Norms for the Progressive Matrices for Libya and Tunisia

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Cover Picture: A group of Negro and Nubian prisoners being driven before the chariot of Ramesses II as depicted at Abu Simbel. (*See book review.* Race in Ancient Egypt and the Old Testament.)

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Spearman's Hypothesis: Support from the Wechsler Intelligence Scale for Children, Third Edition

Harrison Kane*
Mississippi State University
Christopher Brand
Formerly Edinburgh University

'Spearman's hypothesis' states that Black-White differences in intelligence are largely a function of the demand of a test on the general factor, Spearman's *g*. The present study investigates Spearman's hypothesis using the standardization sample of the Wechsler Intelligence Scale for Children, Third Edition (WISC-III, 1991). As additional comparison groups, data from two samples of children with sensory impairments were also analyzed. Findings support Spearman's hypothesis as an account of average Black-White differences in subtest performance. Differences on WISC-III in the disabled samples were not significantly related to Spearman's *g* despite these groups' experience of deprivation. Thus, the deprivation hypothesis is not affirmed, while Spearman's *g* gains further credibility as an explanation for observed racial differences on IQ-type tests.

Key Words: Spearman's hypothesis; WISC-III; Race differences; Intelligence.

No practice in psychology has inspired or endured more criticism than mental testing. Usually, the most strident attacks target the repeated finding that Blacks and Whites differ in varying degrees on tests of intellectual ability (Jensen, 1969, 1980, 1998; Naglieri & Jensen, 1987). These average group differences in America are substantial, of some 15-16 IQ points, and have been observed for more than a century, beginning with the widespread use of IQ testing (Ferguson, 1916; Jensen, 1969, 1980; Rushton & Jensen, 2005a; Shuey, 1966; Yerkes, 1921). While researchers generally agree that these differences exist, there has been a massive debate about their origins (Devlin et al., 1997; Kamin, 1974; Mensh & Mensh, 1991; Miele, 1995). The unremitting controversy surrounding the issue of Black-White differences in IQ is fueled by the media and by social researchers who depict research on group differences in

* Address for correspondence: hdk15@colled.msstate.edu

intelligence as fundamentally flawed, tacitly racist, and morally reprehensible (Fish, 2002; Gottfredson, 2005; Snyderman and Rothman, 1988; Williams, 1974). In reality, the available empirical research from various disciplines has converged on a portrait of intelligence that is the opposite of conventional wisdom. That is, intelligence is a highly reliable and predictive construct that is subject to developmental growth and decline and is substantially related to elementary cognitive processes, educational achievement, and earnings (Brand, 1996; Carroll, 2005; Gottfredson, 1997, 2002; Herrnstein & Murray, 1994; Legree et al., 1996; Lynn & Vanhanen, 2002; Neisser et al., 1996) and a heritability of around .60 (Jensen, 1998; Loehlin, 2000; Miele, 2002).

Controversy about group differences in intellectual performance invariably concerns the general factor of intelligence, *g*, which was discovered by Charles Spearman in 1904 as part of an experiment to "find out whether, as Galton [had] indicated, the abilities commonly taken to be intellectual correlated with each other or with sensory discrimination" (Spearman, 1927, p. 322). Spearman obtained teacher evaluations of 36 students from a village school. Students were rated on the usual academic subjects (Latin, English, and Math) as well as Music and Pitch Discrimination. Spearman noticed immediately that all tests correlated positively. These observed linear correlations between the variables prompted Spearman to hypothesize that the variables shared a common source of variance (Spearman, 1927). Additionally, the fact that the correlations between tests differed from one another suggested to Spearman that each test sampled this common source of variance to a varying degree. In the same seminal article, Spearman developed the statistical method of factor analysis for estimating the general factor. He remarked that his variables had different levels of saturation with *g*, represented by different loadings on the general factor. Spearman devoted the rest of his academic career to explicating *g*, which he conceptualized as "mental energy"; he held *g* was the "leading part of intelligence, and is displayed by the ability to handle not merely abstract ideas, but above all symbols" (Spearman, 1927; p. 211).

The provenance of the general factor (Spearman's *g*) stems from the ubiquitous finding that scores on all cognitive tests correlate positively with one another, forming a positive

manifold. Provided the number of tests in the analyzed battery is sufficiently large to yield reliable factors and the tests are sufficiently diverse in item type and content to reflect more than a single narrow cognitive ability, a *g* factor always emerges as the first unrotated principal component in a factor analysis. As it turns out, Spearman's *g* plays a role in the successful completion of any intellective task, regardless of cognitive complexity, response format, or item content. To varying degrees, Spearman's *g* is realized whether an individual is expected to respond to a flashing light, decipher a bus schedule for a trip to the grocery, calculate the next move in a chess tournament, determine the best comeback in a humorous conversation, answer a question from a geography teacher, or weigh the merits of a job applicant. Even among experimental tasks that bear little resemblance to traditional IQ tests, *g* accounts typically for more than 50% of the reliable individual differences in performance (Jensen, 1993). Today's evidence from the varied disciplines of education, psychology, medicine, sociology and biogenetics converges on the notion that Spearman's *g* is the *sine qua non* of cognitive ability (Brody, 1992; Carroll, 1993; 1997; 2005).

Potential explanations of persistent Black-White differences in cognitive ability (Kamin, 1974; Loehlin, 2000; Rushton & Jensen, 2005a; Steele, 1997) differ in stressing: (a) racial differences actually reflecting psychometric bias (e.g., differential item functioning, reliability, or validity); (b) group differences being a function of specific psychological traits of the examinee (e.g., verbal fluency, test sophistication, level of aspiration, self-esteem); (c) race differences reflecting the immediate or cumulative influence of the environment (e.g., race of examiner and cultural deprivation); and (d) differences between races being a function of the degree to which the respective test taps *g*.

This final explanation has its provenance in Charles Spearman's *The Abilities of Man* (1927), which proposed that Black-White (B-W) differences would be "most marked in just those [tests], which are known to be saturated with *g*" (p.379). Spearman never formally investigated this possibility, so his comment lay dormant until rediscovered by Jensen (1980), who coined the term "Spearman's hypothesis" for the idea that the B-W difference on a test would depend on the test's *g* loading. As

an example, one of the most common IQ sub-tests requires the examinee to repeat a series of digits that are read aloud. Usually, the examinee is required to recall the digits as they are presented initially (forward), and then again in reverse order (backward). Although the content is identical (numbers), these two cognitive activities require different amounts of mental manipulation of the input, with the recall of digits in reverse order placing more demands on Spearman's *g* (Sattler, 2001). Typically for this task, B-W differences in performance are twice as large for the more complex backward condition as for the simpler forward condition (Jensen & Figueroa, 1975).

Jensen drew widespread attention to Spearman's hypothesis in a series of empirical investigations spanning nearly three decades, each of which advanced the notion that B-W differences on various tests are predominantly (though not exclusively) explained by the *g* factor (1985; 1992; 1993; Naglieri & Jensen, 1987; Nyborg & Jensen, 2000). Jensen (2001) summarized 17 independent data sets representing a total of nearly 45,000 Blacks and 245,000 Whites derived from 171 psychometric tests. The *g* loadings across the assembled tests consistently predicted the magnitude of B-W differences in cognitive performance (r = .63). Jensen (1993) found that Spearman's hypothesis is borne out even for the *g* factor extracted from a battery of elementary cognitive tests (ECTs). ECTs are very easy tasks, such as discriminating the lengths of two lines projected on a computer screen. Importantly, ECTs place no demands on acquired knowledge and can be done successfully by virtually all subjects at exposure durations of milliseconds (even by individuals with mental retardation). The correlation between the *g* loadings derived from the ECTs and the B-W differences in reaction time ranged from .70 to .81. These results were similar to findings using more traditional IQ tests such as the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974) and Kaufman Assessment Battery for Children (KABC; Kaufman & Kaufman, 1985).

While most research on Spearman's hypothesis comes from data obtained in the USA, the phenomenon generalizes beyond Western cultures and industrialized societies. Rushton (2001) analyzed ten subtests of the WISC-R on 154 Black South African high school students and found the vector of mean African–White differences correlated significantly with the vector of *g*-

loadings (r=0.77). Moreover, Spearman's *g* asserts an early influence. In a sample of 89 White and 54 Black preschoolers who were assessed with 20 subtests from the Woodcock-Johnson, Revised (WJ-R; Woodcock & Johnson, 1989), Kane (2004) confirmed Spearman's hypothesis with a significant correlation of .48, indicating that group differences on standardized tests of IQ and cognitive ability emerge prior to formal education. Across all investigations of Spearman's hypothesis, the singularly consistent finding is that general intelligence overshadows other dispositional and psychometric factors (e.g., motivation and short-term memory) as a possible explanation for observed racial differences on IQ tests.

Assuming that group differences are merely accumulated individual differences, this consistent finding poses the possibility that the same aspects of *g* that characterize individual differences may also depict the nature of group differences. That is, to the extent that *g* is implicated, race differences in intelligence may be highly heritable, enduring, and resistant to intervention. For many scholars and laymen, this possibility is simply unpalatable (Glazer, 1997; Rushton & Jensen, 2005b). Despite the fact that Spearman's hypothesis has garnered confirmatory support spanning various tests of cognitive performance (e.g., Wechsler Scales, Raven's Progressive Matrices, WJ-R, and ECTs), ages of examinees (preschoolers, children, and adults), countries (e.g., Netherlands, USA, and South Africa), and methodologies (e.g., both exploratory and confirmatory factor analysis), there is the nagging contention by strict environmentalist theorists that the correlation between *g* loadings and the magnitude of B-W differences may be a statistical artifact (e.g., Fish, 2002; Gould, 1996; Kamin, 1995; Schonemann, 1997a, 1997b). As the argument goes, between-group differences naturally contribute to the observed variation in IQ test performance. Similarly by definition, the first principal factor extracted from IQ data (Spearman's *g*) is calculated to account for the maximum variance in test performance. By default, between-group differences and *g* loadings will be necessarily correlated. Thus, the relationship between *g* and the magnitude of B-W differences is an inconsequential artifact and cannot be interpreted as supporting (or disconfirming for that matter) Spearman's hypothesis.

It was Braden (1989) who first noted the proposal that Spearman's hypothesis is a statistical artifact could be empirically refuted by finding groups that manifest between-group differences in cognitive ability, but for whom the magnitude of mean differences is not correlated to the test's *g* loadings. If a substantial correlation between *g* loadings and mean group differences can be found for groups that are not expected to demonstrate such a relationship, this result would cast formidable doubt upon the construct validity of Spearman's hypothesis as an explanation of Black-White differences in performance on cognitive tests (p. 151).

In the present study, Spearman's hypothesis is examined using samples of Black and White children taken from standardization data of the Wechsler Intelligence Scale for Children, Third Edition (WISC-III; Wechsler, 1991). In addition, the relationship between *g* loadings and group differences is investigated with independent samples of children with severe auditory and visual impairment who also had been administered the WISC-III. Because there is no *a priori* reason to anticipate group differences in *general* intelligence between children with or without sensory impairments, this study offers an empirical test of Schonemann's proposal that *g* is merely a statistical artifact, rather than a genuine explanative source of race differences in cognitive ability.

Method

The WISC-III is an individually administered test of intelligence intended for children 6 through 16 years old. The WISC-III contains 13 subtests comprising Verbal and Performance Scales. The five subtests comprising the Verbal Scale are Information, Similarities, Arithmetic, Vocabulary, and Comprehension. The five subtests contributing to the Performance Scale are Picture Completion, Coding, Picture Arrangement, Block Design, and Object Assembly. Three subtests—Digit Span in the Verbal Scale and Symbol Search and Mazes in the Performance Scale—are designated as supplementary subtests. Brief descriptions of each subtest are offered in Table 1. The WISC-III was standardized on 2,200 children who were selected to be representative of children in the United States. The WISC-III, like all Wechsler Scales, uses age-based deviation scores (M = 100, SD = 15) for the Verbal,

Performance, and Full Scale IQs, and scaled scores (M = 10 SD = 3) for the 13 individual subtests. The WISC-III is described as having "outstanding" reliability (Sattler, 2001, pp. 226-295).

Data from the WISC-III standardization consisted of 1,543 White and 331 Black children, with average ages of 11.9 and 11.3, respectively. All participants reported typical development and received education in a general classroom setting. A full description of the normative sample, as well as the sampling procedures used in standardization, is given in the WISC-III Technical Manual (Wechsler, 1991). The hearing-impaired sample consisted of 110 children ranging from 8 through 16 years of age (M =13 years, 3 months). These children reported severe and profound hearing loss pre-lingually and used American Sign Language (ASL) as their principal means of communication. No accompanying handicapping conditions were identified. For these children, the WISC-III was translated and administered by trained examiners fluent in ASL. The remaining sample consisted of 62 children identified with visual impairment and blindness as their sole handicapping condition. Ages ranged from 6 years to 16 years 11 months (M = 11 years, 5 months). The primary etiologies of blindness in the sample were congenital, with the majority of participants experiencing retinitis pigmentosa and retinopathy related to prematurity. For obvious reasons, these children were administered only the Verbal subtests plus the supplementary Digit Span subtest. Addressing criticisms (Isham & Kamin, 1993) of previous studies (e.g., Braden, 1989) that applied a similar research design, participants were matched according to the severity of disability to the greatest extent possible. Standardization data were provided by The Psychological Corporation, while data for the handicapped groups were collected by credentialed psychologists and graduate students under direct supervision.

Jensen (1992, 2001) developed the primary methodology to evaluate Spearman's hypothesis. Differences between groups were calculated by subtracting sample means and dividing by the standard deviation for Whites. These standardized differences were also corrected for attenuation by dividing each difference by the square root of the respective test's reliability coefficient for Whites. Descriptive statistics for the groups are presented in Tables 2 through 4. Predictably, a number of subtests demonstrated pronounced Black-White differences, with Whites

outperforming Blacks on 11 of the 12 subtests examined (Table 2). The exception is the Coding subtest, typically one of the poorest measures of *g* among the various Wechsler scales (Sattler, 2001). While B-W differences are noted, they are not statistically significant (.21 sigma units). The average B-W difference across the 12 subtests was .74 sigma units. Deaf-Hearing comparisons (Table 3) show appreciable differences between the subtests of the Verbal Scale, with an average difference of 1.2 sigma units. The largest of these differences was observed on the Vocabulary subtest. No significant differences were found on the Performance Scale subtests. This finding affirms previous research with the Wechsler Scales that suggests items with verbal content are more difficult for children with hearing impairments, even with the assistance of sign language (Braden, 1994). Descriptive statistics for the children with visual impairment (Table 4) offer significant differences on four of the six Verbal Scale subtests. These differences range from .08 (Similarities) to .65 (Arithmetic), with an average across subtests of .37 sigma units.

Data from each group were factor analyzed, with the first-extracted principal factor regarded as an estimate of Spearman's *g* (Jensen, 1998; Jensen & Weng, 1994). For each group, this factor was corrected for attenuation by dividing the factor loadings by the square root of the reliability for the respective subtest. From Table 5, it is apparent that the corrected principal factor loadings are very similar across each group. Moreover, based on congruence coefficients ranging from .96 to .99, it can be assumed that the *g* factor is virtually identical for the four groups under consideration.

At this point, a test of Spearman's hypothesis is a straightforward matter. For the Black and White groups, correlations between the vectors of corrected *g* loadings and mean test score differences confirmed Spearman's hypothesis: $r = .76$, $p < .05$. Conversely, correlations for the deaf and blind groups were negligible, at .17 and .16, respectively. Consequently, between-group differences for the unimpaired White and sensory-impaired samples bear no association to *g* loadings.

Table 1.
Descriptions of WISC-III subtests comprising the verbal and performance scales.

Verbal Scale subtests	
Information	requires the child to answer questions dealing with various content and acquired knowledge, including history, calendar art, scholastic information, and science.
Similarities	requires the child to identify and synthesize the common elements of two related concepts or ideas.
Arithmetic	requires the child to answer simple to complex problems involving arithmetic skills and quantitative reasoning.
Vocabulary	requires the child to define words presented orally.
Comprehension	requires the child to explain situations and actions that relate to society and popular culture.
Digit Span	requires the child to repeat (forward and backward) a series of digits that are read aloud.
Performance Scale subtests	
Picture Completion	requires the child to identify the most important missing element or detail in drawings of common objects.
Coding	under timed conditions, requires the child to copy simple symbols paired with other symbols
Picture Arrangement	requires the child to place a series of pictures in logical order and sequence
Block Design	requires the child to reproduce abstract designs and patterns using three-dimensional blocks that are colored on each side
Object Assembly	under timed conditions, requires the child to put together jigsaw puzzle pieces to form common objects
Symbols Search	requires the child to look at a target symbol and then decide if the symbol is present in an array of symbols under timed conditions.
Mazes	requires the child to solve paper-and-pencil mazes under timed conditions.

Source: Sattler, 2001.

Table 2.

Descriptive statistics for White and Black groups on the WISC-III. N =1,543 (White) and 331 (Black). d is the difference expressed in White SD units.

	White		*Black*		
Subtest	Mean	(SD)	Mean	(SD)	*d*
Information	10.68	(3.02)	.86	(3.21)	.96*
Similarities	10.56	(2.97)	8.22	(2.59)	.84*
Arithmetic	10.47	(3.01)	8.65	(2.72)	.69*
Vocabulary	10.53	(3.02)	8.16	(2.95)	.79*
Comprehension	10.58	(3.22)	8.36	(2.91)	.84*
Digit Span	10.31	(3.03)	9.47	(3.00)	.30*
Picture Completion	10.50	(3.02)	7.86	(3.21)	.94*
Coding	10.05	(3.28)	9.43	(3.43)	.21
Picture Arrangement	10.41	(3.15)	8.18	(3.03)	.78*
Block Design	10.47	(3.27)	7.32	(3.16)	.97*
Object Assembly	10.44	(3.16)	7.73	(3.16)	.99*
Symbol Search	10.29	(3.19)	8.54	(3.36)	.61*

**Denotes significance at the .05 alpha level.*

Table 3.

Descriptive statistics for Deaf and White Hearing groups on the WISC-III. N =1,543 (Hearing) and 106 (Deaf). d is the difference expressed in White Hearing SD units.

	Hearing		*Deaf*		
Subtest	Mean	(SD)	Mean	(SD)	*d*
Information	10.68	(3.02)	6.51	(3.50)	1.27*
Similarities	10.56	(2.97)	7.24	(3.60)	1.01*
Arithmetic	10.47	(3.01)	6.90	(3.40)	1.04*
Vocabulary	10.53	(3.02)	4.60	(3.30)	1.85*
Comprehension	10.58	(3.22)	6.75	(3.99)	1.05*
Digit Span	10.31	(3.03)	6.66	(3.20)	1.11*
Picture Completion	10.50	(3.02)	10.17	(3.20)	.10
Coding	10.05	(3.28)	10.07	(3.88)	.01
Picture Arrangement	10.41	(3.15)	10.60	(3.83)	.05
Block Design	10.47	(3.27)	10.58	(3.98)	.03
Object Assembly	10.44	(3.16)	10.41	(3.81)	.01
Symbol Search	10.29	(3.19)	10.59	(4.30)	.08

**Denotes significance at the .05 alpha level.*

Table 4.

Descriptive statistics for Blind and Unimpaired White groups on the WISC-III. N =1,543 (Unimpaired) and 62 (Blind). d is the difference expressed in Unimpaired White SD units.

	Unimpaired		*Blind*		
Subtest	Mean	(SD)	Mean	(SD)	*d*
Information	10.68	(3.02)	9.51	(2.91)	.39*
Similarities	10.56	(2.97)	10.33	(3.11)	.08
Arithmetic	10.47	(3.01)	8.50	(3.22)	.65*
Vocabulary	10.53	(3.02)	9.58	(3.29)	.31*
Comprehension	10.58	(3.22)	8.82	(3.46)	.55*
Digit Span	10.31	(3.03)	9.58	(4.11)	.24

**Denotes significance at the .05 alpha level.*

Table 5.

Loadings of the unrotated first principal component of the WISC-III subtests for White, Black, deaf and blind groups, corrected for attenuation.

Subtest	*White*	*Black*	*Deaf*	*Blind*
Information	.83	.79	.91	.89
Similarities	.84	.82	.85	.93
Arithmetic	.82	.80	.71	.88
Vocabulary	.81	.83	.84	.94
Comprehension	.76	.82	.80	.97
Digit Span	.53	.64	.68	.59
Picture Completion	.68	.74	.73	
Coding	.52	.54	.22	
Picture Arrangement	.62	.70	.61	
Block Design	.75	.80	.89	
Object Assembly	.76	.73	.86	
Symbol Search	.69	.68	.19	

Discussion

Because Unimpaired-Blind and Unimpaired-Deaf differences do not vary as a function of general intelligence, this study decisively refutes the idea that Spearman's hypothesis is a statistical artifact. If Spearman's hypothesis were a statistical artifact as proposed by Schonemann (1997a,b), between-group differences across all samples would have been significantly related to general intelligence. Therefore, these same findings offer further evidence in favor of Spearman's hypothesis, which also gains credibility as an explanation of B-W differences on mental tests.

The largest B-W differences were observed on the Object Assembly (.99) and Block Design (.97) subtests. These results accentuate the point that the use of figural stimuli, at the expense of verbal stimuli taken to be more culturally laden, does not necessarily reduce racial differences (Manos, 2008). Supported by the American Psychological Association (APA; 1999), a common practice for psychologists is to use nonverbal tests to assess the intelligence of Black people, in the belief that minimal verbal content reduces cultural bias. In actuality, many of these tests, such as Raven's Progressive Matrices (RPM; Raven, Raven, & Court, 1998), are saturated with Spearman's *g* and actually increase B-W differences in scores. If psychologists wish to close the observed B-W IQ gap through contrived test selection, they would do best to select tests that are poor measures of Spearman's *g*, such as the Black Intelligence Test of Cultural Homogeneity (BITCH; Williams, 1972). Of course, such practices would sacrifice the considerable clinical utility and predictive validity of Spearman's *g* for the sake of appearances (Gottfredson, 2002).

Although not its primary purpose, the present study also provides a test of the deprivation hypothesis long favored by environmentalist theorists to explain racial differences in intelligence (Hale, 2001; Ogbu, 1994, 2002; Williams, 1974). Children with pronounced and longstanding sensory impairment present a rare and unfortunate natural experiment in environmental deprivation (Braden, 1994). Many of the characteristics frequently cited to explain the comparatively poor performance of Blacks on IQ tests also apply to the disabled groups in this study: (a) both groups experience

environmental deprivation; (b) both groups have language systems (Braille and ASL) that are nonstandard and isolate them from the majority and even their own parents; (c) because of conditions beyond their control, both groups are prevented from full participation in the workforce; (d) both groups often have limited economic opportunity and political influence; (e) frequently, members of both groups are segregated in social settings; (f) historically, both groups have been targeted for derision and are often considered inferior to their non-disabled peers; and (g) until recently, children with low-incidence handicaps were not guaranteed educational services, and if these services were offered, these children were segregated from the majority. Not surprisingly, some sociologists even go so far as to consider being Black as a 'handicapping' condition in school, the workforce, and society (McDermott & Varenne, 1995).

Essentially, under these assumptions, the sensory-impaired samples in this study serve as "pseudo races" and replicate many of the cultural characteristics typically assigned to Blacks as a historically disenfranchised group (Ogbu, 2002). Therefore, if the cultural deprivation hypothesis is plausible as a model for Black underperformance, low *g* should characterize the sensory-impaired samples in this study. However, *g* accounted for only some 3% of the variance in the two disabled-unimpaired comparisons.

Certainly, the observed correlations of between-group test differences and loadings on Spearman's *g* are not decisive as to the origin of these group differences; but the B-W difference is on a factor that has been described as the '*sine qua non'* of intelligence (Brody, 1992), has high heritability for both Blacks and Whites (Osborne, 1980; Rowe and Cleveland, 1996), and is found here to be inexplicable in terms of 'deprivation.' Spearman (1927) expressed clear leanings for a genetic explanation of Black-White differences:

On the whole, there has been found a large body of evidence that races do differ from one another, at any rate in respect of g. And there have been some indications—as yet hardly decisive—that such differences persist even when the members of the respective races are living in the same environment, educational and otherwise; to this extent, then, the course would appear fairly traceable to inheritance." (1927, p. 380).

In the samples with sensory impairment, *g* was little impaired, so the environmental deprivation associated with blindness and deafness seems to take its toll on psychological abilities independent of Spearman's *g*. Clearly, subsequent investigations with disabled populations should take special care to examine group factors and sub-test specificities that may contribute to observed differences in test scores. But this study has confirmed that the B-W IQ difference is in *g* and has shown that Spearman's hypothesis is no artifact; and it has confirmed and extended Braden's earlier work on deaf children pointing out that the Black-White difference in *g* cannot be traced to any common-or-garden version of 'deprivation.'

References

American Psychological Association
(1999) *The Standards for Educational and Psychological Testing*. Washington, DC: Author

Braden, J.P.
(1989) Fact or artifact? An empirical test of Spearman's hypothesis. *Intelligence*, 13(2), 149-155.

Braden, J.P.
(1994) *Deafness, Deprivation, and IQ*. New York, NY: Plenum Press.

Brand, C.
(1996) *The g Factor: General Intelligence and Its Implications*. New York: John Wiley & Sons.

Brody, N.
(1992) *Intelligence*. San Diego, CA : Academic Press.

Carroll, J.B.
(1993) *Human cognitive abilities: A survey of factor analytic studies*. New York, NY: Cambridge University Press.

Carroll, J.B.
(1997) Psychometrics, intelligence, and public perception. *Intelligence*, 24(1), 25–52.

Carroll, J.B.
(2005) The three-stratum theory of cognitive abilities. In D.P. Flanagan & P.L. Harrison (eds.), *Contemporary Intellectual Assessment: Theories, Tests, and Issues*, pp. 69-76. New York, NY: Guilford Press.

Devlin, B., Feinberg, S.E., Resnick, D.P. & Roeder, K., eds.
(1997) *Intelligence, Genes, and Success: Scientists Respond to The Bell Curve*. New York: Springer-Verlag.

Ferguson, G.O.
(1916) The psychology of the Negro: An experimental study. *Archives of Psychology,* 36, 1-138.

Fish, J.M., ed.
(2002) *Race and Intelligence: Separating Science from Myth.* Mahwah, NJ: Erlbaum.

Galton, F.
(1869) *Hereditary Genius.* London: Macmillan.

Glazer, N.
(1994, October 31)
The lying game. *The New Republic*, 15–16.

Gottfredson, L.S.
(1997) Mainstream science on intelligence: An editorial with 52 signatures, history and bibliography, *Intelligence*, 24(1), 13-23.

Gottfredson, L.S.
(2002) *g*: Highly general and highly practical. In R.J. Sternberg & E.L. Grigorenko (eds.), *The General Factor of Intelligence: How General is It?* pp. 331–380. Mahwah, NJ: Erlbaum.

Gottfredson, L.S.
(2005) What if the hereditarian hypothesis is true? *Psychology, Public Policy and Law*, 11, 311-319.

Gould, S.J.
(1996) *The Mismeasure of Man*, 2nd ed. New York: Norton.

Hale, J.E.
(2001) *Learning while Black: Creating Educational Excellence for African American Children.* Baltimore, MD: Johns Hopkins University Press.

Herrnstein, R.J. & Murray, C.
(1994) *The Bell Curve.* New York: Free Press.

Isham, W.P. & Kamin, L.J.
(1993) Blackness, deafness, IQ and g. *Intelligence*, 17, 37-46.

Jensen, A.R.
(1969) How much can we boost IQ and scholastic achievement? *Harvard Educational Review*, 39, 1–123.

Jensen, A.R.
(1980) *Bias in Mental Testing.* New York, NY: Free Press.

Jensen, A.R.
(1985) The nature of the Black-White difference on various psychometric tests: Spearman's hypothesis. *Behavioral and Brain Sciences*, 8, 193-263.

Jensen, A.R.
(1992) Spearman's hypothesis: Methodology and evidence. *Multivariate Behavioral Research*, 27, 225–234.

Jensen, A.R.
(1993) Spearman's hypothesis tested with chronometric information-processing tasks. *Intelligence*, 17, 47-77.

Jensen, A.R.
(1998) *The g Factor: The Science of Mental Ability.* Westport, CT: Praeger.

Jensen, A.R.
(2001). Spearman's hypothesis. In S. Messick & J.M. Collis (eds.), *Intelligence and Personality: Bridging the Gap in Theory and Measurement*, pp. 3-24. Mahwah, NJ: Lawrence Erlbaum Associates.

Jensen, A.R. & Figueroa, R.A.
(1975) Forward and backward digit span interaction with race and IQ: Predictions from Jensen's theory. *Journal of Educational Psychology*, 67, 882-893.

Jensen, A.R. & Weng, L.
(1994) What is a good g? *Intelligence*, 18, 231-258.

Kamin, L.J.
(1974) *The Science and Politics of IQ.* Hillsdale, NJ: Erlbaum.

Kamin, L.J.
(1995) "Lies, Damned Lies and Statistics," In R. Jacoby & N. Glauberman (eds.), *The Bell Curve Debate: History, Documents, Opinions*, pp.81-105. New York, NY: NY Times Books.

Kane, H.D.
(2004) Developmental considerations of Spearman's Hypothesis. *Proceedings of the International Society for the Study of Intelligence, USA* [Abstract].

Kaufman, A.S. & Kaufman, N.L.
(1985) *Kaufman Assessment Battery for Children.* Circle Pines, MN: American Guidance Services.

Legree, P.J., Pifer, M.E. & Grafton, F.C.
(1996) Correlations among cognitive abilities are lower for higher ability groups. *Intelligence*, 23, 45-57.

Loehlin, J.C.
(2000) Group differences in intelligence. In R.J. Sternberg (ed.), *Handbook of Intelligence*, pp. 176–193. Cambridge: Cambridge University Press.

Lynn, R., & Vanhanen, T.
(2002) *IQ and the Wealth of Nations.* Westport, CT: Praeger.

Manos, G.
(2008) Group differences on the Naglieri Nonverbal Ability Test (NNAT). *Mankind Quarterly*, 49 (1), this issue.

McDermott, R. & Varenne, H.
(1995) Culture as disability. *Anthropology & Education Quarterly*, 26, 324-348.

Mensh, E. & Mensh, H.
(1991) *The IQ Mythology: Class, Race, Gender, and Inequality.* Carbondale, IL: Southern Illinois University Press.

Miele, F.
(1995) For whom the bell curve tolls: An interview with [the author of *The Bell Curve*] Charles Murray, on IQ, race, class, Gould, Gardner, and the Clintons. *Skeptic*, 3(2), 34–41.

Miele, F.
(2002) *Intelligence, Race, and Genetics: Conversations with Arthur R. Jensen.* Boulder, CO: Westview Press.

Naglieri, J.A., & Jensen, A.R.
(1987) Comparison of Black–White differences on the WISC–R and K–ABC: Spearman's hypothesis. *Intelligence*, 11, 21–43.

Neisser, U., Boodoo, G., Bouchard, T.J., Jr., Boykin, A.W., Brody, N., Ceci, S.J. et al.
(1996) Intelligence: Knowns and unknowns. *American Psychologist*, 51, 77–101.

Nyborg, H.U. & Jensen, A.R.
(2000) Black-White differences on various psychometric tests: Spearman's hypothesis tested on American armed services veterans. *Personality and Individual Differences*, 28, 593-599.

Ogbu, J.U.
(1994) Racial stratification and education in the United States: Why inequality persists. *Teachers College Record*, 96, 264-298.

Ogbu, J.U.
(2002) Cultural amplifiers of intelligence: IQ and minority status in cross-cultural perspective. In J.M. Fish (ed.), *Race and Intelligence: Separating Science from Myth*, pp. 241-278. Mahwah, NJ: Lawrence Erlbaum Associates.

Osborne, R.T.
(1980) *Twins: Black and White.* Athens, GA: Foundation for Human Understanding.

Raven, J., Raven, J.C. & Court, J.H.
(1998) *Manual for Raven's Standard Progressive Matrices.* Oxford: Oxford Psychologists Press.

Rowe, D.C. & Cleveland, H.H.
(1996) Academic achievement in Blacks and Whites: Are the developmental processes similar? *Intelligence*, 23, 205–228.

Rushton, J.P.
(2001) Black–White differences on the *g* factor in South Africa: A "Jensen effect" on the Wechsler Intelligence Scale for Children—Revised. *Personality and Individual Differences*, 31, 1227–1232.

Rushton, J.P. & Jensen, A.R.
(2005a) Thirty years of research on race differences in cognitive ability. *Psychology, Public Policy and Law*, 11, 235-294.

Rushton, J.P. & Jensen, A.R.
(2005b) Wanted: More race realism, less moralistic fallacy. *Psychology, Public Policy and Law*, 11, 328-336.

Sattler, J.M.
(2001) *Assessment of Children: Cognitive Applications*, 4th ed. La Mesa, CA: Author.

Schonemann, P.H.
(1997a) Famous artifacts: Spearman's hypothesis. *Cahiers de Psychologie Cognitive/Current Psychology of Cognition*, 16, 665-694.

Schonemann, P.H.
(1997b) The rise and fall of Spearman's hypothesis. *Cahiers de Psychologie Cognitive/Current Psychology of Cognition*, 16, 788-812.

Shuey, A.M.
(1966) The Testing of Negro Intelligence. *New York: Social Science Press.*

Snyderman, M. & Rothman, S.
(1988) *The IQ Controversy, the Media and Public Policy.* New Brunswick, NJ: Transaction Press.

Spearman, C.E.
(1927) *The Abilities of Man: Their Nature and Measurement.* New York, NY: Macmillan.

Steele, C.M.
(1997) A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52, 613–629.

Wechsler, D.
(1974) *Wechsler Intelligence Scale for Children, Revised.* San Antonio, TX: Psychological Corporation.

Wechsler, D.
(1991) *Wechsler Intelligence Scale for Children, Third Edition.* San Antonio, TX: Psychological Corporation.

Williams, R.L.
(1972) *The BITCH Test.* St. Louis, MO: Black Studies Program, Washington University.

Williams, R.L.
(May, 1974) Scientific racism and IQ: The silent mugging of the Black community. *Psychology Today*, 32-41.

Woodcock, R.W. & Johnson, M.B.
(1989) *Woodcock-Johnson Psychoeducational Battery, Revised.* Itasca, IL: Riverside.

Yerkes, R.M., ed.
(1921) Psychological examining in the United States Army. *Memoranda of the National Academy of Science*, 15, 1-890.

Demographics of the Upward-Trending Murder Rate in Buffalo, New York: An Omen for the Future?

Vance McLaughlin,
Wade C. Mackey*
Both of Jacksonville State University

A century of murder rates is surveyed from Buffalo, New York, within the context of several demographic variables. Over the course of the twentieth century, Buffalo's murder rates have trended upward. It is argued that the dynamics of the twentieth century in Buffalo may be repeated across various cities in the twenty-first century via analogous demographics. Accordingly, increasing rates of violent crime in general, and most specifically of murder, would be under pressure to remain at the relatively high levels.

Key Words: Murder rate, Buffalo, ethnic homogeneity, immigration, high school graduation rates, non-marital births, violent crime rates, unemployment.

Demography is destiny.

Auguste Comte

Although murder in the United States is relatively rare and each case has unique properties, some patterns tend to be consistent. Murder is mainly a male event (as to both perpetrator and victim) with young males over-represented in the arrests. This article focuses upon the level of documented murder in Buffalo, New York. Demographic variables, over and beyond "young males", will be examined in relationship to any trends, upward or downward, in the murder rates. Following the results section, the attempt will be made to augur whether Buffalo, New York, can be reasonably generalized to other similar cities in the U.S. If generalizability is justifiable, then the question emerges of whether the generalization most usefully applies to twentieth century America as a snap-shot of the past

* Corresponding author: Wade C. Mackey, Department of Criminal Justice, 130 Brewer Hall, Jacksonville State University, 700 Pelham Road North, Jacksonville, Alabama 36265. e-mail: waddmac@aol.com. Tel.: (256) 782-5335

or, rather, to twenty-first century America as a prediction of the future.

Backdrop of the Analysis

The Township of Buffalo, New York, was established in 1810, and incorporated as a city in Erie County in 1832. Buffalo soon became important commercially both as a place for the transit of goods and as a center for manufacturing goods. In the late nineteenth and early twentieth centuries, Buffalo was a magnet for immigration from Europe, and a significant wave of European immigration occurred. The percentage of Buffalo's foreign-born Whites, i.e. Europeans, peaked at 30% in 1900 and slowly declined until the Great Depression. See Table 1. As the Great Depression began and continued, the level of immigration from Europe declined steeply.

World War II created a market for labor, and a second wave of immigration into Buffalo occurred. This wave contained a fairly large number of southern Blacks. In the 1980s a third wave began, consisting mainly of individuals from Mexico and Central America. See Table 1 for percentages of ethnic group by decade. It should be noted that various entities, including governmental agencies, across various years refer to this latter group with various names, e.g. Latinos, Hispanics, Chicanos, Spanish. This article will use the term Latinos and notes that the majority of the recently immigrating Latinos originated from Mexico or Central America.

Method

Variables:

Dependent variable: Buffalo's rate of murders (per 100,000 population) as known to the police will be the dependent variable. The Buffalo murder rates were available from the 1890-2003 (Buffalo Police Department 1905-1935, U.S. Department of Justice 1931-2005. To avoid an aberrant year, the mean murder rate of three years is the datum of record. The census year, plus and minus one year, developed the three-year mean.

Independent variables: To complement the stipulated variables of "young males", years (with decade as the unit) and levels of ethnic homogeneity are the first, if coarse-grained, set of independent variables. Although there are variations upon the theme, the initial coding for ethnicity will be White, Black and Latino. The hypothesis being tested is that Buffalo's murder

rates will vary predictably with changes over time and changes in ethnic homogeneity.Percentages of the relevant ethnic groups in Buffalo were available from the U.S. Census (1890 – 2002).

Level of ethnic homogeneity: The U.S. Census Bureau lists ethnic/racial categories by state, plus the District of Columbia (Washington DC). The datum of record for this paper was the ethnic group that had the highest percentage (whether a majority or a plurality) in the interval being analyzed. For example, from the Census Bureau (U.S. Census Bureau 2003), Asians were a plurality of the citizens in the state of Hawaii (43%), and White non-Hispanics were the majority in the state of Maine (96.4%). The higher the percentage – by definition – the more the homogeneity. In Buffalo's case, Whites were the majority for all surveyed decades. The percentages of Whites ranged from 99 percent to just over half (54.4%).

Results

Overall, through the 12 decades of available data, the correlation between year and Buffalo's murder rates was significant ($r_p = .833$; $p < .01$; $df = 10$) with approximately two-thirds of the rise aligned with the changes in the year ($.833^2 = .694 = 69.4\%$). Framed differently, from 1890 to 2000, the murder rate trended upward significantly.

From 1890 to 1940, the murder rate stayed below five per 100,000 population (n = 6; mean = 2.9; sd = 1.0). During this interval, the percentage of foreign-born Whites in Buffalo dropped from 33.4% in 1890 to 16.0% in 1940. See Table 1. For the 1949-1951 interval and for the 1959-1961 interval, the murder rates remained low, 2.5 and 3.4 respectively. Hence, the first wave of immigration (i.e., the one from Europe) seemed to have little impact upon the murder rate. By contrast,from the 1959-1961 interval to the 1969-1971 interval the murder rate more than trebled (12.7/3.4 = 3.7). This increase was aligned with the second wave of immigrants (that of southern Blacks), which reached one-fifth (20.4%) of the city's population by the 1970s. The Black percentage of the population consistently rose through the decades to the 1999-2001 interval, during which the percentage reached 38.6%. Since the 1980s, the murder rate has remained in the midteens.

The Latino percentage of Buffalo's population was less than 1% from the 1890s to the 1970s. The 1980 census reported the

Latino population was 2.7% of the total. This percentage grew to 4.89% in the 1990 census and 7.5% in the 2000 census. By the year 2006 (the latest available year), the percentage had increased to 8.9%. Table 1.

Using the construct of ethnic homogeneity, as defined above in the Method section, the correlation (from 1890 to 2000) between ethnic homogeneity and murder rates was significant (r_p = -.928; p < .001; df = 10). Over 80% (.928^2 = .861= 86.1%) of the variance in murder rates is aligned with changes in the level of ethnic homogeneity. Framed differently, the second wave of immigration (the Blacks) into Buffalo was correlated with an increase in the murder rate.[1]

Arguably, the suggested third wave (the Latinos) had begun too late (1980s) to account for the onset in the rise in murder rates (1960s).

Discussion

Two questions now emerge: (a) What factors serve as viable candidates to help understand the rise in murder rates? and (b) what, if any, relationship would there be between these factors and the second wave of immigration into Buffalo?

To address these two questions, the discussion here is broadened to examine the relationship, across the fifty states plus DC, between rates of violent crime (known to police per 100,000 population) and a set of demographic variables.

The four demographic variables that proffer themselves as being useful in teasing out the relationships include: (1) level of non-marital births (the mean from a fiveyear interval), (2) male unemployment rates (the mean from a five-year interval), (3) level of high school graduation, and (4) level of ethnic homogeneity (U.S. Census Bureau 1980 – 2007).

1. Level of non-marital births and violent crime. As Table 2

[1] *States as units of analysis:* A state (e.g. Ohio, New Jersey, Texas) in the U.S. is a coarse unit of analysis. Many of the U.S. states are far from homogeneous entities. The potential is quite real for noise in the system to overwhelm any useful signal. That is, the possibility of obtaining false negatives is quite real. Nevertheless, the use of states as sampling units has been successfully utilized elsewhere (Immerman & Mackey 1999, Kania & Mackey 1977, Mackey & Immerman 2000, 2007a, Mackey & Mackey 2003; cf Mackey & Immerman (2001, 2007b) who analyzed data across nations. The states (including the District of Columbia) were viewed by this inquiry as units discrete enough and sensitive enough to generate reliable and valid patterns. And, as described in the text, discernible patterns did emerge.

illustrates, across the fifty states plus DC, rates of violent crime (per 100,000 population) are robustly related to non-marital births. As elaborated below, the relationship exists both from concurrent time intervals (2000 – 2004) and from a generation-lag of 20 years (the level of non-marital births is the prior variable and the level of violent crime is the subsequent variable).[2]

For each of the most recent five years (2000-2004) the rates of non-marital births were significantly and positively correlated with rates of violent crime. The percentage of explained variance ranged from 43.2% to 52.9%. As would be expected, the mean for the five years was also significant: (r_p) = .698; df = 49; $p < .001$, sd = .026. The mean explained variance was 48.7%. See Table 2. For the five correlations – 2000-2004 – involving the generation lag of 20 years (1980-1984), each of the five correlations (r_p) was significant. The amount of explained variance ranged from 59.6% to 69.9%. The mean correlation (r_p) was also significant: .807; $p < .001$; df = 49. The mean explained variance was 65.1%. See Table 2. New-born infants, of course, will not commit any crimes, violent or otherwise, but they may do so 20 years later, when they have reached the crime-prone age.[3]

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[2] *Ecological inference:* A methodological problem that this type of analysis faces is that of the relationship between aggregate data and individual data. Framed differently, aggregate data are not equipped to isolate behaviors of an individual. Thus, inferences from an aggregate, an ecological unit, are generally inappropriate when directed at any individual. See Robinson (1950) for an early discussion of the problem, and see Borgatta & Jackson (1978), Goodman (1959), Hanushek, Jackson & Kain (1974), King (1997), King, Rosen & Tanner (2004), Langbein & Lichtman (1978) and Pedhazur (1982) for subsequent discussions plus partial solutions to the problem of relating aggregate data to individual behavior; cf Pridemore (2005). Suffice it to say that this present analysis is not construed to specify how any one individual would or would not behave. This analysis is content to attempt to discover what — if any — behavior patterns are aligned with other behavior patterns.

[3] Any detailed analysis of the path from fatherlessness to unwanted social behavior is well beyond the scope of this article. Nonetheless, the linkage between unwanted social behavior and fatherlessness from a non-marital birth (but not from divorce, see Mackey & Immerman 2007), has long been well represented in the literature viz. Adams, Milner & Schrepf (1984), Anderson (1968), Bereczkei & Csanaky (1996), Blau & Blau (1982), Chilton & Markle (1972), Daly & Wilson (1982, 1985, 1988), Gordon & Creighton (1988), Hegar, Zuravin & Orme (1994), Immerman & Mackey (2000), Lenington (1981), Mackey & Immerman (2004), Mackey & Mackey (2003), Mischel (1961a, 1961b), Monahan (1972), Mosher (1969), Robins & Hill (1966), Schnitzer & Ewigman (2005), Stevenson & Black (1988), Tyler (1986), Widom (1992).

The correlation of the generation lag (.807) is significantly larger than the correlation from the same time frame (.698) only if the level of significance is set at $p < .05$ (one-tailed): $t = 1.99$; $df = 48$; $p < .05$ (one-tailed). Hence, the two correlations are most conservatively viewed as being of the same magnitude. There is no evidence found that would suggest that correlation from the same time interval was of greater magnitude than the correlation from the generation lag.

Non-marital births and violent crime: correlation across time. Across an interval of 53 (available) years (1952 -2004) (U.S. Census Bureau 1953 – 2007), the correlation between rates of non-marital births and rates of violent crime was significant ($r_p = .867$; $p < .001$; $df = 51$). Approximately three-quarters (75.2%) of the variance in violent crime rates is explained by variation in rates of non-marital births.

2. Male unemployment and violent crime. Significance was reached in three of the five surveyed years (2000 – 2004). Two of the years did not achieve significance. For the five year interval, the mean correlation was significant: $r_p = .341$; $p < .01$; $df = 49$. See Table 2. See Chamlin, Cochran, & Lowenkamp (2002) Pratt & Lowenkamp (2002) and Strom & MacDonald (2007) for more detailed discussions on putative dynamics linking economics and murder.

Non-marital births and male unemployment. Significance was reached in two years of the five year interval (three of the years did not achieve significance). For the five year interval, the mean correlation was significant: $r_p = .279$; $p < .05$ (two-tailed, $df = 49$). See Table 2.

Violent crime & non-marital births versus male unemployment. From the same time interval, the correlation between rates of non-marital births and rates of violent crime (.698) was significantly larger than the correlation between rates of male unemployment and rates of violent crime (.341) ($t = 2.944$, $p < .01$; $df = 48$).

Similarly, for the generation lag, the correlation between rates of non-marital births and rates of violent crime (.807) was significantly larger than the correlation between rates of male unemployment and rates of violent crime (.341) ($t = 4.70$; $p < .001$; $df = 48$).

If the rates of male unemployment are partialled from the correlation between non-marital births and violent crime, the

correlation between non-marital births and violent crime is still significant (r_p = .668; F[1,48] = 38.68; p < .001). On the other hand, if the rates of non-marital births are partialled from the correlation between rates of male unemployment and rates of violent crime, the previously significant correlation between rates of male unemployment and rates of violent crime is no longer significant (r_p= .213): F (1,48) = 2.274; p > .05.In conclusion, rates of non-marital births were robustly related to rates of violent crime. The magnitude of the relationship, both from the same temporal interval and from the generation lag, was significantly greater than the correlation between rates of male unemployment and rates of violent crime. This relationship between violent crime and non-marital births has been present for as long as records have been available to be analyzed.

3. Attainment of a high school degree. In 2005, across the fifty states plus D.C., the percentage of persons 25 years or older in the United States who had attained a high school degree was 85.2%. The range was from 78.2% (low; Texas) to 92.7% (high; Minnesota and Utah) (U.S. Census Bureau, 2007). The state-level correlation between attaining a high school degree and violent crime rates was significant: r_p = -.447, p < .01; df = 49. The correlation was negative: as the proportion of adults with a high school degree increased, violent crime rates decreased. Approximately 20% of the variance ($.447^2$ = .1998 = 19.98%) in violent crime rates is aligned with changes in the attainment of a high school degree.

The completion rates of (all) persons aged 18-24 years not currently enrolled in high school or below (in 2003) was 87.1%. By race/ethnicity, the White completion rate was 91.9%, the Black was 85.0% and the Hispanic was 69.2% (U.S. Census Bureau, 2003).

Using a slightly different index, the U.S. Census reported that 86.9% of native-born American adults had a high school degree. The analogous figure for the foreign-born population was 67.2%. Of interest to our present study, 49.1% of the population with a Latin American background had a high school education, and the Central American population's figure was 37.3% (U.S. Census Bureau, 2003).

4. Ethnic homogeneity. The mean for this index was 75.4 (median 78.3). The standard deviation was 13.9. The low was

Hawaii (43.1) and the high was Maine (96.4) (U.S. Census Bureau, 2003). The state-level correlation (r_p) between ethnic homogeneity and violent crime was -.651; $p < .001$; df = 49. The relationship was negative: the higher the ethnic homogeneity, the lower the violent crime rate. Over 40% ($.651^2 = .424 = 42.4\%$) of the variance in violent crime rates can be attributed to changes in the level of ethnic homogeneity. See Kubrin & Wadsworth (2003) and Haynie & Armstrong (2006), who view structural correlates to violent crime vis-à-vis ethnicity from complementary frameworks.

Aggregate influence upon violent crime rates

If the aggregated impact of all four independent variables (non-marital births, male unemployment, high school degree, and ethnic homogeneity) upon violent crime rates is computed, the result is significant ($F[3,47] = 22.924$, $p < .001$). The R is .816, and the adjusted $R^2 = .475$. That is, more than 45% (47.5%) of the variance in rates of violent crime can be attributed to the influence of the four variables acting in concert.

Buffalo within the context of the U.S.: Demographic markers for future violent crime rates in Buffalo, New York.

Non-marital births. In the year 2003, the overall percentage of non-marital births (of all live births in the U.S.) was 34.6% (Whites: 29.4%, Blacks 68.2%, Mexican-Hispanic: 43.7%, Central & South American Hispanic: 46.0%) (U.S. Census Bureau, 2007). For the year 2000, the ethnic breakdown (in Buffalo) of the percentage of all live births which were non-marital was Whites: 47.3%, Blacks: 79.9%, and Hispanics: 69.1% (National Center for Health Statistics, 2002). Note that all three indices were above the national average of 34.6%. Hence, to the extent that levels of non-marital births remain correlated with violent crime rates (especially after a 20-year delay), Buffalo's violent crime rate will be under upward pressures for decades.

Attainment of a high school degree. The (Common Core Index) graduation rate for Whites in New York State (in 2002-2003) was 78.5% (for suburbs, the figure was 80.0%). For Buffalo, the White rate was 57.9%, the Black rate was 45.7%, and the Hispanic rate was 36.6% (National Center for Education Statistics, 2006; The Urban Institute, 2003). Again, these three

figures are below state average. In 2006, the percentage of adults 25 years or older in the U.S. with a high school degree was 85.5%. For New York State, the figure was 81.1%. For Buffalo, New York, the figure was 74.5% (U.S. Bureau of the Census, 2007). To the extent that a lack of a high school degree continues to be predictive of violent crime rates, Buffalo will experience an upward pressure on those rates.

Unemployment. In the 1970s, Buffalo's unemployment rate (males and females) was in the low teens. The rate vacillated up and down until the mid-1990s, at which time the rate was lowered to high single digits. In 2001, the unemployment rate was 5.8% and has risen slightly since then (New York State Department of Labor, 2007). This rate of 5.8% was higher than the national mean in 2001 of 4.8% (4.8 for males and 4.7 for females) (U.S. Bureau of the Census, 2007). The most current (estimated) unemployment level from 2007 indicates an unemployment rate of 5.7%. The figure of 5.7% is higher than the New York State level of 5.0% and the national U.S. level at 5.1% (On-Board Informatics, 2008, U.S. Bureau of the Census, 2007). To the extent that Buffalo's unemployment rate remains above the national average, then there would be upward pressures on the rates of violent crime.

Ethnic homogeneity. If the Hispanic migration continues to increase the proportion of Mexican-Hispanics and Central American-Hispanics into Buffalo (and the most current data indicate that the proportion has increased), then the ethnic homogeneity index will decrease. To the extent that decreased ethnic homogeneity continues to be predictive of violent crime rates, Buffalo would be expected to experience upward pressures on those rates.

Summary and Conclusions

The first wave of immigrants (from Europe) seemed to have minimal impact upon murder rates in Buffalo. The second wave (of Blacks) was aligned with increased homicide rates. The third wave (Mexican-Hispanics and Central American Hispanics) is too soon a phenomenon, or even epiphenomenon, to adjudge its impact upon violent crime rates in general or murder rates in particular.

The pattern of results in Buffalo, New York, which was presented above, may be confined to a few decades at the end of

the twentieth century and be useful only as an historical snapshot. On the other hand, if the relationships that have been presented above continue to "hold" their significant and predictive character, then Buffalo's demographics of the late 20th century would become a predictor of violent crime rates in similar cities with similar demographics well into the 21st century.

References

Adams, P.L., Milner, J.R. & Schrepf, N.A.
(1984) *Fatherless Children.* NY: John Wiley & Sons.

Anderson, R.E.
(1968) Where's dad? Paternal deprivation and delinquency. *Archives of General Psychiatry* 18: 641-649.

Bereczkei, T. & Csanaky, A.
(1996) Evolutionary pathway of child development: lifestyles of adolescents and adults from father-absent families. *Human Nature* 7: 257-280.

Blau, J.R. & Blau, P.M.
(1982) The cost of inequality: metropolitan structure and violent crime. *American Sociological Review* 47: 114-129.

Borgatta, E.F. & Jackson, D.J. (eds.)
(1978) *Aggregate Data: Analysis and Interpretation.* Beverly Hills, CA: Sage.

Buffalo Police Department
(1905-1935)
Annual Report of the Board of Police. Buffalo, New York: City of Buffalo.

Chamlin, M.B., Cochran, J.K., & Lowenkamp, C.T.
(2002) A Longitudinal Analysis of the Welfare-Homicide Relationship: Testing Two (Non-Reductionist) Macro-Level Theories. *Homicide Studies: An Interdisciplinary & International Journal* 6(1): 39-60.

Chilton, R.J. & Markle, G.E.
(1972) Family disruption, delinquent conduct, and the effects of subclassification. *American Sociological Review* 47: 114-129.

Daly, M. & Wilson, M.I.
(1982) Homicide and kinship. *American Anthropologist* 84: 372-378.

Daly, M. & Wilson, M.I.
(1985) Child abuse and other risks of not living with both parents. *Ethology & Sociobiology* 6: 197-210.

Daly, M. & Wilson, M.I.
(1988) *Homicide.* NY: Aldine De Gruyter.

Goodman, L.
(1959) Some alternatives to ecological correlation. *American Journal of Sociology* 64: 6120-6125.

Gordon, M. & Creighton, S.J.
(1988) Natal and non-natal fathers as sexual abusers in the United Kingdom: a comparative analysis. *Journal of Marriage and the Family* 50: 99-105.

Hanushek, E.A., Jackson, J.E. & Kain, J.F.
(1974) Model specification, use of aggregate data and the ecological correlation fallacy. *Political Methodology* 1: 87-106.

Haynie, D.L. & Armstrong, D.P.
(2006) Race- and gender-disaggregated homicide offending rates. *Homicide Studies: An Interdisciplinary & International Journal* 10(1): 3-32.

Hegar, R.L., Zuravin, S.J., & Orme, J.G.
(1994) Factors predicting severity of physical child abuse injury: a review of the literature. *Journal of Interpersonal Violence* 9(2): 170-183.

Immerman, R.S. & Mackey, W.C.
(1997) Cultural evolution and sexually transmitted diseases: establishing a link. *Genetic, Social, and General Psychology Monographs* 123(4): 441-460.

Immerman, R.S. & Mackey, W.C.
(2000) The societal dilemma of multiple sexual partners: the costs of the loss of pair-bonding. *Marriage and Family Review* 29(1): 3-19.

Kania, R.R. & Mackey, W.C.
(1977) Police violence as function of community characteristics. *Criminology* 15: 27-48.

King, G.
(1997) *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data.* Princeton, NJ: Princeton University Press.

King, G., Rosen, O, & Tanner, M.A. (eds.)
(2004) *Ecological Inference: New Methodological Strategies.* Cambridge: Cambridge University Press.

Kubrin, C.E. & Wadsworth, T.
(2003) Identifying the structural correlates of African American killings. *Homicide Studies: An Interdisciplinary & International Journal* 7(1): 3-35.

Langbein, L.I. & Lichtman, A.J.
(1978) *Ecological Inference.* Beverly Hills, CA: Sage.

Lenington, S.
(1981) Child abuse: the limits of sociobiology. *Ethology & Sociobiology* 2: 17-29.

Mackey, W. C. & Immerman, R. S.
(1999) The societal dilemma of multiple sexual partners: The costs of the loss of pair-bonding *Marriage and Family Review* 29 (1): 3-19.

Mackey, W.C. & Immerman, R.S.
(2001) Restriction of sexual activity as a partial function of disease avoidance: a cultural response to sexually transmitted diseases. *Cross-Cultural Research* 35: 400-423.

Mackey, W.C. & Immerman, R.S.
(2004) The presence of the social father in inhibiting young men's violence. *Mankind Quarterly* 44: 339-366.

Mackey, W.C. & Immerman, R.S.
(2007a) Fatherlessness by divorce contrasted to fatherlessness by non-marital births: a distinction with a difference for the community. *Journal of Divorce and Remarriage* 47: 111-134.

Mackey, W.C. & Immerman, R.S.
(2007b) Sexually transmitted disease and gender role: an index of cultural evolution. *Cross-Cultural Research* 41: 46-65.

Mackey, W.C. & Mackey, B.W.
(2003) The presence of fathers in attenuating young male violence: dad as social palliative. *Marriage and Family Review* 35: 63-75.

Mischel, W.
(1961a) Father-absence and delay of gratification: cross-cultural comparison. *Journal of Abnormal and Social Psychology* 52: 116-124.

Mischel, W.
(1961b) Preference for delayed reinforcement and social responsibility. *Journal of Abnormal and Social Psychology* 62: 1-7.

Monahan, T.P.
(1972) Family status and the delinquent child: A reappraisal and some new findings. *Social Forces* 35: 250-258.

Mosher, L.R.
(1969) Father absence and antisocial behavior in Negro and White males. *Acta Pedopsychiatrica* 36: 186-202.

National Center for Education Statistics
(2006) *Dropout Rates in the United States: 2002 and 2003:* http://nces.ed.gov/pubs2006/dropout/tables/table_11.asp

National Center for Health Statistics
(2007) *Vital Statistics of the United States, Vol. 1: Natality*. Washington, D.C.: Government Printing Office.

New York State Department of Labor
(2007) *Buffalo City, NY: Unemployment Rate*: www.labor.state.ny.us/workforceindustrydata/laus_pr.asp?reg=nys&geog=51PS015

On-Board Informatics
(2008) www.4.onboardnavigator.com/webcontent/obwc.

Pedhazur, E.J.
(1982) *Multiple Regression in Behavioral Research* (2nd ed.). NY: Holt, Rinehart & Winston.

Pratt, T. C. & Lowenkamp, C. T.
(2002) Conflict theory, economic conditions, and homicide: a "time-series analysis. *Homicide Studies* 6 (1): 61-83.

Pridemore, W.A.
(2005) A cautionary note on using county-level crime and homicide data. *Homicide Studies: An Interdisciplinary & International Journal* 9(3): 256-268.

Robins, L.N. & Hill, S.Y.
(1966) Assessing the contributions of family structure, class, and peer groups to juvenile delinquency. *Journal of Criminal Law, Criminology, and Police Science* 57: 325-334.

Robinson, W.S.
(1950) Ecological correlation and the behavior of individuals. *American Sociological Review* 15: 351-357.

Schnitzer, P.G. & Ewigman, B.G.
(2005) Child deaths resulting from inflicted injuries: household risk factors and perpetrator characteristics. *Pediatrics* 116(5): 1209.

Stevenson, M.R. & Black, K.N.
(1988) Paternal absence and sex-role development: a metaanalysis. *Child Development* 59: 793-814.

Strom, K.J. & MacDonald, J.M.
(2007) The influence of social and economic disadvantage on racial patterns in youth homicide over time. *Homicide Studies: An Interdisciplinary & International Journal* 11(1): 50-69.

The Urban Institute
(2003) *Who Graduates? Who Doesn't? A Statistical Portrait of Public High School Graduation, Class of 2001.* Washington, D.C.: The Urban Institute Education Policy Center.

Tyler, A.H.
(1986) The abusing father. In M.E. Lamb (ed.): *The Father's Role: Applied Perspective*, pp. 256-275. NY: Wiley.

U.S. Census Bureau
(1900-2007)
Statistical Abstract of the United States: 1900-2004 (25th-128th eds.). Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Justice
(1931-2005)
Uniform Crime Reports. Washington, D.C.: U.S. Government Printing Office.

Widom, C.S.
(1992) *The Cycle of Violence*. Washington, D.C.: Government Printing Office.

Wilson, J.Q. & Herrnstein, R.
(1985) *Crime and Human Nature*. NY: Simon & Schuster.

Table 1:
Selected demographics of Buffalo, New York, from 1890 to 2002 by decade and by latest available year.[a]

Years	*Rate (per 100,000)*	*Population*	*Foreign-born Whites*	*White*	*Black*	*Latino*
2006	19.8	276,059		51.0%	39.7%	8.9%
1999-2001	15.4	292,648		51.8%	38.6%	7.5%
1989-1991	14.0	295,619		62.0%	30.7%	4.9%
1980-1981	14.3	357,870		69.3%	26.0%	2.7%
1969-1971	12.7	463,000		78.6%	20.4%	<1.0%
1959-1961	3.4	533,000		85.7%	13.3%	<1.0%
1949-1951	2.5	580,132		92.7%	6.3%	<1.0%
1939-1941	2.3	575,901		96.8%	3.1%	<I.0%
1929-1931	2.8	573,076	21%	97.5%	2.4%	<1.0%
1919-1921	4.0	502,775	24%	99.1%	0.9%	<1.0%
1909-1911	3.4	423,715	29%	99.6%	<1.0%	<1.0%
1900	3.6	352,387	30%	99.5%	<1.0%	<1.0%
1890	1.4	255,664		99.5%	<1.0%	<1.0%

[a] Source: U.S. Census Bureau (1900 – 2007).

Table 2:

Relationships (correlations [r_p] and explained variance) among rates of non-marital births, rates of violent crime and rates of male unemployment: both concurrent and with a generation lag (n = 51) (U.S. Census Bureau 1980-2006)

Compared years	*Non-marital births & Violent crime*	*% explained variance*	*Violent crime & male unemployment*	*% explained variance*	*Non-marital births & male unemployment*	*% explained variance*
2004-2004	.657 ***	43.2%	.484 ***	23.4%	.287 n.s	n.a.
2003-2003	.691 ***	47.7%	.260 n.s.	n.a.	.126 n.s.	n.a.
2002-2002	.708 ***	50.1%	.234 n.s.	n.a.	.169 n.s.	n.a.
2001-2001	.727 ***	52.9%	.396 **	15.7%	.405 **	16.4%
2000-2000	.709 ***	50.3%	.330 *	10.9%	.409 **	16.7%
Mean	.698 ***	48.7%	.341 **	11.6%	.279 *	7.8%
s.d.	.026		.102		.131	
1984-2004	.772 ***	59.6%				
1983-2003	.802 ***	63.4%				
1982-2002	.802 ***	64.3%				
1981-2001	.836 ***	69.9%				
1980-2000	.822 ***	67.6%				
Mean	.807 ***	65.1%				
s.d.	.024					

* p < .05 (two-tailed); ** p < .01; *** p < .001

State IQ and Fertility in the United States

Steven M. Shatz*
Hofstra University

The relationship between IQ and fertility was examined at the state level within the USA. As predicted, SAT-derived state IQ scores were negatively correlated with three different indicators of state fertility rates. The IQ-fertility relationship remained relatively unchanged when demographic and educational characteristics of the states were controlled for. Limitations and possible causal hypotheses are discussed.

Key Words: IQ; Fertility; Dysgenics.

Introduction

IQ and Fertility

Research on the relationship between IQ and fertility among individuals in modern populations has consistently revealed a negative relationship throughout the 20th century (Lynn, 1996; Lynn & Van Court, 2004; Rodgers et. al., 2000; Vining, 1982, 1995). The negative relationship indicates that those with lower IQ tend to have more children than those with higher IQ. The magnitude of these correlations is often small, in the range of -.20 (plus or minus .10). However, even small fertility differentials can potentially have cumulative effects over generations, whether through cultural or genetic transmission or both, resulting in reduced population IQ for future generations (Galor & Moav, 2002; Lynn, 1996). This phenomenon is often termed dysgenic fertility. There are indications that historically, this has not always been the case. While there are no historical records regarding IQ before the beginning of the 20th century, historical research indicates that up until the nineteenth century, social status (a correlate of IQ) has been positively correlated with fertility (Betzig, 1986, 1993; Røskaft et al., 1992).

The Flynn Effect (Flynn, 1987), which describes rising population IQ scores over the twentieth century, appeared to be a refutation of the potential effects of dysgenic fertility. However, recent research indicates that the gains in population

* Address for correspondence: Steven M. Shatz, Psy.D., Department of Psychology, Hofstra University, Hempstead, NY 11549, USA, email: dr_shatz@yahoo.com.

IQ, presumably caused by environmental improvements such as compulsory education and better nutrition and pre-natal care, might be coming to an end or even reversing (Lynn & Harvey, 2008; Shayer et al., 2007; Sundet et al., 2004; Teasdale & Owen, 2008). Thus, dysgenic fertility might continue to be a pertinent concern for future populations.

Shatz (2008) examined the IQ-fertility relationship at a broader aggregate level. Instead of comparing individual IQ scores to individual fertility rates, national IQ scores (Lynn & Vanhanen, 2006) were compared to national fertility rates for 113 countries around the world. As predicted, the correlations between national IQ and three national indicators of fertility were in the negative direction. The correlations were much larger than in studies that compare individuals, in the range of -0.52 to -0.75. A criticism of this finding would likely be based on the use of Lynn & Vanhanen's (2006) national IQ scores. The validity of these scores might be questioned based on the idea that western tests of intelligence, from which Lynn & Vanhanen derived the national IQ scores, might not be valid indicators of intelligence in non-western nations (e.g., Barnett & Williams, 2004). This study attempts to bypass this possible confound by looking at the IQ-fertility relationship at the broad aggregate level within a single western country, the United States.

SAT-Derived State IQ Scores

Frey and Detterman (2004) demonstrated that Scholastic Aptitude Test (SAT) scores were significantly correlated with traditional measures of IQ. For example, post-1994 re-centered SAT scores were positively correlated with scores on the Raven's Advanced Progressive Matrices test (r = .48). The Raven test is widely regarded as an excellent measure of the *g* factor construct (Jensen, 1998). After correcting the correlation for restriction of range in SAT scores, the correlation rose to .72. The authors concluded that "the SAT is an adequate measure of general intelligence" (p. 377). This conclusion has been supported by others (Beaujean et al., 2006). Even if one considers the SAT primarily an academic achievement test rather than an intelligence test, there is ample evidence of the close relationship between scholastic achievement and IQ (Deary et al., 2007; Jensen, 1998; Neisser et al., 1996) to support the use of an achievement test as a proxy for IQ.

Kanazawa (2006) used scores from the 2005 SAT to estimate mean general intelligence for the fifty US states and the District of Columbia. He noted a two-pronged presumed selection bias in SAT scores: Not every high school student stays in high school until senior year, when many students take the SAT; and not all high school seniors take the SAT. He then made two assumptions, which he used to adjust the truncated SAT data. The first assumption is that students who complete high school are uniformly more intelligent than those who do not. The second assumption is that those high school seniors who take the SAT are uniformly more intelligent than those who do not. The adjusted SAT scores were converted to IQ scores (mean = 100, standard deviation = 15) and used as proxy measures of state IQ. He indicates that the state IQ scores should not be viewed as the actual average IQ scores for individuals in those states, but as indicators of a state's relative standing in IQ compared to the other states.

Kanazawa (2006) correlated the SAT-derived state IQ scores with various economic indicators in order to replicate the findings of Lynn & Vanhanen (2002) that aggregate IQ scores are associated with aggregate economic outcomes. Kanazawa reported the following results: Higher state IQ scores were associated with higher gross state product per capita (Pearson correlation r = .32, Spearman's ρ= .54), higher median family income (r = .57, ρ = .54), and lower proportions of the state population living in poverty (r = -.35, ρ = -.38).

McDaniel (2006) discussed some of the methodological problems associated with Kanazawa's SAT-derived state IQ scores. The main criticism is that SAT-derived IQs will be more accurate for states where the SAT is the more widely used college entrance exam, and will be much less accurate for states where the SAT is the less widely used and the ACT is the preferred college entrance exam.

Hypothesis

Based on the results found in Shatz's (2008) study it is predicted that there will be a statistically significant, small to moderate negative correlation between state IQ scores and fertility rates between states in the USA.

Methods

Kanazawa's (2006) SAT-derived IQ scores were used as

indicators of state IQ for all 50 states and Washington D.C. Indicators of state fertility were obtained from the United States National Center for Health Statistics (Martin et al., 2005). The fertility indicators are for the year 2003. The three indicators are: birth rate, fertility rate, and total fertility. Birth rate is defined as "live births per 1000 estimated population in each area." Fertility rate is defined as "live births per 1000 women aged 15-44 years estimated in each area." Total fertility is defined as "sums of birth rates for 5-year age groups multiplied by 5." The three measures were available for all 50 states and Washington D.C.

Table 1
Correlations between state IQ and state fertility rates

	Pearson's r	*Spearman's* ρ
Birth Rate	-.31	-.36
Fertility Rate	-.37	-.44
Total Fertility	-.29	-.39

All correlations significant at the $P < 0.05$ level.

Table 2
SAT-Derived State IQ scores and Indicators of State Fertility Rates

State	*IQ*	*Birth Rate*	*Fertility Rate*	*Tot. Fertility Rate*
Alabama	79.9	13.2	62.5	1918.0
Alaska	103.6	15.5	72.5	2374.5
Arizona	97.3	16.3	79.2	2385.0
Arkansas	73.3	13.9	67.4	2055.0
California	100.5	15.2	69.9	2131.5
Colorado	97.6	15.2	69.5	2119.5
Connecticut	109.4	12.3	59.6	1915.5
Delaware	106.4	13.9	64.6	2009.5
District of Columbia	103.1	13.5	53.9	1593.5
Florida	103.8	12.5	63.4	2005.0
Georgia	105.8	15.7	69.3	2121.5
Hawaii	103.5	14.4	72.2	2242.5
Idaho	92.6	16.0	76.0	2319.0
Illinois	85.7	14.4	67.0	2052.5
Indiana	105.5	14.0	66.4	2054.0
Iowa	76.6	13.0	63.3	1986.5
Kansas	82.6	14.5	69.5	2152.0
Kentucky	83.6	13.4	63.1	1951.5
Louisiana	75.2	14.5	66.1	2001.5
Maine	107.0	10.6	52.0	1746.0
Maryland	105.8	13.6	62.4	1977.5
Massachusetts	109.9	12.5	57.2	1735.5
Michigan	82.5	13.0	61.7	1939.0
Minnesota	88.5	13.8	64.1	2024.5
Mississippi	62.7	14.7	67.9	2030.0
Missouri	78.3	13.5	64.1	1994.0
Montana	99.0	12.4	62.6	2029.0
Nebraska	80.0	14.9	71.4	2209.0
Nevada	98.6	15.0	72.2	2208.0
New Hampshire	110.3	11.2	52.7	1771.5
New Jersey	108.6	13.5	64.9	2051.0
New Mexico	83.6	14.8	71.4	2200.5
New York	108.9	13.2	61.0	1866.0
North Carolina	105.6	14.1	65.8	2018.0

North Dakota	74.5	12.6	61.6	1933.5
Ohio	96.3	13.1	62.7	1964.0
Oklahoma	77.0	14.5	69.9	2110.5
Oregon	105.4	12.9	62.5	1901.5
Pennsylvania	106.2	11.8	58.1	1855.0
Rhode Island	104.8	12.3	56.6	1763.0
South Carolina	103.0	13.4	62.9	1929.5
South Dakota	75.5	14.4	70.8	2241.5
Tennessee	88.8	13.5	63.1	1950.5
Texas	99.2	17.1	77.5	2346.5
Utah	75.1	21.2	92.2	2566.5
Vermont	106.5	10.6	51.1	1683.0
Virginia	107.1	13.7	63.3	1973.5
Washington	105.1	13.1	61.2	1899.5
West Virginia	88.1	11.6	58.1	1798.5
Wisconsin	78.4	12.8	60.7	1943.0
Wyoming	86.9	13.4	65.6	2058.5

Results

The hypothesis was supported. The correlations (both Pearson's and Spearman's) between the state IQ scores and the three state fertility indicators were all small to moderate, negative, and statistically significant (see Table 1). The correlations ranged from -.29 to -.44. The correlations indicate that states with lower state IQ scores tend to have higher fertility rates. Table 2 shows the state IQ scores (Kanazawa, 2006) and the fertility indicators (Martin et al., 2005) for the 50 states plus Washington D.C.

Further analysis was done to investigate the effects of possible mediating variables. One possible mediating variable is education (Retherford & Sewell, 1989). For each state, the percentage of people over the age of 25 who had obtained a bachelor's degree or higher (US Census Bureau, http://quickfacts.census.gov/qfd/) was controlled for. The partial correlations between state IQ and fertility, with education controlled for, were as follows: birth rate -0.35, fertility rate -0.31, and total fertility -0.23. The birth rate and fertility rate

correlations remained significant, while the total fertility correlation was on the margins of significance ($P = 0.58$). The correlations appear to be minimally impacted.

Another potential mediating variable is fertility and IQ differentials between various demographic groups. As demographic groups, Blacks and Hispanics have lower IQ scores than most others (e.g., Caucasians, Asians) (Jensen, 1998; Neisser et al., 1996; Rushton, 1995), and they also have higher fertility rates (Martin et al., 2005; Rushton, 1995). The proportion of Blacks and Hispanics in each state might mediate the IQ/fertility relationship. When the percentage of each state's Black and Hispanic population (US Census Bureau, 2008) was controlled for, the IQ/fertility partial correlations were as follows: birth rate -0.43, fertility rate -0.49, and total fertility -0.40. All correlations were statistically significant. Thus, when the percentage of Blacks and Hispanics per state was controlled for, the IQ/fertility relationship was strengthened. This is an unexpected finding, given that Vining (1982, 1995) reported the IQ/fertility relationship in US Blacks to be double that of Whites.

Discussion

The correlations found between SAT-derived state IQ scores and state fertility indicators support the hypothesis that they would be negatively correlated. The correlations are larger than those typically found in studies that relate individuals' IQs to their fertility, but smaller than those found in Shatz (2008) for IQ and fertility rates between nations. This is not at all unexpected. Higher levels of aggregation (individual, state, nation) are typically associated with higher correlations. The lower correlations between states as compared to those found between countries might also be due to range restriction. It is likely that the differences between US states are smaller than differences between nations.

The results confirm the IQ-fertility relationship at the broad aggregate level, without the possible confound of using western measures of intelligence in non-western nations (a criticism of the Lynn & Vanhanen studies). However, even the use of the SAT, limited to students in the USA, might be questioned as a valid indicator of intellectual ability. Another caveat is McDaniels's (2006) criticism of the accuracy of SAT-derived IQ

scores. However, inaccuracy of the data is more likely to lead to an underestimation rather than an overestimation of the true relationship between state IQ and fertility.

Another limitation is the use of population data. Inferring that this aggregate level data could be generalized to individuals would amount to the ecological fallacy (Robinson, 1950), which is the error of assuming that what is found at the aggregate level will also be found at the individual level.

Generally speaking, causal explanations will come from two broad perspectives on human behavior. The Standard Social Science Model (SSSM) (Barkow et al., 1992) is a way of understanding human behavior that emphasizes the human mind as a blank slate, the importance of culture in shaping human behavior, a general-purpose learning mechanism, and content-independent cognitive processes. Causal explanations for the IQ-fertility relationship derived from the SSSM would likely focus on mediating variables such as education or wealth. There is some evidence that the IQ-fertility relationship at the level of individuals is mediated by education (intelligence → education → fertility) (Retherford & Sewell, 1989). The possibility by which education impacts fertility can be through a knowledge deficit. For example, low education might be associated with lack of knowledge regarding reproduction, the ovulation cycle, and effective birth control methods. Another possibility is that women with more education choose to delay childbirth longer than women with less education because of the difficulties of managing both children and higher education. Also, women with higher education might have time-demanding career aspirations and choose to delay childbirth until later into their reproductive years. One possible way of testing this hypothesis is to examine the IQ-fertility relationship after statistically controlling for education. Although education is likely to be important at the level of individuals, in this study the state-level correlations were impacted minimally after controlling for education.

An alternative explanation comes from the Evolutionary Psychology (EP) perspective, which asserts that certain psychological processes have been shaped by natural selection. Rushton (2004) proposed differential *K* theory, a variant on Life History Theory, as a way of explaining the relationship between IQ and fertility. This theory proposes that various psychological,

physiological and life-history traits cluster together, based on an evolved history, in order to maximize survival, growth and reproduction in a given environment. These traits include gestation time, rate of maturation, fertility rate, brain size, intelligence, health and longevity. According to this theory, individuals vary along a dimension characterized by high mating effort/low parenting effort at one end, and low mating effort/high parenting effort at the other end. Rushton speculates that one's "set point" along the continuum will be influenced by brain size. There is clearly an empirically demonstrated relationship between brain size and IQ (Wickett, Vernon & Lee, 2000). An interesting longitudinal test of this hypothesis would be to see if there is a relationship between brain size (possibly measured in mid- to late adolescence) and fertility (possibly measured in the late 40's).

Another possible explanation from the EP perspective is from Kanazawa's (2004) theory that the *g* factor (general intelligence) evolved in humans as a domain-specific adaptation to deal with evolutionary novelty in the ancestral environment. According to Kanazawa, while mating is not evolutionarily novel, voluntary control of fertility through artificial means is. Therefore, those with higher general intelligence will be more effective than those with lower levels of general intelligence in utilizing evolutionarily novel devices such as condoms and birth control pills.

The negative relationship between IQ and fertility appears to be a real phenomenon that is consistently found when studied empirically. At this point, research on this phenomenon should focus on strengthening possible causal explanations.

References

Barkow, J., Cosmides, L. & Tooby, J.
(1992) *The Adapted Mind: Evolutionary Psychology and the Generation of Culture.* Oxford: Oxford University Press.

Barnett, S. & Williams, W.
(2004) National intelligence and the emperor's new clothes. *Contemporary Psychology* 49: 389 – 396.

Beaujean, A., Firmin, M., Knoop, A., Michonski, J., Berry, T. & Lowrie, R.
(2006) Validation of the Frey and Detterman (2004) IQ prediction equations using the Reynolds Intellectual Assessment Scales. *Personality and Individual Differences* 41: 353 – 357.

Betzig, L.
(1986) *Despotism and Differential Reproduction: A Darwinian View of History*. New York: Aldine.

Betzig, L.
(1993) Sex, succession, and stratification in the first six civilizations: How powerful men reproduced, passed power on to their sons, and used power to defend their wealth, women, and children. In L. Ellis (Ed.): *Social Stratification and Socioeconomic Inequality, Vol I: A Comparative Biosocial Analysis*. Westport, CT: Praeger.

Deary, I., Strand, S., Smith, P. & Fernandes, C.
(2007) Intelligence and educational achievement. *Intelligence* 35: 13 – 21.

Flynn, J.
(1987). Massive IQ gains in 14 nations: What IQ tests really measure. *Psychological Bulletin* 101: 171 – 191.

Frey, M. & Detterman, D.
(2004) Scholastic assessment or *g*? The relationship between the scholastic assessment test and general cognitive ability. *Psychological Science* 15: 373 – 378.

Galor, O. & Moav, O.
(2002) Natural selection and the origin of economic growth. *Quarterly Journal of Economics* 117: 1133 – 1191.

Jensen, A.
(1998) *The g Factor*. Westport, CT: Praeger.

Kanazawa, S.
(2004) General-intelligence as a domain-specific adaptation. *Psychological Review* 111: 512 – 523.

Kanazawa, S.
(2006) IQ and the wealth of states. *Intelligence* 34: 593 – 600.

Lynn, R.
(1996) *Dysgenics: Genetic Deterioration in Modern Populations*. Westport, CT: Praeger.

Lynn, R. & Harvey, J.
(2008) The decline of the world's IQ. *Intelligence* 36: 112 – 120.

Lynn, R. & Van Court, M.
(2004) New evidence of dysgenic fertility for intelligence in the United States. *Intelligence* 32: 193 – 201.

Lynn, R. & Vanhanen, T.
(2002) *IQ and the Wealth of Nations*. Westport, CT: Praeger.

Lynn, R. & Vanhanen, T.
(2006) *IQ and Global Inequality*. Augusta, GA: Washington Summit Publishers.

Martin, J., Hamilton, B., Sutton, P. et al.
(2005) *Births: Final Data for 2003. National Vital Health Statistics Reports, Vol. 54, no. 2*. Hyattsville, MD: National Center for Health Statistics.

McDaniel, M.
(2006) State preference for the ACT versus SAT complicates inferences about SAT-derived state IQ estimates: A comment on Kanazawa (2006). *Intelligence* 34: 601 – 606.

Neisser, U., Boodoo, G., Bouchard, T., Boykin, A., Brody, N., Ceci, S., et al.
(1996) Intelligence: Knowns and unknowns. *American Psychologist* 51: 77 – 101.

Retherford, R. & Sewell, W.
(1989) How intelligence affects fertility. *Intelligence* 13: 169 – 185.

Robinson, W.
(1950) Ecological correlations and the behavior of individuals. *American Sociological Review* 15: 351 – 357.

Rodgers, J., Cleveland, H., van den Oord, E. & Rowe, D.
(2000) Resolving the debate over birth order, family size, and intelligence. *American Psychologist* 55: 599 –612.

Røskaft, E., Wara, A. & Viken, A.
(1992) Reproductive success in relation to resource-access and parental age in a small Norwegian farming parish during the period 1700 – 1900. *Ethology and Sociobiology* 13: 443 – 461.

Rushton, J.P.
(1995) *Race, Evolution, and Behavior: A Life History Perspective.* New Brunswick, NJ: Transaction Publishers.

Rushton, J.P.
(2004) Placing intelligence into an evolutionary framework or how *g* fits into the *r-K* matrix of life-history traits including longevity. *Intelligence* 32: 321 – 328.

Shatz, S.
(2008) IQ and fertility: A cross-national study. *Intelligence* 36: 109 - 111.

Shayer, M., Ginsburg, D. & Coe, R.
(2007) Thirty years on – a large anti-Flynn effect? The Piagetian test volume & heaviness norms 1975 – 2003. *British Journal of Educational Psychology* 77: 25 – 41.

Sundet, J., Barlaug, D. & Torjussen, T.
(2004) The end of the Flynn effect? A study of secular trends in mean intelligence test scores of Norwegian conscripts during half a century. *Intelligence* 32, 349 – 362.

Teasdale, T. & Owen, D.
(2008) Secular declines in cognitive test scores: A reversal of the Flynn effect. *Intelligence* 36: 121 – 126.

US Census Bureau
(2008) *State and County QuickFacts.* Retrieved September 2008, http://quickfacts.census.gov/qfd/

Vining, D.
(1982) On the possibility of a re-emergence of a dysgenic trend with respect to intelligence in American fertility differentials. *Intelligence* 6: 241 – 2641.

Vining, D.
(1995) On the possibility of a re-emergence of a dysgenic trend: An update. *Personality and Individual Differences* 19: 259 – 265.

Wickett, J., Vernon, P. & Lee, D.
(2000) Relationships between factors of intelligence and brain volume. *Personality and Individual Differences* 29: 1095 – 1122.

Gender Differences in Means and Variance on the Standard Progressive Matrices in Pakistan

Riaz Ahmad,* Sarwat J. Khanum , Zaeema Riaz ,
Institute of Clinical Psychology,
University of Karachi, Pakistan
Richard Lynn
University of Ulster, Northern Ireland

A standardization of the Standard Progressive Matrices in Pakistan for the ages 12 through 18 years and 18 through 45 years was analysed for gender differences in means and variance. The results show no significant differences in means and generally greater variance in females, contrary to the frequent assertion that males have greater variance than females.

Key Words: Progressive Matrices; Pakistan; Gender differences; Variance.

The Progressive Matrices is one of the most widely used tests of reasoning ability, general intelligence and Spearman's *g* (Jensen, 1998; Raven, Raven & Court, 2000). The test was constructed in Britain in the 1930s by John Raven (1939) and numerous studies have been published on it during the last seventy years. Two of the issues that have been discussed and researched are whether there are any sex differences in mean scores obtained on the test, and whether there is a sex difference in variability.

The issue of whether there are any sex differences in mean scores obtained on the Progressive Matrices has been discussed since the test was first published. Raven (1939) reported in his initial study of children up to the age of 14 that there was no difference in the average scores obtained by boys and girls. This conclusion was affirmed for adults as well as children in a review of numerous studies by Court (1983) and later by Mackintosh (1996). These conclusions have been disputed by Lynn & Irwing (2004) in a meta-analysis of sex differences on the Progressive Matrices that showed no sex difference in children, but a slightly higher mean for boys at the age of 16 years, increasing in size into adulthood where it reaches about 5 IQ points.

The second question of whether there is a sex difference in

* Address for correspondence: e-mail: dr_riazpsy@hotmail.com

variability has been discussed in connection with the claim that males have greater variability of intelligence than females, i.e. that there are more males with high and low intelligence, while females cluster around the mean. This contention has been asserted since the early years of the twentieth century, when it was proposed by Havelock Ellis (1904), Thorndike (1910) and Terman (1916). These early writers proposed that a difference in variability explains why men are greatly overrepresented among geniuses, when there is apparently no average sex difference in intelligence. The theory that there is greater variability among males entailing more males among those with very high intelligence (as well as more males with very low intelligence) seemed to provide a solution to this problem.

Thorndike (1910) put the theory as follows: "The trivial difference between the central tendency of men and that of women which is a common finding of psychological tests and school experience may seem at variance with the patent fact that in the great achievements of the world in science, art, invention, and management, women have been by far excelled by men. One who accepts the equality of typical representatives of the two sexes must assume the burden of explaining this great difference in the high ranges of achievement. The probably true explanation is to be sought in the greater variability within the male". Thorndike examined test data on variability and concluded that men are about five percent more variable than women.

The theory that males have greater variability of intelligence than females has been frequently re-asserted. For instance, "the consistent story has been that men and women have nearly identical IQs but that men have a broader distribution…the larger variation among men means that there are more men than women at either extreme of the IQ distribution" (Herrnstein & Murray, 1994, p. 275); "males are more variable than females" (Lehrke, 1997, p.140); "males' scores are more variable on most tests than are those of females" (Jensen, 1998, p.537); and "sex differences exhibit greater male than female variance. Females are much of a muchness, clustering round the mean. But among males, the difference between the best and the worst can be vast. So, when it comes to science, more men than women will be dunces but more will be geniuses – although the means are close" (Cronin, 2005, p.17).

Some studies have confirmed this thesis (e.g. Hedges & Nowell, 1995; Deary, Irwing, Der & Bates, 2007). Other studies, however, have failed to confirm the theory. For instance, a meta-analysis of 22 studies of sex differences on the Progressive Matrices among university students found no difference in variability (Irwing & Lynn, 2005).

Most of the studies of sex differences in means and variability have been carried out in the United States and Europe. It is useful to examine how far the results in these countries are present in other locations and cultures. To contribute to this question we present some results from Pakistan.

Method

The Standard Progressive Matrices test (SPM) (Raven, Raven & Court, 2000) was standardized in Pakistan in 2004 through 2006. The standardization sample consisted of adolescents aged 12 to 19 years and adults aged 18-45. The adolescents (N=1,662) were selected from representative schools in the four provinces into which Pakistan is divided (North West Frontier, Baluchistan, Sindh and Punjab) and were tested in groups. The adult sample consisted of 2,016 subjects (1,019 females and 997 males). The mean age was 31.7 years (females: 31.4 yrs; males: 32.1 yrs). The sample was drawn from the city of Karachi and comprised volunteers obtained from a variety of different organizations. These were tested in groups or individually. Both samples were matched to the general population for socio-economic status. For both samples the test was administered without any time restriction.

The split-half reliability was found to be .891. The validity study of SPM was examined by administering the Draw-a-Person test (Goodenough, 1926) together with the SPM to a sample of 200 school children aged 6.0 years to 12.0 years. The correlation coefficient between the two tests was found to be .256. This is quite a low correlation probably because the Goodenough test is not an especially good test of general intelligence. Harris (1963) has reviewed studies of the correlations between the Goodenough and Wechsler and Stanford-Binet tests of general intelligence and reported a wide range of results ranging between 0·38 and 0·77 with the WISC (the Wechsler children's test), and between 0·26 and 0·92 with the Stanford-Binet.

Table 1.
Gender Means for the Standard Progressive Matrices in Pakistan

Age (years)	12	13	14	15	16	17	18	18-45
Males								
Number	108	143	144	142	103	90	123	997
Mean	32.69	32.34	37.00	38.38	41.76	41.99	41.30	45.61
S.D	10.13	10.29	10.51	9.46	9.89	10.04	10.31	7.61
Females								
Number	111	103	113	116	135	107	124	1019
Mean	31.12	32.43	36.39	37.22	39.50	39.53	41.31	45.30
S.D	10.43	11.67	10.95	10.08	10.59	9.25	10.63	7.60
d	.15	.00	.06	.11	.22	.26	.00	.04
t	1.135	-0.065	0.459	0.949	1.679	1.786	-0.010	0.905
Significance	.258	.948	.647	.344	.095	.076	.992	.366
Variance ratio	.94	.79	.92	.88	.87	1.18	.94	.00

Table 2.
Standard Progressive Matrices Means for the Provinces of Pakistan

Provinces	N	Mean	St dev	Brit Pc
Sindh	453	40.9	9.0	22.0
Baluchistan	389	39.5	11.0	13.5
Punjab	410	35.6	10.5	7.5
NWFP	410	33.9	10.5	5.0

Results

Table 1 gives the data from the study consisting of the numbers, mean scores and standard deviations for males and females. These are followed by the differences between the means of the males and females expressed in standard deviation units *d*, obtained by dividing the difference between the means by the pooled standard deviation (the average of the two standard deviations). The next two rows give the values of t and the statistical significance of the gender difference, and show that none of the differences are statistical significant. The last row gives the variance ratios (VR, obtained by dividing the male variance by the female variance). Variance ratios greater than 1.0 indicate that males have greater variance than females, while variance ratios lower than 1.0 indicate that females have greater variance than males.

The mean scores of the 12-19 year olds (mean age 15.5) in each of the four provinces are given in Table 2. The percentile equivalents in the British 1979 standardization sample are given in the right hand column. We see that the highest mean was obtained in Sindh in the south. The mean score of 40.9 corresponds to the British 22nd percentile and a British IQ of approximately 88.4. The next highest mean was obtained in Baluchistan, which lies to the west and borders Iran and Afghanistan. A somewhat lower mean was obtained in Punjab, which lies to the north-east. The lowest mean was obtained in the North West Frontier Province, which lies to the north and where the mean score of 33.9 corresponds to the British 5th percentile and a British IQ of approximately 75.4.

Discussion

The results show slightly higher means for males than females in adolescents aged 12, 14, 15, 16 and 17 years and among adults, but none of these differences are statistically significant. At ages 13 and 18 years there were no differences in the means. The results as a whole suggest that there are only negligible gender differences in the mean performance on the Standard Progressive Matrices in Pakistan. It is interesting to note that in this traditional society, girls and women perform just as well as boys and men on this test. It is sometimes suggested that females are handicapped in traditional societies and this impairs their intellectual development, and that as

females become more emancipated and gain greater equality, their cognitive abilities improve. This theory receives no support from the present results.

The gender differences in variability given in the last row of the table show that at ages 12 through 16 and at age 18 years, girls have greater variability than boys (the VRs are less than 1.0). Only at age 17 do boys have greater variability than girls (VR = 1.18), while among adults there is no gender difference in variability. These results are inconsistent with the frequent assertion that males have greater variability of intelligence than females. This theory also receives no support from the present results.

The mean scores obtained by the sample are lower than those obtained by standardization samples in Britain and the United States. For the four age groups 12-15 the percentile equivalent of the mean scores on the British 1979 standardization samples is 10.5, and this is equivalent to an IQ of 81.3. For the age groups 16 and 18, the American 1993 standardization percentile equivalent of the mean scores of the two age groups is 13.5, and this is equivalent to an IQ of 83.5 (Raven, Raven & Court, 2000, p.18) . For the adults, the American 1993 standardization percentile equivalent of the mean scores of the five adult age groups is 18.4, and this is equivalent to an IQ of 86.4. These IQ equivalents do not take account of possible Flynn effects, i.e. secular increases in IQ. These IQs are typical of those reported in a number of countries in the Middle East reported in Lynn (2006). It will be seen in Table 2 that there is quite a considerable range of average IQs in the four provinces. The mean IQ is highest in the most prosperous southern province of Sindh, which contains the major city of Karachi, and lowest in the poorer North West Frontier Province, much of which lies in the foothills of the Himalayas. Thus in the provinces of Pakistan there is a positive relationship between regional IQs and prosperity of the same kind as holds in the British Isles and France (Lynn, 1979, 1980) and on a global scale (Lynn & Vanhanen, 2006).

References

Court, J.H.
(1983). Sex differences in performance on Raven's Progressive Matrices: a review. *Alberta Journal of Educational Research*, 29, 54-74.

Cronin, H.
(2005). The vital statistics. *The Guardian*, 12 March.

Deary, I.J., Irwing, P., Der, G. & Bates, T.C.
(2007). Brother-sister differences in the g factor in intelligence: analysis of full, opposite-sex siblings from the NLSY 1970. *Intelligence*, 35, 451-456.

Ellis, H.
(1904). *Man and Woman: A Study of Human Secondary Sexual Characteristics*. London: Walter Scott.

Goodenough, F.L.
(1926). *The Measurement of Intelligence by Drawings*. New York: World Books.

Harris, D.B.
(1963). *Children's Drawings as Measures of Intellectual Maturity*. New York: Harcourt, Brace & World.

Hedges, L.V. & Nowell, A.
(1995). Sex differences in mental test scores, variability, and numbers of high-scoring individuals. *Science*, 269, 41-45.

Herrnstein, R. and Murray, C.
(1994). *The Bell Curve*. New York: Random House.

Irwing, P. and Lynn, R.
(2005). Sex differences in means and variability on the Progressive Matrices in university students: A meta-analysis. *British Journal of Psychology*, 96, 505–524.

Jensen, A.R.
(1998). *The g Factor*. Westport, CT: Praeger.

Lehrke, R.
(1997). *Sex Linkage of Intelligence*. Westport, CT: Praeger.

Lynn, R.
(1979). The social ecology of intelligence in the British Isles. *British Journal of Social and Clinical Psychology,* 1979, 18,1-12.

Lynn, R.
(1980). The social ecology of intelligence in the France. *British Journal of Social and Clinical Psychology,*19,325-331.

Lynn, R.
(2006). *Race Differences in Intelligence: An Evolutionary Analysis*. Augusta, GA: Washington Summit Publishers.

Lynn, R. and Irwing, P.
(2004). Sex differences on the Progressive Matrices: a meta-analysis. *Intelligence*, 32, 481-498.

Lynn, R. and Vanhanen, T.
(2006). *IQ and Global Inequality*. Augusta, GA: Washington Summit Publishers.

Mackintosh, N.J.
(1996). Sex differences and IQ. *Journal of Biosocial Science*, 28, 559-572.

Raven, J.C.
(1939). The RECI series of perceptual tests: an experimental survey. *British Journal of Medical Psychology*, 18, 16-34.

Raven, J., Raven, J.C. & Court, J.H.
(2000). *Standard Progressive Matrices.* Oxford: Psychologists Press.
Terman, L.M.
(1916). *The Measurement of Intelligence.* New York: Houghton Mifflin.
Thorndike, E.L.
(1910). *Educational Psychology.* New York: Houghton Mifflin.

A Study of Intelligence in the United Arab Emirates

Omar Khaleefa*
University of Khartoum
Richard Lynn
University of Ulster

Results are reported from a large standardization sample of 6-11 year olds for the Colored Progressive Matrices in the United Arab Emirates. Girls performed slightly better than boys, and younger children performed better than older children relative to British norms. There was no sex difference in variability. In relation to a British IQ of 100, the sample obtained an average IQ of 83.

Key Words: Sex differences; Intelligence; Progressive Matrices; United Arab Emirates; Variability.

We have recently published some data on intelligence in Syria derived from the standardization of the Standard Progressive Matrices for the ages 7 through 18 years (Khaleefa & Lynn, 2008). The results of this study showed that there were no sex differences on the test in means or variability; that the mean IQ of the total sample was lower than mean IQs in Britain and the United States; and that in relation to British children, the younger children aged 7-9 years performed rather better than the older children. In this paper we present some data on intelligence in the United Arab Emirates and examine how far the results confirm or differ from those in Syria.

The data for the United Arab Emirates are obtained from a standardization of the Colored Progressive Matrices. This is a non-verbal test in which the problem is to find the principle governing the sequence of a series of designs and patterns. The test is described and norms are given for Britain and a number of countries by Raven et al. (1995). The Colored Progressive Matrices is an easier version of the Standard Progressive Matrices which was constructed in Britain in the 1930s by John Raven (1939) and was designed for children aged 5 through 11 years, while the Standard Progressive Matrices was designed for children aged 6.6 years and older, and for adults. Both the

* Address correspondence to Omar Khaleefa, Ph.D., PO Box 12718 Khartoum, Sudan; e-mail: okhaleefa@hotmail.com

Colored Progressive Matrices and the Standard Progressive Matrices have been used extensively in cross-cultural research. The results of several hundred studies that have used the tests in many countries have been summarized in Lynn (2006).

Both the Colored and the Standard Progressive Matrices are widely accepted as one of the best tests of general intelligence and Spearman's general factor (*g*) (Jensen, 1998). The first and easier items in the test are measures of visualization ability, while the later items are measures of abstract reasoning ability (Lynn et al. (2004).

Numerous studies have been published on the tests during the last seventy years. Three of the issues that have been discussed and researched are: (1) Are there any sex differences on the test? (2) Is there a sex difference in variability? (3) Are there national differences in the mean IQs obtained on the test?

Method and Results

The Colored Progressive Matrices was standardized in the United Arab Emirates in 1997 in a project authorized by the Ministry of Education and Youth and published by Eid (1999). The publication is in Arabic and hence is not readily accessible to western scholars. A total of 4,496 children aged from 6.0 through 11.6 years were drawn as a representative sample and tested. The results are summarized in Table 1. This gives the mean scores obtained by boys and girls of each age, the standard deviations, and the percentile equivalents on the British norms for the Standard Progressive Matrices collected in 1979 given in Raven (1981). These are used because they are more accurate than those for the Colored Progressive Matrices. To calculate these percentile equivalents the scores obtained on the Colored Progressive Matrices had to be converted to equivalent scores on the Standard Progressive Matrices given by Raven et al. (1995, p. 64). There are no percentile equivalents for the Standard Progressive Matrices for scores obtained by 6.0 year olds, so for these the percentile equivalents are for the 1982 British standardization sample of the Colored Progressive Matrices.

Table 1.
Sex Differences on the Colored Progressive Matrices in the United Arab Emirates

Age	Sex	N	Mean	Sd	British Percentile
6	M	183	14.6	3.4	37
	F	232	15.3	3.4	46
6.6	M	240	14.6	4.0	27
	F	241	15.5	3.1	34
7	M	185	16.0	4.4	28
	F	215	16.5	4.6	35
7.6	M	255	16.1	4.4	24
	F	256	17.0	4.2	28
8.0	M	180	18.4	5.3	24
	F	210	19.4	5.3	29
8.6	M	267	18.8	4.7	11
	F	247	19.7	5.3	15
9.0	M	189	20.7	5.1	18
	F	238	21.3	5.7	19
9.6	M	249	21.1	5.1	13
	F	238	21.4	6.3	14
10.0	M	190	22.5	5.7	10
	F	220	23.7	5.2	13
10.6	M	232	22.6	5.3	4
	F	229	24.4	5.6	8
11.0	M	197	24.1	5.8	4
	F	251	25.3	4.7	4
11.6	M	234	24.5	5.5	6
	F	219	25.7	5.6	6

Discussion

The results show four interesting features. First, the younger children aged 6-8 years performed better than the older children in relation to the percentile norms for British children. This replicates the results we have reported for Syria. The 6.0 year olds in the UAE obtained a British percentile of 41.5, equivalent to an IQ of 97, while the older children aged 10-11

obtained a British percentile of approximately 6, equivalent to an IQ of approximately 77 (to adjust for Flynn effects in Britain, these IQs need to be reduced by approximately 3.7 IQ points). The most likely explanation for the better performance of the 6 year olds is that the first items in the test are measures of visualization ability, while the later items are measures of abstract reasoning ability. Thus, the 6 year olds in the UAE obtained almost the same average IQ (97) as British children on visualization ability, but the older children aged 10-11 obtained a much lower IQ (77) on reasoning ability than British children. Another possible factor may be that young Arab children do better than older ones because the West provides a more cognitively stimulating environment, and this has a cumulative advantageous effect as children grow older.

Second, there is no consistent sex difference in variability. This can be seen from the standard deviations, which were larger for boys in four of the age groups, larger for girls in six of the age groups, and the same for boys and girls in two of the age groups. Since the early years of the twentieth century it has frequently been asserted that males have greater variability than females, i.e. there are more males with high and low intelligence while females cluster around the mean. This view has been expressed, for example, by Ellis (1904), Thorndike (1910), Eysenck (1981, p. 42), Hedges & Nowell (1995), and Deary et al. (2007). However, not all studies have found greater male variability, including a meta-analysis of the performance of college students on the Progressive Matrices by Irwing and Lynn (2005). Nor do the present data show any sex difference in variability.

Third, the girls do consistently better than the boys in all twelve age groups. The magnitude of the difference is 2 IQ points, calculated by averaging the British percentile equivalents and converting these to IQs. This result is inconsistent with numerous other studies collated in a meta-analysis by Lynn & Irwing (2004) that show no differences in average scores of boys and girls over this age range, although males obtain higher average scores than females among adults. There was also no sex difference in our study in Syria (Khaleefa & Lynn, 2008). The slightly higher scores obtained by girls in the present UAE sample probably have to be regarded as a sampling error. It is interesting to note that in this rather traditional Arab society

girls do at least as well as boys on this test. It is sometimes argued that girls are handicapped in traditional societies and this impairs their intellectual development, and that as females become more emancipated and gain greater equality, their cognitive abilities improve. Clearly this theory receives no support from the results.

Fourth, the average of the British 1979 percentile equivalents of the scores given in the right hand column of Table 1 is 17.1 for boys, equivalent to an IQ of 85.7, while the average of the girls is 20.9, equivalent to an IQ of 87.7. These two figures can be averaged to 86.7. With adjustment for a Flynn effect gain of 3.7 IQ points in Britain for the 18 years 1979 to 1997, this IQ needs to be reduced to 83. This is closely similar to the average IQs in a number of Middle Eastern countries (calculated in relation to a mean IQ of 100 and SD of 15 in Britain), e.g. Egypt (IQ = 81), Iran (84), Iraq (87), Israel (95), Jordan (84), Kuwait (86), Lebanon (82), Qatar (78), Syria (83), Turkey (90), and Yemen (85) reported in Lynn (2006) and Lynn & Vanhanen (2006).

It is interesting to note that the UAE has a per capita income comparable to that in Western Europe ($24,030 Gross National Income at Purchasing Power Parity as compared with $26,580 in Britain: 2002 figures), but the average IQ remains similar to that of other much poorer countries in the Middle East (e.g. Syria has a per capita income of $3,470 and an average IQ of 83).

It has become well established that IQs in Britain and other western countries have been increasing since 1917 at about 3 IQ points a decade (Tuddenham, 1948; Flynn, 1984, 2007; Lynn & Hampson, 1986). Thus, in relation to a present IQ of 100, the IQ in Britain and other western countries was about 80 in the1930s, and hence a bit lower that that in the UAE at the end of the twentieth century. The causes of these IQ increases are not understood. It has been proposed that they may be due to improved nutrition (Lynn, 1990) and education (Flynn, 2007). Testing is not widely employed in Arab countries, and it is possible that the observed group differences are attributable, at least in part, to the relative novelty of the testing process, as suggested by Stanczak, Stanczak & Awadalla (2001). It can be anticipated that with further economic development intelligence in the United Arab Emirates will increase, as it has in economically developed nations.

References

Deary, I.J., Irwing, P., Der, G. & Bates, T.C.
(2007) Brother-sister differences in the g factor in intelligence: analysis of full, opposite-sex siblings from the NLSY 1970. *Intelligence*, 35, 451-456.

Eid, Ahmed
(1999) *I'khtibar al-masfofat al-mutatabia' al-mulawwan* (The Coloured Progressive Matrices). United Arab Emirates: Ministry of Education and Youth (In Arabic).

Ellis, H.
(1904) *Man and Woman: A Study of Human Secondary Sexual Characteristics*. London: Walter Scott.

Eysenck, H.J.
(1981) *Intelligence: Battle for the Mind*. London: Pan.

Flynn, J.R.
(1984) The mean IQ of Americans: massive gains 1932 to 1978. *Psychological Bulletin,* 95, 29-51.

Flynn, J.R.
(2007) *What is Intelligence? Beyond the Flynn Effect*. Cambridge: Cambridge University Press.

Irwing, P. & Lynn, R.
(2005) Sex differences in means and variability on the Progressive Matrices in university students: a meta-analysis. *British Journal of Psychology*, 96, 505–524.

Jensen, A.R.
(1998) *The g Factor: The Science of Mental Ability*. Westport CT: Praeger.

Khaleefa, O. & Lynn, R.
(2008) Sex differences on the Progressive Matrices: some data from Syria. *Mankind Quarterly*, 48, 345-352.

Lynn, R.
(1990) The role of nutrition in secular increases of intelligence. *Personality and Individual Differences*, 11, 273–285.

Lynn, R.
(2006) *Race Differences in Intelligence: An Evolutionary Analysis*. Athens, GA: Washington Summit.

Lynn, R., Allik, J. & Irwing, P.
(2004) Sex differences on three factors identified in Raven's Standard Progressive Matrices. *Intelligence*, 32, 411-424.

Lynn, R & Hampson, S.L.
(1986) The rise of national intelligence: evidence from Britain, Japan and the USA. *Personality and Individual Differences*, 7, 23-32.

Lynn, R. & Irwing, P.
(2004) Sex differences on the Progressive Matrices: a meta-analysis. *Intelligence*, 32, 481-498.

Lynn, R. & Vanhanen, T.
(2006) *IQ and Global Inequality*. Augusta, GA: Washington Summit. Raven, J.C.

(1939) The RECI series of perceptual tests: an experimental survey. *British Journal of Medical Psychology*, 18, 16-34.

Raven, J.
(1981) *Manual for the Raven's Progressive Matrices and Mill Hill Vocabulary Scales: Research Supplement No 1. Irish and British Standardisations.* Oxford: Oxford Psychologists Press.

Raven, J.C., Court, J.H. & Raven, J.
(1995) *Coloured Progressive Matrices.* Oxford: Oxford Psychologists Press.

Raven, J., Raven, J.C. & Court, J.H.
(2000) *Standard Progressive Matrices.* Oxford: Oxford Psychologists Press.

Stanczak, D., Stanczak, E. & Awadalla, A.
(2001) Development and initial validation of an Arabic version of Expanded Trail Making Test: implications for cross-cultural assessment. *Archives of Clinical Neuropsychology*, 16, 141-149.

Terman, L.M.
(1916) *The Measurement of Intelligence.* New York: Houghton Mifflin.

Thorndike, E.L.
(1910) *Educational Psychology.* New York: Houghton Mifflin.

Tuddenham, R.D.
(1948) Soldier intelligence in world wars I and II. *American Psychologist*, 3, 54-56.

Norms for the Standard Progressive Matrices in Qatar

Omar Khaleefa*
University of Khartoum, Sudan
Richard Lynn
University of Ulster, Northern Ireland

Data for a recent standardization of the Progressive Matrices in Qatar for the ages 6 through 11 are presented. The results show that the mean IQ relative to that in Britain is approximately 88. The variance of the girls is greater than that of the boys.

Key Words: Intelligence; Progressive Matrices; Qatar; Variance.

Mean IQs for a nine countries in the Middle East have been reported in Lynn (2006) and Lynn and Vanhanen (2006). These IQs have been calculated in relation to a mean IQ of 100 (standard deviation of 15) in Britain. The countries for which these data have been reported are Egypt (IQ = 81), Iran (84), Iraq (87), Israel (95), Jordan (84), Kuwait (86), Lebanon (82), Qatar (78), Syria (83), Turkey (90), and Yemen (85). Thus, apart from Israel which has a large number of European immigrants, the IQs of these countries lie in the range between 78 (in Qatar) and 90 (in Turkey), and have a median value of 83. Some critics of these figures have contended that they are unreliable. The best way to examine this criticism is to examine further data and see whether they are consistent with those already published. In this paper we summarize a new study of this kind in Qatar. The IQ of 78 reported for Qatar is derived from a standardization of the Progressive Matrices on a sample of 273 10-13 year olds by Bart, Kamal & Lane (1987).

Method

The Standard Progressive Matrices has been standardized in Qatar by Al-Thani (2001) for a representative sample of 1135 (males, N=517; females, N=618) aged 6.0 through 11.6 years). The data are presented in a master's thesis awarded by Umm Al-Qura University, Saudi Arabia. The thesis is written in Arabic

* Address for correspondence: PO Box 12718 Khartoum, Sudan; e-mail: okhaleefa@hotmail.com

and therefore difficult to access by western scholars.

Results

The numbers, means and standard deviations of 12 age groups are given in Table 1. The right hand column gives the British percentile equivalents (PCE) of the scores taken from the 1979 British standardization given by Raven (except for the 6.0 age group for which there are no British norms).

Table 1.
Norms for the Progressive Matrices in Qatar

Age	*N*	*M*	*SD*	*British PCE*
6	53	13.66	2.86	-
6.6	105	14.81	3.61	36
7	95	16.36	4.45	45
7.6	108	17.65	6.14	32
8	95	21.02	8.55	38
8.6	82	23.36	8.78	25
9	113	25.81	9.54	33
9.6	100	27.75	9.35	27
10	95	30.64	9.80	22
10.6	70	31.72	9.44	19
11	130	34.08	8.58	23
11.6	89	36.39	8.22	26

The thesis does not give separate means for males and females for each single age group. However, it does the overall means for males and females as 23.7 (SD 9.98) for males and 25.7 (SD 11.34) for females.

The study reports a test-retest correlation coefficient of 0.89 for males, 0.95 for females and 0.93 for the total sample, and a split-half reliability of 0.84 for males, 0.88 for females and 0.87 for the total sample. The study also reports a test validity obtained as the correlation coefficient of 0.86 between the SPM and the Draw-a-Man test.

Discussion

The results provide four points of interest. First, they confirm the conclusion advanced in Lynn (2006) that average IQs in the Middle East are somewhat lower than in the economically developed nations of Europe and North America. The last column of Table 1 shows that this is true for these results from Qatar. The mean of the British percentile equivalents is 29.6 and this is equivalent to an IQ of 92. The IQ

in Britain measured by the Progressive Matrices has been increasing since the 1930s at about 2 IQ points a decade (Lynn & Hampson, 1986). The British IQ should have increased by 4 IQ points from 1979-1999. Adjusting for this (and assuming that the Qatar data were collected in 1999), 4 IQ points need to be deducted from the Qatar IQ, to give a figure of 88.

Second, the IQ of 88 estimated from this study is somewhat higher than the IQ of 78 reported for 10-13 year olds in Qatar by Bart, Kamal & Lane (1987). However, as noted in the introduction, the median IQ of the middle east countries is 83. Thus, the Qatar IQ obtained by Bart et al. is 5 IQ points lower than the median, while the Qatar IQ obtained in the present study is 5 IQ points higher than the median. It looks as if these differences are due to sampling or administration errors and that the best reading for a Qatar IQ is obtained by averaging the two results to give an IQ of 83, precisely the same as the median of other countries in the middle east.

Third, the 6 to 8 year olds performed better, in relation to British norms, than the older children. This confirms results reported for Syria and the United Arab Emirates (Khaleefa & Lynn, 2008a, 2008b). Possibly the explanation for the younger children performing better than the older is that the initial and easier items in the test are measures of visualization ability, while the later items are measures of abstract reasoning ability (Lynn, Allik and Irwing, 2004). It is abstract reasoning ability that has improved most with modernization in western countries (Flynn, 2007). Another possible factor may be that young Qatari children do better than older ones because the West provides a more cognitively stimulating environment, and this has a cumulative advantageous effect as children grow older.

Fourth, the standard deviation of the girls is greater than that of the boys, showing that the variance of girls is greater. The difference is normally expressed as the variance ratio (VR), calculated by dividing the boys' variance by the girls' variance. Thus, a VR greater than 1.0 shows that boys have greater variance than girls, while a VR less than 1.0 shows that girls have greater variance than boys. In the present data, the VR is 0.77, showing that the girls have greater variance than boys. This is contrary to the frequent assertion that males have greater variance than females. This contention was advanced in the early years of the twentieth century by Havelock Ellis (1904),

Thorndike (1910) and Terman (1916) to explain why men are so greatly over-represented among geniuses, when there is apparently no sex difference in general intelligence. The theory that there is greater variability among males entailing more males among those with very high intelligence (as well as more males with very low intelligence) seemed to provide a solution to this problem. This hypothesis has come to be widely accepted. For instance "While men and women average pretty much the same IQ score, men have always shown more variability in intelligence. In other words, there are more males than females with very high IQs and very low IQs" (Eysenck, 1981, p.42; "the consistent story has been that men and women have nearly identical IQs but that men have a broader distribution…the larger variation among men means that there are more men than women at either extreme of the IQ distribution" (Herrnstein and Murray, 1994, p. 275); "males are more variable than females" (Lehrke, 1997, p.140); "males' scores are more variable on most tests than are those of females" (Jensen, 1998, p.537); and, more cautiously, "there is some evidence for slightly greater male variability" (Lubinski, 2000, p.416).

The present results fail to support the theory of greater male variability. Five other studies of the Progressive Matrices in the Middle East and north Africa have also failed to confirm the theory. Thus, there was no sex difference in variability was found in Syria, the United Arab Emirates, Yemen, Sudan and Libya (Khaleefa & Lynn, 2008a; Khaleefa & Lynn, 2008b; Khaleefa & Lynn, 2008c; Khaleefa, Khatib, Mutwakkil & Lynn, 2008; Lynn, Abdalla & Al-Shahomee, 2008). It is beginning to appear that the hypothesis of greater male variability of intelligence is another beautiful theory spoiled by some ugly facts.

References

Al-Thani, A. M.
(2001) Tagneen i'khtibar al-masfofat al-mutatabia' al-A'di liravin ala tollab wa talibat al-marhalah al-i'btidaiah bimadinat al-Dawha bidawlat Qatar (Standardization of the Standard Progressive Matrices to elementary school pupils in Doha, State of Qatar). Unpublished master thesis, Faculty of Education, Umm Al-Qura University, Saudi Arabia (In Arabic).

Bart,W., Kamal,A. & Lane, J.F.
(1987) The development of proportional reasoning in Qatar. *Journal of Genetic Psychology,*148, 95-103.

Ellis, H.
(1904) *Man and Woman: A Study of Human Secondary Sexual Characteristics.* London: Walter Scott.

Eysenck, H.J.
(1981) *Intelligence: The Battle for the Mind.* London: Pan.

Flynn, J.R.
(2007) *What is Intelligence? Beyond the Flynn Effect.* Cambridge: Cambridge University Press,

Herrnstein, R. & Murray, C.
(1994) *The Bell Curve.* New York: Random House.

Jensen, A.R.
(1998) *The g Factor.* Westport,CT: Praeger.

Khaleefa, O. & Lynn, R.
(2008a) Sex differences on the Progressive Matrices: Some data from Syria. *Mankind Quarterly*, 48, 345-352.

Khaleefa, O. & Lynn, R.
(2008b) A study of intelligence in the United Arab Emirates. *Mankind Quarterly* (to appear)

Khaleefa, O. & Lynn, R.
(2008c) Normative data for the IQ in Yemen. *Psychological Reports* (to appear)

Khaleefa, O., Khatib, M.A., Mutwakkil, M.M. & Lynn, R.
(2008) Norms and Gender Differences on the Progressive Matrices in Sudan. *Mankind Quarterly,* (to appear)

Lubinski, D.
(2000) Scientific and social significance of assessing individual differences. *Annual Review of Psychology*, 51, 405-444.

Lynn, R., Abdalla, S. & Al- Shahomee, A.A.
(2008) Norms for the Coloured Progressive Matrices for Libya and Tunisia. *Mankind Quarterly* (to appear).

Lynn, R.
(2006) *Race Differences in Intelligence: An Evolutionary Analysis.* Athens, GA: Washington Summit Books.

Lynn, R. & Hampson, S.L.
(1986) The rise of national intelligence: evidence from Britain, Japan and the USA. *Personality and Individual Differences,*7, 23-32.

Lynn, R. & Vanhanen, T.
(2006) *IQ and Global Inequality.* Athens, GA: Washington Summit Publishers.

Raven, J.
(1981) *Irish and British Standardisations.* Oxford: Oxford Psychologists Press.

Terman, L.M.
(1916) *The Measurement of Intelligence.* New York: Houghton Mifflin.

Thorndike, E.L.
(1910) *Educational Psychology.* New York: Houghton Mifflin.

Norms for the Progressive Matrices for Libya and Tunisia

Richard Lynn,
University of Ulster, Northern Ireland
Saleh El-Ghmary Abdalla,
University of Omar Al–Mukhtar, El-Beida, Libya
Alsedig Abdalgadr Al-Shahomee*,
University of Omar Al–Mukhtar, El-Beida, Libya

Results are reported for intelligence in Tunisia based on a standardization sample of adults on the Standard Progressive Matrices and in Libya for a standardization sample of 6- to 11-year-olds on the Colored Progressive Matrices. In relation to a British IQ of 100, the mean IQ of the Tunisian sample is 84, and the mean IQ of the Libyan sample is 86.5. In the Libyan sample younger children performed better than older children. There was no difference between girls and boys in either means or variability.

Key Words: Intelligence; Progressive Matrices; Tunisia; Libya; Sex differences; Variability.

Not much is known about the intelligence of North Africans. In a compilation of the intelligence of the populations of 113 nations, Lynn & Vanhanen (2002, 2006) were only able to give an IQ for Egypt (81) among the North African nations. They assigned in addition an IQ of 85 to Morocco, but this was based on immigrants in the Netherlands who are not necessarily representative of the population. In order to fill this gap in existing knowledge, we present here some data for population intelligence in Tunisia and Libya.

The data for intelligence in Tunisia come from a standardization of Raven's Standard Progressive Matrices (RPM, Raven et al., 2000) on adults carried out in 2001. The results are summarized by Abdel-Khalek & Raven (2006). The sample size was 509 and a score of 47 is given for the 50th percentile of 20-year-olds, together with a score of 54 for British 20-year-olds obtained in the 1992 standardization. The raw score difference of 7 is approximately equivalent to 14 IQ points, giving the

* Address correspondence to Alsedig A.A. Abdalgadr Al-Shahomee; e-mail: Shahomee@yahoo.com

Tunisian sample an IQ of 86. If a Flynn effect adjustment is made for an increase in the British IQ of 2 IQ points per decade, the British IQ will have increased by 2 IQ points from 1992 to 2001, and hence the difference between Britain and Tunisia will become 16 IQ points, reducing the Tunisian mean to 84, in relation to a British IQ of 100.

A further calculation of the IQ in Tunisia has recently been made by Rindermann (2007). He adopts scores obtained in the 2003 PISA study of mathematics in 15-year-old school students as a measure of intelligence. In this study the mean score in 29 OECD economically developed countries was 489 (sd=104), and the mean score in Tunisia was 359 (sd=82). The difference between the economically developed countries and the Tunisians is 1.40 sd units, equivalent to an IQ difference of 21 IQ points. This calculation confirms earlier studies reviewed in Lynn & Vanhanen (2002, 2006) showing that the use of mathematics tests as proxies for intelligence tends to magnify the differences obtained from IQ tests. Nevertheless, the results from the Standard Progressive Matrices and from the mathematics test are broadly consistent, giving IQs of 84 and 79, respectively.

The CPM test in Libya

The Colored Progressive Matrices test (CPM, Raven et al., 1995) was standardized in Libya during the months of January and February 2006. A representative sample of 100 children from each of the six age groups 6.0 through 11.6 years old were tested. The sampling procedure comprised a multi-stage random sampling method (cluster sampling). The CPM was administered to pupils in first to sixth grades who where randomly selected from 7 elementary schools in the large city of El-Beida, 4 elementary schools in the small city of Shahat, and from 9 villages, selecting one school in each village. Children in Libya begin school at the age of 6.0 years and boys and girls are educated together. This ensures that the boys and girls are matched for educational experience and family background.

The results are summarized in Table 1. This gives the mean scores obtained by boys and girls of each age (age 6 = 6.5 years, age 7 = 7.5 years, etc), the standard deviations, the variance ratios (variance of the boys divided by variance of the girls), and

the percentile equivalents of the means of the boys and girls combined on the British norms for the Standard Progressive Matrices collected in 1979 given in Raven (1981). These British norms are used because they are more accurate than those for the Colored Progressive Matrices. To calculate these percentile equivalents the scores obtained on the Colored Progressive Matrices had to be converted to equivalent scores on the Standard Progressive Matrices given by Raven et al. (1995, p. 64).

Table 1.

Results on the Colored Progressive Matrices in Libya. Shown are raw score mean and standard deviation (SD), variance ratio (VR, $SDboys^2/SDgirls^2$), and mean performance as percentile of the British norms.

Age	*Sex*	*N*	*Mean*	*SD*	*Age*	*Brit.Pc*
6	Boys	50	20.94	5.54	1.44	73
	Girls	50	20.82	4.61		
	Total	100	20.88	5.07		
7	Boys	51	21.80	6.16	1.12	47
	Girls	49	21.98	5.81		
	Total	100	21.89	5.96		
8	Boys	50	21.98	5.97	0.98	19
	Girls	50	21.44	6.02		
	Total	100	21.71	5.97		
9	Boys	48	22.42	5.92	0.81	16
	Girls	50	22.79	6.58		
	Total	100	22.61	6.24		
10	Boys	50	22.76	6.23	0.77	6
	Girls	50	24.28	7.12		
	Total	100	23.52	6.70		
11	Boys	50	24.90	6.55	0.99	7
	Girls	50	25.76	6.58		
	Total	100	25.33	6.54		

Discussion

The results show five interesting features. First, the six age groups of the Libyan sample obtained a remarkable range of the British percentile equivalents starting at 73 for 6-year-olds and declining to 7 for 11-year-olds. The average of the British percentile equivalents is 28 and is equivalent to an IQ of 91.5. If a Flynn effect adjustment is made for an increase in the British

IQ of 2 IQ points per decade, the British IQ will have increased by 5 IQ points from the time of the 1979 standardization to 2006, and this will reduce the Libyan mean to 86.5. If we adopt this figure, the IQ in Libya is closely similar to that of 84 in Tunisia, given above, and also to that of 81 in Egypt and of 85 in Morocco given in Lynn & Vanhanen (2002, 2006).

Second, there is, however, a problem with these comparisons. It is apparent that the younger children aged 6 and 7 years performed better than the older children in relation to the percentile norms for British children. This replicates the results reported for Syria and the United Arab Emirates (Khaleefa & Lynn, 2008a and 2008b). It raises the problem of how to estimate an IQ for Libya that can be meaningfully compared with that of other countries of North Africa and the Middle East. It is arguable that the scores of the 11-year-olds give a more valid measure of the Libyan IQ than those of the entire age range of 6- to 11-year-olds. The Libyan 11-year-olds score at the 7th percentile of the British standardisation sample. This translates into an IQ of 78, which becomes 73 with a Flynn effect correction. On the other hand it could also be argued that it is more valid to use all the data to estimate the Libyan IQ, as proposed in the paragraph above.

Third, the large decline in the IQs of Libyan children, relative to British children, over the age range 6-11 identifies an important problem. Why should this be? One factor is that it has been shown by Lynn et al. (2004) that the initial items in the CPM and the SPM tests measure visualization ability, while the later items measure abstract reasoning ability. The 6- and 7-year-olds are scored mainly on the initial visualization items because the abstract reasoning ability items are too difficult for them. The older children aged 10 and 11 are scored mainly on the abstract reasoning ability items because the visualization items are so easy that they mostly get them all right, so the visualization items are largely a constant that is added to their scores on the abstract reasoning ability items. There is still the problem of why young children in Libya, and also in Syria and the United Arab Emirates, have approximately the same average visualization ability as British children, but older children perform less well on abstract reasoning ability, although curiously, this is not the case in Kuwait, where children do worst on the Standard Progressive Matrices at age 8 but improve to a

near-British level at age 15 (Abdel-Khalek & Raven, 2006).

It is known that abstract reasoning ability (also known as fluid intelligence) has increased considerably in economically developed nations during the last 70 years or so (Flynn, 1984, 2007; Lynn & Hampson, 1986). The reasons for this are not understood. They probably lie in improvements in nutrition and education that have accompanied rising living standards (Lynn, 1990), and it can be anticipated that as living standards rise in North Africa and the Middle East, abstract reasoning ability will also rise. Further factors may be that primary schools in Libya do not promote problem solving abilities as well as do those in Britain, teachers are not as well trained, and children in Libya do not have much experience of taking intelligence tests. It is possible that the observed group differences are attributable, at least in part, to the relative novelty of the testing process, as suggested by Stanczak et al. (2001). Whatever the explanation, the important point is that the Libyan children fail to develop reasoning skills while they are in school, as compared with British children. It may be that the solution to this problem would be for teachers in Libya to devote more attention to teaching reasoning skills.

Fourth, none of the differences in the means of boys and girls in Libya is statistically significant (tested by t tests). This result is consistent with numerous studies from western countries given in a meta-analysis by Lynn & Irwing (2004). There is also no sex difference among children in Syria (Khaleefa & Lynn, 2008a), although in the United Arab Emirates girls scored slightly higher than boys (Khaleefa & Lynn, 2008b). This is an interesting result because it is sometimes suggested that girls in traditional societies are handicapped and this impairs their intellectual development, and that as females have become more emancipated and gained greater equality in economically developed western nations, their cognitive abilities relative to males have improved. This theory receives no support from the present results.

Fifth, there is no consistent sex difference in variability. This can be seen from the standard deviations and variance ratios, which are larger for boys among the 6- and 7-year-olds, larger for girls among the 8-, 9- and 10-year-olds, and virtually identical for the 11-year-olds. It has frequently been asserted that males have greater variability than females, i.e. there are more males with

high and low intelligence, while females cluster around the mean. This contention has been advanced since the early years of the twentieth century, e.g. by Ellis (1904), Thorndike (1910), and Terman (1916), and reaffirmed by Eysenck (1981, p. 42) and recently by Deary et al. (2007). However, not all studies have found this including a meta-analysis of the performance of college students on the Progressive Matrices by Irwing & Lynn (2005). The present data also show that greater male variability is not a universal phenomenon.

References:

Abdel-Khalek, A. & Raven, J.
(2006) Normative data from the standardization of Raven's Progressive Matrices in Kuwait in an international context. *Social Behavior and Personality*, 34, 169-180.

Deary, I.J., Irwing, P., Der, G. & Bates, T.C.
(2007) Brother-sister differences in the g factor in intelligence: analysis of full, opposite-sex siblings from the NLSY 1970. *Intelligence*, 35, 451-456.

Ellis, H.
(1904) *Man and Woman: A Study of Human Secondary Sexual Characteristics*. London: Walter Scott.

Eysenck, H.J.
(1981) *Intelligence: Battle for the Mind*. London: Pan.

Flynn, J.R.
(1984) The mean IQ of Americans: Massive gains 1932 to 1978. *Psychological Bulletin*, 95, 29-51.

Flynn, J.R.
(2007) *What is Intelligence? Beyond the Flynn Effect*. Cambridge: Cambridge University Press.

Irwing, P. & Lynn, R.
(2005) Sex differences in means and variability on the Progressive Matrices in university students: A meta-analysis. *British Journal of Psychology*, 96, 505–524.

Khaleefa, O. & Lynn, R.
(2008[a] Sex differences on the Progressive Matrices: some data from Syria. *Mankind Quarterly* (to appear).

Khaleefa, O. & Lynn, R.
(2008b) A study of intelligence in the United Arab Emirates. *Mankind Quarterly* (to appear).

Lynn, R.
(1990) The role of nutrition in secular increases of intelligence. *Personality and Individual Differences*, 11, 273–285.

Lynn, R., Allik, J. & Irwing, P.
(2004) Sex differences on three factors identified in Raven's Standard Progressive Matrices. *Intelligence*, 32, 411-424.

Lynn, R & Hampson, S.L.
(1986) The rise of national intelligence: evidence from Britain, Japan and the USA. *Personality and Individual Differences*, 7, 23-32.

Lynn, R. & Irwing, P.
(2004) Sex differences on the Progressive Matrices: A meta-analysis. *Intelligence*, 32, 481-498.

Lynn, R. & Vanhanen, T.
(2002) *IQ and the Wealth of Nations*. Westport (CT): Praeger.

Lynn, R. & Vanhanen, T.
(2006) *IQ and Global Inequality*. Augusta (GA): Washington Summit

Raven, J.
(1981) *Irish and British Standardisations*. Oxford: Oxford Psychologists Press.

Raven, J.C., Court, J.H. and Raven, J.
(1995) *Coloured Progressive Matrices*. Oxford, UK: Oxford Psychologists Press.

Raven, J., Raven, J.C. & Court, J.H.
(2000) *Standard Progressive Matrices*. Oxford: Oxford Psychologists Press.

Rindermann, H.
(2007) The g-factor of international cognitive ability comparisons. *European Journal of Personality*, 21, 667-706.

Stanczak, D., Stanczak, E. & Awadalla, A.
(2001) Development and initial validation of an Arabic version of Expanded Trail Making Test: Implications for cross-cultural assessment. *Archives of Clinical Neuropsychology*, 16, 141-149.

Terman, L.M.
(1916) *The Measurement of Intelligence*. New York: Houghton Mifflin.

Thorndike, E.L.
(1910) *Educational Psychology*. New York: Houghton Mifflin.

BOOK REVIEW ARTICLE

Energy, Population and Eugenics

John Glad*
University of Maryland

The World Energy Crisis and the Task of Retrenchment: Reaching the Peak of Oil Production
Seymour W. Itzkoff, foreword by Matthew R. Simmons
The Edwin Mellen Press, Lewiston/Queenston/Lampeter

First of all full disclosure: Seymour Itzkoff wrote the preface to my own book *Future Human Evolution: Eugenics in the Twenty-First Century*, already downloaded a million times free from the website http://whatwemaybe.org.[1]

Itzkoff's title leads the reader to assume that this is a sort of manual published by Standard Oil, or perhaps the Halliburton Corporation. While it does contain summary data on energy production capacity, it is really a book about eugenics!

Itzkoff is one of a long line of Jewish proponents of eugenics. Note that I did *not* say "at the *end* of a long line of Jewish proponents of eugenics," for that worldview thrives as strongly as ever nowadays – both in Israel and in the Diaspora. Given the massive public assault on the eugenics movement by the Holocaust Memorial Movement (both were launched in the late 1960's), this objective fact will surprise and perplex most readers who have not followed the realities of Jewish discourse and values.

Permit me to produce just one example per year for the past decade:

*

1998

Noam J. Zohar, a professor of philosophy at Bar-Ilan

* Address for correspondence: *jglad@umd.edu*.
[1] Glad, 2006.

University in Israel, responds to rabbi Max Reichler's 1910 essay "Jewish Eugenics," noting that Reichler's emphatically pro-eugenics views are "shared… by more than a few Judaic circles today":

> A program of individualized eugenics… would seem to be consonant
>
> with an attitude that was, at the very least, tacitly endorsed by traditional Judaic teachings. Should it make a difference if the means for producing fine offspring are no longer determined by moralized speculation but instead by evidence-based genetic science? It seems to me that, insofar as the goal itself is acceptable, the change in the means for its advancement need pose no obstacle to its pursuit. This is so of course provided that the new means are not morally objectionable. To work out a Judaic response to the sort of new eugenics now looming on our horizon it will be necessary to evaluate the various specific means that might serve a modern individualized eugenics. I hope that some of the groundwork for that has been laid in this examination of traditional Judaic voices.[2]

1999

Bioethicist Jonathan R. Cohen:

> Ba'al Shem, the mythical, eighteenth–century founder of Hassidic Judaism… taught that there are two types of fruit in the world: fruit that grows in vineyards, and fruit that grows in the wild. Usually, fruit that grows in vineyards is large, shapely, tasty and consistent. Fruit that grows in the wild often has blemishes or defects, and much of it is lost to insects and disease. However, it may be quite strong in flavor. How do these two types of fruit compare? Both are pleasing in God's eyes.
>
> In time, we may well see a world in which many people will be cloned or genetically engineered, while others will be created through traditional means. Perhaps both will be pleasing in

[2] Zohar, 1998, 584-585.

God's eyes.[3]

2000

B'Or Ha'Torah: Journal of Science, and Modern Life in the Light of the Torah asks bioethicist Fred Rosner: "Does halakha [Jewish religious law] sanction eugenics? From Rosner's response:

> Genetic screening, gene therapy, and other applications of genetic engineering for the treatment, cure, or prevention of disease fulfills the biblical mandate to heal. If Tay-Sachs disease, diabetes, hemophilia, cystic fibrosis, Huntington's disease, or other genetic diseases can be cured or prevented by "gene surgery," it is permitted in Jewish law.[4]

2001

Jewish bioethicist Jonathan Glover:

> The idea of 'human nature' is a vague one, whose boundaries are not easy to draw. And, given our history, the idea that we must preserve all the characteristics that are natural to us is not obvious without argument. Some deep changes in human nature may only be possible if we do accept positive genetic engineering. It is true that our nature is not determined entirely by our genes, but they do set limits to the sorts of people we can be. And the evolutionary competition to survive has set limits to the sorts of genes we have. Perhaps changes in society will transform our nature. But there is the pessimistic thought that perhaps they will not. Or, if they do, the resulting better people may lose to unreconstructed people in the evolutionary struggle. On either of these pessimistic views, to renounce positive genetic engineering would be to renounce any hope of fundamental improvement in what we are like. And we cannot yet be sure that these pessimistic views are both false.
>
> Given the risks that positive genetic engineering is likely to

[3] Cohen, 1999, 11-12.
[4] Rosner, 2000.

involve, many people will think that we should reject it, even if that means putting up with human nature as it is. And many others will think that, quite apart from risks and dangers, we ought not to tamper with our nature. I have some sympathy with the first view. The decision involves balancing risks and gains, and perhaps the dangers will outweigh the benefits. We can only tell when the details are clearer than they are now, both about the genetic techniques and about the sort of society that is in existence at the time.

It is less easy to sympathize with opposition to the principle of changing our nature. Preserving the human race as it is will seem an acceptable option to all those who can watch the news on television and feel satisfied with the world. It will appeal to those who can talk to their children about the history of the twentieth century without wishing they could leave some things out."[5]

2002

According to researchers at the University of Haifa and the Sheba Medical Center, donor insemination is "highly curtained" in Israel and "camouflaged" as a treatment for male infertility, but is in reality a "popular mode of conception" even among singles. Israel has 16 sperm banks, and the greatest number of in-vitro fertilizations per capita of any country in the world. Israeli Jewish women tend to choose sperm from tall Ashkenazi men with light brown hair and light colored eyes. In the words of the researchers, "these ideals are couched in the hegemonic discourse of Israeli Ashkenazi groups."[6]

2003

Historian Christine Rosen:

It begins innocuously enough. A six-month-old baby, once thriving and cheerful, begins reacting differently to normal sounds such as clapping hands or closing doors. Her parents

[5] Glover, 2002.
[6] Birenbaum-Carmeli, 2002.

> notice that her limbs twitch and her muscles are not developing properly. She has trouble swallowing and shows signs of mental retardation. What they can't see is her compromised brain tissue, which began degenerating when she was still in her mother's womb. Soon their once-healthy child is in the grips of an overwhelming illness. As the deterioration intensifies, fatty deposits overwhelm the nerve cells in her brain, and she experiences seizures and paralysis. Bright cherry red spots appear on the retinas of her eyes, and she is rendered blind. Their daughter lapses into a vegetative state, and by the age of 3 or 4, she is dead, often of complications from pneumonia. If ever there was a clear case for using our knowledge of human genetics to end suffering, Tay-Sachs, a killer of children, is it. There is no cure for the disease…. The question is no longer whether we will practice eugenics. We already do. The question is: Which forms of eugenics will we tolerate and how much will we allow the practice of eugenics to expand?[7]

2004

Sachlav Stoler-Liss, who is researching the topic "eugenicist Zionists" at Ben-Gurion University, comes across a card file with notes written by the editors of a collection of Joseph Meir's writings, published in Israel in the mid-1950s where the editors call the article "problematic and dangerous" and comment that "Now, after Nazi eugenics, it is dangerous to publish this article."[8] *Ha'aretz* quotes her as saying: "Eugenic thinking is alive and well [in Israel] today."[9]

2005

Shifra Shvarts, Nadav Davidovitch, Rhona Seidelman, and Avishay Goldman of Ben-Gurion University:

> This paper discusses the debate over medical selection which preceded the acceptance rules by the Israeli government. It is

[7] Rosen, 2003.
[8] Traubmann, 2004a.
[9] Traubmann, 2004b.

> our claim that the debate was shaped to a large extent by the combining of Zionist ideology and eugenic influences – two intellectual forces that had interacted with each other well before the creation of the Israeli State in the first half of the 20th century.[10]

2006

The Longitudinal Israeli Study of Twins (LIST) traces children's prosocial development from phenotypic, genetic and environmental perspectives, focuses on measuring prosociality with a multi-trait multi-method approach, and relates it to children's general cognitive and sociocognitive abilities, and to parenting in the family. Other variables of interest are children's temperament and parental values.[11]

2007

Professor of Jewish Philosophy and Mysticism, Spertus Institute of Jewish Studies, Chicago, Byron L. Sherwin:

> [T]he legend of the golem… tells of the creation of life through mystical and magical means…. In many classical Hebrew texts golem denotes an embryo. One may couple this linguistic fact to discussions, particularly in halakhic literature, of the legal status of a golem. While some, including the nineteenth-century Hasidic master Gershon Hanokh Leiner of Radzyn, maintain that a golem has the potential to become a human person in every respect, the dominant halakhic view is that as long as a golem remains a golem it does not have the status of a human being. Consequently, destroying it is not murder. This view has direct implications not only for abortion but also for embryonic stem cell research. If a human embryo or pre-embryo is a golem, it is not a human person. This approach rejects the claim of various religious and secular bioethicists, including some members of the U.S. President's Commission on Bioethics, who have declared that embryos,

[10] Shvarts *et al*, 2005, 6.
[11] Knafo, 2006.

even at very early stages, are human persons 'like us.'

> As has been noted, golems are created by means of manipulating letters in the Hebrew alphabet, particularly the Tetragrammaton. The Jewish mystics claimed that cracking the code and learning how to manipulate the letters could penetrate the mysteries of life and could provide one with great powers, including the ability to heal existing life and to create new life. With the publication of the human genome and with other developments in genomics, this abstruse medieval mystical notion has taken on new meaning and relevance. In Jewish mysticism combining and recombining the four letters of God's name can create life, including golems, and can cure disease. Similarly, in genomics, DNA is represented by the four letters GATC, representing the four nucleotides of which DNA is composed. In combining and recombining these four letters, that is, nucleotides, scientists believe, they can create new life forms and new ways of treating and even curing diseases – through the use of bioengineered pharmaceuticals, for example. Furthermore, at some university and government laboratories, such manipulations are being used to try to create organic life from inert matter, which is what the creator of a golem also does.[12]

2008

Cornell-University geneticists create what is believed to be the first genetically engineered human embryo, which critics immediately brand as a step toward 'designer babies.' The researchers inserted a gene for a fluorescent protein into a triploid human embryo that had three sets of chromosomes instead of two. After incubation for three days, all the cells in the embryo were glowing. 'This particular piece of work was done on an embryo that was never going to be viable,' says Dr. Zev Rosenwaks, director of the Center for Reproductive Medicine and Infertility at New York-Presbyterian/Weill Cornell hospital, whose ethics board approved the privately financed project.[13]

[12] Sherwin, 2007, 139.
[13] Zimmer, 2008, A14.

*

I cite these examples to demonstrate that Itzkoff is not "fringe," but "mainstream" – within knowledgeable Jewish circles. Regrettably, popular mythology switches those hats, and authors such as he need more than a little courage to write about it.

Itzkoff's thesis can be summarized as follows: humanity is currently living off the temporary benefits of resources put in the ground long before people walked the earth, and once those resources are depleted – which will happen relatively soon – a vastly overpopulated world will be forced to rely on its "human capital." While the intelligent minority may (or may not) survive, the scenario is far less optimistic for the majority. Even though intelligent individuals are to be found throughout humanity, the descendants of the Cro-Magnons, Asians, and especially the Jews have a disproportionate percentage of this talent, and the less fortunate, especially sub-Saharan Africans, are in for bad times. The only solution is a) population reduction and b) selective management of human breeding resources, regardless of "ethnicity." In Itzkoff's view modern egalitarianism is preparing the way for unheard-of disaster, and *de facto* censorship threatens our common survival. Only a "paradigm shift" can save us.

Let me continue to construct this review like a quilt, stitching together quotes this time from Itzkoff's volume:

***

> Peak oil refers to the reality that the cheap, heretofore readily available oceans of sweet crude are disappearing.[14]
>
> *
>
> These chapters comprise an accusation against contemporary "liberalism" and its hopeless attempts to equalize the human race through fiat money. Along with crude oil, it has and will run out. The human race will have to stand on its own feet, use

[14] Pg. 4.

its own intellectual endowment to survive.[15]

*

We still believe that this halcyonic future is determined by growth: economic expansion, more people working, greater corporate profits, ever high salaries for the working classes, stock markets on the perpetual ascend, a world increasingly interconnected, hopeful democratically free enterprise in outlook. We propose to state that such an outlook is a chimera.[16]

*

In the case of the Islamic world, except for Spain and Portugal, it was the introduction of massive sub-Saharan African slavery (by some counts, 8 million humans) thence to be absorbed into Islam itself, that marked the precipitous decline, economic, political, and intellectual of Arab Islam from the eleventh century on.[17]

*

We have to rely, if we are to survive as a species, on our human capital, and not on physical and biological nature's once utilitarian plenitude. There are vastly too many people to prosper amidst such diminishing resources. The once unlimited bounty, beyond energy, base metals, forests for the cutting, rich agricultural land and the resources to keep it at industrial productivity, and especially, drinkable water, are coming into crisis.[18]

*

Ajay Kapur has coined the word "plutonomy" to describe the super-wealthy we have created in our time. In the United States the top 1 percent of the wealthiest control half the value of our stock markets…[19]

*

[15] Pg. 5.
[16] Pg. 9.
[17] Pg. 14.
[18] Pg. 27.
[19] Pg. 28.

There is enough wealth and less need to support the richest panoply of occupations. It could remind us of ancient Athens, Renaissance Florence. Such a world could flourish mightily with a population of under one billion educated humans, they no longer gasping for clean air, potable water.[20]

*

In late December, 2007, the United States Department of Energy released its "Annual Energy Outlook, 2008." By 2016, it stated, oil prices would descend to $58 per barrel of crude…[21]

*

Here is the major line of debate over bio-renewables. Considering the input of seed, fertilizer, pesticides, constant tractor/gasoline grooming, even before harvesting and industrial processing, all of this using fossil based energies, is this renewable energy system viable: EROEI = energy return on energy invested… Crude Oil 20:1; Coal 80:1; Gasoline 20:1; Corn Ethanol 1.2-1.5:1; Cane Sugar Ethanol 8-12:1; Oil Shale Sands 3:1; Liquefied Coal 2.5:1.[22]

*

The battery-powered car is not a panacea. Batteries wear out, then become poisonous entities that must be stored so that they do not pollute the subsoil.[23]

*

But what to do with the billions of humans who are left behind?... The demography of the poor will continue to explode. Theocracy is the present salve for the inability of these masses to grasp the handles of modernity. It is not a peaceful religiosity.[24]

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[20] Pg. 29.
[21] Pg. 33
[22] Pg. 54.
[23] Pg. 62.
[24] Pg. 91.

The censorship is overwhelming.[25]

*

Liberalism's Moral Collapse…[26]

*

Here is the struggle: scientific knowledge and the will of educated persons to use this knowledge for both the private and the public good, as against ensconced religious dogma and its political reach to the yet-unenlightened masses.[27]

*

Unemployment and inflation soar, our dollar in collapse, the trillions of dollars of external debt now being called in, along with a plenitude of unfunded liabilities, Medicare, Medicaid, Social Security, Federal and State Pensions. Where will the wealth and political dreams of growth and redistribution come from? A new reality sets in.[28]

*

Science and technology will surge to the fore in deciding the fate of a people. Do they have the reservoir of brain power to adapt? Many others will be left out.[29]

*

The "g" factor (general cognitive intelligence) overrides everything. Highly intelligent black people are very similar to highly intelligent white or Asiatic humans. Where the differences exist, in some medical areas, they will vanish as the reality of racial out breeding continues apace.[30]

*

Today large swaths of Latin America, Africa, South Asia, and the Muslim world are under water in their incapacity to master

[25] Pg. 101.
[26] Pg. 107.
[27] Pg. 163.
[28] Pg. 179.
[29] Pg. 181.
[30] Pg. 223.

> symbolic complexity, the abstract principles and skills that would make them competitive and independent, not dependent of the racist power structure that derives inner satisfaction from the maintenance of their intergenerational chains. This philanthropy is a chimera…[31]

***

Post Industrial Revolution technology is ferociously sifting through the surface of the planet, and in the long run it is incidental how quickly it accomplishes its spoliation. Sooner or later, we will be left with nothing but renewable resources, and only a radically smaller and smarter society can survive. I would add only that intelligence, culture, and civilization are *not* simply means to achieve prosperity or even survival, they are core values in and of themselves.

The bottom line: Itzkoff is right. Read his book.

References

Birenbaum-Carmeli, Daphna; Carmeli, Yoram S.; Weissenberg, Yigal; Weissenberg, Ruth.
2002 "Hegemony and homogeneity: donor choices of Israeli recipients of donor insemination," *Journal of Material Culture* 7(1): 73-95.

Cohen, Jonathan R.
1999 "In God's garden: creation and cloning in Jewish thought," *Hastings Center Report* 29(4): 7-12.

Glad, John.
2006 *Future Human Evolution: Eugenics in the Twenty-First Century*. Hermitage, Schuylkill Haven, Pennsylvania.

Knafo, Ariel.
2006 "The Longitudinal Israeli Study of Twins (LIST): children's social development as influenced by genetics, abilities, and socialization, *Twin Research and Human Genetics* 9(6): 791-798.

Rosen, Gary.
2003 "Who's afraid of Leon Kass?" *Commentary*, Jan., 28-33.

Rosner, Fred.
2000 "Genetic screening, genetic therapy & cloning in Judaism," *B'or Ha'Torah: Journal of Science, Art & Modern Life in the Light of Torah*, Weekly Q&A:

[31] Pg. 233.

http://www.borhatorah.org/home/question_archive/2000/week14.html.

Sherwin, Byron L.
2007 "Golems in the biotech century," *Zygon*, 42(1): 133-143.

Shvarts, Shifra; Davidovitch, Nadav; Seidelman, Rhona; Goldberg, Avishay.
2005 "Medical selection and the debate over mass immigration in the new state of Israel (1948–1951)," *Canadian Bulletin of Medical History,* 22(1): 5-34.

Traubmann, Tamara.
2004a "Where scientists call the shots: Advanced capabilities and lax regulation put Israel on the leading edge of cloning," *The Center for Public Integrity: Investigative Journalism in the Public Interest*, June 2: http://www.publicintegrity.org/genetics/report.aspx?aid=279: accessed November 30, 2006.

Traubmann, Tamara.
2004b "'Do not have children if they won't be healthy'," *Ha'aretz*, July 3, 5764:
http://www.Ha'aretz.com/hasen/pages/ShArt.jhtml?itemNo=437879, accessed Jan. 18, 2008.

Zimmer, Carl.
2008 "Engineering by scientists on embryo stirs criticism," *New York Times*, May 13, 2008, A14.

Zohar, Noam J.
1998 "From lineage to sexual mores: examining 'Jewish Eugenics,'" *Science in Context* 11(3-4): 575-585.

In God's Image:
The Natural History of Intelligence and Ethics
Gerhard Meisenberg
Book Guild Publishing, Sussex, England, 2007

A 2007 *Newsweek* poll found that 91% of Americans believe in God (Black). In sharp contrast, a 1998 poll conducted by the Journal *Nature*, showed that 93% of major scientists either deny this belief outright or are, at the very least, skeptical (Correspondence). And that's only a beginning. Over the years Zogby and Gallup polls have found (on average) that 14 percent of Americans consider the statement "human beings developed from earlier species of animals" to be definitely true and another 29 percent consider it probably true, while 15 percent said "probably not true," 33 said "definitely not true," and 9 percent "didn't know" (Mooney).

But the discordance goes far deeper than that indicated in the polls. The minority that either accepts the theory of evolution or at least concedes it *may* be true assumes that even if we evolved from other species, that process has come to a grinding halt – for us. Georges-Louis Leclerc, Comte de Buffon (1707-1788), was Carl Linnaeus's French contemporary and opponent in the field of zoology. In a nutshell, Buffon held to the fluidity of biological species, in opposition to Linnaeus's classification system, which more or less assumed stasis. It's a safe bet that even the overwhelming majority of those 14 percent of those polled who accept the theory of evolution are themselves Neo-Linnaens – not by conviction, but simply by assumption. If asked, most would admit that the thought had never even occurred to them.

Moving to politics, we have to concede that democracy's house stands on the shakiest of grounds. In a 2007 Pew poll almost 1/3 of Americans could not name the Vice President of the United States, and nearly 2/3 could not identify the President of Russia (Pew).

An intellectual Grand Canyon cleaves the worldview of the man in the street from that of the serious thinker, the co-existence of two mutually exclusive "narratives" made possible by the general populace's blissful ignorance of this fact and by

scientists' understandable reluctance to breach the topic.

Today's predominant scientific "paradigm" is that offshoot of the eugenics movement known as "sociobiology." Just imagine yourself as a relatively intelligent person who reads his *New York Times* daily and considers himself more or less well informed. You are recommended an article by the biologists David Sloan Wilson and Edward O. Wilson, who have decided to "rethink the theoretical foundation of sociobiology," in the *Quarterly Review of Biology*. Would you comprehend its explosive political significance?

Intended for a very select readership, QRB is a very prestigious journal, but a WorldCat search shows it as owned by only 1,555 libraries (largely universities). It is unlikely that more than a handful of political scientists read it – at most. The article is replete with terminology such as "eusociality," "inclusive fitness theory," and "multilevel selection." The abstract is hardly clear to a lay audience:

> Current sociobiology is in theoretical disarray, with a diversity of frameworks that are poorly related to each other. Part of the problem is a reluctance to revisit the pivotal events that took place during the 1960s, including the selection of group selection and the development of alternative theoretical frameworks to explain the evolution of cooperative and altruistic behaviors. In this article we take a "back to basics approach," explaining what group selection is, why its rejection was regarded as so important, and how it has been received based on a more careful formulation and subsequent research. Multilevel selection theory (including group selection) provides an elegant theoretical foundation for sociobiology in the future, once its turbulent past is appropriately understood. (Wilson/Wilson).

Many of you will have seen the kindly, professorial figure of Harvard's E. O. Wilson chatting on educational television about the behavior of ants. It's all very reassuring, but this article's implications make it a major political manifesto – comparable to the *Magna Charta, the Declaration of Independence, Das Kapital, Mein Kampf*, all of which had their own vision of humanity. The ideological roots of the two Wilsons extend back to Darwin, whose political significance has been crudely suppressed in the popular media but whose legacy defines us and our place in the world.

I recently received a letter from James D. Watson, co-discoverer of the double helix, describing how what he had assumed to be a private remark on race caused him to have to fall on his sword and resign his position of Director of Cold Spring Harbor Laboratory. Larry Summers was forced to resign as President of Harvard University over a comment on women. The psychologist Hans Eysenck at a lecture to have been delivered at the London School of Economics was first prevented from speaking by the chanting of "No Free Speech for Fascists!" and then physically attacked and had to be rescued from the stage, his eyeglasses broken and blood streaming from his face. When his book *The IQ Argument* appeared in the United States, wholesalers and booksellers were threatened with arson and violence, and the book became almost impossible to obtain. As we all know, E. O. Wilson himself was attacked over the political implications of his treatises on insects. It is thus not surprising that serious thinkers are not particularly eager to be understood by the general public.

The eugenics movement numbers among its children – demography, criminology, IQ testing, family planning, and even genetics. And it has any number of cousins in the social sciences – physical and cultural anthropology, bioethics and biopolitics. Its echoes have reverberated through philosophy, literature, psychology. And even now eugenics stands Odysseus-like in the intellectual doorway, glowering at the false suitors of egalitarianism's "cultural revolution" (what the two Wilsons refer to as "the pivotal events that took place during the 1960s"). Their fathers include Sigmund Freud, whose erotic inventions are no longer taken seriously by today's professionals in the field, Karl Marx, whose legacy was formulated by E. O. Wilson as "wonderful idea, wrong species," and Franz Boaz, whose most famous pupil, Margaret Mead, was so naïve that even a stone-age people figured out what she wanted to hear and spoon fed it to her. But who are the suitors themselves? They are the former 1960s radicals, now senior editors and "pundits," who have not noticed that their gods have been displaced by a new pantheon of deities. Blissfully unaware of their host's presence, the drunken intruders quaff his wine and bellow ballads in each other's honor. As feared, Penelope (humanity) is not as beautiful as she once was, but the haggard beggar has a more urgent task at hand, and he heatedly whispers with Telemachus

as the two slip unnoticed into the armory together. The wine jars seem bottomless, surely the feast will last forever. Suspended above a placid Ionian Sea, a full moon shines like a gold coin, and the carousing carries far over the waters. In the palace the unsuspecting hostess bends over her loom even as the old wet nurse's eyes brim with tears of joy and fear.

What Meisenberg has done in his ironically entitled book is to let the Cheshire cat of sociobiology out of the bag, laying out in a casual, somewhat meandering, even chatty fashion the current scientific consensus. The book is an entirely serious effort at popularization, not clothed in recondite academic terminology. In a way, it's a belated parent-child "the-birds-and-the-bees" revelation. Meisenberg, who is a professor of biochemistry and genetics at Ross University Medical School, likes to get a rise out of his students, and some of his views obviously deviate more from the scientific mainstream than do others, but mainstream it is. Let us examine some of his statements and try to identify their common thread:

*****

"You and I are lumbering robots and digital (or possibly analog) computers, and poorly constructed ones to boot."

*

"Our moral intuitions about right and wrong are merely a bundle of instinctive responses to standard social situations that we apply knee-jerkingly... to promote the survival of the genes that have programmed them into our brains."

*

"All or nearly all modern societies will self-destruct during the third millennium."

*

"Next to kin selection and reciprocity, group selection has been credited with the evolution of altruism."

*

"[Is] a cross between human and chimp… possible? Perhaps."

*

"More than 90 percent of mammals have father-absent families."

*

"Women excel at verbal tasks…. Presumably, they need verbal fluency to talk their men into doing what they want them to do…. Men tend to do better in arithmetic tests… and in certain spatial tasks."

*

"Where women are in control of their sex life, they plan their sexual relations to avoid unwanted pregnancies. This means that matriarchal societies cannot survive. They breed themselves out of existence."

*

"We [humans] are hypersexualized because sex is needed for pair bonding."

*

"If you have had regular sex with a woman for some time she is probably either pregnant or lactating or infertile…. A man should therefore always find his own wife less attractive than other women."

*

"Gays are lucky. They are free to pursue sexual variety while straight men have to accommodate the preferences of the women who force them into lengthy, expensive and often unproductive courtship displays."

*

"Most women are ill-tempered, argumentative and uncooperative. In a polygamous household, almost invariably the co-wives… pester each other but leave him in peace. Female aggression evolved for female rivals, not husbands!"

*

"Women don't like being raped because they have to be free to pick the best genes on the market."

*

"Group life evolved for protection. On your own you will be eaten…. But group-living animals also compete with another for… food and mates, sex and money."

*

"The schoolteacher who cannot get accepted as alpha male (or alpha female) by the children is in deep trouble."

*

"Most crimes are committed by young men, with a peak age between 18 and 24 years. This is the age at which the males have to fight over females."

*

"Only the invention of walled compounds and professional harem guards emancipated despotic rulers from the tyranny of female choice."

*

"The rarity of women warriors and the similarity of warfare in humans and chimpanzees show that warfare is a biological phenomenon."

*

"We don't know whether incestuous chimps experience anything resembling shame, guilt or remorse."

*

"All moralists are liars…. The serious moralist deceives both others and himself."

*

"According to him [a forensic psychiatrist], freedom [of choice] is compromised in certain psychiatric diseases, and people so afflicted are not responsible for their misdeeds. While a common criminal deserves punishment, the psychotic is ill and deserves treatment…. This distinction makes no sense because all behavior, criminal or otherwise, has causes."

*

"Being stupid, the poor are unable to improve their lot by insisting on reforms or organizing revolutions. This type of

society is called a meritocracy. It is the most efficient and most oppressive society history has ever seen."

*

"What has become more important in recent decades are not intelligence and technical skill, but the ability to function in the buddy networks of corporate management!"

*

"Men go for beauty, and women for money!"

*

"Conservatives and authoritarians… like dominance hierarchies."

*

"The moral knee-jerk tells us to be nasty to people whose problems are caused by genes."

*

"When I entered skin color and IQ in the same data table, I was stunned by the discovery that the correlation coefficient between these two variables was a whopping 0.88. Neither wealth nor education predicted national IQ as closely as did skin color!"

*

"Roughly, the complexity of a society is determined by its population size and the proportion of highly talented individuals in the population.

*

When bright people fail to have children their high-IQ genes are lost from the gene pool…. The ancient civilizations did not die by the sword. Their elites were submerged in an ocean of stupidity."

*

"Eugenics flourished when its scientific assumptions were shaky, and went out of fashion as soon as these assumptions were shown to be correct!"

*

"The touchy-feely emotional approach to life with its consumerism, pleasure-seeking, individualism and escapism defines the postmodern fun society…. Rights must be maximized and obligations minimized…. [Today we insist] on the sanctity of this-and-that with little concern for consequences – as long as there are no bad consequences for ourselves."

*

"About half of Americans believe in witches, ghosts, extrasensory perception, angels, the Devil, and the literal truth of Genesis."

*

"Genetic selection in the late twentieth-century United States is expected to reduce intelligence by 0.35 to 0.9 points per generation."

*

"Selection against high intelligence is greater in women than men."

*

"If current fertility levels persist for 200 years, the population of Britain will shrink to 19 percent of its present size. Only 6 percent of the Japanese, and 3 percent of Russians and Italians will be left at that time…. This trend leaves only two choices: either depopulation… or migration from low-IQ countries to high-IQ countries."

*

"The dynamic of gene-culture coevolution implies that there will be another one or possibly two good centuries. IQs will no longer rise the way they did during the twentieth century, and scientific progress will slowly grind to a halt."

*

"Is there a true threshold between a mere animal and an intelligent creature? Several animal species use tools; many have communication systems, though not as complex as human language; our moral intuitions are mere instincts that are

superimposed on older instincts; and intelligence comes in all gradations. And yet there is a discontinuity that marks the transition from common animal life to intelligent life. This transition takes place when a species learns to control its own evolution: when it proceeds to become what it wants to be."

*

"If you were on a committee that has to decide about future human evolution, what would you propose? Should the human project be continued, or should we opt for extinction."

*

"Only the very first attempts at self-replicating electronic devices have been made so far. If this technology succeeds, then humans will no longer be needed. They can be phased out. And perhaps one of the robotic life forms that take our place will figure out why there is something rather than nothing. It will be the one that evolves into God's image."

*****

Let us grant that Meisenberg likes to *épater la bourgeoisie*, but his basic message is rooted in a scientific consensus. Despite the reference to a "discontinuity" between humans and the other animal species, the scarlet thread running through this worldview is the end of illusions about human particularism. All those television documentaries about meerkats, lions, and chimps are indeed about meerkats, lions, and chimps… but they're also about us. The ant and termite colonies perhaps even more so, for our species easily outdoes any of them as a "super-organism."

When any species overwhelms all others, the process is routinely referred to as an infestation. We have reached just such a tipping point. Either we rationally manage our own population, both in terms of quantity and quality, or we destroy our host planet and perish ourselves as a species in the process. It's nature's way, and there is nothing unusual or controversial about it. Now that selection via mortality has been swept aside by selection via fertility, we can either bring our ideology in line with reality, or, as Groucho Marx's broker put it to him after the stock market crash of 1929, "the jig is up." It's as straightforward as that. And that is why Meisenberg reaching out to the

intelligent lay reader is so important. Order *In God's Image* for your students, and read it yourself. I learned a lot from it. You can too.

John Glad
University of Maryland

References

Black, Nathan.
2007. "Poll: 9 of 10 Americans Believe in God; Nearly Half Rejects Evolution, *Christian Post*, April 2: http://www.christianpost.com/article/20070402/poll-9-of-10-americans-believe-in-god-nearly-half-rejects-evolution.htm.

Correspondence.
1998. "Leading Scientists Still Reject God," *Nature*, vol. 394, No. 6691, p. 313: http://www.stephenjaygould.org/ctrl/news/file002.html.

Mooney, Chris.
2003. "Polling for ID," Committee for Skeptical Inquiry, September 11, http://www.csicop.org/doubtandabout/polling.

Pew Research Center for the People and the Press.
2007. "Public Knowledge of Current Affairs Little Changed by News and Information Revolutions: What Americans Know: 1989-2007, April 5, http://people-press.org/commentary.

Wilson, David Sloan; Wilson, Edward O.
2007. "Rethinking the Theoretical Foundation of Sociobiology," *The Quarterly Review of Biology*, Dec., 82(4), 327-348.

The Global Bell Curve:
Race, IQ, and Inequality Worldwide
Richard Lynn
Washington Summit Publishers, Augusta, Georgia, 2008
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(paperback), $19.95

Lynn, who is Emeritus Professor of Psychology at the University of Ulster, has written extensively on the taboo topics of eugenics and inter-group differences. One of the authorities cited by Richard Herrnstein and Charles Murray in *The Bell Curve*, he has returned the favor by attempting to replicate their

socioeconomic hierarchy of race and intelligence on a global scale. Even the title is an extension of Herrnstein's and Murray's study – "as a tribute to their pioneering work." But Lynn is considerably more blunt than are they.

Professor Lynn devotes his attention to multiracial societies, for some reason neglecting Indians in India and the Chinese in China, each home to literally hundreds of diverse ethnic groups. In as much as these two nations make up more than one third of humanity, the adjective "global" in the title is not really justified. Lynn, of course, himself is quite aware of the situation and in the latest (Summer 2008) issue of *Mankind Quarterly* compares the mathematical ability of Tibetans to that of Han Chinese. All in all, he has gathered an enormous amount of data, but there are limits to what any human individual can accomplish.

The regions covered are Australia; Britain; Canada; Hawaii; the Netherlands; New Zealand; in the Caribbean: Cuba, the Dominican Republic, Grenada, Haiti, Jamaica, Martinique, Puerto Rico, Trinidad and Tobago; in Africa: Kenya, Uganda, Tanzania, Mozambique, Zambia, Zimbabwe; in Southeast Asia: Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand; in Latin America: Bolivia, Chile, Colombia, Ecuador, Guatemala, Guyana, Mexico, Nicaragua, Paraguay, Peru, Surinam; lastly, the United States.

Lynn does not hold to a systematic classification of genetic types of the sort elaborated by the American physical anthropologist Carleton Coon, so that Africans, who are far more genetically diverse than any other human population, are lumped together under the catch-all rubrics "black" and "African." Likewise, the genetically and culturally very diverse indigenous populations of the New World receive only the scantest attention, at best being referred to as "Indians." Among the smorgasbord of other groups discussed are "Europeans" or "whites," "coloreds" or "mulattos," "mestizos," Australian "aborigines," "Japanese," "South Asians" or simply "Asians," "Native Americans," "British," "French," "Canadians," "Catholic French Canadians," "Inuit," "Puerto Ricans," "Filipinos," "Hawaiians," "Portuguese," "Maori," "Malays" and "Hispanics." (My mother had a Cuban neighbor in Coral Gables, Florida, who once quipped: "You know, John, I used to be white, but now I'm Hispanic.")

What Lynn is after is "human capital," and the method he

employs for all groups is to compare statistics on earnings, socioeconomic status, unemployment, crime, fertility, drug abuse, infant mortality and life expectancy, and the frequency of psychological illnesses and abnormalities and, above all, IQ. According to his paradigm, intellectual ability and personality traits are heritable and they in turn explain success in life – both for the individual and the nation. This once widely discussed topic has been less than popular for the last few decades, and even now it is fortunate for Lynn that he has been granted (relative) immunity by his "Emeritus" status.

After sifting through a mountain of comparative data, Lynn concludes that the sociological paradigm that posits class differences and prejudice as the root cause of racial inequalities amounts to excuse making. He argues that Europeans, East Asians and Jews have the highest IQs and an innately superior work ethic, which explains their besting Africans, Australian Aborigines, Native Americans, Pacific Islanders, etc.:

> How to explain the rapid socioeconomic successes of the Chinese and Japanese in the United States, Canada, Latin America, Hawaii, Europe, and Southeast Asia? How to explain the rapid socioeconomic successes of the Jews in the United States, Canada, and Britain? The only explanation that can provide a comprehensive answer to this question is that these peoples have high IQs. As an old English proverb has it, the cream rises to the top.

At the risk of restating what was obvious in the nineteenth century, let us examine two mammalian species to provide perspective on our human situation – cheetahs and dogs. Cheetahs are so genetically (note that the vaguery "ethnic" would be patent nonsense for any species other than our own) identical that at some point in history there may have been a single remaining breeding pair. By contrast, dogs are descendants of wolves, but different subspecies of wolves. And they lived in radically differing environments, even discounting the caprices of artificial breeding by people. Human social organization is closer to the canine model than to the cheetah. If there really was an "Eve," where is the proof that she did not precede the emergence of "physically modern" *H. sapiens*? We

are dealing here with the more recent evolutionary past. Then came a 100,000 or perhaps 150,000 years "out of Africa" migrations into radically differing environments. Obviously conditions of selection in northern climes differed hugely from those prevalent in the tropics, and – equally obvious – the requirements of modern society are closer to the squirrel mentality that was selected for by agriculture rather than by a hunter-gatherer existence.

I am not referring here exclusively to intelligence, but also to personality traits. I once asked an Eskimo man why his people chose to remain in such hard conditions and never simply walked to Florida. He responded that the ability to survive a six-month night in a cramped arctic igloo required an easy, "laid-back" personality: People who did not have that personality killed each other off in short order. It's called "selection." Probably, he reasoned, his ancestors would have made the trek south – it certainly would not have been difficult – but the Indians were very aggressive and barred their way. This Eskimo man was indeed a very nice person, and I felt that I could recognize the truth in his words by just talking to him.

The defining element of a "species" is that its members can interbreed, and the same is equally true of "subspecies" – the term we use for all species other than our own. We humans are not generally described as having "subspecies" (hence the intentionally redundant classification *Homo sapiens sapiens*); instead we have "races," and we have been told over and over again, incorrectly, that race is only skin deep. But what if Lynn is right? What if there are *significant* differences between human races/subspecies? Should we not celebrate the positive elements in our diversity and be less insistent that we are all so identical and perfect, having been "created in God's image"? (If you're a clone, that's not a bad model. After all, you could do a lot worse.) And even Lynn points out that Australian Aborigines come out happier in surveys than do the frenetic white and Asian occupiers.

But how valid are Lynn's statistics? They are certainly impressive in their consistency. I personally would like Richard Lynn to be wrong, and so, I suspect, would he. But emotions have no place in science.

Let me play the devil's advocate and attack Lynn's thesis: What Lynn is attempting to do is disentangle genotype

(potential) from phenotype (realized potential). The question is not whether genotype sets limits to phenotype, but how strict are these limits. Regardless of whether Lynn is correct in his assertion of statistically significant mental differences between human subspecies/races, we should all agree that we are dealing here with a question of science, not morality, although there are obviously moral implications here of the most profound nature.

A frustrated Dwight Eisenhower once commented that he wished he had only one-armed advisors, because he was constantly hearing "on the one hand…."! Bioethicists are basically an unethical lot. They like to "pose questions" and then lean back with a self-satisfied smile to let the audience admire their cleverness in formulating the latest casuistry. But what we are dealing with here is science, not ethics.

I doubt Lynn will be shouted down. There is a much more effective form of censorship. It's called silence.

Lynn discusses various social science theories that attribute disadvantages to minorities in general or "involuntary minorities" in particular, and in several places where he shows that these theories are not airtight. The example of the Chinese in Southeast Asia is especially impressive.

The value of the book is mainly that it shows to Americans that racial inequalities are by no means unique to their country, but are found almost invariably in all countries where two or more races live together. There are also things that could be criticized. For example, Lynn contributes to semantic confusion by using the term "intelligence" for the innate capacity to develop high intelligence. This is not the common use of the term, which is simply "what IQ tests measure." Measured IQ is not only genetic potential but also other things, as evidenced by the Flynn effect. Lynn also tends to overemphasize consistency by downplaying examples of differences that resolved over time. For example, in the early years of the 20th century many Americans were greatly disturbed by the influx of immigrants from East and Southeast Europe who scored 15 points below white Americans on IQ tests. But somewhere Lynn presents a table showing that today, people with East European and Southeast European names are well represented among those listed in *Who is Who*. He could also have mentioned that the difference in school achievement between Ashkenazic and Sephardic Jews in Israel has almost disappeared in two to three

generations (see *Population Studies* 56: 135-150). This seems to show that some differences persist, and these are likely to be genetic; but that others disappear within two or three generations, and they most likely are environmental.

John Glad
University of Maryland

John Glad's *Future Human Evolution: Eugenics in the Twenty-First Century* is available free on line at http://whatwemaybe.org. in seven different languages, with more languages in process.

A Race Against Time:
Racial Heresies for the 21st Century
Ed. George McDaniel
New Century Books, Oakton, Va. 2003

This 330-page symposium, comprising no less than 38 well-written papers by a variety of contributing authors, should possibly be better classified as political science than as either anthropology or sociology. It may be justifiably discussed, however, in a journal devoted to anthropology, since it is primarily concerned with race, race relations, demography, and crime, in contemporary America.

The editor, George McDaniel, has arranged the papers into five sections. The first, entitled *Current Events*, includes ten papers dealing with racism, anti-racism, race relations, multiculturalism, crime, and white flight from hitherto predominantly white urban neighborhoods. The second, entitled *The Past*, includes twelve papers dealing with the history of race consciousness and race relations in the U.S., and includes sidelights on the intellectual impact of the U.S. Civil War, the Mexican war, desegregation and the legally enforced racial integration of schools, requiring as those laws did the forced bussing of schoolchildren from their own neighborhoods in order that they should attend schools dominated by children of other races.

These two sections are followed by a third entitled *Science*, comprising five papers that seek to define the meaning of the word "race," that tell how group differences in intelligence may contribute to sociocultural differences, and even to the frequency of psychopathic disorders. This section flows naturally into *Philosophy*, a collection of five papers that discuss the impact of race on American society and changes in values. Finally, in *The Future,* six papers conclude the symposium by speculating on possible future social trends in an America that is far from homogeneous culturally or genetically, but in which official policy has for decades been attempting to advance multiculturalism as a positive value. Readers of this collection will be excused if they conclude that the effort made by some authors to advance multiculturalism resembles the old adage that the best way to sell a bad horse is to point out and praise its weakest points.

Readers who recognize multiculturalism as one of the most fashionable ideals of the contemporary Western world will find much of interest in this volume, no matter what their personal views on multiculturalism as a government policy might be.

Ian McNish

Race in Ancient Egypt & the Old Testament
A. H. Sayce, edited and updated by R. Peterson
Scott-Townsend Publishers, 2008.

Based on illustrations from the walls of Egyptian tombs and temples, this volume provides graphic evidence of the physical appearance of the founders of the Egyptian and Biblical civilizations. Egyptian artists of the later dynastic periods are shown to have been have been acutely conscious of the physical characteristics that distinguished the diverse peoples with whom Egypt had contact, and in distinguished between them clearly in their paintings. As populations were more sharply localized and inbred over generations in prehistoric times, it is to be expected that members of the same deme would share common features that would mark them out sharply from populations of different ancestry living in other and especially distant geographical areas.

Modern readers may be surprised to learn that the Egyptian artists represented Libyans and the pre-Israelite inhabitants of Canaan as having fair hair and light eyes, in sharp contrast to Semites who were depicted as having black hair, dark eyes and prominent noses. Hittites warriors were shown with even more markedly Armenoid features, and Africans from Nubia and further south are given the characteristic Negroid features recognizable today. Egyptian males were distinguished by light brown skins and straight black hair, although Egyptian females were portrayed as having markedly lighter skins than the males. It has been suggested that this is because the ordinary Egyptian male would have spent more time outdoor than females, whose household duties would have tended to keep them in the shade. The contrast that distinguished the Nubians of what we now call the Sudan and sub-Saharan Negroes from Egyptians is clearly revealed in paintings that portray Egyptian guards transporting Nubian and black prisoners in ships on the Nile.

While the visual evidence comes mostly from Egyptian sources, Sayce also ventures on a discussion of various Asian peoples, such as the Assyrians, mentioned in Biblical records and for this purpose draws not only on Egyptian evidence but on a limited amount of material drawn from Mesopotamian sources.

This publication is based on the original work completed by Sayce and it is regretyable that the profuse illustrations are therefore all in black and white. It would be interesting to produce a similar study illustrated by colored photographs or the same or similar illustrations selected by Sayce. Chapters include: Introduction - Race and History - The Study of Race - The Tenth Chapter of Genesis - The Egyptians - Cush - Nubia and Lands to the South - The Semites - The Peoples of Canaan - Beyond Palestine - North Africa and Europe – Conclusion

Henry P. Thorndike

Saxons, Vikings and Celts:
The Genetic Roots of Britain and Ireland
Bryan Sykes
W. W. Norton and Company, 2006

This is totally delightful and readable book traces the history of attempts to identify the genetic identity of the native population of the British Isles. Authored by an Oxford professor of human genetics who clearly takes a delight in the history of his own country and people, *Saxons, Vikings and Celts* not only throws light on the genetic origins of the British and Irish but also shows how early skeletal studies, followed by research into fingerprints and blood groups and finally research into race differences in DNA, have been utilized used to trace the biological history of the diverse human populations around the world. Not presented as a scientific treatise, author Bryan Sykes provides an intriguing pen picture of the populating of the British Isles, written in a colorful and intimate style, which identifies the origins of the various people who settled these isles in the millennia since the ice that covered northern Europe during the last Ice Age receded and left them available for human occupation.

Essentially the book could be divided into two parts, although they fit so well together that one is not conscious of this when reading it – the history of physical anthropological techniques and the findings of modern DNA research – because the text moves smoothly from historical research into the findings of modern studies. Enlivening technical information with personal anecdotes and graphic geographical descriptions, Sykes begins by explaining how myth and early history was at one time the only source of information on the racial history of the British Isles and how it was not until the Nineteenth Century that early techniques for research into physical anthropology made it possible to categorize populations by skeletal measurements and by skin, hair and eye coloring. These techniques are described without the customary criticism of those who used to condemn such methods, although he does explain their limitations. Indeed, he devotes an entire chapter to honor John Beddoe's *The Races of Britain*, which provided detailed information about the physical characteristics of the people inhabiting the various parts of the British Isles in the

mid-Nineteenth Century before local migrations resulting from easier methods of travel had largely eliminated the small racial differences that formerly marked out the different regions according to whether they were primarily settled by Celts, Saxons or Vikings. Not that there were significant differences between the genetics of these three originally Nordic populations, although DNA confirms evidence of a darker pre-Nordic component of an earlier pre-Celtic population that settled the British Isles before the arrival of these three not too different peoples, and whose genes are represented quite strongly amongst the living inhabitants of these isles.

I should mention here that author Bryan Sykes is careful to avoid use of the term race, doubtless because of popular biases and sensitivities. His department at Oxford conducts DNA research into the ancestry of living individuals, and in his preface he reports having received a telephone call from an Oklahoma husband who told him that there must be some mistake in his analysis of his wife's ancestry. "Wilma's gone into a coma!" the husband said of his wife, after she learnt that "on her mother's side, Wilma was descended not from the ladies of the English county of Hampshire, as she had always believed, but from a native American, either Sioux or Cherokee."

To make the results of his study of the British population comprehensible, Sykes points out that there are only some five main paternal Y-chromosome variants in the population of Europe (which geographical area includes such "racial" variants as Lapps and Samoyeds), and some seven major maternal mtDNA variants. This, he notes, should be considered in sharp contrast to the more than 36 such variants worldwide, especially since is likely that many more variants will be discovered as research continues. Needless to say, since his aim is to trace the historic settlement of the British Isles, his collection of DNA was restricted to persons who were known to be of indigenous origin.

Many who believe that suppression of racial realities will perchance lead to a world without conflict, or who devote their energies to asserting that persons with serious genetic disabilities, or whether physical or mental, should be encouraged to propagate themselves in order to satisfy any personal urges they may have in that direction, may dislike this book. It clearly encourages the general public to think in terms

of heredity, and may well stimulate a primordial inclination to favor one's own people. Even Bryan Sykes recognizes this, having noted it in the changed attitudes of some of the people whose DNA he has analyzed. Indeed, he volunteers an example from his own personal experience. Having tested the DNA of the Vice-Chancellor of Oxford University, and found that they shared a common female ancestor some 17,000 years ago (besides, of course, being generally much more similar genetically than most of the world's population, simply because both were of indigenous British origin), he admits that "for better or worse, I feel now very differently about the Vice-Chancellor. So much so that, were we ever to have a severe disagreement, it would be hard for me to take it quite so seriously."

This book not only presents a new vision of the origins of the indigenous peoples of the British isles, but also it also enlightens members of the general public as to the extent to which modern physical anthropology can throw light on the historical movement of human populations – while at the same time showing that conclusions based on earlier methods employed by physical anthropologists before the discovery of DNA generally proved to be quite accurate.

Bryan T. Richardson

La Cruche Celte de Brno
Kruta, Venceslas and Dario Bertuzzi
Faton Editions, Dijon, 2007. 139 pages, 68.
ISBN: 978-2-87844-097-3.

Specialists of Celtic art have been aware of the «pitcher» of the necropolis of Brno Maloměřice (Moravia, Czech Republic) since its discovery in 1941. The piece consists of sixteen bronze ornaments, sheet bronze units and thirty eight small bronze nails, which today are held to have been the decoration of a now vanished wooden wine pitcher, considered as dating from the first half of the 3d century BC. The book reviewed successively presents "the Celts and their art from the origins to the 3d century BC" (pp. 8-46), "the pitcher of Brno Maloměřice" (pp.

48-96), "the main Celtic works of art which are illustrated in the book" (pp. 102-125), a "list of the historical sequences of the necropolis" (pp. 125-128). It concludes with the maps, a bibliography, and an index (pp. 129-136).

This fine book, the text of which is due to Venceslas Kruta and the photographs to Dario Bertuzzi, originated from a bold conjecture, which is set out p.73 in the form of a question to Silvia Cernuti, palaeoastronomer at the Observatory of Brera: "Can one find in the sky visible in the latitude of Brno towards the year 280 BC any configurations of stars corresponding to the disposition of the eyes of the monstrous beings in the two main bronze lattice-works of the pitcher of Brno?" This unexpected question has now been answered in the affirmative: it appeared that the two lattice-works in which one formerly saw only entangled dragons represent the stars of the two seasons of the Celtic year, summer and winter. The first ornament corresponds to summer: it represents stars of the constellation of Cygnus (the Northern Cross), of Aquila and of Lyra, three of the which are the points of the configuration called "Summer Triangle"; the central eye corresponds to Albireo, which is in the center of that triangle. These indications apply to the latitude of Brno on Juni 14th 280 BC. The 2nd applique is interpreted from the sky of Brno on November 21st 14th 280 BC, which is dominated by the constellations of Taurus and Orion. The largest eye corresponds to Aldebarran (α Taur), two eyes can be identified as the Horn (β Aur) and the Goat (α Aur). The other eyes correspond to Bellatrix (γ Ori) and the twofold Meissa-Heka (γ Ori).

Due to those precise correspondences, which cannot be fortuitous, the formerly bold conjecture evolved into an important discovery. To those manifold concordances, Kruta adds a significant item (p. 86): "while the 'winter' lattice-work corresponds to the appearance of the vault of heaven when the container stands vertically, such a relation obtains for the 'summer lattice-work' only when it is inclined about 60-70° in pouring its liquid contents. That peculiarity clearly supports the ceremonial function of the pitcher."Other patterns have been convincingly identified, even if their identification could not be demonstrated in the same way as the eyes of the two main lattice-works. For example, the two small appliques, the one in form of S-hook, which may represent the twin stars Castor and Pollux of the constellation of Gemini; the other one, the Sun

godhead in its fullness ; both correspond to the two solstices. The upper face can be identified to Cernunnos, the twin heads are interpreted as a symbol for the alternation day/night, light/darkness, summer/winter, life/death, the triskel as a symbol for the three skies and their three colours, the two dragons of the lid which call up those of Lludd and Llevelys of the *Mabinogi* as an iconographic motif which belongs to the warrior-elite of the beginning of the 3d century BC. The three pierced appliques of the base may figure the stars of Orion's baldric. Those mainly astronomical interpretations imply that the craftsman has worked at the suggestion of one of the druids about whom Caesar, *De bello gallico,*6,12 ff. (quoted p. 86) informs us that "they devoted themselves to many speculations about stars and their motion."

The presentation of this hypothesis follows a summary of historical and archaeological data on the Celts relating to periods prior to the object under study – Celtiberians, Celts of Golasecca, and Celts of Hallstatt – in which Kruta develops several of his key ideas and introduces some new suggestions: the continuity of the Celtic art of the 1st millenium BC and its traditional character (p. 13: "the study of the storehouse of the Hallstatt art of the 2nd quarter of that millenium reveals the existence of a structured system of thought which has been inherited from the Bronze Age, and which makes up "the groundwork for latenian Celtic art"); the parallel between "the rejection of any image with a descriptive or narrative character in Celtic art from the 5th century" (except the Hallstatt sheath and the Gundestrup cauldron) and the rejection of writing; the parallel between the peculiarities of Celtic iconography and the turn of mind of the Gauls, as mentioned by Diodorus of Sicily, *Historical Library,* 5,31 (quoted p. 31), "their speech is short, enigmatic, allusive"; and interpretation of coral as the materialization of "fire in water". Perhaps it is the same with salmon, a new motif which appears in the 3nd century (p. 46).

Jean-Paul Haudry

Kari's Saga
Robert Jansson
www.booksurge.com

We do not normally review books of fiction, but *Kari's Saga* is more than just an ordinary novel. It is one that not only grips the attention of the reader, but also unobtrusively conveys a graphic picture of social life in Viking Iceland. It is set one thousand years ago, when Icelanders voted to accept Christianity as an official creed, but to allow paganism to survive freely alongside the new religion.

Much of Northern Europe was converted to Christianity unwillingly, under military duress. In Germany, Christianity was imposed on the Saxons only after several decades of war, the execution of their entire aristocracy by the victorious Franks, and the imposition of a fine equivalent to that incurred for killing a slave on anyone who failed to baptize his children. In the Baltic countries, Christianity supplanted European paganism only after the military victories of the Teutonic Knights, and most of Scandinavia was forcibly converted to Christianity by rulers such as Olaf Tryggvason. In Iceland, often described as Europe's oldest "democracy," the process was more peaceful.

Under pressure from Norway to accept Christianity or face invasion, Icelanders voted democratically to allow Christianity and the old pagan beliefs to exist side by side. Kari's saga is woven around this event, but it is also to be valued for the way in which the author provides an ethnographically accurate portrait of Iceland and Icelanders at the beginning of the second millennium A.D.

Ian McNish

About *The Mankind Quarterly*

The Mankind Quarterly was founded as a quarterly journal of anthropology, in the broadest sense of "the science of man," in 1961. This was a time when the study of man had already diversified into physical anthropology, ethnography, quantitative cross-cultural research, archaeology and other subspecialties such as psychology and comparative linguistics.

These developments took place against the background of a widening gulf between the biological and social sciences. Following the leading dogma of the day, cultural and social anthropologists in academe began to deny the importance of biology for behavioral and cultural phenomena. Conversely, biological (physical) anthropologists aligned themselves with the "hard" sciences, many describing themselves as human biologists rather than anthropologists in an attempt to distance themselves from a social anthropology that they no longer saw as scientifically sound. In many places, these divisions persist to the present day.

The Mankind Quarterly was founded as a response to these centrifugal trends. Its founders were united in the view that human biology, behavior and culture interact in manifold ways. They also were united in the view that biological and cultural diversity can only be understood as the outcomes of evolutionary, ecological, and historic processes.

In short, *The Mankind Quarterly* was established as a journal for those scholars who still believed in a unified "science of man" that studies the interactions between biological and cultural diversity. It was first published in Edinburgh (Scotland), but publication was transferred to the United States in 1979, since when it has been published from Washington, D.C. by the Council for Social and Economic Studies.

The founders included some of the most renowned scholars of their time in the field of anthropology and related disciplines. In the course of its 46-year existence its editorial board has

included, amongst many others, the following distinguished scholars:

Anthropology and Biology:
Sir Charles B. Darwin (Cambridge); R. Ruggles Gates (London); Luigi Gedda (Rome); Corrado Gini (Rome)

Archaeology and Palaeontology:
Henri V. Vallois (Paris); Bertil Lundman (Uppsala)

Genetics:
David C. Rife (New Delhi); J. D. J. Hofmeyr (Pretoria); O. von Verschuer (Muenster)

Mythology:
Joseph Campbell (New York)

Psychology:
Raymond B. Cattell (Honolulu); Henry E. Garrett (Columbia & Chapel Hill); Frank C. McGurk (Villanova); S. D. Porteus (Honolulu); Audrey Shuey (Randolph-Macon)

Sociology:
Charles C. Josey (Indiana); Stefan T. Possony (Stanford); Herbert Sanborn (Tennessee); H. Turney-High (South Carolina)

Throughout its existence *The Mankind Quarterly* has maintained its character as a journal devoted to the interdisciplinary study of man. Today the editorial board includes scholars from a wide variety of disciplines, from primatology, physical anthropology and human genetics, to psychology, sociology, mythology and history. Despite their diverse expertise and views, the editors share a common interest in the evolutionary and historical processes that generate human diversity.

Since history and biological evolution are ongoing processes, this includes an interest in the social, cultural, demographic and biological changes that are taking place in modern societies. Many of the articles the journal publishes are of an historical nature and deal with the origins of the racial, ethnic, linguistic and cultural diversity we see today. However, the editors are especially interested in the currently ongoing processes that will influence human diversity in the future. It can be argued that these processes are the most immediately relevant topics in the study of man.

The Mankind Quarterly is not and never has been afraid to publish articles in controversial areas, including behavioral race differences and the importance of mental ability for individual outcomes and group differences. During the "Bell Curve wars" of the 1990s, it received considerable criticism when opponents realized that many of the work cited by Herrnstein and Murray had first been published in *The Mankind Quarterly*. However, this science has stood the test of time, and MQ is still prepared to publish controversial findings and theories.

Over the years, advances in genetics and medical science have stimulated new approaches that are helping to close the gulf between the biological and social sciences. Sociobiology, now often described as evolutionary psychology, developed during and around the 1970s as the science of "human nature." It gave us the conceptual tools that allow us to explain human behavior and social systems as the products of evolved cognitive systems. In essence, sociobiology tells us that social and ideational systems tend to develop to conform with evolving needs, preferences and cognitive biases. A number of the articles MQ publishes are direct applications of sociobiological theory.

Behavioral genetics is another field that developed into a solid body of knowledge only during the last three decades of the 20th century. Behavioral genetics deals not only with genes. It also analyzes cultural influences on human behavior, both from the family environment and the wider society. One implication of the behavior genetic approach is that to the extent that genes affect human behavior, they are bound to affect the belief systems, values, and social structures that anthropologists describe as "culture."

Notes for Authors

As a peer-reviewed academic journal of anthropology, *The Mankind Quarterly* publishes articles on all aspects of the *science of man*, ranging from cultural and physical anthropology, and psychology and behavioral genetics, to demography, mythology and the history of religion.

However, the editors are especially interested in articles relating to cultural and biological evolution, and to the interaction between biology and culture. Such topics include (1) the historical origins of present-day cultural and biological diversity using approaches from history, archaeology, linguistics, mythology, and population genetics; (2) the study of cultural and biological trends in contemporary societies including cross-cultural studies of personality, intelligence and culturally transmitted beliefs and values, as well as the study of demographic trends and trends in physical characters and gene frequencies over time; and (3) the implications of current trends for future human evolution.

Included in these areas of special interest are articles dealing with the evolution of personality, its expression in varying cultural, ecological and economic conditions, and its implications for future cultural and biological evolution. Interdisciplinary approaches that integrate findings from historically separate disciplines and subdisciplines are especially encouraged.

MQ publishes research reports, theoretical articles, data-driven reviews, book reviews, and short communications on new discoveries or critical comments on published papers, either in the MQ or elsewhere. Because MQ is read by individuals from diverse backgrounds, the authors of highly specialized or technical articles are asked to present the background and significance of their work clearly and concisely. Likewise, book reviews should deal with publications which will be of interest to a non-specialist audience.

Theoretical articles may be speculative or controversial or both, but must be based on solid data. Submissions are evaluated only on the basis of scientific soundness, relevance, and interest.

Manuscripts should be submitted electronically to socecon@aol.com although the publishers may request a printed copy of any article which is accepted for review by the journal's referees. The review process takes approximately 2-3 months, and articles are published within 6 months after final acceptance. When submitting a manuscript electronically, please indicate the file format. Alternatively, authors can submit three hard copies, typed double-spaced. References should be listed in alphabetical order, and footnotes should be linked to the corresponding numbers inserted in the text.