Validity issues in pediatric neuropsychological assessment Jacobus Donders Jacobus.Donders@maryfreebed.com

Restoring Hope and Freedom Mary Free Bed

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Before we start

• Presenter reports no conflicts of interest.

- Objectives:
 - Understand the rationale for evaluating both performance and symptom validity in pediatric neuropsychological assessments.
 - Describe factors that may contribute to failure of validity tests.
 - Be prepared to potentially intervene when validity checks are failed.
 - Provide effective written reports and sworn testimony.

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What do our organizations say?

- Both NAN (2005) and AACN (2009) have long had position papers, indicating that evaluation of validity is not optional but required as standard of care in neuropsychological evaluations.
- However, those papers dealt primarily with adult practice.
 Most recent AACN update recommended that "practitioners"
- should use [validity tests] routinely in neuropsychological evaluations of school-aged children and adolescents" (Sweet et al., 2021, The Clinical Neuropsychologist, 35[6], 1053-1106).

Ethical considerations: Do no harm

- How could validity testing prevent harm, you may ask.
- Example: Child with epilepsy is seen for presurgical work-up.
- Poor effort results in very low scores across the board.
- Low baseline functioning is a contra-indication for risky surgery.
- Child may not get the best treatment.



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Less dramatic points

- Bases of assessment: We're supposed to base our opinions on information that is sufficient to substantiate them.
- Purposes of assessment: We should consider various factors that may affect the accuracy of assessment findings.
- If we don't check validity:







Developmental psychology literature

- A minority of 2-year-olds and a majority of 3-year-olds are capable of lying.
- They get a lot better at it by age 5. Developing theory of mind allows for more



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Kids don't always do their best

They may not be interested in the task.
They may be angry about having to miss a preferred event or activity.

• There may be psychosocial stressors that keep them pre-occupied.



Malingering by proxy can happen but
 does not appear to be very common in most clinical settings.

How common is validity failure in children?

• Really depends on the setting and sample:

- Constantinou & McCaffrey (2003): 3% in a mixed clinical sample.
 Kirkwood & Kirk (2010): 17% in mild traumatic brain injury.
- Chafetz et al. (2007): 28-37% in social security / disability evaluations.
 So, what to do?



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Two types of validity to be concerned about

• Performance validity: • The degree of bona fide effort that a child

puts forth to allow routine interpretation of other tests of mental ability (e.g., memory).

• Symptom validity:

· The veracity of subjective complaints (e.g., anxiety, pain) that a child or their caregiver reports.



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Examples of performance validity measures

• Best validated stand-alone measures for children:

• Test of Memory Malingering • (< 90% on Trials 2 or 3). Medical Symptom Validity Test

• (< 85% on any of Immediate Recall, Delayed Recall or Consistency).



Other performance validity measures

 Memory Validity Profile is newer.
 Cut-off < 30/32 raw total works well, except with very young children (Wilson & Lesica, 2021, Child Neuropsy, 27[4], 516-531).



 PdPVTs is the most recent set of measures.
 Not much independent research yet. Test authors reported no race or sex bias in standardization sample (McCaffrey et al., 2023, *J Ped Neuropsy*, 9[1], 18-28).

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What if even only 1 PVT is failed?

- That is still likely to suppress results on other tests:
 Donders & Gardner (2020), Applied Neuropsychology: Child, 9(4), 355–359.
 - Green & Flaro (2021), Applied Neuropsychology: Child, 10(1), 65-81.



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Donder & Gardner study: Processing Speed

Could this be explained by greater true cognitive impairment in the Fail group? *No*, because PS correlated with coma (*p* < .002) whereas TOMM did not (*p* >.14)

in the complete sample.



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More examples of performance validity measures

- Embedded measures:
 - Reliable Digit Span needs much lower cut-off than in adults, to the point that sensitivity becomes very low.
 - Several indices proposed for the CVLT-C (Recognition Discriminability and a Forced-Choice one), but these have received little replication.
 ChAMP also has an embedded (Recognition List) index; little research.

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• Bottom line: stick to stand-alone STICK

measures, for now.

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Don't want to spend all that time?

- Loughan et al. (2016)* suggested that scores > 40 on TOMM Trial 1, or even > 8/10 on its first 10 items, are highly predictive of eventually passing Trial 2 and Retention.
- of eventually passing Trial 2 and Retention. Donders & Gardner (2020)** confirmed this: Both had acceptable specificity (> .90) and sensitivity (> .60).
- * Child Neuropsychology, 22(6), 707–71
- ** Applied Neuropsychology: Child, 9(4), 355–359.

Examples of symptom validity measures

- Almost all are embedded into larger questionnaires pertaining to adjustment and mood.
- Can be obtained from child and parent (some also teacher).
- Examples:
 - Negativity index on the BRIEF-2
 - F index on the BASC-3Dissimulation index on PIC-2 and PIY



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Fa • 1 • 3	airly little overlap in terms of failure Kirk et al. (2014), <i>Assessment</i> , <i>21</i> (5), 562-569. 274 children and adolescents with mild TBI.							
		MSVT Pass	MSVT Fail					
	BASC-2 Pass	195 (71%)	46 (17%)					
	BASC-2 Fail	29 (10%)	4 (2%)					







- Can we just forget about SVT's then? • No. They just measure different things than PVTs and cannot be used as a substitute for them.
- Children may still over-report subjective symptoms, even when they put forth good cognitive effort:
 - Increased attention for being "sick" or "hurt".
 - Avoidance of specific duties or situations.
 - Medication-seeking behavior in adolescents.Malingering by proxy for \$ incentives.



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Considering multiple tests with SVTs

- Donders et al. (2023) *Applied NeuroΨ*: *Child*, *14*(2), 174-181.
- 198 6-16 year-old children with various diagnoses whose parents produced <u>valid</u> BASC-3 and BRIEF-2 profiles.
- Correlations between instruments were moderate (0.42 - 0.77).
- They disagreed about presence/absence of impairment in about 1 out of every 4 cases.













Implications

- BASC-3 and BRIEF-2, which both have embedded SVTs, provide complimentary and non-redundant information.
- They do not inform about performance validity, so you need both.
- Use at least one of each, and preferably more than one of each, in each eval.



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The importance of base rates

- Reflect how common poor scores or contrasts are in a specific population (e.g., test's standardization sample).
- Even though a finding may be statistically significant (p < .05), that does not mean that it is uncommon.

 It may look like one, walk like one and quack like one but that does not mean that it is a:







Brooks & Iverson's (2012) chapter in Pediatric Forensic Neuropsychology

- Poor scores are common across all neurocognitive domains in healthy children.
- Their frequency will depend on:
 - Where the clinician sets the cut-off • The number of tests administered.

 - Characteristics of the child (e.g. IQ)
 Characteristics of the parent (e.g., education)



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Unfortunately . . .

- Test manuals typically report only univariate base rates. How common are discrepancies of 15 points
- between VC and FR on the WISC-V? • What we really need to consider are
- multivariate base rates.
 - · How common is it that a child has a 15-point discrepancy between any two factor index scores on the WISC-V?



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As an example:

- Aita et al. (2022), Child Neuropsychology, 28(4), 535-553.
- Reported on multivariate base rates of elevated scores on the clinical scales of the BRIEF-2.
- Split out by self, parent and teacher reports.
- Broken down by different elevation levels / cut-offs.
- For illustration, let's focus on a T score cut-off of > 65.













What to take away from this:

- Isolated poor scores, even when PVTs and SVTs are passed, are not all that uncommon.
- > 2 infrequent scores should raise at least one eyebrow.
- Just because a single elevation is not uncommon, that does not necessarily mean that it is unimportant.
- You need to interpret these data in the context of *all* other available information, considering brain-behavior relationships.



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Equity, diversity, inclusion and social justice

• Most of the literature on PVTs and SVTs has been based on

- predominantly White, English-speaking samples.We should also be aware of our own explicit and implicit biases.
- Research with adults: cut-offs may need to adjusted for non-native English speakers if

they have low education / acculturation.Not much research in pediatrics on this.





More specifically looking at BASC-3								
• B	errill et al. (20	23), Dev Neur	opsychol, 48(3), 56-64.				
		BASC-3 Valid	BASC-3 Invalid	Total				
	White	54 (76%)	17 (24%)	71 (69%)				
	BIPOC	26 (81%)	6 (19%)	32 (31%)				
	Total	80 (78%)	23 (22%)	103 (100%)				

/IVP				
l. (2023),	Dev Neur	opsychol, 48(3), 56-64.	
M	VP <mark>Valid</mark>	MVP Invalid	Total	
e 6	7 (94%)	4 (6%)	71 (69%)	
c 2	8 (88%)	4 (12%)	32 (31%)	
9	5 (92%)	8(8%)	103 (100%)	
	/IVP I. (2023), I e 67 c 24 I 99	AVP I. (2023), Dev Neur MVP Valid e 67 (94%) C 28 (88%) I 95 (92%)	MVP I. (2023), Dev Neuropsychol, 48(3 MVP Valid MVP Invalid e 67 (94%) 4 (6%) C 28 (88%) 4 (12%) I 95 (92%) 8(8%)	MVP Nurp sychol, 48(3), 56-64. MVP valid MVP invalid Total e 67 (94%) 4 (6%) 71 (69%) C 28 (88%) 4 (12%) 32 (31%) I 95 (92%) 8(8%) 103 (100%)

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So, do demographics make a difference?

- Well, being racially minoritized does not. Common pediatric PVTs and SVTs are *not* biased against children who are Black, Indigenous or Of Color.
- However, that does distinctly not mean that there are no other demographic factors that need to be taken into account.



Recent findings in a large mixed clinical sample

- Donders & Romain (in press), Child Neuropsychology.
- 293 6-16 year-old children completed the MVP as part of an outpatient neuropsychological evaluation.
- 62% White, 62% male, median parental education 13 years.
 Wide range of diagnoses, with TBI (29%), ADHD (16%), and CP (7%) being relatively most common.
- Used a universal cut-off of < 30/32 for MVP failure.

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But kids who failed the MVP criterion were:

On average, about 2.6 years younger than those who passed.
About 3 times more likely to be or

have been in special education.These two variables were unrelated.















Implications:

- A uniform PVT cut-off across all ages and all levels of neurological impairment is ill-advised with children.
- We need adjusted cut-offs that maintain 90% specificity at both ends of the child-adolescent age spectrum as well as with various common pediatric neurological conditions.
- Normative samples need adequate representation of children from traditionally marginalized groups.

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So, what if you run into a PVT or SVT failure?

• You have a number of options (listed in increasing number of reported use in the literature):

- Continue the examination with no changes.
- Terminate the examination prematurely.

Confront the examinee about performance.Administer additional validity measures.

Just remind them to do their best.



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My suggestion would be to:

- Don't wait for this to happen but work proactively.
- Build rapport with the child first.
- Encourage them to do their best.
- Tell them the parents get homework.
- Start with a relatively easy task.
- Spread validity checks throughout the rest of the assessment.

If you still encounter a failure:

- First remind them to do their best. Ask if they want a break.
- Then continue with the exam until a second PVT is failed.
- At that time, speak to the parent first and offer to confront the child in a *non-threatening* manner.

• If that does not resolve the problem, then terminate the exam prematurely.



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Case example:

- 13-Y-O seen for ? ADHD in context of poor school performance.
- Fails MVP (29) and TOMM (36, 42, 39).
- Mom disappointed but not entirely surprised by this.
 Gently confronted, in mom's presence,
- about unusual findings.
- Agreed to take break and then try again.







Debriefing:

- Reveals that she wanted the medication because she (a) wanted to "fit in" and (b) had been encouraged by peers to sell it for recreational (snorting) purposes.
- Was surprised when told that she was actually smart and did not need anybody else telling her what to do.
- Still concerned about body dysmorphic issues.

• Mom agreed to set up outpatient counseling.



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So, how do you have "the talk"?

- Since you are dealing with a minor, speak with the parents first. • Do not attribute motivation. Just explain that the findings are very "unusual" or not "consistent", and that you are concerned that you may not always see their child at their best.
- How they react will determine how you go from there (See: Connery & Suchy [2015] in Kirkwood's book on Validity testing in child and adolescent assessment [pp. 145-163])



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And if the parents say:

- I knew it! He's lazy and didn't want to come.
 Maybe we need to find out if he is upset about something or if there is another reason why he is not showing us his A game.
- Oh no! That must be from her concussion!
 Her performance is actually worse than if she had been in a coma for a week. Something else may be going on. Let's talk with her, together. We don't want her looking less smart than she is.



When you talk with the child:

- Have the parent in the room with you.
- Again, don't attribute motivation.
- Ask how they think they are doing.
- Then express your concern.
- Use language that is appropriate to their developmental level.





Example: 6-year-old

- Your dad and I would like to talk about the work you have done, so far.
- How do *you* think you did on the test?
 Was there *any* time when you could not do your best?
- Was there dry time when you could not do your best
- Do you think you can try to do even better?
- (Dad): If you do, I will take you out for ice cream, later.

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Example: 14-year-old

- Your mom and I would like to talk about the test results we got from you, so far.
 I am concerned that I am not always seeing you at your best.
- M.
- Is there any reason for that? Anything that we have not yet talked about?
 What if I make a deal with you: We'll cut it down to 4 more tests, instead of 8, if you agree to work your behind off.

Documentation

- You *have* to document validity failures, how you addressed them, and what the outcome was.
- Use neutral language. Don't get carried away with emotions.
- Make it very clear to what degree the findings can be used for diagnosis and treatment.

• Suggest an appropriate follow-up plan.

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Examples of what not to say (6-year-old)

- The data are not interpretable because Johnny was being a spoiled brat.
- A blind child would have done better than Jane did on the visual tests.

 Although some of the data may not have shown Kelly at their best, I am still going to rely on my own clinical experience.



THE VOICE OF REASON

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Example of what you could do / say

 Although Maria did not appear to do her best, at first, she worked much harder after I gently confronted her about this, in the presence of her mother. I will comment only on results from those tests that she completed after we had that talk with her. I am confident that I still obtained a sufficient sample of her abilities to answer the referral question.



Or, if it did not work (14-year-old):

- Victor failed several formal checks of his effort on the tests. This continued after he was given ample opportunity to talk about this and to have the testing abbreviated.
- I do not believe that the results can be used for special education planning. They do fit with the oppositional behaviors and volatile emotions that his parents and teachers have described.
 Therefore, I recommend for him outpatient dialectical behavioral therapy.

WELL SAID.

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In summary:

- Routinely include at least 1 PVT and at least 1 SVT in your pediatric neuropsychological evaluation.
- Do not jump to knee-jerk conclusions.
- Explore options to resolve the situation.
- Be professional and reasonable in your report and during sworn testimony.
- Remember: in the end, it's not about you; it's about informing the trier of fact.



