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# Long term stability of the French WISC-IV index scores: Intellectual strengths and weaknesses<sup>1</sup>

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## INTRODUCTION

- ❖ The Wechsler Intelligence Scale for Children-fourth edition (WISC-IV) is frequently used to assess a child’s overall intellectual ability.
- ❖ The clinical interpretation of the WISC-IV is currently based on a Full Scale Intelligence Quotient (**FSIQ**) and 4 Index standard scores (Verbal Comprehension: **VCI**; Perceptual Reasoning: **PRI**; Processing Speed: **PSI**; and Working Memory: **WMI**).
- ❖ The analysis of these Index scores allows the practitioners to develop hypotheses regarding normative and personal strengths and weaknesses.

## OBJECTIVES

The goal of this study is to explore the long-term stability of personal strengths and personal weaknesses with an average Test (T1) - Retest (T2) interval of 2.25 years (sd = .43; range from 1.1 to 2.9 years ).

## METHOD

### Sample

- 119 non clinical French-speaking children;
- Aged between 8 and 12 years old;
- None of them has doubled or skipped class;
- Relatively representative of the Geneva children’s population (sex, SES).

	N	Mean Age T1 (SD)	Mean Age T2 (SD)
Girls	60	8.80 (.76)	11.05 (.57)
Boys	59	8.69 (.65)	11.07 (.58)
Total sample	119	8.75 (.70)	11.06 (.57)

### Material

- The 10 core subtests and the subtest Picture Completion of the WISC-IV were administered to all children in order to calculate the 4 Index standard scores and the FSIQ.

### Procedure

- First, the mean of the child’s 4 Index standard scores is computed.
- Then for each child, the mean of all Index standard scores is subtracted from each Index standard score.
- Referring to the critical value needed for significance proposed by Grégoire (2009), the deviation from the mean is evaluated in order to determine personal strengths and/or personal weaknesses.

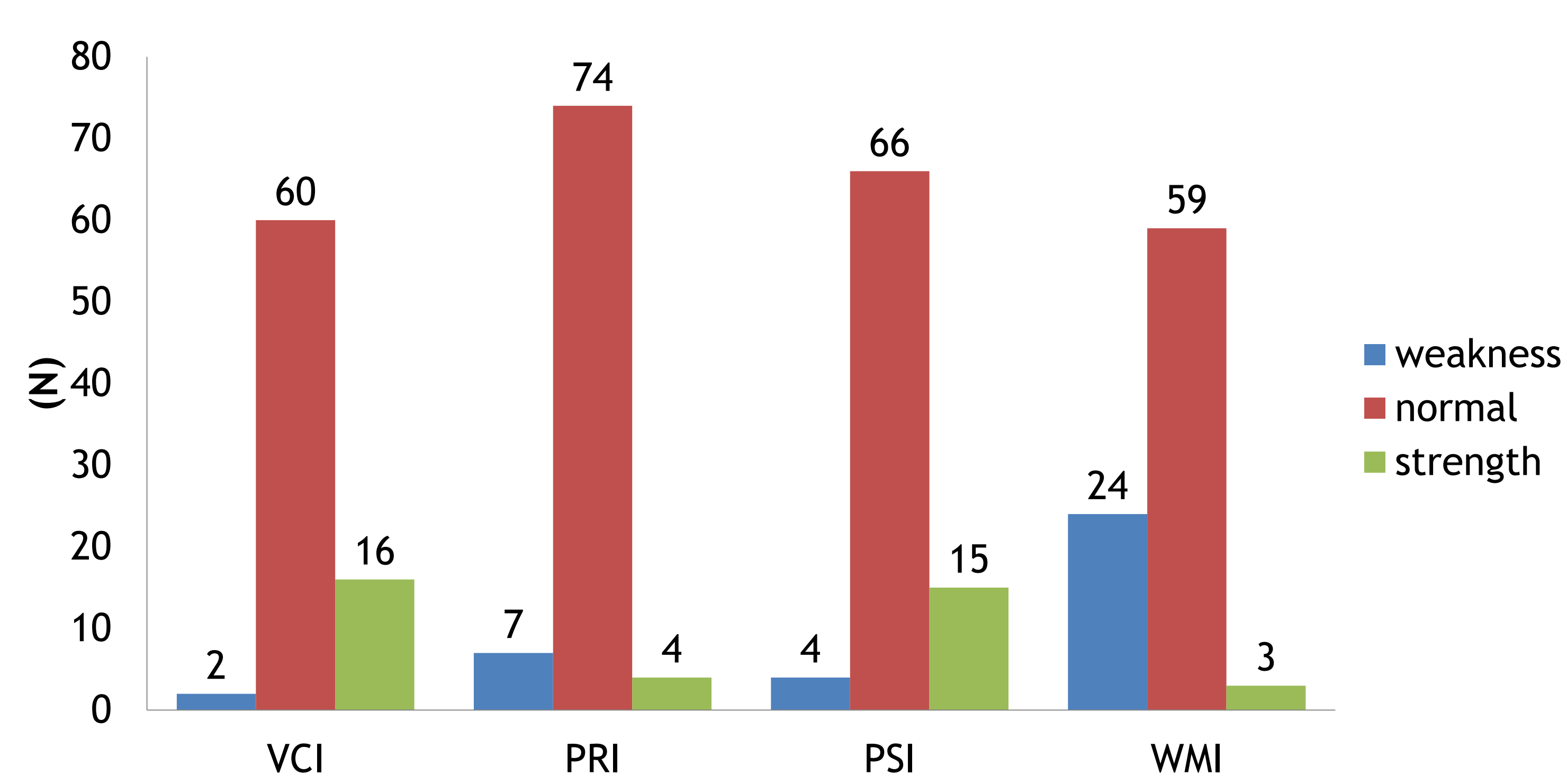
## RESULTS

- The means of child’s all Index standard scores range from 82.3 to 125.3 (mean: 101.6; sd: 9.7) at Test, and from 84.5 to 128 (mean: 103.2; sd: 8.5) at Retest.
- Regarding the number of deviant scores from the mean, most children have at least one.

Number of deviant Index score	Kieng et al. (2013)		Grégoire (2009)
	Test	Retest	Test
0	37.0%	25.2%	39.6%
1	21.8%	26.1%	26.7%
2	32.8%	42.0%	29.0%
3	6.7%	5.9%	3.6%
4	1.7%	0.8%	1.1%

## RESULTS

- In our sample and for both assessments, VCI and PSI are more often a personal strength than a personal weakness. On the contrary, WMI is more often a personal weakness than a personal strength.
- In the graphic below, the distribution of stable Index scores profile between Test and Retest is represented. For example, and for VCI, 2 children show a personal weakness, 16 children show a personal strength and for 60 children, VCI is not significantly different from the mean of the four Index scores.



- On both assessments:
  - **VCI**: 2/3 children show a personal weakness, 16/30 children show a personal strength and for 60/86 children, VCI is not different from the mean.
  - **PRI**: 7/14 children show a personal weakness, 4/12 children show a personal strength and for 74/93 children, PRI is not different from the mean.
  - **PSI**: 4/10 children show a personal weakness, 15/26 children show a personal strength and for 66/83 children, PSI is not different from the mean.
  - **WMI**: 24/36 children show a personal weakness, 3/5 children show a personal strength and for 59/78 children, WMI is not different from the mean.
- Between both assessments, 65.5%, 71.4%, 71.4% and 72.3% of children present stability in personal cognitive strength, weakness or normal for VCI, PRI, PSI, and WMI, respectively.
- Note that only 22.7% of children Index scores profiles remained exactly in the same personal strength/normal/weakness for all the 4 Index scores on both assessments.

## CONCLUSIONS

- ❖ In the general population, most children show 1-2 personal strength/weakness in their individual profile.
- ❖ Our results on a sample of 119 children suggest that personal strengths/weaknesses interpreted with the WISC-IV Index scores are not stable in long term.
- ❖ Making predictions about future strengths or weaknesses are not recommended.

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