

Slovenian Standardisation Data in an International Context

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Compare the Slovenians norms for the various RPM tests with those collected in other countries.

- Slovenian data are particularly useful for comparing because, data have been collected for ALL the RPM tests.
- We can broaden the scope of explanations of apparent differences in test scores between countries.

RPM is the most frequently used test in Slovenia (EU survey 2009)

First standardization of the CPM, SPM and APM – 1998

4850 data - 29 kindergartens (individual administration), 23 primary schools and 15 SSs.

- CPM (individual administration): 550 children, 6 to 7 years old.
- CPM (group administration): 1230 children, 7 to 13 years old.
- SPM: 1620 children, 7,5 to 18 years old.
- APM: 1450 children, 12 to 19 years old.

Second standardization of the SPM-Plus – 2005, 2006

- Children between age 10.5 and 14.5 (primary schools), n = 1079.
- Adolescents aged 14 to 17 (primary and secondary schools), n = 610.
- Adults aged 38 to 53, n = 322.

Once again in 2008

SPM for children aged 9-11, n = 729.

Standard Progressive Matrices

Smoothed 1998 Norms for Slovenia

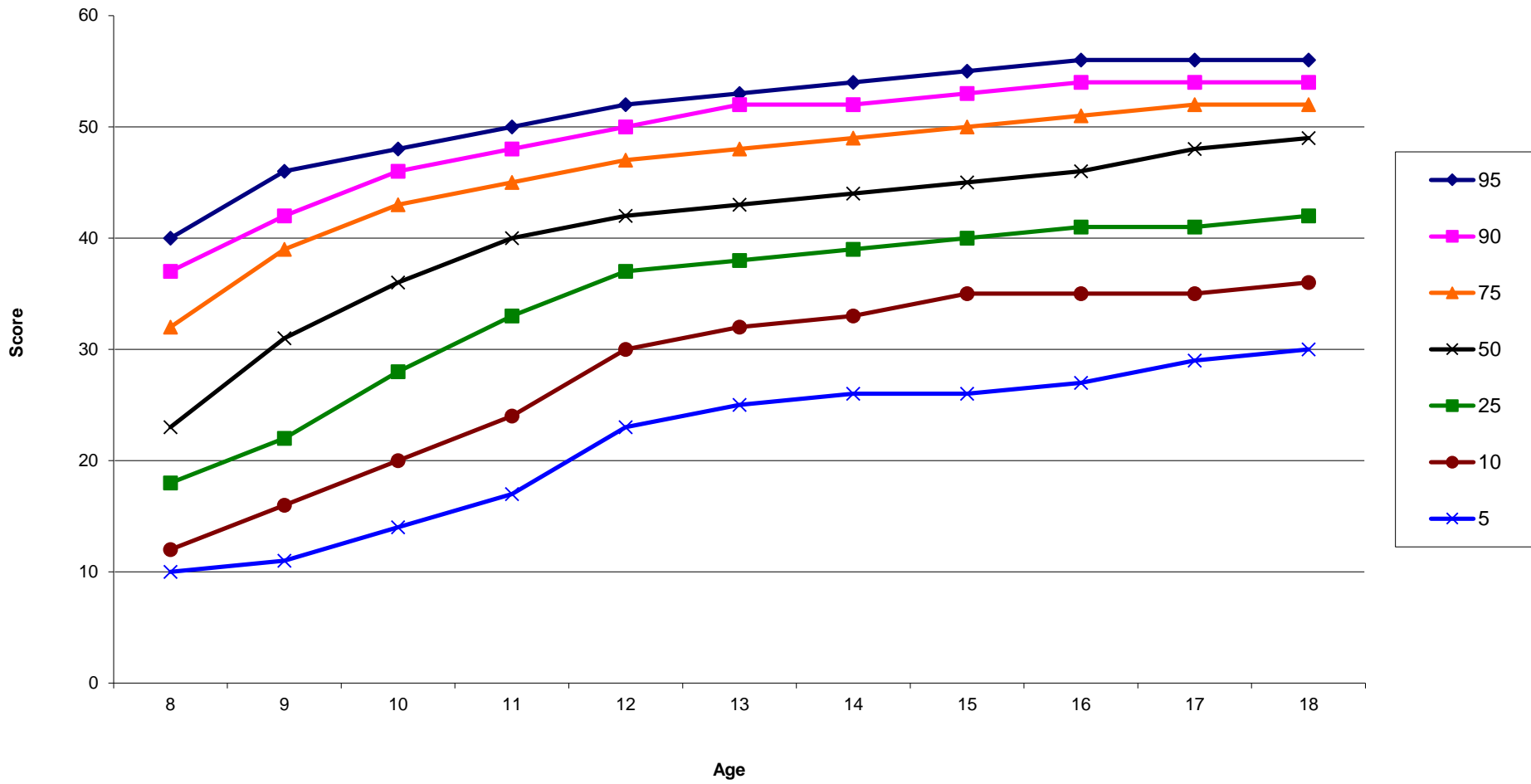
Age in Years (Months)

| Percentile | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|------------|--------------------|--------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 7(6) to 8(5) | 8(6) to 9(5) | 9(6) to 10(5) | 10(6) to 11(5) | 11(6) to 12(5) | 12(6) to 13(5) | 13(6) to 14(5) | 14(6) to 15(5) | 15(6) to 16(5) | 16(6) to 17(5) | 17(6) to 18(5) |
| 95 | 40 | 46 | 48 | 50 | 52 | 53 | 54 | 55 | 56 | 56 | 56 |
| 90 | 37 | 42 | 46 | 48 | 50 | 52 | 52 | 53 | 54 | 54 | 54 |
| 75 | 32 | 39 | 43 | 45 | 47 | 48 | 49 | 50 | 51 | 52 | 52 |
| 50 | 23 | 31 | 36 | 40 | 42 | 43 | 44 | 45 | 46 | 48 | 49 |
| 25 | 18 | 22 | 28 | 33 | 37 | 38 | 39 | 40 | 41 | 41 | 42 |
| 10 | 12 | 16 | 20 | 24 | 30 | 32 | 33 | 35 | 35 | 35 | 36 |
| 5 | 10 | 11 | 14 | 17 | 23 | 25 | 26 | 26 | 27 | 29 | 30 |
| <i>n</i> | 99 | 128 | 115 | 125 | 123 | 116 | 132 | 144 | 283 | 211 | 80 |

The dangers involved in seeking to make fine discriminations in the tails of the distributions may be illustrated by citing Bryan's Dockrell's finding that someone with a scaled score of 24 on the WISC R would be said to have an IQ of 47 if the statistician who compiled the norms fitted a Gaussian curve to the data (the usual approach) but 60 if he or she extrapolated the true curve derived from the standardisation sample.

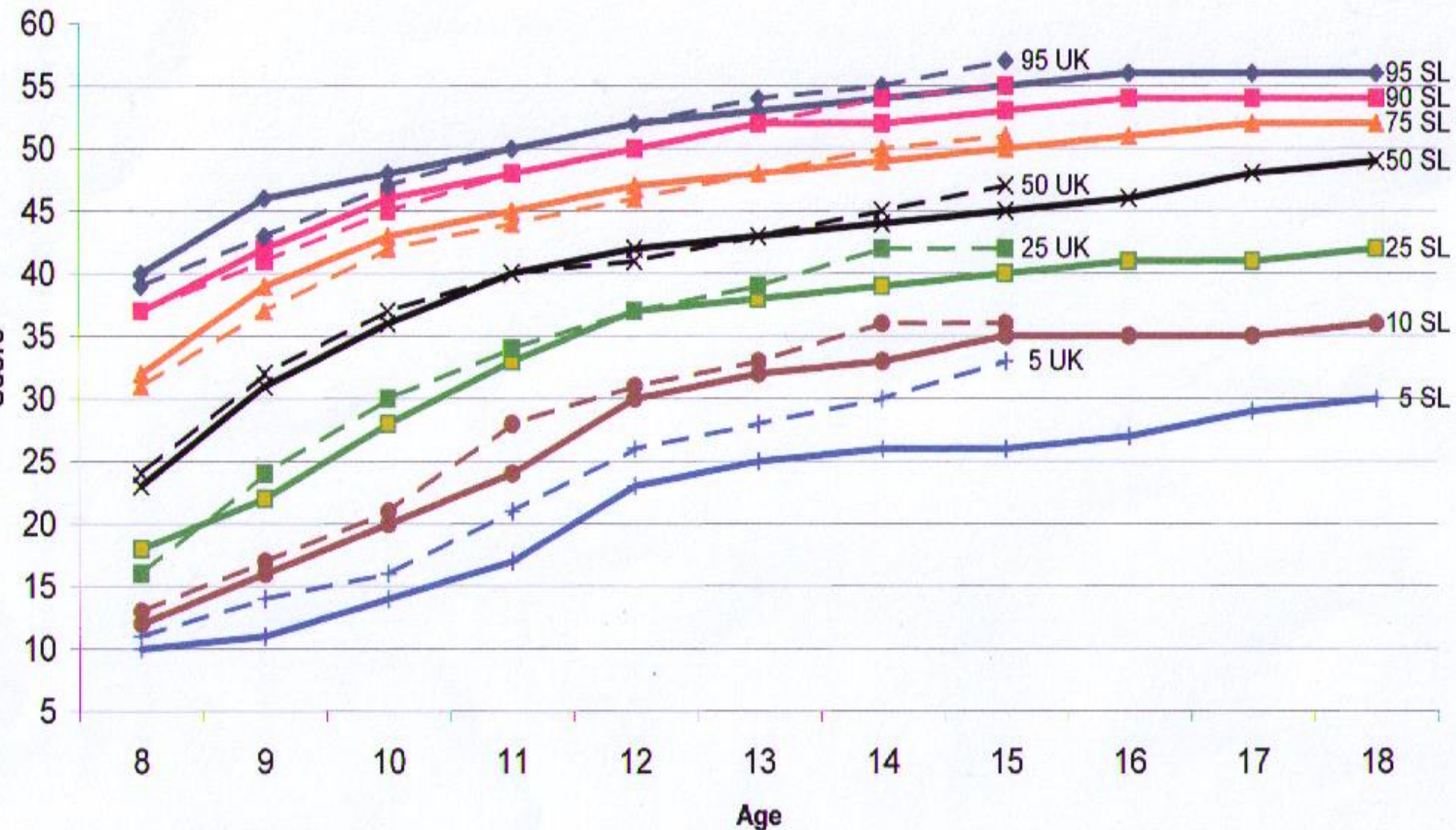
SPM

1998 Smoothed Norms for Slovenia



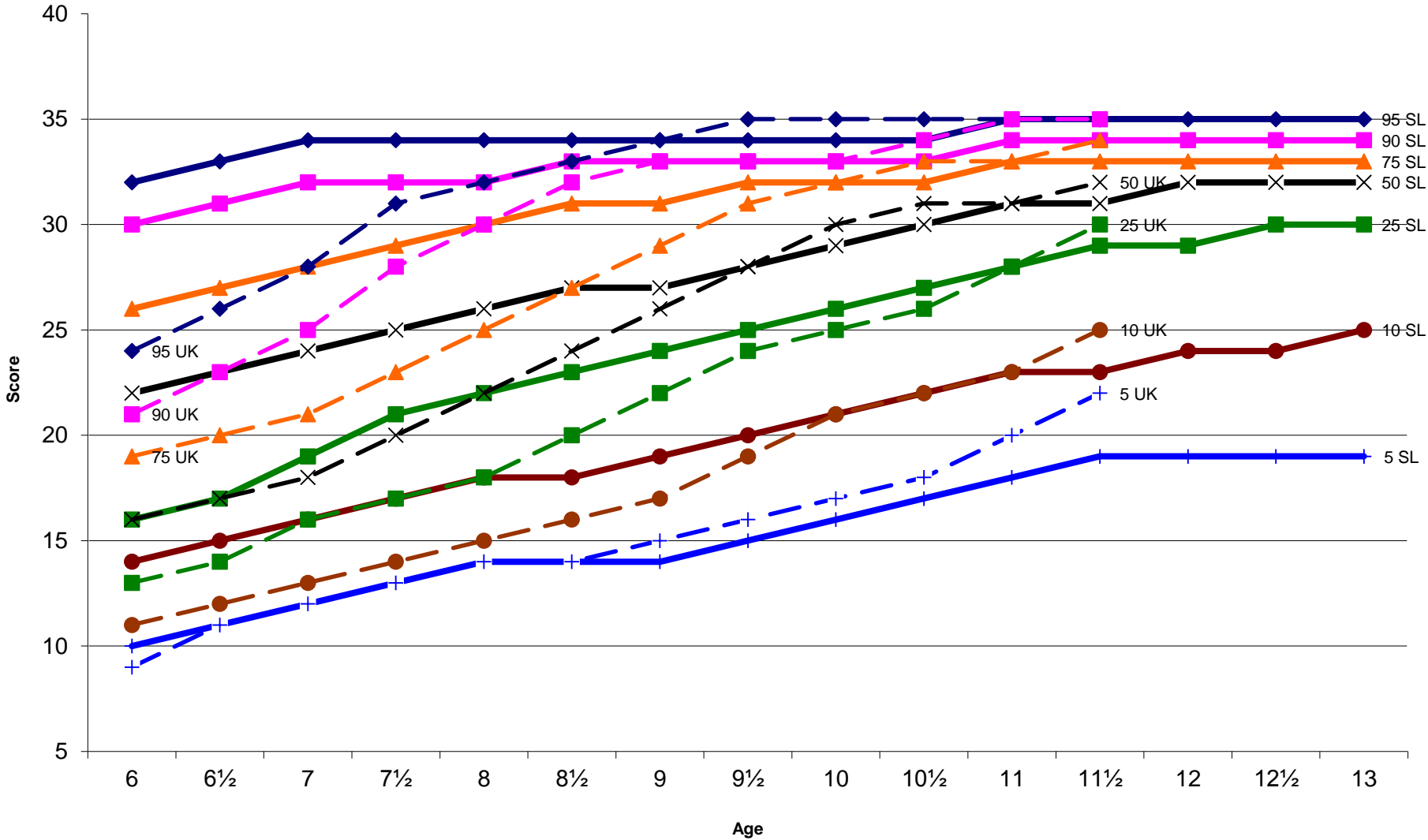
SPM

Smoothed 1998 Slovenian and 1979 British Norms



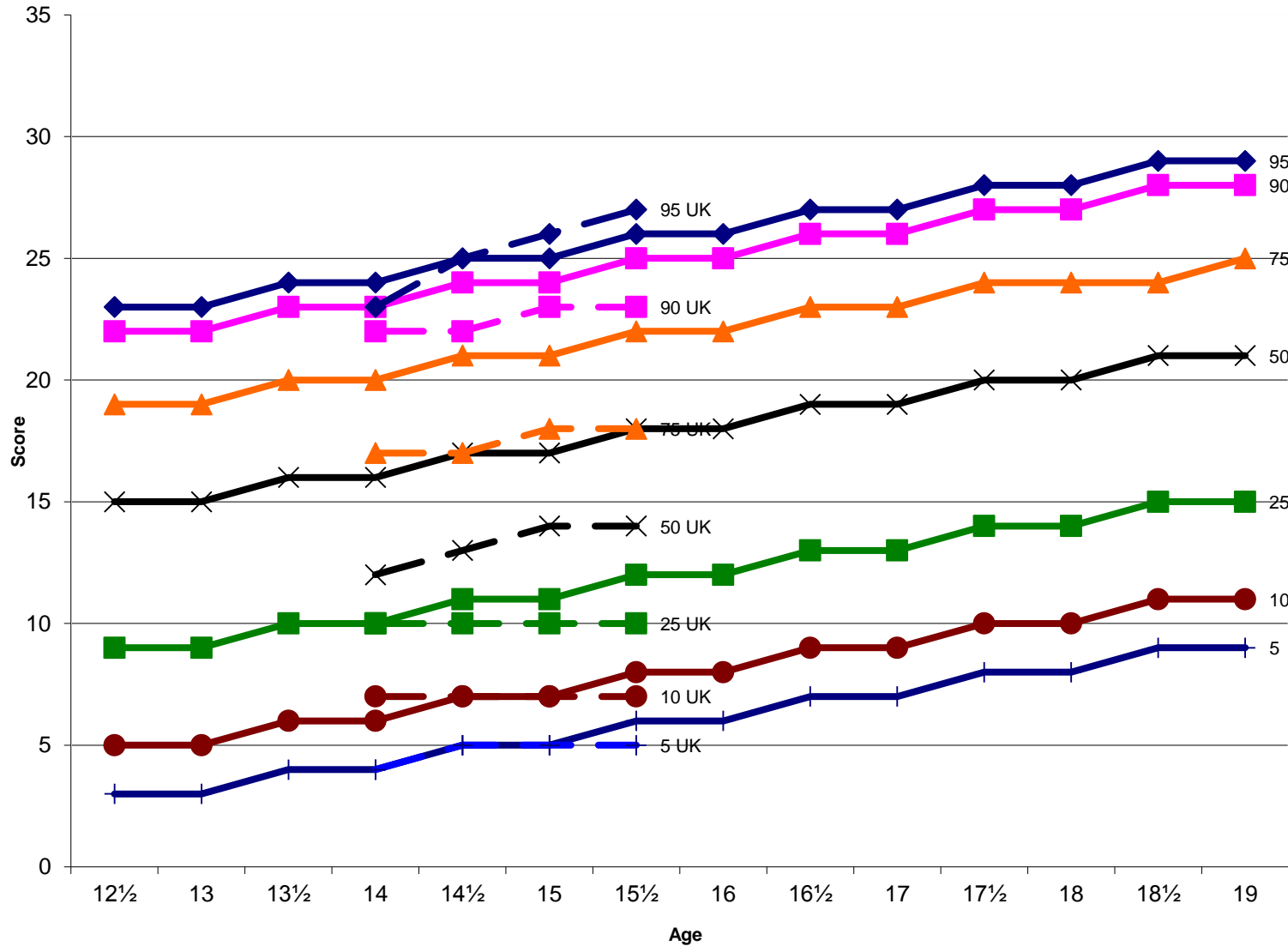
CPM

Smoothed 1998 Slovenian and 1982 Dumfries Norms



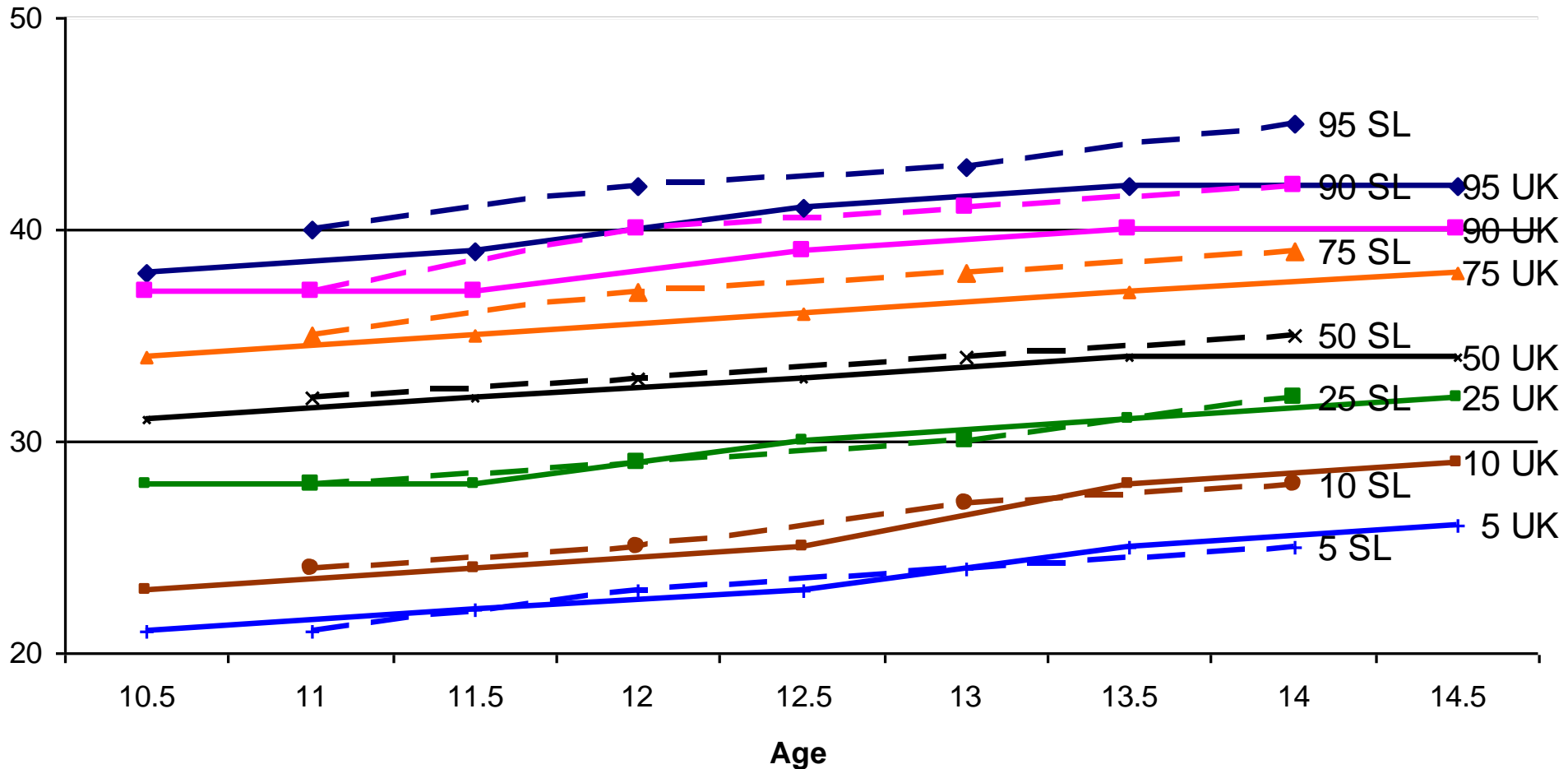
APM Set II (Untimed)

Smoothed 1998 Slovenian and 1979 UK Norms



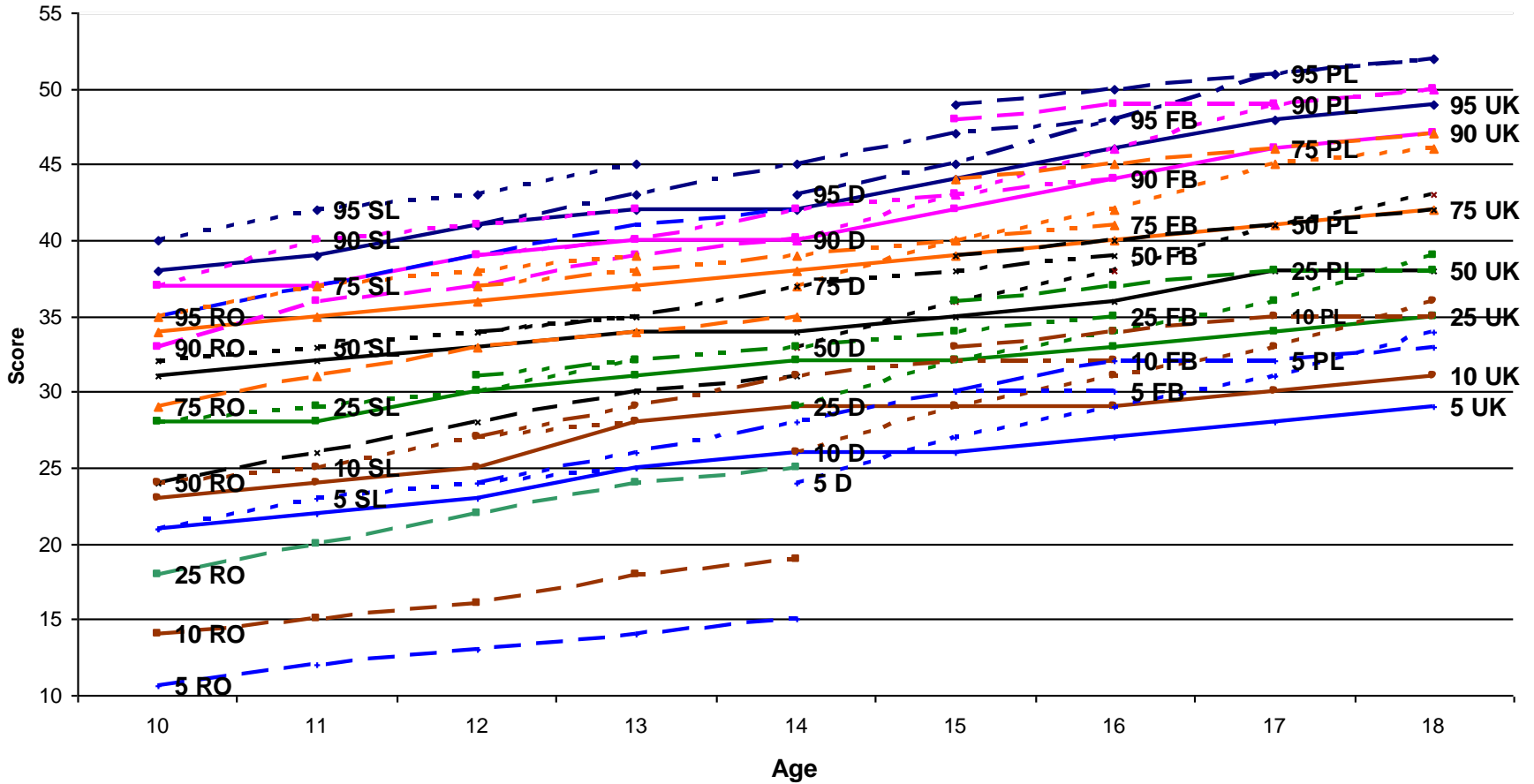
SPM Plus

2005 Slovenian and 2008 UK Smoothed Norms



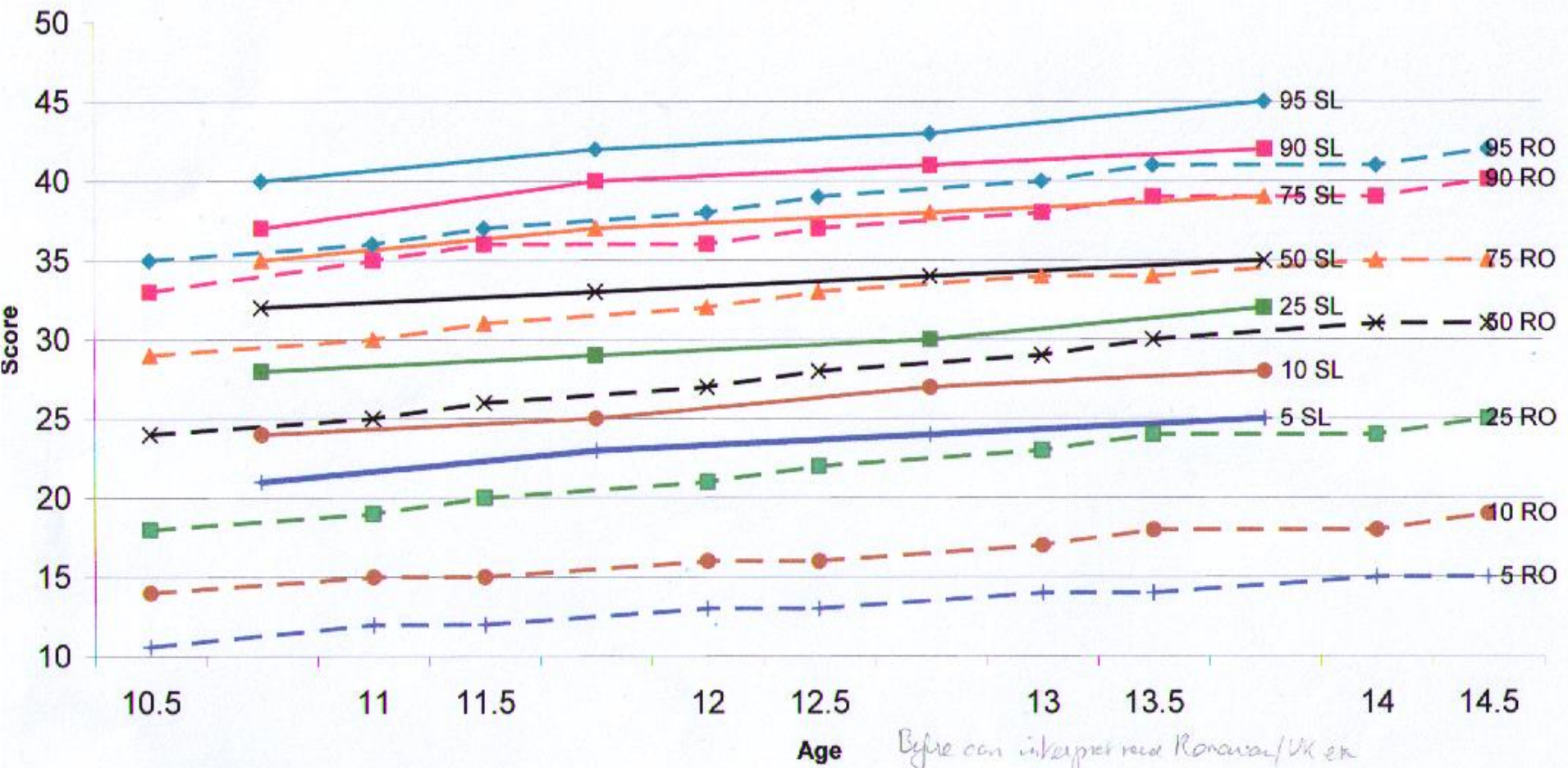
SPM Plus

Norms for UK, Germany, Romania, Poland, Slovenia, Fort Bend, Texas



SPM Plus

Smoothed 2005 Slovenian and 2003 Romanian Norms



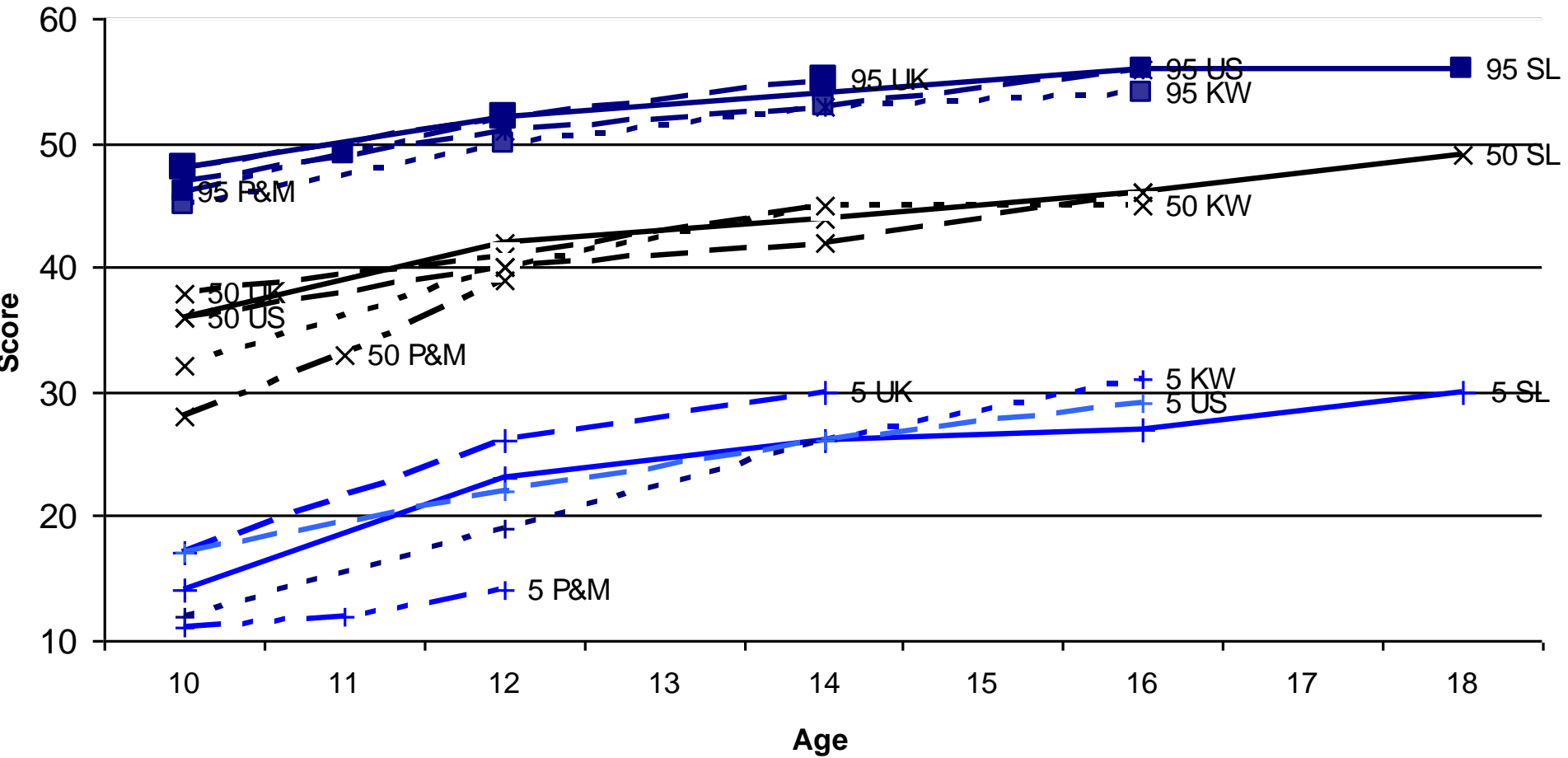
Standard Progressive Matrices *Plus* Smoothed 2003 Norms for Romania

In the Context of 2008 UK Norms, Army Conscripts in Hungary, Army Recruits in Poland, and Germany

| Percentile | Age in Years (Months) | | | | | | | | |
|------------|----------------------------|------------------------------|-----------|-----------|-------------------------------|----------------------------|--------------------------|----------------------|-----------|
| | 18 17(9) to 18(2) | 18.5 18(3) to 18(8) | 18 | 18 | 18.5 18(0) to 18(11) | 18.5 Army Conscripts | 18.5 Army Recruits | 20 18 to 22 | 25 |
| | RO | RO | PL | D | UK | H | PL | RO | PL |
| 95 | 46 | 47 | 52 | 52 | 49 | 49 | 44 | 47 | 52 |
| 90 | 45 | 46 | 50 | 50 | 47 | 47 | 42 | 46 | 48 |
| 75 | 40 | 41 | 47 | 46 | 42 | 42 | 38 | 41 | 41 |
| 50 | 36 | 37 | 42 | 43 | 38 | 37 | 34 | 37 | 36 |
| 25 | 30 | 31 | 38 | 39 | 35 | 32 | 30 | 31 | 30 |
| 10 | 20 | 20 | 35 | 36 | 31 | 27 | 25 | 20 | 24 |
| 5 | 17 | 17 | 33 | 34 | 29 | 24 | 21 | 16 | 20 |
| <i>n</i> | 37 | 41 | 248 | 184 | | 7588 | 395 | 151 | 248 |

SPM

Cross-Cultural Stability - UK, Slovenia, Kuwait, US, P&M



Standard Progressive Matrices

Smoothed 2006 Norms for Indian Tribal Areas

In the Context of 1997 Norms for Pune and Mumbai (Bombay)

| | Age in Years | | | | | | | | | |
|------------|--------------|-----------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| | 9 | | 11 | | 13 | | 15 | | 17 | |
| Percentile | P&M | TR | P&M | TR | P&M | TR | P&M | TR | P&M | TR |
| 95 | 44 | 36 | 49 | 39 | 53 | 43 | 55 | 47 | 56 | 49 |
| 50 | 21 | 15 | 33 | 17 | 41 | 23 | 44 | 29 | 45 | 34 |
| 5 | 10 | 8 | 12 | 8 | 17 | 8 | 24 | 10 | 26 | 11 |
| <i>n</i> | 592 | 84 | 1189 | 245 | 1310 | 320 | 1108 | 341 | 769 | 243 |

Differences in calligraphy, language, family size, access to TV, educational system, etc. have much less effect than would commonly be supposed.

GENERAL CONCLUSIONS:

- a. Remarkable SIMILARITY.
- b. Some show markedly DIFFERENT PATTERNS AT DIFFERENT PERCENTILES.

Dependence on statistical analysis and quality of samples.

- a. Some REAL DIFFERENCES: e.g. Romania at lower percentiles (Romanian difference is on a test with linear TCC, so real).
 - . Could be sampling. BUT very consistent.
 - . General explanations in terms of e.g. economic levels have to explain why, in some cases, e.g. Indian Tribal Areas, whole distribution moves down: not compressed.
 - . In other cases, e.g. Romania, the difference is primarily at all lower levels.