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Norms for Intelligence Assessed by the Standard Progressive Matrices in Oman

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Results are reported for a standardization of the Standard Progressive Matrices in Oman. The sample consisted of 5,139 school students aged 9-18 years and an additional sample of 92 university students. The school students obtained a British IQ of 85 and the university students a British IQ of 93.7.

Key Words: Intelligence; Progressive Matrices; Oman; Gender differences.

The Colored Progressive Matrices (CPM) and Standard Progressive Matrices (SPM) are tests of non-verbal reasoning ability that have been extensively used for the measurement of intelligence in numerous countries throughout the world (Raven, Raven & Court, 2000; Lynn, 2006; Lynn & Vanhanen, 2006). The tests are considered to be excellent measures of non-verbal reasoning ability and of *g*, the general factor present in all cognitive tasks first identified by Spearman (1904) (e.g. Carroll, 1993; Jensen, 1998; McGrew & Flanagan, 1998).

Several studies have reported CPM and SPM norms for the Gulf States including Bahrain (Khaleefa & Al Gharaibeh, 2002), Iraq (Abul-Hubb, 1972), Kuwait (Abdel-Khalek & Lynn, 2006), Qatar (Bart, Kamal & Lane, 1987), Saudi Arabia (Abu-Hatab et al., 1977), Syria (Khaleefa & Lynn, 2008a), United Arab Emirates (Khaleefa & Lynn, 2008b), and Yemen (Al-Heeti et al., 1997). These studies have found that the mean scores obtained on the test are lower than in Britain, other countries in northern and central Europe and the United States (Lynn, 2006; Lynn &

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Vanhanen, 2006). In terms of a British IQ of 100 and standard deviation of 15, mean IQs in these states lie in the range of 78 in Qatar to 87 in Iraq. In this paper we present further SPM data for the Gulf States consisting of a standardization of the Standard Progressive Matrices in Oman.

Method

A standardization of the Standard Progressive Matrices in Oman has been reported in Arabic by Yehia, Ibrahim & Galal (2003). The sample consisted of 5,139 school students aged 9-18 with approximately equal numbers of males and females, drawn from representative schools in Muscat (Maskat), the capital city with a population of approximately 350,000. The rest of the country is largely desert. An additional sample consisted of 43 men and 49 women college students at Sultan Qaboos University in Muscat. The year in which the study was carried out is not recorded but is assumed to have been two years before the date of publication, i.e. in 2001.

Results

The means for the 10 age groups of school students and for the college students are given in Table 1. Also given in the right hand column are the percentile equivalents of the mean scores on the British 1979 standardization sample of 9-15 year olds (Raven, 1981). For this age group the mean was at the 11th percentile of the British 1979 standardization sample, corresponding to an IQ of 81.7. There are no British norms for 16 -18 year olds, but American 1993 norms for this age group are given by Raven (2000) for 16 year olds and by Raven, Raven & Court (1998) for 18 year olds. Norms for 17 year olds are estimated as the average of 16 and 18 year olds. 16-18 year olds in Oman performed at the 21.3rd percentile of the 1993 American norms, which corresponds to an IQ of 88.

The mean score of the university students was 48.7, which is at the 34th percentile of the American norms given by Raven, Raven & Court (1998) and corresponds to an IQ of 93.7. There were no significant gender differences among the 9-17 year olds, but at age 18 the boys obtained a higher mean of approximately 2.5 IQ points. Among

university students men outscored women by approximately 5 IQ points.

Table 1.
Descriptive statistics for the SPM in Oman.

Age	Mean	British/US Percentiles
9.1	19.2	15
10.4	23.0	4
11.2	27.3	4
12.2	31.5	11
13.9	33.1	7
14.3	37.4	12
15.2	40.2	22
16.6	41.6	22
17.4	43.8	24
18.3	45.6	18
21.3	48.7	34

Discussion

The results show the mean IQ in Oman measured by the SPM lies between 82 and 88 in relation to British and American norms, respectively. The two figures can be averaged to 85 to give an approximate estimate of the mean IQ in Oman. If this figure is adjusted for a possible Flynn effect of an IQ gain in Britain and the United States of 2 IQ points a decade from 1979 and 1992 (the date of the British and American standardizations) to 2001 (the date of the Oman standardization), the IQ is reduced by 3 IQ points to 82. This result is closely similar to the means obtained by samples in other countries in the Middle East noted in the introduction. Education is compulsory in Oman from the age of 7 years and virtually all children remain in school until the age of 16. At the age of 16 some leave school and these are disproportionately those with lower IQs who normally do less well in academic work. Hence from the age of 16-18 school students are probably positively selected for IQ. This likely explains why they perform better, relative to American norms, than the younger children. There is no consistent trend in the IQs of Omani children over the age range 9-15 years. In the Middle East today there seem to be some countries such as Syria and Libya where the IQs of children are moderately

high initially but then drop off while the children are in school. Other countries, such as Kuwait and Oman (in the present data), do not show this trend. There is no obvious explanation for these differences.

The higher IQ of 93.7 (reducible to 92 if adjustment is made for the Flynn effect) obtained by the university students is to be expected from a selected sample. This IQ is typical of college students in the Middle East, for which several studies are summarized in Lynn (2006). The absence of gender differences among the 9-17 year olds, the higher mean of boys of approximately 2.5 IQ points among 18 year olds, and the higher mean of men of approximately 5 IQ points among the university students is consistent with_a number of studies in western countries reviewed by Lynn (1994, 1999), Lynn & Irwing (2004) and Irwing & Lynn (2005).

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