

GROUP DIFFERENCES IN MEAN INTELLIGENCE FOR THE DUTCH AND THIRD WORLD IMMIGRANTS

JAN TE NIJENHUIS* AND HENK VAN DER FLIER†

**Department of Work and Organizational Psychology, University of Amsterdam and*

†*Department of Work and Organizational Psychology, Vrije Universiteit, Amsterdam, the Netherlands*

Summary. Evidence from eleven samples indicates that the mean IQ of third world immigrants in the Netherlands is lower than the Dutch mean by approximately one standard deviation for Surinamese and Antillians, and by approximately one and a half standard deviations for Turks and Moroccans. Since IQ tests provide the best prediction of success in school and organizations, it could be that the immigrants' lower mean IQ is an important factor in their low status on the Dutch labour market. The IQs of second-generation immigrants are rising.

Introduction

Intelligence, as measured by standardized IQ tests, is the most important predictor of economic success in Western society (Schmidt & Hunter, 1998). Group differences in mean scores on intelligence tests may therefore have large consequences for society. In the US, Blacks generally score on average one standard deviation lower on intelligence tests than Whites. Research has been carried out to discover whether this was the result of test bias or whether it reflected a lower mean level of capacities in the Black group. The results indicate that intelligence tests are not culturally biased against American Blacks or other native-born, English-speaking peoples in the US, and that IQ scores predict equally accurately for all such Americans, regardless of race and social class (Jensen, 1980; Gottfredson *et al.*, 1994). As a consequence of the expert consensus on the absence of test bias, researchers have moved on to discuss how these differences in intelligence between the groups can be dealt with, for example by matching educational instruction to the aptitude level of individual children and adults. Actually, group differences in mean intelligence appear to be more of a rule than an exception (see Jensen, 1980; Lynn, 1982, 1997; Rushton, 1995; Zeidner, 1987).

In recent decades growing numbers of third world immigrants have become part of the Dutch population, now making up about 6% of it. About 60% of them come from Turkey and Morocco, and the 40% from the Dutch Antilles and Surinam are

predominantly Black. Immigrant children tend to perform poorly in school and the adult unemployment rate is 20% for immigrants versus 7% for the total population. The first studies on IQ-test scores of immigrant children yielded very low mean scores (de Jong & Van Batenburg, 1984; Resing, Bleichrodt & Drenth, 1986), leading to an initial hypothesis of a strong cultural bias in tests. However, this hypothesis is now refuted by about 25 studies (for instance, te Nijenhuis, Evers & Mur, 2000; te Nijenhuis & van der Flier, 1997; see te Nijenhuis & van der Flier, 1999, for a review of all studies) and there is consensus among testing experts on the small effects of bias. Only tests with a verbal component, such as verbal analogies, clearly are at the disadvantage of immigrants, although they substantially improve the predictive validity of a test battery. The reason is clear: verbal knowledge is important for success in school and economic life.

The issue of bias against immigrants being practically settled, the magnitude of the difference in mean (phenotypic) intelligence between the Dutch population and the immigrant group should now be established. However, the majority group samples of most studies are not representative of the Dutch population, nor is there much information about the background of the candidates from the immigrant samples; therefore, little can be said about the results of these studies being representative. This study therefore addresses the following question: To what degree are the mean differences between samples of the immigrant group and the majority group representative for the differences in means between the immigrant population and the majority population in the Netherlands?

Methods

Cook & Campbell (1979) describe models whereby conclusions from studies can be generalized to other persons, settings and times. Because random sampling for representativeness is very difficult to realize, they opt for a series of smaller studies with haphazard samples, which they refer to as deliberate sampling for heterogeneity. The idea is to obtain heterogeneous samples of persons, settings and times, so as to probe the robustness of a particular finding over a wide range of possible moderating factors.

Te Nijenhuis & van der Flier (1999) reviewed Dutch studies in which IQ data of groups of immigrants and majority group members were reported; only studies of acceptable methodological quality were included in the review. The analyses in the present paper made use of these data.

Results

The model of random sampling for representativeness applies to three of the majority group samples: Resing, Bleichrodt & Drenth (1986), Snijders, Tellegen & Laros (1988) and Tellegen, Winkel, Wijnberg-Williams & Laros (1998) use samples that are representative of the Dutch population. Snijders *et al.* (1998) and Tellegen *et al.* (1998) also used this procedure for their immigrant samples, but the sizes of their immigrant groups are rather small; therefore, small sampling errors may have large consequences. The immigrant sample of Resing *et al.* (1986) is, because of its careful

sampling and its large numbers, the best approximation of a representative sample of immigrant children. The term 'representativeness' does not only refer to national representativeness, but also to local representativeness, as for example in the study of de Jong & van Batenburg (1984) in which representative random samples were drawn from all primary schools in the city of Rotterdam. Table 1 shows that in these various methodologically carefully designed studies differences between the immigrant group and the majority group are similar in size, namely approximately one standard deviation. For first-generation immigrants these differences are larger than for immigrants of the second generation. Within the immigrant group, Surinamese and Antillians obtain higher mean scores than Turks and Moroccans.

In some studies data of a complete, specific population were used. Te Nijenhuis & van der Flier (1997) compared the test results of all the immigrant job applicants of the Dutch Railways between 1988 and 1992, with those of a random representative sample of all the majority group applicants over the same period of time. Te Nijenhuis & van der Flier (2000) present results of a study among all the immigrant trainee truck drivers in an organization with offices throughout the country, matched with the same number of trainee truck drivers of the majority group. Van Rooijen (1992) used the data of all immigrant streetcar drivers in one of the Dutch large cities and a random sample of all their colleagues of the majority group. Snijders *et al.* (1988) also tested the entire Dutch population of deaf children within a specific age range. It is remarkable that of this population 18% were immigrant children. The difference between the complete groups of immigrant and majority group deaf children is practically the same as the difference between the complete groups of immigrant and majority group children in the sample of children without hearing difficulties. These studies, which are based on the data of a complete but specific population, replicate the findings of the methodologically carefully designed studies, namely, a difference between immigrants and majority group members of approximately one standard deviation.

The remaining studies (Hessels, 1993; van de Vijver, Willemse & van de Rijt, 1993) clearly used haphazard sampling, but nevertheless lead to the same conclusions.

Discussion

This paper addressed the question to what degree the mean differences between samples of the immigrant group and the majority group are representative for the differences in means between the immigrant population and the majority population in the Netherlands. Differences in effect sizes are expected because of the variety of samples. However, if the outcomes of the methodologically most sound study (Resing *et al.* 1986) are compared with those of the study with the largest sample size (te Nijenhuis & van der Flier, 1997) it can be seen that for the first-generation immigrants effect sizes are to a great extent comparable. All in all, taking into consideration the variations in methodology used in the studies, the difference of approximately one standard deviation between majority and minority groups is relatively robust: the samples consist of very young children, adolescents and adults; they employ research participants from schools and industry; adult samples consist of job applicants, trainees and experienced workers; various intelligence tests are used. Therefore, it can

Table 1. Differences in mean scores on intelligence tests between immigrants and majority group members in Dutch studies^a

Study	Group	<i>n</i>	Test	Generation	Effect size	
Children						
de Jong & van Batenburg (1984)	Turks and Moroccans	106	GALO	1	1.13	
	Surinamese	110		1	0.93	
Resing <i>et al.</i> (1986)	Turks	130	RAKIT	1	1.45	
	Moroccans	177		1	1.70	
	Surinamese and Antillians	123		1	1.09	
	Turks	104		2	1.20	
	Moroccans	76		2	1.43	
Snijders <i>et al.</i> (1988) ^a	Surinamese and Antillians	71	SON-R 5.5-17	2	0.77	
	Normal children					
	Turks	24		Mix	1.16	
	Moroccans	9		Mix	0.82	
Deaf children	Surinamese and Antillians	10	Mix	0.22		
	Turks and Moroccans	31	Mix	0.89		
	Surinamese and Antillians	85	Mix	0.67		
van de Vijver <i>et al.</i> (1993)		26		2	0.81	
Hessels (1993)	Turks	198	RAKIT (shortened form)	Mix	1.47	
	Moroccans	199		Mix	1.38	
Tellegen <i>et al.</i> (1998) ^b	Turks	22	SON-R 2.5-7	Mix	0.60	
	Moroccans	25		Mix	0.79	
	Surinamese	36		Mix	0.70	
	Antillians	15		Mix	0.21	
te Nijenhuis, Evers & Mur (2000)	Various	111	DAT	1	1.14	

Table 1. *Continued*

Study	Group	<i>n</i>	Test	Generation	Effect size
Adults					
van Rooijen (1992)	Surinamese	20	GATB	1	1.05
te Nijenhuis & van der Flier (1997) ^c	Turks	275	GATB	1	1.43
	Moroccans	167		1	1.86
	Surinamese	535		1	1.08
	Antillians	126		1	1.17
te Nijenhuis & van der Flier (2000)	Various	78	GATB	1	0.99

Effect size: Majority group mean minus minority group mean, and divided by majority group SD. Assignment to first or second generation based on description in original study. When no clear descriptions were available, generation was estimated.

^aSnijders *et al.* (1988): data on deaf children; differences in mean between deaf majority group children and deaf immigrant children.

^bThe sample of Tellegen *et al.* (1998) consisted of 76% second-generation children.

^cEffect sizes for the te Nijenhuis & van der Flier (1997) study are not reported, but were computed by the present authors.

be concluded that the best estimate for the Antillian and Surinamese immigrant population is an average score on intelligence tests that is approximately one standard deviation lower than that of the majority population, and for the Turkish and Moroccan immigrant population the best estimate is an average score that is approximately one and a half standard deviation lower. Furthermore, it can also be concluded that there is a clear score improvement for second-generation immigrants.

If the mean IQ of the Dutch is set at 100, a rough estimate of the mean IQ of Antillians and Surinamese immigrants would then be 85, and a rough estimate of the mean IQ of Turkish and Moroccan immigrants would be 78. Among the Antillian and Surinamese immigrant population, 84% have an IQ that is lower than the Dutch average IQ, and the figure for the Turkish and Moroccan immigrant population would be 93%. Apart from other possible causes, such as low educational level, the low level of knowledge of Dutch culture, the low level of command of the Dutch language, and discrimination, the low mean IQ of immigrants may be an important factor to account for their low social-economic status on the Dutch labour market. However, the intergenerational rise in mean IQs probably indicates that the socioeconomic possibilities are improving for subsequent generations. The first-generation immigrants are probably the least successful group on the Dutch labour market. The business world's attempts to hire more immigrants without lowering requirements will probably meet with growing success in the years to come. However, it remains to be seen whether later generations of immigrants will enjoy a status on the labour market that is comparable to that of the majority group. With regard to this point, an interesting group is formed by the Moluccans, a group that came to the Netherlands after the independence of the erstwhile Dutch colony, Indonesia. Although the status of the small group of third-generation Moluccans on the Dutch labour market is better than that of the Surinamese, Antillians, Turks and Moroccans, it remains behind the status of the majority population (Veen & Robijn, 1994); however, data on mean IQs of various generations of Moluccans are not available. Finally, the reasons for these group differences in mean intelligence are still unclear; one possible factor could be selective migration.

Based on these findings on group differences in mean IQ, which is probably the biggest handicap for immigrant groups, more realistic programmes for dealing with the problem of immigrants' integration into Western society can be developed.

Acknowledgments

The authors thank Arne Evers for discussions.

References

- COOK, T. D. & CAMPBELL, D. T. (1979) *Quasi-experimentation: Design and Analysis Issues for Field Settings*. Houghton, Boston.
- DE JONG, M. J. & VAN BATENBURG, TH. A. (1984) Etnische herkomst, intelligentie en schoolkeuzeadvies [Ethnic origin, intelligence, and school choice advice]. *Pedagogische Studiën* **61**, 362–371.

- GOTTFREDSON, L. S., ARVEY, R. D., BOUCHARD, T. J., CARROLL, J. B., COHEN, D. B., DAWIS, R. V. *et al.* (1994) Mainstream science on intelligence. *The Wall Street Journal*, December 13, 1994.
- HESSELS, M. G. P. (1993) *Leertest Voor Etnische Minderheden: Theoretische en Empirische Verantwoording [Learning Potential Test for Ethnic Minorities: Theoretical and Empirical Foundation]*. Unpublished doctoral dissertation, University of Utrecht, the Netherlands.
- JENSEN, A. R. (1980) *Bias in Mental Testing*. Methuen, London.
- LYNN, R. (1982) IQ in Japan and the United States shows a growing disparity. *Nature* **297**, 222–223.
- LYNN, R. (1997) Geographical variation in intelligence. In: *The Scientific Study of Human Nature*. Edited by H. Nyborg. Pergamon, Oxford.
- RESING, W. C. M., BLEICHRODT, N. & DRENTH, P. J. D. (1986) Het gebruik van de RAKIT bij allochtoon etnische groepen [Use of the RAKIT for assessment of immigrants]. *Nederlands Tijdschrift voor de Psychologie* **41**, 179–188.
- RUSHTON, J. P. (1995) *Race, Evolution, and Behavior: A Life History Perspective*. Transaction, New Brunswick, NJ.
- SCHMIDT, F. L. (1992) What do data really mean? Research findings, meta-analysis, and cumulative knowledge in psychology. *Am. Psychol.* **47**, 1173–1181.
- SCHMIDT, F. L. & HUNTER, J. E. (1998) The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychol. Bull.* **124**, 262–274.
- SNIJDERS, J. TH., TELLEGEN, P. J. & LAROS, J. A. (1988) *Snijders-Oomen Niet-verbale Intelligentietest: SON-R 5-5-17. Verantwoording en Handleiding [Snijders-Oomen Nonverbal Intelligence Test: SON-R 5-5-17. Justification and Manual]*. Wolters-Noordhoff, Groningen, the Netherlands.
- TELLEGEN, P. J., WINKEL, M., WIJNBERG-WILLIAMS, B. & LAROS, J. (1998) *Snijders-Oomen Niet-verbale Intelligentietest: SON-R 2-5-7. Handleiding en Verantwoording [Snijders-Oomen Nonverbal Intelligence Test: SON-R 2-5-7. Justification and Manual]*. Swets, Lisse, the Netherlands.
- TE NIJENHUIS, J., EVERS, A. & MUR, J. P. (2000) Validity of the Differential Aptitude Test for immigrant children. *Educ. Psychol.* **20**, 99–115.
- TE NIJENHUIS, J. & VAN DER FLIER, H. (1997) Comparability of GATB scores for immigrants and majority group members: some Dutch findings. *J. appl. Psychol.* **82**, 675–687.
- TE NIJENHUIS, J. & VAN DER FLIER, H. (1999) Bias research in the Netherlands: Review and implications. *Eur. J. Psychol. Assess.* **15**, 165–175.
- TE NIJENHUIS, J. & VAN DER FLIER, H. (2000) Differential prediction of immigrant versus majority group training performance using cognitive ability and personality measures. *Int. J. Selection Assessment* **8**, 54–60.
- VAN DE VIJVER, F., WILLEMSE, G. & VAN DE RIJ, B. (1993) Het testen van cognitieve vaardigheden van allochtone leerlingen [Testing of cognitive skills of immigrant pupils]. *De Psycholoog* **48**, 152–159.
- VAN ROOIJEN, E. (1992) Het gebruik van psychologische tests bij allochtonen in het kader van selectie [The use of psychological tests for assessment of immigrants for selection]. Paper presented at *WAOP Conference*, Rijksuniversiteit Groningen, the Netherlands, 1992.
- VEEN, A. & ROBIJNS, M. (1994) Schoolloopbanen van Molukse leerlingen in het voortgezet onderwijs [School careers of Moluccan pupils in secondary education]. *Tijdschrift voor Onderwijsresearch* **19**, 143–159.
- ZEIDNER, M. (1987) Test of the cultural bias hypothesis: Some Israeli findings. *J. appl. Psychol.* **72**, 38–48.

