

## DOCUMENT SUMMARY

This 2011 research paper by Soulières, Dawson, Gernsbacher, and Mottron investigates the nature of intelligence in individuals with Asperger syndrome. The study finds that, similar to other autistics, Asperger individuals show a significant advantage on **Raven's Progressive Matrices (RPM)**—a core measure of fluid intelligence—compared to their scores on standard Wechsler IQ tests. This suggests that a genuine, versatile, and underestimated intelligence is a common feature across the entire autistic spectrum, challenging deficit-based interpretations of autistic cognition.

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## FILENAME

soulieres\_2011\_research\_report\_autistic\_intelligence\_aspergers

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## METADATA

**Category:** RESEARCH **Type:** report **Relevance:** Core **Update Frequency:** Static **Tags:** #autistic-intelligence #asperger-syndrome #ravens-progressive-matrices #wechsler-scales #fluid-intelligence #michelle-dawson #enhanced-perception **Related Docs:**

- [happe\\_2009\\_research\\_report\\_autism\\_talent\\_detail\\_focus](#)
  - [baron-cohen\\_2009\\_research\\_report\\_autism\\_talent\\_hyper-systemizing](#)
  - [research\\_report\\_neurotypical\\_baseline\\_critique](#) **Supersedes:** N/A
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## FORMATTED CONTENT

### The Level and Nature of Autistic Intelligence II: What about Asperger Syndrome?

#### Abstract

A distinctively uneven profile of intelligence is a feature of the autistic spectrum. Within the spectrum, Asperger individuals differ from autistics in their early speech development and in being less likely to be characterized by visuospatial peaks. While different specific strengths characterize different autistic spectrum subgroups, all such peaks of ability have been interpreted as deficits: isolated, aberrant, and irreconcilable with real human intelligence. This view has recently been challenged by findings of autistic strengths in performance on **Raven's**

**Progressive Matrices (RPM)**, an important marker of general and fluid intelligence. We investigated whether these findings extend to Asperger syndrome, an autistic spectrum subgroup characterized by verbal peaks of ability, and whether the cognitive mechanisms underlying autistic and Asperger RPM performance differ. Thirty-two Asperger adults displayed a significant advantage on RPM over Wechsler Full-Scale and Performance scores relative to their typical controls, while in 25 Asperger children an RPM advantage was found over Wechsler Performance scores only. As previously found with autistics, Asperger children and adults achieved RPM scores at a level reflecting their Wechsler peaks of ability. Therefore, strengths in RPM performance span the autistic spectrum and imply a common mechanism advantageously applied to different facets of cognition. Autistic spectrum intelligence is atypical, but also genuine, general, and underestimated.

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## Introduction

Individuals on the autistic spectrum are characterized by atypical information processing, raising the question of how best to assess and understand their intellectual abilities. Their unusual profile of performance on popular intelligence test batteries is a durable empirical finding, yet it is often eclipsed by deficit-based interpretations.

This research challenges that assumption by comparing two divergent approaches to measuring intelligence:

- **Wechsler scales (e.g., WAIS, WISC):** These are batteries of 10+ subtests with specific oral instructions. Atypical individuals who lack specific skills (e.g., typical speech processing) or experiences may produce scores that do not reflect their general intelligence.
- **Raven's Progressive Matrices (RPM):** This is a single, self-paced test of geometric designs that minimizes spoken instruction. It is regarded as the most complex single test of intelligence and the best marker for **fluid intelligence** (reasoning and novel problem-solving).

A previous study (**Dawson et al., 2007**) found that autistic individuals scored an average of 30 percentile points higher on RPM than on Wechsler scales, a discrepancy not seen in typical individuals. This study investigates if this advantage extends to individuals with **Asperger syndrome**, who, unlike many autistics, often show verbal peaks of ability rather than visuospatial ones.

## Key Findings

The study compared 32 Asperger adults and 25 Asperger children to non-Asperger controls on both Wechsler scales and RPM.

- **Asperger adults** demonstrated a significant advantage in their RPM scores over their Wechsler Full-Scale IQ (FSIQ) and Performance IQ (PIQ) scores. Their average RPM was at the **74th percentile**, while their FSIQ was at the **47th percentile**.
- **Asperger children** showed a significant advantage in their RPM scores over their Wechsler Performance IQ (PIQ), but not their Verbal IQ (VIQ).

- Crucially, for both Asperger adults and children, their **best performances on Wechsler subtests were at a similar level to their RPM scores**. This suggests their peak ability on a standard IQ test, not their overall score, is more representative of their general intelligence as measured by RPM.
- The difficulty of each RPM item was highly correlated between the Asperger and non-Asperger groups. This indicates that RPM is measuring the **same construct (genuine intelligence)** in both groups, not some splinter skill.

## Discussion and Relevance

The results demonstrate that the advantage on RPM is not limited to autistics with visuospatial peaks but is also characteristic of Asperger individuals with verbal strengths. This suggests a fundamental property of intelligence across the autistic spectrum.

The authors propose that autistics' cognitive processes function in an atypically independent way, leading to "parallel, non-strategic integration of patterns." This allows them to maintain more veridical representations (closer to the actual information in the environment) when performing complex tasks, without the loss or distortion of information that can characterize typical processing hierarchies.

Thus, while there has been a long tradition of pursuing speculated autistic deficits, it is important to consider the possibility of strength-based mechanisms as underlying autistics' atypical but genuine intelligence.

The findings strongly suggest that the level and nature of autistic intelligence have been systematically underestimated by standard assessment instruments. The discrepancies revealed between different measures of intelligence underline the ambiguous, non-monolithic definition of intelligence itself. Autistic intelligence is atypical, but it is also genuine, general, and complex.