) CAS Interpretive Handbook

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Differential Diagnosis: ADHD vs ASD

Autism Profile

CAS							ASRS
130							70
125							67
120							63
115							60
110							57
105							53
100							50
95							47
90							43
85							40
80							37
75							33
Plan	Sim	Att	Succ	SC	UB	SReg	

ADHD Profile

CAS							ASRS
130							70
125							67
120							63
115							60
110							57
105							53
100							50
95							47
90							43
85							40
80							37
75							33
Plan	Sim	Att	Succ	SC	UB	SReg	
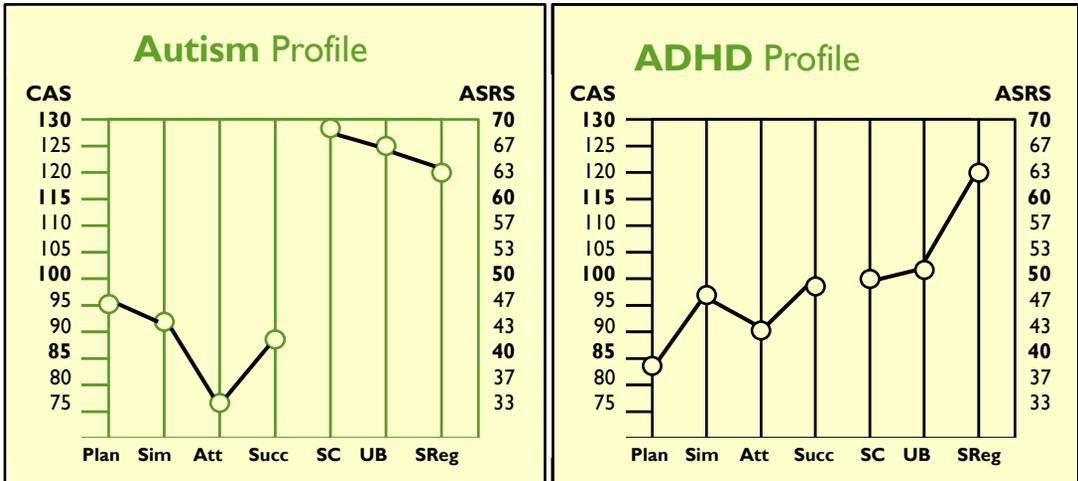
85

ASD - Italy

Psichiatria dell'infanzia e dell'adolescenza (2009), vol. 76: 687-700   687

Processi cognitivi e Disturbi Specifici dell'Apprendimento: il contributo diagnostico del Cognitive Assessment System

Evaluate the cognitive processes in the Specific Learning Disorders: the Cognitive Assessment System diagnostical contribution

STEFANO TADDEI*, FRANCESCA VENDITTI*, SARA CARTOCCI*

Summary *The diagnosis of the Specific Learning Disabilities (SLD), commonly referred to as discrepancy criterion, is often based on instruments which have an important connection to both learning and IQ. Methods inspired by discrepancy criterion don't seem suitable to indicate intervention or to improve the abilities and performance of the subjects. The Planning, Attention,*

Figura 1. *Profilo cognitivo al CAS dell'intero campione.*

120,0			
115,0			
110,0			
105,0			
100,0			
95,0			
90,0			
85,0			
80,0			
75,0			
70,0			
65,0			
60,0			
55,0			
50,0			
PIAN	SIM	ATT	SUCC

86

86

43
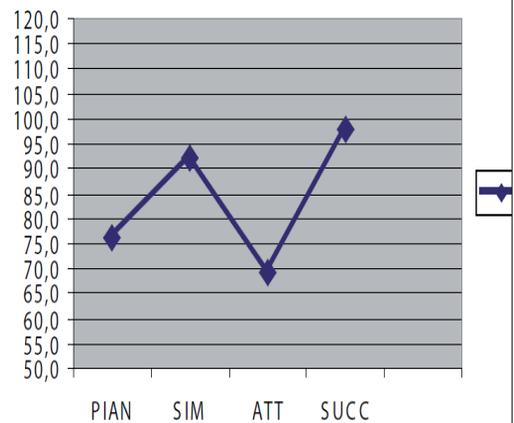
Autism and Asperger Syndrome

ASRS preliminary findings

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Autism & Asperger's

Autism vs Asperger 6-18

Descriptive Statistics and Comparisons Between Individuals with Autism (n = 20) and Asperger Syndrome (n = 23).

		Mn	*SD*	*F*	*Sig*	*d*-ratio
PLAN	Asperger	103.5	31.6	1.71	.20	0.40
	Autism	92.9	19.2			
SIM	Asperger	101.0	15.3	3.33	.08	0.54
	Autism	91.9	17.5			
ATT	Asperger	86.9	17.7	0.30	.59	0.17
	Autism	83.9	18.8			
SUC	Asperger	98.3	15.7	2.46	.12	0.47
	Autism	88.3	25.6			

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An Important Case from Norway

PASS scores from CAS and Autism Spectrum Rating Scale (ASRS) results

➢ **From school:**
➢ 14-Year-old young man has good social functions with certain limits e.g. rigidity. Many interests, but some of them were thought of as childish by his peers.
➢ Reading: OK reading, making appropriate progress.
➢ Difficulties with multi-syllable-words
➢ Difficulties with finding words. Mispronunciations, received services by speech therapist.

➢ **From parents:**
➢ Autism diagnosed at age 7.
➢ He has had a great deal of his schooling as 1-1 with a special needs teacher or assistant.
➢ In school-years 8-10 a lot of outdoors activities and kitchen work, not so much curriculum content, which the parents think he could benefit from.
➢ We met him one year ago, for three days assessment and teaching. Based on this, and the CAS2 and Autism Spectrum Rating Scale from 2018 we completed an evaluation and recommendations for his schooling.

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Slide 91

PASS Scores – Successive Processing Weakness and Social Communication Problems

Scale	T-score (90% CI)	Percentile	Classification	Interpretive Guideline
TOTAL SCORE				
Total Score	52 (49-55)	58	Average Score	No problem indicated.
ASRS SCALES				
Social/ Communication	64 (59-67)	92	Slightly Elevated Score	Has difficulty using verbal and non-verbal communication appropriately to initiate, engage in, and maintain social contact.
Unusual Behaviors	54 (50-58)	66	Average Score	No problem indicated.
Self-Regulation	37 (34-42)	10	Low Score	No problem indicated.

ASRS®

Autism Spectrum Rating Scales (6-18 Years)
Parent Ratings
By Sam Goldstein, Ph.D. & Jack A. Naglieri, Ph.D.

Differences Between PASS Scale Standard Scores and the Student's Average PASS Score Required for Sig... Subtest EXTENDED battery AGES 8-18 Years.

Cognitive Assessment System - 2		Difference from PASS Mean of:	Significantly Different (at p = .05) from PASS Mean?	Strength or Weakness
PASS Scales	**Standard Score**	**82.3**		
Planning	93	10.8	yes	
Simultaneous	91	8.8	yes	
Attention	85	2.8	no	
Successive	60	-22.3	yes	Weakness

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Slide 92

The Discrepancy Consistency Method (DCM) was first introduced in 1999 (most recently in 2017)

Essentials of CAS2 Assessment — Jack A. Naglieri, Tulio M. Otero — WILEY

Essentials of CAS Assessment
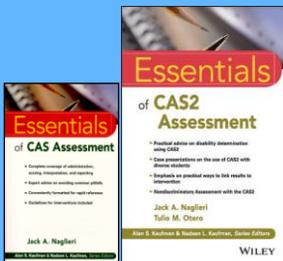
Discrepancy between high and low processing scores

Discrepancy between high processing and low achievement

Consistency between low processing and low achievement
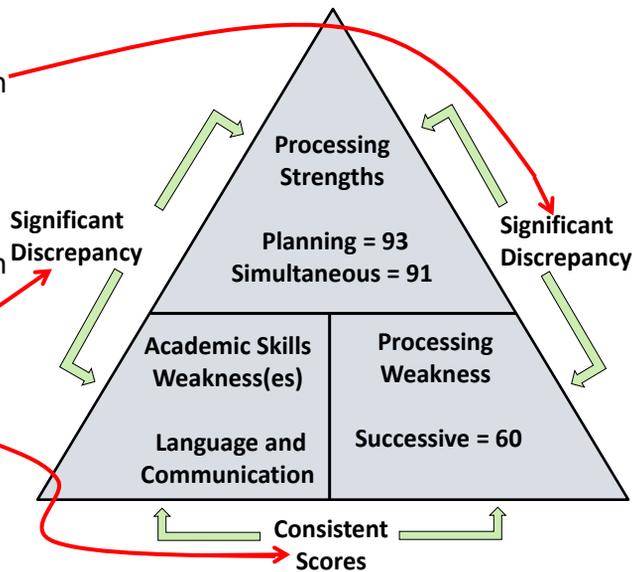
Significant Discrepancy

Significant Discrepancy

Processing Strengths
Planning = 93
Simultaneous = 91

Academic Skills Weakness(es)
Language and Communication

Processing Weakness
Successive = 60

Consistent Scores

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Presentation Outline

➤An understanding of Autism Spectrum Disorders (ASD)

➤Symptoms of ASD: Building the ASRS

➤Importance of a national standardization sample

➤Autism Spectrum Rating Scale

• Structure, Reliability, & Validity

➤Autism Spectrum Rating Scale Short Form

• Structure, Reliability, & Validity

➤ASRS Interpretation with other measures

➤**Conclusions**

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Final Thoughts

➤Accurate diagnosis requires well developed tools that

• Are standardized on a typical sample that represents the US population

• Represent current understanding of ASDs, especially the role of self-regulation

• Have good reliability and validity

• Have relevance to intervention

• Are relatively easy to administer and score

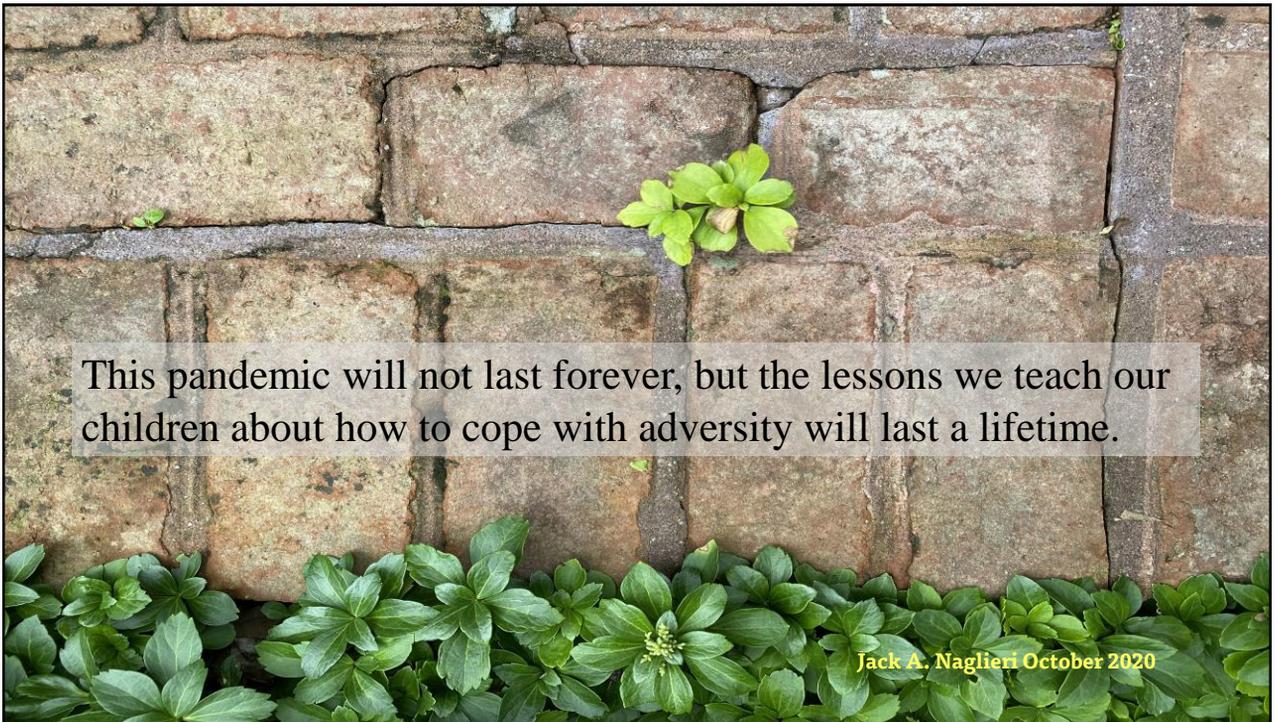➤Our overall goal is greater understanding to help individuals with ASD

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Questions and Thoughts Please

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This pandemic will not last forever, but the lessons we teach our children about how to cope with adversity will last a lifetime.

Jack A. Naglieri October 2020

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