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The Intelligence of Yakuts and Ethnic Russians in Yakutia

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The intelligence of Yakuts and ethnic Russians in Yakutia was tested with Raven's Standard Progressive Matrices Plus. According to British norms, the average IQ was 97.0 for Yakuts and 97.9 for ethnic Russians. Urban samples scored higher than rural samples.
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The objective of this paper is to report a study of the intelligence of Yakuts and ethnic Russians in the province of Yakutia in eastern Siberia. Yakutia (also known as Sakha, the former indigenous term) is the largest of the 83 provinces of the Russian Federation. It consists of approximately 3,000,000 km^2 but has only a small population given in the 2010 census as approximately 958,500. The capital city Yakutsk has a population of approximately 269,600. The next largest cities are Neryungry with a population of approximately 58,000 and Mirny with a population of approximately 34,000. The population of the province is given in the 2010 census as 64 percent urban. Slightly above 50 percent of the economy is generated by industrial production consisting primarily of diamonds, gold and tin ore mining. The rest of the economy consists largely of agriculture. The GDP per capita of the province is 28th among the provinces of the Russian Federation. Education between the ages of 7 and 18 years is compulsory for all children in the Russian Federation. Yakutsk has a university – the North-Eastern Federal University – and several theatres. Many of the population have internet connection and TV.

The indigenous population are the Yakuts, also known as Turkic Sakha. They are classified by Cavalli-Sforza, Menozzi and Piazza (1996, p. 231) as one of the

Arctic peoples most closely related to the Sherpa and Tuva, and more distantly related to the peoples of the Altai Mountains, Northern Chinese and Uzbeks. They originated in Central Asia and migrated into Yakutia in the 13th and 14th centuries. Russia began to colonize Yakutia in the 17th century and a number of Russians subsequently migrated into the province. The 2010 census gives the population as Yakuts (49.9%), Russians (37.8%), Evenks (2.2%), Ukrainians (2.2%), Evens (1.6%) and Tartars (0.9%). Yakutia has a sub-arctic climate with average monthly temperatures in Yakutsk of minus 35ºC in January and 19ºC in July.

The study to be reported is the first of the intelligence of Yakuts and ethnic Russians in Yakutia, but there have been a few studies of the intelligence of ethnic Russians in European Russia and of other ethnic peoples in Eastern Siberia. Grigorenko and Sternberg (2001) have reported an IQ of 96 for a sample of Russian adults in European Russia tested with the Cattell Culture Fair test, and Lynn (2001) has reported an IQ of 97 for a sample of Russian 14-15 years olds in European Russia tested with the Standard Progressive Matrices. Lynn and Vanhanen (2012, p. 27) give an IQ of 96.7 for a sample of Russian 15-year-olds based on PISA results in math, science and reading comprehension, and an IQ of 96.6 for all three samples. All these are scaled to British norms, with a British mean and standard deviation of 100 and 15, respectively.

Studies of the intelligence of some of the ethnic minorities in Russia were carried out in the 1920s and 1930s by Luria and others. These have been reviewed by Grigoriev and Lynn (2009), who concluded that at that time these ethnic minorities had lower intelligence than ethnic Russians. These studies came to an end in 1936 when intelligence testing was banned in the Soviet Union. It was not until the 1960s and early 1970s that this prohibition was progressively relaxed and research on intelligence in Russia resumed. Shibaev and Lynn (2015) have reported a study of intelligence tested with the Standard Progressive Matrices Plus of a small sample of Evenk/Tungus school children in a village in an isolated rural location in the province of Vladivostok who obtained an IQ of 80.

Method

The samples were drawn from Yakutsk, the capital of the Yakutia region containing almost one third of the population of the province, from the town of Viluysk, and from four villages. The sample from Yakutsk consisted of 52 ethnic Russian and 287 ethnic Yakut school students with a mean age of 12 to 13 years attending typical secondary schools. They included all those present in the first year of secondary school on the day of testing.

Viluysk is situated 592 km north-west of Yakutsk and was officially

designated as a city in 2013 but has a population of approximately 10,600 and would be regarded in western countries as a small town. There is no institution of tertiary education but there is a museum of local history and a museum of the Yakut's Jewish harp (the khomus). Most people have an internet connection. The sample from Viluysk consisted of 7 ethnic Russian and 236 ethnic Yakut school students with a mean age of 12.7 years attending the three secondary schools of the town. Two of these were typical secondary schools, and one was a gymnasium (academic-track secondary school). The sample included all those present in the first year of secondary school on the day of testing.

The village samples were:

1. *Khangalassy:* Located approximately 45 km north from Yakutsk, it has a population of approximately 1,800 ethnic Russians including a small number of "sakhalyars" of mixed Russian-Yakut ethnicity. It has one school. All children aged 7 to 16 were tested, with an average age of 10.8 (N=61).
2. *Khatassy:* This village is approximately 40 km from Yakutsk and consists of approximately 5,000 Yakut inhabitants. It has one school. All children aged 9 to 15 were tested, with an average age of 10.9 (N=75).
3. *Berdigestyakh:* This is the administrative center of Gorny Ulus (Gorny rural region) and is approximately 184 km from Yakutsk. The population is Yakut and numbers 6,460.There are two secondary schools in which all children aged 9 to 16 were tested, with an average age of 12.9 (N=82). There is also a gymnasium (academic-track secondary school) from which 21 children aged 15 to 17 with an average age of 16.75 were tested.
4. *Yert:* This village is approximately 264 km from Yakutsk and has a Yakut population of 544. There is only one school in this village. All children aged 7 to 18 were tested, with an average age of 12.6 (N=58).

The samples were tested between late 2015 and late 2016 with Raven's Standard Progressive Matrices Plus (Raven, 2008) administered by the first author with a time limit of one hour giving ample time to complete the test. Boys and girls attended the same schools and there were approximately equal numbers of each in all samples.

Results

The British-scaled IQs of the participants were obtained from the norms of the 2008 British standardization given in Raven (2008).The results for all secondary school students are shown in Table 1. The results for the village secondary school students are shown in Table 2. The results for gymnasium

school students are shown in Table 3. The results for university students are shown in Table 4. It seems surprising that the IQs of pupils from gymnasiums are higher than those of students in Yakutsk University. One likely reason is that most of the university students were studying subjects such as philology and linguistics. Results from countries as diverse as Sudan and the United States have shown that students in the "soft sciences" and humanities usually have lower IQs than students in the natural sciences, mathematics and engineering (e.g., Khaleefa, Amer & Lynn, 2014). Another reason could be that pupils from gymnasiums are more motivated and disciplined than university students. Also, the best pupils from gymnasiums try to graduate in Moscow or St. Petersburg universities, not in the local Yakutsk University. The high-scoring pupils in Berdigestyakh's gymnasium were aged 10-11. It is not clear whether their very high scores are related to their young age or the process by which local children are selected into the gymnasium. It may also be a chance result due to the small size of the sample.

Table 1. *IQs of Russian and Yakut secondary school students.*

	Russians		Yakuts		
Sample	N	IQ ± SD	N	IQ ± SD	t
Yakutsk	52	102.3 ± 17.5	287	97.9 ± 15.8	1.69
Viluysk	7	97.1 ± 18.2	236	99.5 ± 13.7	0.35
Villages	61	91.2 ± 14.1	215	94.2 ± 15.6	1.43

Table 2. *IQs of Russian and Yakut village school students.*

Sample	Ethnicity	N	IQ ± SD
Khangalassy	Russians	61	91.2 ± 14.1
Khatassy	Yakuts	75	93.2 ± 16.1
Berdigestyakh	Yakuts	59	93.0 ± 17.4
Berdigestyakh	Yakuts	23	95.9 ± 12.9
Yert	Yakuts	58	96.1 ± 14.3

Table 3. *IQs of Yakut gymnasium students.*

Sample	Ethnicity	N	IQ ± SD
Viluysk	Yakuts	132	110.64 ± 13.82
Berdigestyakh	Yakuts	21	127.25 ± 13.61

Table 4. *IQs of Yakut first-year university students aged 17-20 years.*

Sample	Ethnicity	N	IQ ± SD
Yakutsk	Yakuts	46	101.16 ±15.34

Discussion

There are five points of interest in the results. First, the results given in Table 1 show that the British-scaled IQ of the urban Russians averaged from the two city samples weighted by sample size was 101.7 and of the village sample was 91.2. The population of the province is 64 percent urban and 36 percent rural. Thus, weighting the IQs of the urban and rural samples by their percentages in the province gives an IQ of 97.9. This is marginally higher than the IQ for Russia given as 96.6 by Lynn and Vanhanen (2012) on the basis of three studies from European Russia. These results are the first to show that the IQ of Russians is approximately the same in Asiatic Russia as in European Russia.

Second, the results given in Table 1 show that the IQ of the urban Yakuts averaged from the two samples weighted by sample size was 98.6 and of the village sample was 94.2. The population of the province is 64 percent urban and 36 percent rural. Thus, weighting the IQs of the urban and rural samples by their percentages in the province gives an IQ of 97.0.

Third, the Russians obtained a slightly higher IQ than the Yakuts in the Yakutsk sample while the Yakuts obtained slightly higher IQs than the Russians in the Viluysk and village samples, but none of these differences was statistically significant. The IQs of the combined samples are estimated as 97.0 (SD 15.1) for the Yakuts (N=738) and 97.9 (SD 16.5) for the ethnic Russians (N=120). This difference is trivial and not statistically significant (t=.56). Therefore the IQs of the two samples should be regarded as approximately the same. Weighting these IQs by the percentages of Yakuts and Russians in the province of 49.9 and 37.8, respectively, gives an IQ of 97.4 for the province.

Fourth, for both Russians and Yakuts the IQs of the city samples were higher than the IQs of the village samples. For the Russians, there was a difference of 10.5 IQ points between the combined city samples and the village sample, while for the Yakuts the difference was 4.4 points. The higher IQs of the city samples is a common result found in many previous studies reporting that urban populations typically obtain higher IQs than rural populations. In a study of intelligence in 79 provinces of the Russian Federation, a correlation of .44 with urbanization has been reported by Grigoriev et al. (2016). In the United States, in the standardization sample of the American WAIS-R, the IQ of the urban sample was 1.9 IQ points higher than that of the rural sample (Reynolds et al., 1987). The populations of capital cities typically obtain higher IQs than the rest of the population, e.g. in the British Isles (Lynn, 1979), France (Lynn, 1980) and Portugal (Almeida, Lemos & Lynn, 2011). The higher average IQs of urban samples are probably explained by migration of individuals with higher IQ to towns and cities for which evidence is given for the British Isles and France (Lynn, 1979, 1980)

and Russia (Grigoriev et al., 2016). In Yakutia, there has been substantial rural-to-urban migration in the recent past, and also emigration from the province. Between the 1989 and 2010 censuses, the population of Yakutsk increased from 186,626 to 269,601 while the population of the province declined from about 1.1 million to 951,000. Because of out-migration of young working-age people, mainly old people are left in the villages. If those with higher IQ were more likely to migrate than those with lower IQ, this can explain the urban-rural IQ difference that we observed in our study.

Fifth, Yakutia has a sub-arctic climate with an average monthly temperature of minus 35°C in January and 19°C in July in Yakutsk. The high IQ of the Yakuts is therefore consistent with the 'cold winters theory' of the evolution of racial differences in intelligence advanced by Lynn (1991, 2015). The theory proposes that greater cognitive demands for survival in the temperate and cold environments of the northern hemisphere provided the crucial selection pressure for the evolution of higher intelligence. This theory has been endorsed by a number of scholars who have reported statistically significant associations between average winter temperatures and national IQ (Rushton, 2000; Kanazawa, 2008; Templer & Arikawa, 2006; Meisenberg & Woodley, 2013). The high IQ of the Yakuts is a further corroboration of this theory.

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