ter are sensitive to possible environmental differences between groups. Lesser *et al.* (*4*), Stodolsky and Lesser (*5*), and Werner *et al.* (*6*), for example, compared profiles of mean values or mean factor scores of children of various ethnic backgrounds and reported substantial group differences. Guttman and Guttman, on the other hand, examined intercorrelations of achievement scores of Israeli-born children whose parents' origins were in Israel, Iraq, Persia, or Europe and North America. Despite large differences in mean scores among groups, the same simplex pattern of intercorrelations was observed in each group. This result was interpreted as possibly indicating a biological basis for the simplex pattern which is independent of environmental factors (*7*).

In the present study, phenotypic correlations among the 15 cognitive variables were obtained for both ethnic groups and subjected to principal component analyses with varimax rotations. Communalities of 1 were used, and the number of factors retained for rotation was equal to the number of eigenvalues greater than 1 (*8*). Four readily interpretable factors emerged for both racial groups: spatial visualization, verbal, perceptual speed and accuracy, and visual memory (*9*). Common factor loadings of the 15 cognitive tests on the varimax-rotated principal components for the two ethnic groups are graphed in Fig. 1.

The high similarity of the factor loading profiles of the two ethnic groups is obvious. Coefficients of congruence (*10*) of the loadings, computed for each factor to assess this similarity, were as follows: spatial visualization, 0.96; verbal, 0.99; perceptual speed and accuracy, 0.96; and visual memory, 0.96. We interpret these results as indicating the essentially identical structure of intellect of the two different ethnic groups as represented in Hawaii. However, further research will be required to clarify whether this isomorphism is principally cultural or connatural.

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References and Notes

1. The 15 cognitive variables in order of administration, test times allowed, and estimated reliabilities are as follows: (i) Primary Mental Abilities (PMA) vocabulary, 3 minutes, .96; (ii) visual memory, 1 minute of exposure and 1 minute of recall, .76; (iii) things (a fluency test, two parts, 3 minutes each, .79; (iv) mental rotations, 10 minutes, .88; (v) subtraction and multiplication, two parts, 2 minutes each, .96; (vi) Elithorn mazes ("lines and dots"), shortened form, 5 minutes, .89; (vii) Educational Testing Service (ETS) word beginnings and endings, two parts, 3 minutes each, .76; (viii) ETS card rotations, two parts, 3 minutes each, .88; (ix) visual memory (delayed recall), 1 minute, .78; (x) PMA pedigrees (a reasoning test), 4 minutes, .72; (xi) ETS hidden patterns, two parts, 2 minutes each, .92; (xii) paper from board, 3 minutes, .83; (xiii) ETS number comparisons, two parts, 1.5 minutes each, .82; (xiv) Whiteman test of social perception (verbal), 10 minutes, .43; and (xv) Raven's progressive matrices, modified form, 20 minutes, .89. References and more details concerning these cognitive tests and the estimation of their reliabilities will be provided in a subsequent paper.
2. The AJA sample was composed of 79 fathers, 89 mothers, 49 sons, and 45 daughters. The AEA sample included 242 fathers, 231 mothers, 148 sons, and 161 daughters. At the time of testing, children ranged in age from 13 to 31 years, whereas parental ages were 32 to 56 years. The numbers of fathers and mothers are unequal within racial groups because of interracial marriages. Offspring of these interracial marriages were not included in the present analysis.
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7. For a review of other comparative studies, see S. G. Vandenberg [in *Multivariate Analysis and Psychological Theory*, J. R. Royce, Ed. (Academic Press, London, in press)].
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9. The percentages of common variance accounted for by these factors for AJA and AEA subjects, respectively, were as follows: spatial visualization, 19.8 and 20.0 percent; verbal, 18.7 and 19.8 percent; perceptual speed and accuracy, 12.8 and 12.2 percent; and visual memory, 11.0 and 10.5 percent. Factor analyses were also undertaken separately for fathers, mothers, sons, and daughters within each ethnic group. In the case of AEA subjects, four factors again emerged for each of the sex by generation combinations, and factor loading profiles were highly similar. Although four factors also emerged for AJA fathers, sons, and mothers, more variation in factor loadings was observed, and a fifth not readily interpretable factor emerged for AJA daughters, presumably due to the smaller sample sizes.
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11. The results reported here are made possible by collaboration of a group of investigators (G. C. Ashton, R. C. Johnson, M. P. Mi, and M. N. Rashad at the University of Hawaii, and J. C. DeFries, G. E. McClearn, S. G. Vandenberg, and J. R. Wilson at the University of Colorado) supported by NSF grant GB 34720 and grant MH 06669 from the National Institute of Child Health and Human Development.

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Hydrolysis of the Lectin of Otala lactea

The partially purified lectin which agglutinates blood group A (and AB) (anti-A) and which is found in the snail *Otala lactea* was lightly treated with *p*-phenylazobenzoyl chloride [an "acylation" type of reaction, which causes an increase in anti-A activity (*1*)] and then hydrolyzed by crystalline papain. Three smaller fragments were obtained, with sedimentation constants 1.8, 2.2, and 4.2, respectively, all of which possess anti-A activity. This result suggests the presence in the original lectin molecule of at least three combining groups.

This recalls the work of Hammarström and Kabat (*2*), who found six specific combining groups in the anti-A lectin of the snail *Helix pomatia*, and that of Springer and Desai (*3*), who found between five and eight combining groups on the anti-H (O) lectin (agglutinate A_2 cells and O cells) of the eel *Anguilla rostrata*.

Since most antibodies apparently have only two specific combining groups per molecule, this leads us to suggest that the larger number in lectins (or at least in some lectins) may represent another significant difference between lectins and antibodies. This difference might explain, for example, why the anti-H (O) eel lectin was found by Springer and Desai (*3*) to precipitate specifically with certain molecularly dispersed monosaccharides —a finding that is hard to explain on the basis of the "lattice" theory of specific precipitation.

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