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Introduction

- The case of GB (male, 12 years old) with a left frontal subcortical cyst, whose cause and on-set are unknown, is reported.
- Differential diagnosis considered:
 - 1) Neurocysticercosis (parasitic infection)
 - 2) Developmental cyst
- Lesion is located under the cingulate (limbic system) gyrus and prior to the splenium of corpus callosum
- Lesion to anterior cingulate gyrus is associated to abnormal emotion processing¹ and aberrant social behavior²

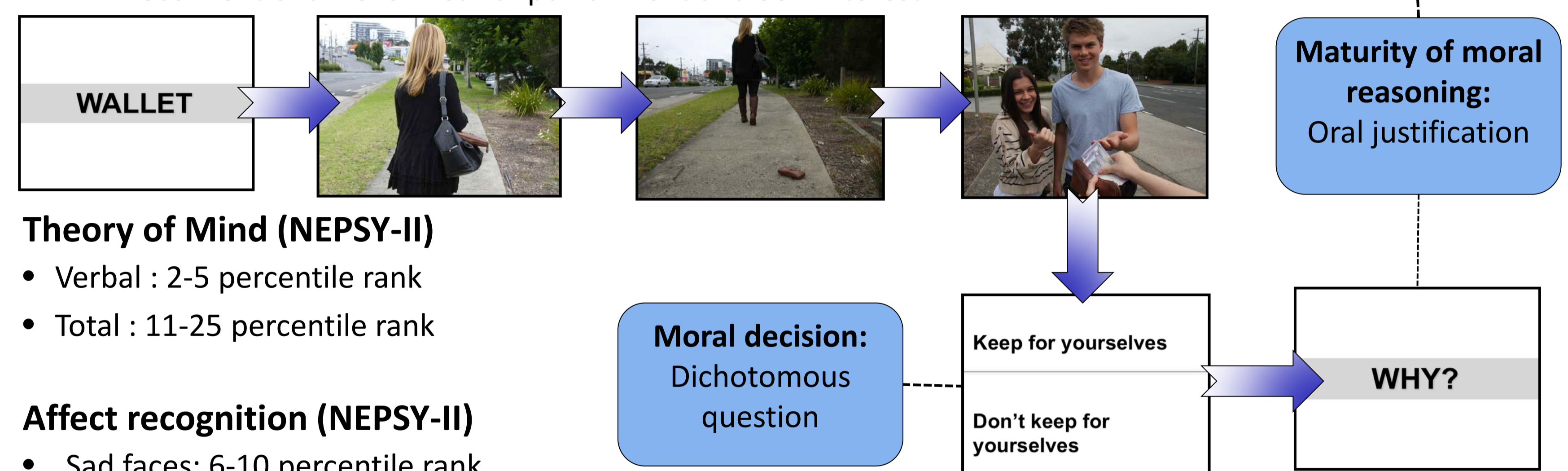
Executive functions

D-KEFS Subtests		Scaled Score	Qualitatives Description
Verbal Fluency	Category Switching Total Switching Accuracy	14	High Average - Superior
	Contrast Score: Letter VS Category	5	Borderline
Color-Word Interference	Inhibition Time	13	High Average
	Inhibition/Switching Time	11	Average
	Inhibition/Switching Total Errors	5	Borderline
Tower Test	Mean First Move Time	12	Average - High Average
	Time Per Move Ratio	13	High Average
	Move Accuracy Ratio	5	Borderline
Trail Making Test	Number-Letter Switching	13	High Average
	Number-Letter Switching vs. Combined Number Sequencing + Letter Sequencing	10	Average

Social Cognition

Moral Reasoning (So-Moral³; Beauchamp, Dooley & Anderson, 2013)

- 19 moral dilemmas (long version) designed for adolescents
- Self-paced, visual, computer-based task, First person perspective
- Raw score on Moral Decision: 13/19
- Raw score on Maturity of Moral Reasoning: 33/95
 - Transition from level 1 to Level 2
 - Preconventional Level: Fear of punishment and Self-interest



Theory of Mind (NEPSY-II)

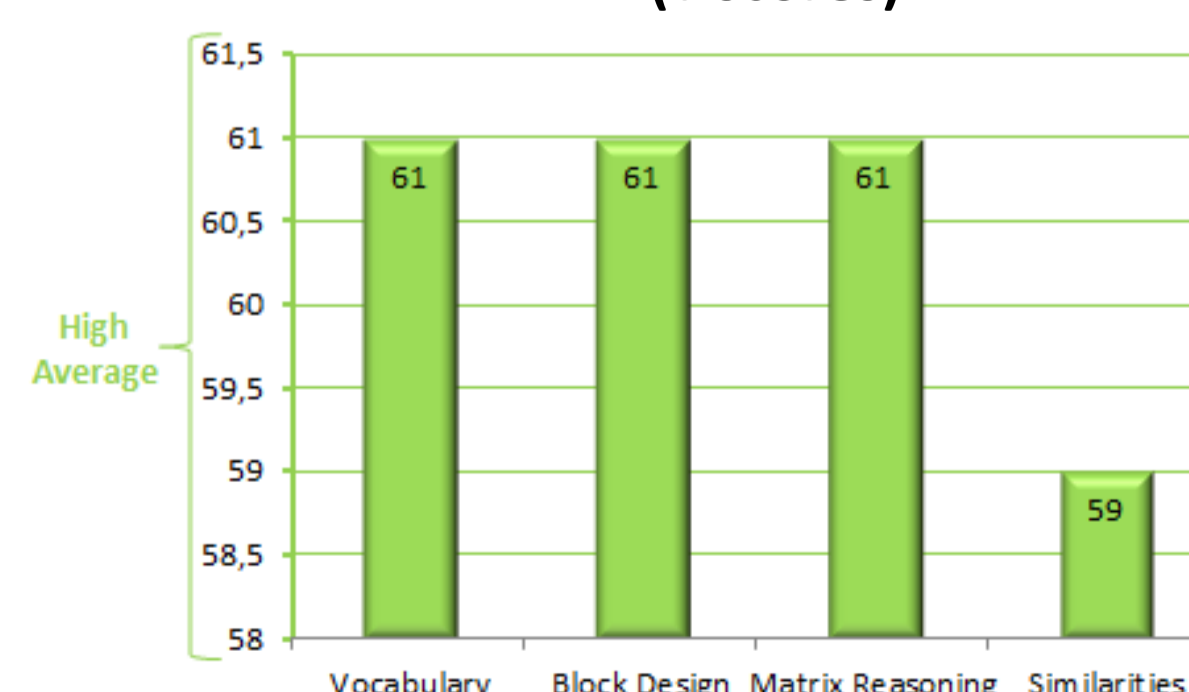
- Verbal : 2-5 percentile rank
- Total : 11-25 percentile rank

Affect recognition (NEPSY-II)

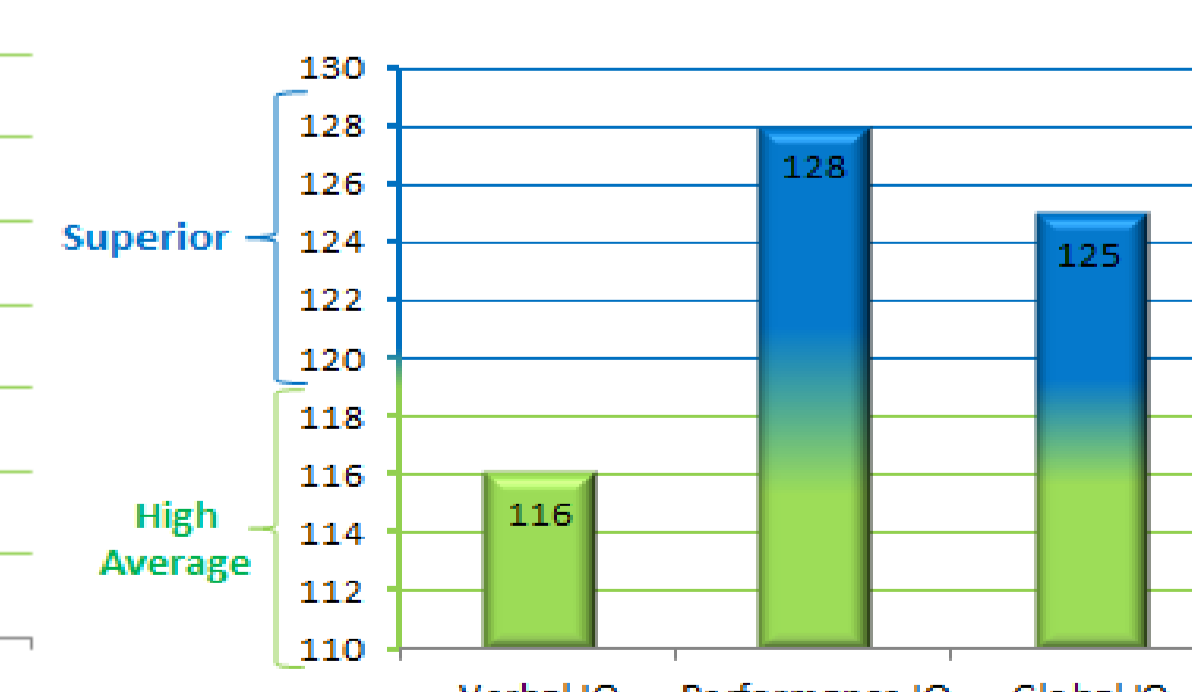
- Sad faces: 6-10 percentile rank
- Angry faces: 6-10 percentile rank

Cognitive functions

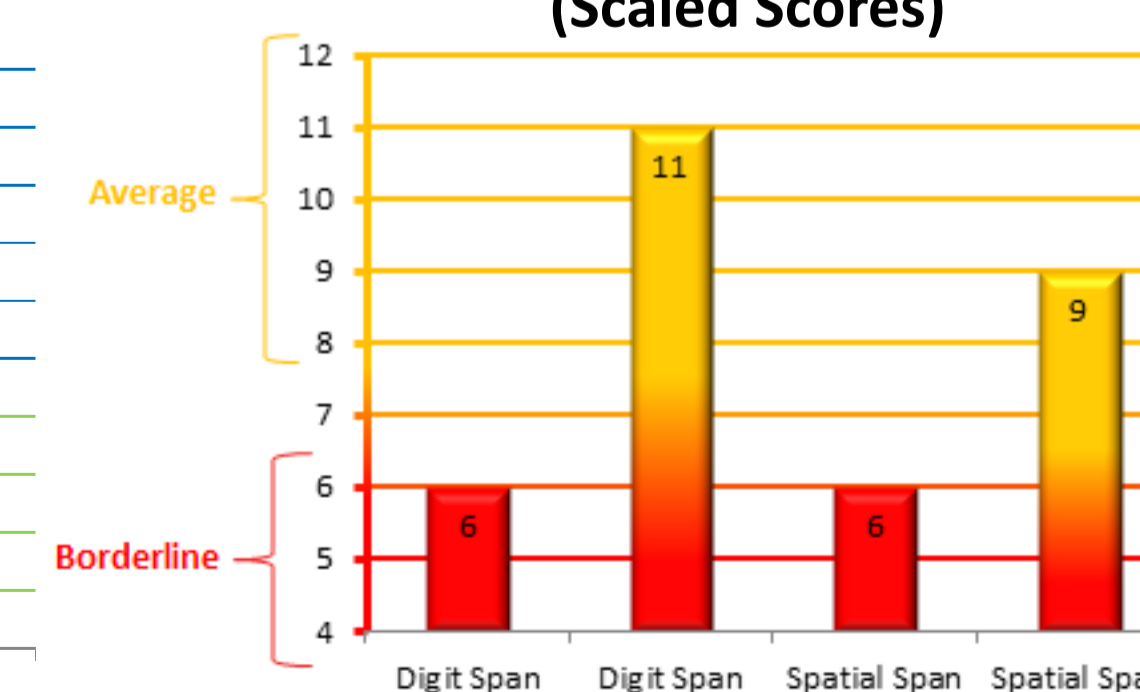
WASI Subtests (T scores)



WASI: IQ



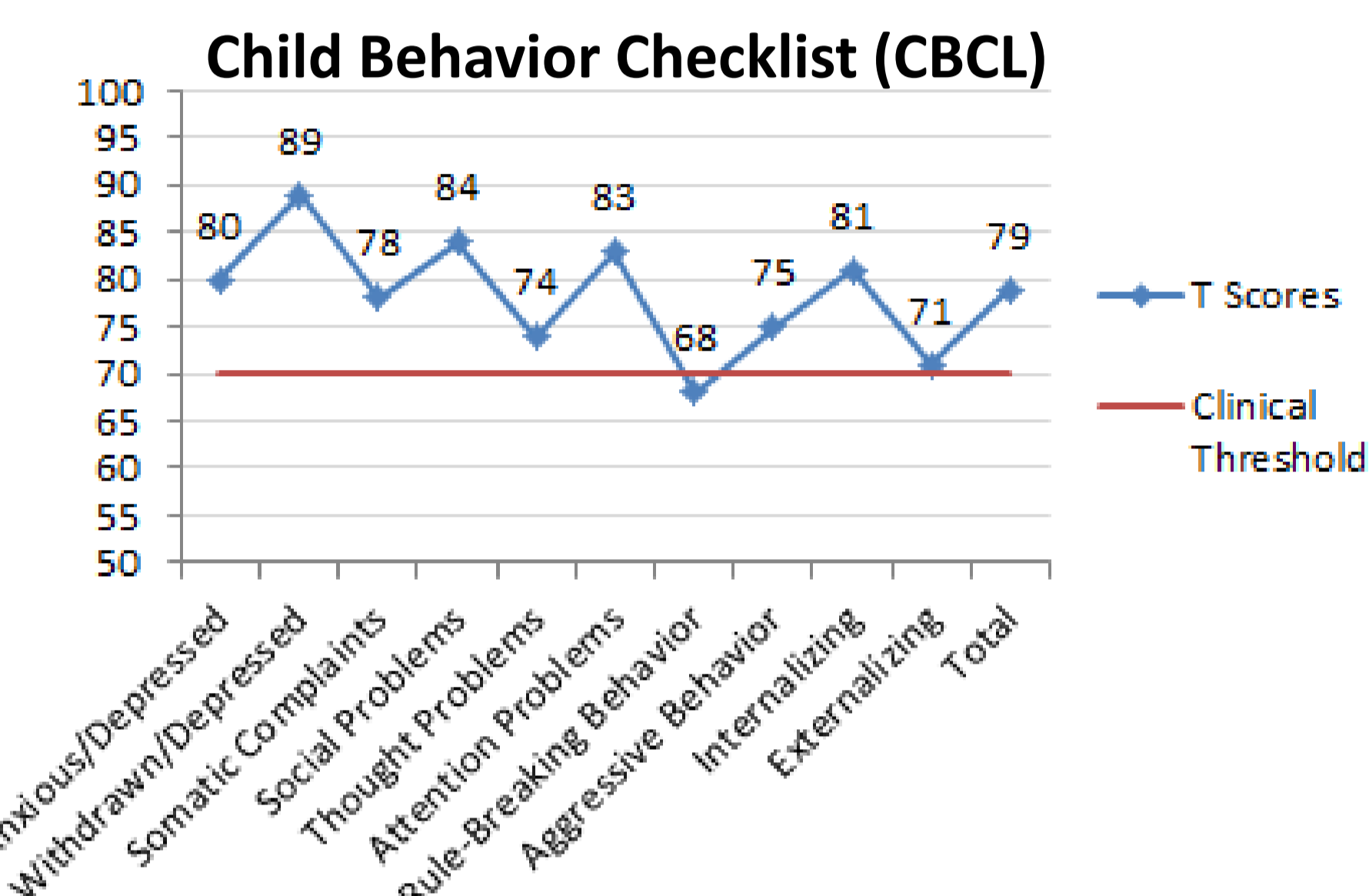
WISC-IV Integrated: Working Memory (Scaled Scores)



- High average performance in each WASI subtest, resulting in a superior global IQ.

- Performance suggests variability in attention.
- Better performance on the more difficult task, digit span backwards, than he did on less demanding task like digit span forwards.

Behavior



Conclusion

- Discrepancies between intellectual performance and social cognition
- Consistent with the notion that cingulate gyrus is linked with emotional functioning and could undermine social competence⁴
- Several sociocognitive impairments: moral reasoning, theory of mind, affect recognition and sign of high impulsivity
- Functional effect confirmed by parent report (internalizing and externalizing problems)
- Highlight the importance of assessing social cognition and behavior problems, over and above more global cognitive and executive functions, when frontal lesions are identified
- Neuropsychological diagnosis relevant? (Gifted, ASD, ADHD)

References

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