

U C S C

BRG

Bilingual
Research Group

Published
in 1989

**Bilingualism and Intelligence Testing:
An Annotated Bibliography**

Kenji Hakuta
University of California, Santa Cruz

BRG #89-07



Working Papers

University of California • Santa Cruz

The mission of the **Bilingual Research Group** is to stimulate and conduct original research on bilingualism and on the education of language minority populations. The BRG is particularly interested in encouraging cross-disciplinary research as well as collaboration between researchers and educational practitioners. The *BRG Working Papers* are published irregularly to disseminate on-going and pre-publication work by BRG members and visitors to the unit. Series titles are listed in the last page of each issue.

Bilingual Research Group Associates

Kenji Hakuta (co-director) *Education and Psychology, UCSC*
Barry McLaughlin (co-director) *Psychology, UCSC*
Lucinda Pease Alvarez *Education, UCSC*
Catherine Cooper *Psychology, UCSC*
Eugene Garcia *Education and Psychology, UCSC*
Ronald Henderson *Education and Psychology, UCSC*
Aída Hurtado *Psychology, UCSC*
Viljo Kohonen *Visiting Scholar, UCSC (University of Tampere, Finland)*
Ed Landesman *Mathematics, UCSC*
Maria Eugenia Matute-Bianchi *Education, UCSC*
Ellen Moir *Education, UCSC*
Martha Moorehouse *Psychology, UCSC*

Staff

Julia Kushner *Administrative Assistant*
Gloria Cuadraz
Laura Curry
Daniel D'Andrea
Valeurie Friedman
Greg Peters
Doug Rosener
Aída Walqui

Bilingualism and Intelligence Testing: An Annotated Bibliography

Kenji Hakuta

This annotated bibliography on bilingualism and intelligence testing was assembled primarily for my own education and edification during a sabbatical year at the Center for Advanced Study in the Behavioral Sciences. I was determined to read everything published on the topic, and I think that I got most of the way there. As I perused through the articles, I realized that the problem of bilingualism and intelligence actually had two identities: one as a genuine scholarly topic, and the other as a social issue related to the education of immigrants. The essence of this duality became the heart of the chapter on bilingualism and intelligence in *Mirror of Language: The Debate on Bilingualism*. As it turned out, it would actually have been possible to write an entire book just on this literature. Since the publication of the book, I have often been asked to share this information, and therefore decided to use the *BRG Working Papers* as an official outlet. Even though it may be somewhat out of date and incomplete in many regards, I suspect that it is probably more complete than anyone would ever desire.

The annotated bibliography comes in two parts. The first section is a simple alphabetical listing of the references that I have gathered and read. The second section contains summaries and notes on some of the articles and books, mostly from those references during the period up thru the early 1950's. My own biases obviously appear in the notes, and I do not apologize for them. After this rather strenuous endeavor, I should add that what I learned the most was to fully appreciate the value of going back to read original sources rather than relying on contemporary histories (as they say, revolutions are accompanied by the re-writing of history).

Of course, I received an embarrassing amount of help in putting this together. The staff librarian at the Center for Advanced Study, Bruce Harley, tirelessly carried articles to me. And Leslie Logan, a graduate student at Yale, helped in a number of the annotations, especially up to the letter *J*, and they are acknowledged by the initials *L.L.* at the end of the relevant entries (I imagine she is doing something considerably more rewarding now). The wonders of word processing also helped put roughly framed words and ideas into a form suitable for public presentation, with editorial band-aids by Valeurie Friedman.

Bibliographic Listing

- Addams, J. (1897). Foreign-born children in the primary grades. *National Education Association Journal of Proceedings and Addresses*, 104-112.
- Addams, J. (1908). The public school and the immigrant child. *National Education Association Journal of Proceedings and Addresses*, 99-102.
- Altus, G. T. (1953). W.I.S.C. patterns of a selective sample of bilingual school children. *Journal of Genetic Psychology*, 83, 241-248.
- Anastasi, A. & Cordova, F. (1953). Some effects of bilingualism upon the intelligence test performance of Puerto Rican children in New York City. *Journal of Educational Psychology*, 44, 1-19.
- Anastasi, A. & deJesús, C. (1953). Language development and nonverbal IQ of Puerto Rican preschool children in New York City. *Journal of Abnormal and Social Psychology*, 48, 357-366.
- Arsenian, S. (1972). *Bilingualism and mental development*. New York: Teachers College Press, 1937. Reproduced by AMS Press, New York .
- Arsenian, S. (1945). Bilingualism in the post-war world. *Psychological Bulletin*, 42, 65-86.
- Bain, B. (1974). Bilingualism and cognition: toward a general theory. In S. T. Carey (Ed.), *Bilingualism, biculturalism, and education: Proceedings from the Conference at College Universitaire Saint Jean*. Edmonton: The University of Alberta.
- Bain, B. (1976). Verbal regulation of cognitive processes: a replication of Luria's procedures with bilingual and unilingual infants. *Child Development*, 47, 543-546.
- Bain, B. & Yu, A. (1980). Cognitive consequences of raising children bilingually: 'one parent, one language.' *Canadian Journal of Psychology*, 34, 304-313.
- Barik, H. C. & Swain, M. (1976). A longitudinal study of bilingual and cognitive development. *International Journal of Psychology*, 11, 251-263.
- Barke, E. (1933). A study of the comparative intelligence of children in certain bilingual and monoglot schools in South Wales. *British Journal of Educational Psychology*, 3, 237-250.
- Barke, E. & Williams, D. (1938). A further study of the comparative intelligence of children in certain bilingual and monoglot schools in South Wales. *British Journal of Educational Psychology*, 8, 63-77.@
- Becht, J. G. (1918). Americanization as a war-time duty of the schools. *National Education Association Addresses and Proceedings*, 56, 363-364.
- Ben-Zeev, S. (1977). The influence of bilingualism on cognitive strategy and cognitive development. *Child Development*, 48, 1009-1018.
- Ben-Zeev, S. (1977). Mechanisms by which childhood bilingualism affects understanding of language and cognitive structures. In P. A. Hornby (Ed.), *Bilingualism: Psychological, Social and Educational Implications*. New York: Academic Press, .

- Bossard, J. H. (1945). The bilingual as a person-linguistic identification with status. *American Sociological Review*, 10, 699-709.
- Brigham, C. C. (1930). Intelligence tests of immigrant groups. *Psychological Review*, 37, 158-165.
- Brill, M. (1936). Studies of Jewish and non-Jewish intelligence. *Journal of Educational Psychology*, 27, 331-352.
- Brown, G. L. (1922). Intelligence as related to nationality. *Journal of Educational Research*, 5, 324-327.
- Carlson, H. B. & Henderson, N. (1950). The intelligence of American children of Mexican parentage. *Journal of Abnormal and Social Psychology*, 45, 544-551.
- Carringer, D. C. (1974). Creative thinking abilities of Mexican youth: the relationship of bilingualism. *Journal of Cross-Cultural Psychology*, 5, 492-504.
- Cattell, J. M. (1890). Mental tests and measurements. *Mind*, 15, 373-380.
- Chandler, J. T. & Plakos, J. (1969). Spanish-speaking pupils classified as educable mentally retarded. *Integrated Education*, 7(6), 28-33.
- Clarizio, H. F. (1982). Intellectual assessment of Hispanic children. *Psychology in the Schools*, 19, 61-71.
- Cohen, H. L. (1919). Americanization by classroom practice. *Teachers College Record*, 20, 238-249.
- Colvin, S. S. & Allen, R. D. (1923). Mental tests and linguistic ability. *Journal of Educational Psychology*, 14, 1-20.
- Cummings, F. (March, 1940). When do babies learn to talk? *Parents' Magazine*, 15, 45.
- Cummins, J. (1976). The influence of bilingualism on cognitive growth: a synthesis of research findings and explanatory hypothesis. *Working Papers on Bilingualism*, 9, 1-43.
- Cummins, J. (1978). Metalinguistic development of children in bilingual education programs: Data from Irish & Canadian Ukrainian- English programs. In M. Paradis (Ed.). *The Fourth Lacus Forum 1977*. Columbia, S.C.: Hornbeam Press.
- Cummins, J. (1977). Cognitive factors associated with the attainment of intermediate levels of bilingual skill. *Modern Language Journal*, 61, 3-12.
- Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, 49, 222-251.
- Cummins, J. (1980). The cross-lingual dimensions of language proficiency: implications for bilingual education and the optimal age issue. *TESOL Quarterly*, 14, 175-187.
- Cummins, J. & Gulutsan, M. (1974). Bilingual education and cognition. *Alberta Journal of Educational Research*, 20, 259-269.
- Darcy, N. T. (1946). The effect of bilingualism upon the measurement of the intelligence of children of preschool age. *Journal of Educational Psychology*, 37, 21-44.
- Darcy, N. T. (1953). A review of the literature on the effects of bilingualism upon the measurement of intelligence. *Journal of Genetic Psychology*, 82, 21-57.
- Darsie, M. L. (1926). The mental capacity of American-born Japanese children. *Comparative Psychology Monographs*, 3(15), 1-89.

- Davies, M. & Hughes, A. G. (1928). An investigation into the comparative intelligence and attainments of Jewish and non-Jewish school children. *British Journal of Psychology*, 18, 134-146.
- Diebold, A. R. (1968). The consequences of early bilingualism in cognitive development and personality formation. In E. Norbeck, D. Price-Williams, & W. McCord (Eds.), *The study of personality: an interdisciplinary approach*. New York: Holt, Rinehart and Winston.
- Delmet, D. T. (1930). A study of the mental and scholastic abilities of Mexican children in the elementary school. *Journal of Juvenile Research*, 14, 267-279.
- Duncan, S. E. & De Avila, E. A. (1979). Bilingualism and cognition: some recent findings. *NABE Journal*, 4, 15-50.
- Engle, P. L. (1975). Language medium in early school years for minority language groups. *Review of Educational Research*, 45, 283-325.
- Esper, E. A. (1921). The psychology of language. *Psychological Bulletin*, 18, 490-496.
- Feingold, G. A. (1924). Intelligence of the first generation of immigrant groups. *Journal of Educational Psychology*, 15, 65-82.
- Feldman, C. & Shen, M. (1971). Some language-related cognitive advantages of bilingual five-year-olds. *Journal of Genetic Psychology*, 118, 235-244.
- Fitz-Gerald, J. (1921). The bilingual-biracial problem of our border states. *Hispania*, 4, 175-186.
- Fritz, R. A. & Rankin, N. R. (1934). The English handicap of junior high-school pupils from foreign speaking homes, and remedial suggestions. *Journal of Educational Research*, 27, 412-421.
- Fukuda, T. (1925). A survey of the intelligence and environment of school children. *American Journal of Psychology*, 36, 124-139.
- Garretson, O. K. (1928). A study of causes of retardation among Mexican children in a small public school system in Arizona. *Journal of Educational Psychology*, 19, 31-40.
- Genesee, F. (1981). A comparison of early and late second language learning. *Canadian Journal of Behavioral Science*, 13, 115-128.
- Gerken, K. C. (1978). Performance of Mexican American children on intelligence tests. *Exceptional Children*, 44, 438-443.
- Giardini, G. & Root, W. T. (1923). A comparison of the Detroit First Grade Tests given in Italian and English. *Psychology Clinic*, 15, 101-108.
- Goodenough, F. (1926). Racial differences in the intelligence of school children. *Journal of Experimental Psychology*, 9, 388-397.
- Goodenough, F. L. (1946). The measurement of mental growth in childhood. In L. Carmichael (Ed.), *Manual of child psychology*. First Edition. New York: Wiley & Sons, .
- Goodenough, F. (1940). New evidence on environmental influence on intelligence. *The Thirty-Ninth Yearbook of the National Society for the Study of Education. Intelligence: its nature and nurture. Part 1: Comparative and Critical Exposition*. Bloomington, Illinois: Public School Publishing Company, 307-384.
- Goddard, H. H. (1913). The Binet tests in relation to immigration. *Journal of Psycho-Asthenics*, 18, 105-110.

- Goddard, H. H. (1917). Mental tests and the immigrant. *Journal of Delinquency*, 2, 243-277.
- Graham, V. T. (1926). The intelligence of Chinese children in San Francisco. *Journal of Comparative Psychology*, 6, 43-71.
- Green, J. (1941). An experiment in English. *Harpers Magazine*, (August), 183, 397-405.
- Gundersen, R. & Feldt, L. (1960). The relationship of differences between verbal and nonverbal intelligence scores to achievement. *Journal of Educational Psychology*, 51, 115-121.
- Haught, B. F. (1931). The language difficulty of Spanish-American. *Journal of Applied Psychology*, 15, 92-95.
- Hickey, T. (1972). Bilingualism and the measurement of intelligence and verbal ability. *Exceptional Children*, 39, 24-28.
- Hill, H. (1936). Correlation between I.Q.'s of bilinguals at different ages on different intelligence tests. *School and Society*, 44, 89-90.
- Hill, H. (1936). The effect of bilingualism on the measured intelligence of elementary school children of Italian parentage. *Journal of Experimental Education*, 5, 75-78.
- Hirsch, N. (1926). A study of natio-racial mental differences. *Genetic Psychology Monographs*, 1(1-2), 231-406.
- Hollingworth, L. S., Terman, L. M. & Oden, M. (1940). The significance of deviates. *The Thirty-Ninth Yearbook of the National Society for the Study of Education. Intelligence: its nature and nurture. Part 1: Comparative and Critical Exposition*. Bloomington, Illinois: Public School Publishing Company, 43-89.
- Holland, W. R. (1960). Language barrier as an educational problem of Spanish-speaking children. *Exceptional Children*, 42-50.
- Ianco-Worrall, A. (1972). Bilingualism and cognitive development. *Child Development*, 43, 1390-1400.
- Jensen, J. V. (1962). Effects of childhood bilingualism, I, II. *Elementary English*, 39, 132-143, 358-366.
- Johnson, G. B. (1951). The relationship existing between bilingualism and racial attitude. *Journal of Educational Psychology*, 42, 357-365.
- Johnson, G. B. (1953). Bilingualism as measured by a reaction-time technique and the relationship between a language and a non- language intelligence quotient. *Journal of Genetic Psychology*, 82, 3-9.
- Johnson, L. W. (1938). A comparison of the vocabularies of Anglo- American and Spanish-American high-school pupils. *Journal of Educational Psychology*, 29, 135-144.
- Jones, A. M. (1928). A vocabulary study of children in a foreign industrial community. *Psychological Clinic*, 17, 13-21.
- Jones, W. R. (1948). Attitude towards Welsh as a second language, a preliminary investigation. *British Journal of Educational Psychology*, 18, 44-52.
- Jordan, R. H. (1921). *Nationality and school progress: a study in Americanization*. Bloomington: Public School Publishing Company, Reviewed in *Journal of Educational Research*, 1922, 6, 66-67.
- Jordan, R. H. (1921). The retention of foreign language in the home. *Journal of Educational Research*, 3, 35-42.
- Kelley, V. H. (1935). The reading abilities of Spanish and English speaking pupils. *Journal of Educational Research*, 29, 209- 211.

- Keston, M. J. & Jimenez, C. (1954). A study of the performance on English and Spanish editions of the Stanford-Binet intelligence test by Spanish-American children. *Journal of Genetic Psychology*, 85, 263-269.
- Killian, L. R. (1971). Cognitive test performance of Spanish- American primary school children: a longitudinal study. *ERIC Reports*, ED 060 156.
- Lambert, W. E. & Anisfeld, E. (1969). A note on the relationship of bilingualism and intelligence. *Canadian Journal of Behavioral Science*, 1, 123-128.
- Lambert, W. E., Tucker, G. R. & d'Anglejan, A. (1973). Cognitive and attitudinal consequences of bilingual schooling: the St. Lambert Project through Grade Five. *Journal of Educational Psychology*, 65, 141-159.
- Landry, R. G. (1974). A comparison of second language learners and monolinguals on divergent thinking tasks at the elementary school *Modern Language Journal*, 58, 10-15.
- Leopold, W. F. (1940). Ice Cream v. Eiskrem. Article in *Time Magazine*, January 1, 35(1), 42.
- Leopold, W. F. (1948). Review of Vol. 1 by H. V. Velten. *Language*, 24, 215-219.
- Lester, O. P. (1929). Performance tests and foreign children. *Journal of Educational Psychology*, 20, 303-309.
- Liedtke, W. W. & Nelson, L. D. (1968). Concept formation and bilingualism. *Alberta Journal of Educational Research*, 14, 225-232.
- Livesay, T. M. (1936). Racial comparisons in performance on the American Council Psychological Examination. *Journal of Educational Psychology*, 27, 631-634.
- Loevinger, J. (1940). Intelligence as related to socio-economic factors. *The Thirty-Ninth Yearbook of the National Society for the Study of Education. Intelligence: its nature and nurture. Part 1: Comparative and Critical Exposition*. Bloomington, Illinois: Public School Publishing Company, 159-210.
- Lynn, K. (1945). Bilingualism in the Southwest. *Quarterly Journal of Speech*, 31, 175-180.
- MacLearie, E. C. (1932). Foreign accent among boys and girls. *Quarterly Journal of Speech*, 18, 612-621.
- MacNab, G. L. (1979). Cognition and bilingualism: a reanalysis of studies. *Linguistics*, 17, 231-255.
- Macnamara, J. (1970). Bilingualism and thought. In J. Alatis (Ed.), *Bilingualism and language contact*. Washington, D. C.: Georgetown University Press.
- Mahakian, C. (1939). Measuring intelligence and reading capacity of Spanish-speaking children. *Elementary School Journal*, 39, 760-768.
- Manuel, H. T. & Wright, C. E. (1929). The language difficulty of Mexican children. *Journal of Genetic Psychology*, 36, 458- 466.
- Mead, M. (1927). Group intelligence tests and linguistic disability among Italian children. *School and Society*, 25, 465-468.
- Miller, J. (1930). Foreign born parentage and social maladjustment. *Psychological Clinic*, 19, 19-25.
- Mitchell, A. J. (1937). The effect of bilingualism in the measurement of intelligence. *Elementary School Journal*, 38, 29-37.

- Murdoch, K., Maddow, D. & Berg, N. (1928). A study of the relation between intelligence and the acquisition of English. *The Twenty-Seventh Yearbook of the National Society for the Study of Education. Nature and Nurture, Part I, Their Influence upon Intelligence*. Bloomington, Illinois: Public School Publishing Company, 343-353.
- Myers, B. & Goldstein, D. (1979). Cognitive development in bilingual and monolingual lower-class children. *Psychology in the Schools, 16*, 137-142.
- Oplesch, M. & Genshaft, J. (1981). Comparison of bilingual children on the WISC-R and the Escala de Inteligencia Wechsler para Niños. *Psychology in the Schools, 18*, 159-163.
- Orvik, J. M. (August, 1976). Bilingualism and cognition. *Topics in Culture Learning*, 13-15.
- Palmer, M. & Gaffney, P. D. (1972). Effects of administration of the WISC in Spanish and English and relationship of social class to performance. *Psychology in the Schools, 9*, 61-64.
- Peal, E. & Lambert, W. E. (1962). The relation of bilingualism to intelligence. *Psychological Monographs, 76* (27, Whole No. 546).
- Pintner, R. (1932). The influence of language background on intelligence tests. *Journal of Social Psychology, 3*, 235-240.
- Pintner, R. & Arsenian, S. (1937). The relation of bilingualism to verbal intelligence and school adjustment. *Journal of Educational Research, 31*, 255-263.
- Pintner, R. & Keller, R. (1922). Intelligence tests of foreign children. *Journal of Educational Psychology, 13*, 214-222.
- Powers, F. F. (1929). Psychology of language learning. *Psychological Bulletin, 25*, 261-274.
- Rigg, M. (1928). Some further data on the language handicap. *Journal of Educational Psychology, 19*, 252-256.
- Sanchez, G. I. (1934). Bilingualism and mental measures: a word of caution. *Journal of Applied Psychology, 18*, 765-772.
- Sandiford, P. & Kerr, R. (1926). Intelligence of Chinese and Japanese children. *Journal of Educational Psychology, 17*, 361-367.
- Saer, D. J. (1924). The effect of bilingualism on intelligence. *British Journal of Psychology, 14*, 25-38.
- Sattler, J. M. (1970). Racial "Experimenter Effects" in experimentation, testing, interviewing, and psychotherapy. *Psychological Bulletin, 73*, 137-160.
- Serota, K. E. (1927). A comparative study of 100 Italian children at the six-year level. *Psychological Clinic, 16*, 216-231.
- Smith, F. (1923). Bilingualism and mental development. *British Journal of Psychology, 13*, 271-282.
- Smith, M. E. (1931). A study of five bilingual children from the same family. *Child Development, 2*, 184-187.
- Smith, M. E. (1933). A study of language development in bilingual children in Hawaii. *Psychological Bulletin, 30*, 692-693.
- Smith, M. E. (1939). Some light on the problem of bilingualism as found from a study of the progress in mastery of English among pre-school children of non-American ancestry in Hawaii. *Genetic Psychology Monographs, 21*, 119-284.

- Smith, M. E. (1942). The effect of bilingual background on college aptitude scores and grade point ratios earned by students at the University of Hawaii. *Journal of Educational Psychology*, 23, 356-364. @
- Spoerl, D. T. (1944). The academic and verbal adjustment of college age bilingual students. *Journal of Genetic Psychology*, 64, 139-157.
- Swanson, E. & DeBlassie, R. (1971). Interpreter effects on the WISC performance of First Grade Mexican-American children. *Measurement and Evaluation in Guidance*, 4, 172-175.
- Symonds, P. M. (1924). The effect of attendance at Chinese language schools on ability with the English language. *Journal of Applied Psychology*, 8, 411-423.
- Terman, L. M. (1918). The vocabulary test as a measure of intelligence. *Journal of Educational Psychology*, 9, 452-459.
- Thomas, A., Gertzog, M. E., Dryman, I., & Fernandez, P. (1970). Examiner effect in IQ testing of Puerto Rican working-class children. *American Journal of Orthopsychiatry*.
- Thompson, G. G. (1962). *Child Psychology*. Boston: Houghton Mifflin Company, 1952. Second Edition.
- Tomb, J. W. (1925). On the intuitive capacity of children to understand spoken language. *British Journal of Psychology*, 16, 53-55.
- Torrance, E. P., Wu, J.-J., Gowan, J. C. & Aliotti, N. C. (1970). Creative functioning of monolingual and bilingual children in Singapore. *Journal of Educational Psychology*, 61, 72-75.
- Tsushima, W. T. & Hogan, T. P. (1975). Verbal ability and school achievement of bilingual and monolingual children of different ages. *Journal of Educational Research*, 68, 349-353.
- Walters, F. C. (1924). Language handicap and the Stanford Revision of the Binet-Simon tests. *Journal of Educational Psychology*, 15, 276-284.
- Williams, L. L. (1914). The medical examination of mentally defective aliens: its scope and limitations. *American Journal of Insanity*, 71, 257-268.
- Witty, P. & Garfield, S. (1942). Trends in discussions of intelligence: race differences. *Journal of Educational Psychology*, 33, 584-594.
- Yoder, D. (1928). Present status of the question of racial differences. *Journal of Educational Psychology*, 19, 463-470.
- Yoshioka, J. G. (1929). A study of bilingualism. *Journal of Genetic Psychology*, 36, 473-479.
- Young, K. (1922). Intelligence tests of certain immigrant groups. *Scientific Monthly*, 15, 417-434.
- Young, K. (1923). *Mental differences in certain immigrant groups*. (University of Oregon Publication, Vol. 1, No. 11, July, 1922.) Eugene, Oregon: The University Press, 1922. Reviewed by F. J. Kelly, *Journal of Educational Research*, 7, 255-256.
- Zirkel, P. A. (1972). Spanish-speaking students and standardized tests. *Urban Review*, 5/6, 32-40.

Annotations

Addams, J. (1897). Foreign-born children in the primary grades. *National Education Association Journal of Proceedings and Addresses*, 104-112.

Miss Jane Addams is not herself a teacher but works with Hull House in Chicago. In this article she refers to her experiences with Italian immigrants. She realizes "how dependent a neighborhood of foreign-born colonists is upon the school as a socializing and harmonizing factor"(112).

But, she claims, the school is not in tune with the needs of the immigrants and does not address their tenement/street culture in Chicago or eventual life at factory work. School is very removed from their everyday experiences and therefore is seen as drudgery. School attempts to develop child's powers in abstract dimensions (reading, writing, figures) and ignores the "tangible materials" that so affect these immigrant children with peasant backgrounds.

School must convey worth of production (factory work) by providing children with insight into materials, process and use to which their labor will be put—convey "dignity of labor". How is this to be done? She "ventures to assert that if the little Italian lad were supplied, then and there [at school], with tangible and resistance-offering material upon which to exercise his muscle, he would go bravely to work, and he would probably be ready later to use the symbols of letters and numbers to record and describe what he has done; and might even be incited to the exertion of reading to find out what other people had done."(106-7).

L.L.

Addams, J. (1908). The public school and the immigrant child. *National Education Association Journal of Proceedings and Addresses*, 99-102.

Public school as "the great savior of the immigrant district, and the one agency which inducts the children into the changed condition of American life"(99). But (1) separates child from parents—contrast between home and school leads child to reject home values and authority. "If he throws off the control of the home because it does not represent the things which he has been taught to value he takes the first step toward the Juvenile Court . . ." (100); (2) school fails "to place the children into proper relation towards the industry which they will later enter"(100); (3) if children are cut off from their parents then they will not know how to be good parents.

Schools should utilize the rich cultural resources of immigrant communities. This benefits both native-born American children and immigrant children. Gives them an appreciation of culture. "In short, it is the business of the school to give to each child the beginnings of a culture so wide and deep and universal that he can interpret his own parents and countrymen by a standard which is world-wide and not provincial"(100).

L.L.

Anastasi, A. & Cordova, F. (1953). Some effects of bilingualism upon the intelligence test performance of Puerto Rican children in New York City. *Journal of Educational Psychology*, 44, 1-19.

Good discussion of possible reasons why typical finding is that bilinguals are inferior in verbal tests and equivalent in nonverbal. Includes discussion of "rapport" between tester and testee, which is rare in this literature.

Measure: Cattell 'Culture-Free' Test, which Cattell claims can be translated without altering validity of the test. Form A in Spanish, Form B in English, counterbalanced, etc. Good design for ANOVA.

Ss 108 (following elimination of about 70 for various statistical considerations) 6th-8th grade (11 to 15 years old) parochial school Puerto Ricans.

ANOVA shows highly significant practice effect, doing much better on the second form, regardless of the language of administration. The language of administration had no significant effect on performance. "Translating the directions evidently offers no solution to the testing of these subjects. The bilingualism encountered in this group appears to be of the bifurcated variety, the children's mastery of either language being restricted and inadequate" (13).

In absolute terms, the median IQ score for these children was 1.25 SD below norm. Authors emphasize the importance of the children's attitude toward testing (15).

Attribute the overall low performance to their very low SES, "their bilingualism which makes them deficient in both languages, their extreme lack of test sophistication, and their poor emotional adjustment to the school situation. In so far as this maladjustment itself appears to have arisen from the children's severe language handicap during their initial school experiences, a solution of the language problem would seem to be a necessary first step for the effective education of migrant Puerto Rican children" (17).

The authors have not shown that the language of these children in any way contributes to their poor performance overall on the nonverbal test, yet they seem to attribute much to the language handicap. They refer to studies by M. E. Smith (1949) and Barke & Williams in claiming that "It is not the interference between the two languages so much as the restriction in the learning of each to certain areas that leads to handicap. In such cases, the extent of the child's vocabulary as well as other aspects of his linguistic development will be inferior in both languages" (3).

Arsenian, S. (1945). Bilingualism in the post-war world. *Psychological Bulletin*, 42, 65-86.

Excellent survey of issues and empirical generalizations.

"Speculative thinking has attributed great advantages as well as great disadvantages to bilingualism. Some writers on the subject have extolled the benefits of bilingualism in sharpening the child's mind, in extending his mental horizon, in making it easier to learn a third language. Others have decried the evil effects of bilingualism which they believe results in mental confusion, in inadequate mastery of either language, and in cultural uprootedness" (70).

Summary of conclusions (73-4, paraphrase mine):

1. bilingual children are neither retarded nor accelerated in mental development, especially when compared on nonverbal tests;
2. when two groups are compared on verbal tests, the bilinguals fall short of monolinguals, with increasing disparity as tests become more verbal; however, two limitations on this conclusion: a) on the whole, the older the child, the smaller is the discrepancy; b) variation across studies and locations.

Also touches on bilingualism and language development, referring to Smith's studies; bilingualism and school achievement; and bilingualism and emotional adjustment; and others.

This review does not mention the dark days of national/racial comparisons as backdrop for studies of bilingualism in the United States.

Bain, B. Verbal regulation of cognitive processes: a replication of Luria's procedures with bilingual and unilingual infants. *Child Development*, 1976, 47, 543-546. @

Study was designed to test for voluntary control of cognitive processes following a procedure used by Luria (although he did not use bilingual subjects).

Subjects: From an initial pool of 60, 48 22-24 month old children participated in the study. Subject characteristics were as follows: French nationals living in the Alsace region of France; at least one parent was a schoolteacher; mother was primary caretaker; no more than one sibling; both parents had rapport with child. These children composed three groups. (A) bilingual, one person-one language; (B) bilingual, indiscriminate use of two languages; (C) unilingual in Alsatian or in French.

Procedure: Parent hides marble under cup or under tumbler. Gives verbal instructions on where to look. "Game" becomes progressively more difficult. (1. states location—imperative prompt to act; 2. states location—10 sec. delay—imperative; 3. states location—imperative; repeat three times with marble in same location; then on fourth trial states states changed location—imperative; 4. states location—10 sec. delay—imperative; repeat three times with marble in same location; then on fourth trial states changed location—10 sec. delay—imperative.)

Results: A progression in task difficulty was found for all groups; therefore, regardless of type of social experience, the sequence of transfer of cognitive control from social to psychological plane follows the same pattern. Group A did perform at a higher level on all conditions, but this was a trend only; the results were not significant. This finding does not support the claim of accelerated cognitive growth for one person-one language bilingualism, as reported in case studies, à la Leopold. Group B and C performed similarly. There was no evidence of a cognitive deficit for bilinguals raised in mixed-language homes.

L.L.

Barik, H.C. and Swain, M. (1976). A longitudinal study of bilingual and cognitive development. *International Journal of Psychology*, 11, 251-263.

Barik and Swain report data from a group of 136 bilingual (immersion) and a 60 monolingual comparison group. They report a significant difference in favor of the bilinguals across the three year period of the study, but the effect washed out when initial IQ differences were statistically controlled. However, they report a more fine-grained analysis comparing 32 low and 32 high L2 achievers over a three year period. For these groups, the high achievers performed higher on subtests of analogies and following verbal instructions even when initial scores at T1 were controlled. This finding supports Cummins' threshold hypothesis. An implication for further bilingual studies is that comparing the performance of an entire bilingual group, including those who have and those who have not reached the threshold, may mask performance differences.

Barke, E. (1933). A study of the comparative intelligence of children in certain bilingual and monoglot schools in South Wales. *British Journal of Educational Psychology*, 3, 237-250.

South Wales, mining area. Emphasis of study is that nonverbal measurement of intelligence should accompany verbal. Used Non-Language Mental Test by Pintner, and Burt's Northumberland Standardised Tests. "Bilinguals" were 395 10-14 year old Ss where 86.2% spoke Welsh at home, instruction begins in Welsh, with increasing amounts of English in higher grades; teachers are bilingual. "Monolinguals" were 302 Ss where roughly 3.5% spoke Welsh at home. SES appears in favor of bilinguals, "it seems probable that the home environment of the pupils in the three bilingual schools was rather superior to that of the pupils in the monoglot schools; . . . in the bilingual area, many of the miners owned the houses that they occupied, whereas in the other mining area . . . families moved frequently and . . . parents did not show much interest in their children's education" (241). Results:

slight favor for bilinguals on non-verbal test; much difference in favor of monolinguals on verbal test. "The general inferiority of the children from the bilingual schools when measured by the Northumberland Test is doubtless to be attributed to language difficulties and in particular to their imperfect comprehension of the English language." (249).

Barke, E. & Williams, D. (1938). A further study of the comparative intelligence of children in certain bilingual and monoglot schools in South Wales. *British Journal of Educational Psychology*, 8, 63-77.

South Wales, similar schools to Barke's earlier (1933) investigation. Three groups of Ss: Bilinguals (Welsh at home), "combined" (55% from Welsh homes, 45% from English, in these schools Welsh is the beginning language of instruction, English phased in later); monolingual English.

Measures, various including Pintner's Non-Language Test and a vocabulary test in English and in Welsh; Scottish test given in Welsh to bilinguals.

Results: No difference in the nonverbal test, but again an advantage for monolinguals on verbal tests. There was a greater discrepancy on the general intelligence tests when the tests were administered in Welsh (Scottish test) to the bilingual children than when they were administered in English (Northumberland). "The inference is that these bilingual children . . . are unable to do justice to themselves in either language" (76). The vocabulary tests show that "the bilinguals, neither in their mother-tongue nor in their second language, appear to have a vocabulary equal to that of the monoglots" and that "this inferiority of vocabulary when taken in conjunction with the equality of bilinguals and monoglots in a non-verbal mental test, probably accounts in large measure for their inferiority to the monoglots in the two verbal mental tests" (76).

Becht, J.G. (1918). Americanization as a war-time duty of the schools. *National Education Association Addresses and Proceedings*, 56, 363-364.

Becht is secretary for the Pennsylvania State Board of Education. He believes in "Americanizing America." "We assumed that through the process of education and environment the amalgamation of the alien into our American life would take care of itself. But our smug complacency was rudely jarred when we awoke to the fact that about one-sixth of our population was directly or indirectly subject to alien influences."(363).

He emphasized the need for education: "So far as the children are concerned the problem will work out its own answer in the public schools. If the schools are good for the American child and are saturated with the spirit of loyalty, service, and sacrifice for country, there is every probability that the alien child will absorb this spirit and become a patriotic citizen."(363).

Of adults, he understood the need to teach them reading and understanding English. Problem with night schools is fatigue after day of work. "I have seen in many of these classes the attempts of earnest and conscientious aliens to keep awake during the hour when school was in session."(363-4). Solution: program with employer so education will be part of his employment. Benefits both alien and employer.

Sum: "The public school has been an efficient agency in developing personal ideals. If that influence can be brought to bear upon the adult alien, there is little reason to doubt that America can and will be thoroughly Americanized."(364).

L.L.

Bossard, J.H. (1945). The bilingual as a person-linguistic identification with status. *American Sociological Review*, 10, 699-709.

Focus of article—what it means to be bilingual on the development of personality. Generalizations are drawn from 17 case studies (self-studies, family reports, interviews with subjects).

No clear description of subjects who were selected, but it was noted that some were highly intelligent, with "a certain objectivity of insight into their own personality development." (699).

Definition of bilingualism: "the true bilingual is a person, who participates intimately in two cultural systems." (700).

Culture, language and thought issue: "Language is therefore, in a peculiar sense, both part and symbol of a culture, reflecting its essence in such a way that another language cannot serve as a substitute. . . . Words represent, not things, but our behavior with regard to things. It is through words that we organize our thoughts about things." (700).

Important variables regarding bilingualism's effect on personality: (1) ecological setting, i.e. "normalcy" or unusualness of bilingualism; (2) social attitude toward other language and group it represents. Note: all of the following data appears to have been gathered in contexts where bilingualism is the exception; a minority, low-status language used within the home.

Discusses how bilingualism affects:

a. family relations, including: awareness of problem of language; awareness of parents as different from other parents; resentment, irritation, contempt, even hatred toward parents for unwillingness or inability to keep pace in use of English; avoidance of conversation with or avoidance of parents; inability of parents to understand importance of English for child, except for educational progress;

b. social and personality development of child, including: double linguistic task, since extra effort is required for ordinary communication with others; problems for the development of self-confidence; social ridicule;

c. social relations, including: development of "protective devices"—behavior patterns to protect child from consequences of bilingualism; restrained manner of speaking, slow and calm, to hide accent; make oneself inconspicuous in behavior to avoid attention being drawn to bilingualism; home avoidance, especially failure to bring friends home; practice to develop perfect English; affects selection of friends and withdrawal from family;

d. occupation, including: negative aspects such as discrimination and suspicion from others for being foreign; and positive aspects, such as being seen as especially learned.

Note: above effects are less a result of bilingualism per se, i.e. linguistic effects, than effects of social status. The author is a sociologist, which explains his focus. However, he does show a rather grim picture of the bilingual's socialization. No overt motive for this.

L.L.

Brigham, C. C. (1930). Intelligence tests of immigrant groups. *Psychological Review*, 37, 158-165.

A recantation of his own previous work based on the Army alpha test (A Study of American Intelligence, Princeton, 1926) where he reported racial comparisons. Gives good caricature of typical study: "the Blank test of intelligence was given to n children in x grades of a certain school system; the average test scores of children of nationality A, B, and C were as follows" (158).

Accuses "most psychologists working in the test field have been guilty of a *naming fallacy* which easily enables them to slide mysteriously from the score in the test to the hypothetical faculty suggested by the name given to the test" (159).

Admits the internal inconsistency of the Army alpha (164), and seems inclined towards the multi-trait approach to intelligence, citing Kelley.

Relevant to bilingualism: "For purposes of comparing individuals or groups, it is apparent that tests in the vernacular must be used only with individuals having equal opportunities to acquire the vernacular of the test. This requirement precludes the use of such tests in making comparative studies of individuals brought up in homes in which the vernacular of the test is not used, or in which two vernaculars are used. The last condition is frequently violated here in studies of children born in this country whose parents speak another tongue. It is important, as the effects of bilingualism are not entirely known" (165).

Concludes: "... comparative studies of various national and racial groups may not be made with existing tests, and . . . in particular . . . one of the most pretentious of these comparative racial studies—the writer's own—was without foundation" (165).

Brill, M. (1936). Studies of Jewish and non-Jewish intelligence. *Journal of Educational Psychology*, 27, 331-352.

Brill reviews 23 studies conducted in Great Britain and the United States comparing the intelligence of Jews and non-Jews. He finds violations of sound research methods in all of them to varying degrees. Most fail to control experimentally or statistically for SES and/or language. The representativeness of subject samples is also questionable.

Various kinds of intelligence measures used: teacher ratings; school achievement; handwriting scale; U.S. army, Stanford-Binet and other forms of IQ tests.

In studies conducted in Great Britain, Jews were compared with non-Jews, Gentiles, or Christians, but without a clue as to the make-up of these groups. In U.S. studies Jews were most frequently compared to native white Americans, Italians, or other Jewish groups (ex: Polish or Romanian and Russian), and occasionally against many other racial/national groups.

Some of the conclusions drawn by the author are: Jewish children are superior or equal in general intelligence to non-Jewish children of same SES; Jewish children are generally superior to other foreign-born groups; there are differences in intelligence between Jews of different countries in Europe; Jewish college students were found to be superior, but this could be a result of tougher admissions requirements; intelligence of Jewish children was found to be more homogenous than of non-Jewish children.

L.L.

Brown, G. L. (1922). Intelligence as related to nationality. *Journal of Educational Research*, 5, 324-327.

Distributions of Stanford-Binet scores among 913 children in Northern Michigan from 9 nationalities. Note: ages of subjects not given, a superb example of mimicking science! Admits to language difficulty, "Not infrequently we found children who, although they spoke the English language fairly well, tested from six to eighteen months higher when their native language was employed" (324-5).

Nevertheless find no difficulty arguing that Italians especially are very low. Presents additional data (unclear where the source is, but has a table) from 1700 subjects in Michigan. Very worried about the low intelligence of Italians, relating it to crime, problem that they reproduce faster, etc. Concludes, "These problems should make it clear that, in establishing conditions for admission into the United States, the intelligence of the immigrant is of vastly greater importance than the number of dollars which he possesses. Furthermore, they mean that the method of determining the number of immigrants to be admitted by the percentages of the various nationalities already in this country is fundamentally wrong, since the intelligence of immigrants from some countries is decidedly superior to that of the immigrants from other countries" (327).

Caldwell, F.F. and Mowry, M.D. (1933). The essay versus the objective examination as measures of the achievement of bilingual children. *Journal of Educational Psychology*, 24, 696-702.

Both of these authors are from teachers' colleges, one in California, the other in New Mexico. Presumably children from these areas served as subjects. The purpose of this study was to compare essay (old-test) and objective (new-test) examinations to see if Spanish-American children's lower standardized test scores are a result of a language handicap. It was hypothesized that if Spanish-Americans lack mental ability and language handicap is an insufficient influence, then scores on essay and objective tests should be equally lower than Anglo-Americans. But if Spanish-Americans are hampered by a language handicap, then they should perform much lower on the essay test (more language-bound), than objective test relative to Anglo-Americans.

Subjects were 623 children tested on 4646 tests in the fields of English and History. Each objective test was accompanied by an essay test covering the same material. Objective tests were always given first. Tests were administered by classroom teachers. English tests were given to children in grades 3-8 and History to grades 5-8. There were 2 groups of subjects (no SES information). The Spanish-American group was composed of children who gave nationality as "Mexican" or "Spanish". Note: this group was not limited to Spanish-Americans from Spanish-speaking homes. The comparison group was composed of Anglo-Americans. All tests were graded twice, the essay tests by two different blind graders.

Results: Spanish-American group scored lower on both kinds of tests but the difference was more marked on the essay tests. They also performed much worse on the History tests than English tests relative to Anglo-Americans. Concluded that: language difficulties penalize Spanish-Americans on both kinds of tests; more language handicap with essay than objective tests, probably because essay test requires "recall" of vocabulary whereas objective test largely requires "recognition"; greater language handicap in History than in English, probably because child must transfer language information to another field (application of English in field other than English); low standing of Spanish-speaking children on IQ tests, probably a result of language handicap; inferior performance of Spanish-speaking children likely to make them become discouraged thus retarding learning. Use objective tests so "attitudes of inferiority, sullenness and other undesirable mental products will be far less apt to develop"(702).

L.L.

Carlson, H. B. & Henderson, N. (1950). The intelligence of American children of Mexican parentage. *Journal of Abnormal and Social Psychology*, 45, 544-551.

Study to look at group differences in intelligence of native white children and children of Mexican parentage. Attempt to control for many, frequently uncontrolled, environmental factors: *rural vs. urban environment*: all children from Los Angeles, but parents' urban or rural background could not be controlled; *SES and total cultural context*: all children from same area of the city; *amount and quality of formal education*: children attended same schools with same teachers (apparently no attempt to control for parents' education); *health factors*: no children in study were absent from school 25% or more; *prejudice on part of examiner*: tests were administered by different school psychologists to wash out effects; *motivation*: no segregation during testing, same physical conditions of test situation so the external motivation was similar for all; *bilingualism*: uncontrolled.

Subjects met the following conditions: in proper geographical area of L.A. as specified above; in grades 5 or 6; had taken not less than 3 tests of intelligence, including the California Test of Mental Maturity. There were 2 groups of subjects: Experimental (n=115) born in US of Mexican parents; Control (n=105) white children born in US of parents who had been born in countries other than Mexico.

The design was longitudinal in that children were tested on 3 occasions spanning 5 1/2 years.

Results

Dependent Measure: Mean IQ

Time	Type of test	Exper.	Control
1	various	94.1	105.0
2	various	91.0	99.6
3	Calif. Test	88.5	103.3

At each testing period, Exper. group significantly lower than Control group. For Exper. group, significant difference between mean IQ at time 1 and 3. For Control group, significant difference between mean IQ at time 1 and 2. Perhaps combining scores of different tests gives spurious results; therefore from above sample, selected children who had taken same tests at each test period—sub-Experimental group (n=52) and sub-Control group (n=65).

Mean IQ

Time	Type of test	sub-Exper.	sub-Control
1	Detroit First Grade	97.00	107.71
2	Detroit Primary	91.46	101.06
3	Calif. Test	91.44	105.55

Sub-Experimental group scored significantly lower than sub-Control group at each time. Each group had a significant difference between score at times 1 and 2.

IQ results are often used for predictive purposes. How valid is this? Pearson product-moment correlations showed a higher correlation coefficient between testing periods for Control than Experimental groups. However, sub-Control and sub-Experimental groups have correlation coefficients similar in magnitude. As interval of time between testing periods increases the accuracy of prediction decreases.

American-born children of Mexican parentage do have lower IQ scores. The difference between these children and the Control group increase from time of first testing resulting primarily from drop in IQ scores of Experimental group.

1. This may be due to a general language poverty. Teachers' subjective reports indicate limited proficiency in both English and Spanish for many children of Mexican parentage. English was spoken in only 40% of homes for Experimental group, 97% for Control group. The California Test has language and non-language components. There was no significant difference between performance on these parts for either group. Its likely that the non-language component is inadequate and may rely on language factors (because other studies find different performance on language and non-language tests of intelligence for Mexican-American children).
2. Differences in motivation may account for results.
3. Differences in educational level and urban or rural background of parents may account for results. Intellectual differences between racial groups cannot be uncritically attributed to heredity because of the above uncontrolled environmental factors.

Final note: when using IQ tests for prediction it may not be appropriate to assign a single score when many different intelligence tests are used and treated as a single variable. This is especially true of minority groups for whom the test has not been standardized and especially with greater time intervals between test and predicted outcome.

L.L.

Carringer, D.C. (1974). Creative thinking abilities of Mexican youth: The relationship of bilingualism. *Journal of Cross-Cultural Psychology*, 5, 492-504.

The author is a school psychologist in the public school system of Winsted, Connecticut. The study was designed to look for bilingual's mental flexibility or greater creative thinking abilities.

Subjects: 353 Mexican high school students were given a preliminary assessment to determine their language competence in Spanish and English. This included a questionnaire on age and context of Spanish and English use and a word association test, as developed by Lambert, to determine degree of bilingualism. 48 14-16 year olds were selected to participate in the study. All were from middle and upper SES homes it was assumed since they were all attending private schools. There were 2 groups: Monolingual Spanish (N=24) who began studying English in school after age 12 and who showed greater associates to Spanish in a word association test; and Spanish-English Bilinguals (N=24) who began studying English in school between ages of 5-10 and who associated roughly an equal number of English and Spanish words.

Four subtests of the Torrance Tests of Creative Thinking Abilities was administered (probably Spanish translations). Bilinguals performed significantly better on a number of the subtests.

Conclusion: studying two languages creates a "learning set" for flexibility; L2 acquisition occurs at a young age when there is sufficient cerebral plasticity for the complete assimilation of L2; cognitive flexibility develops because of efforts to overcome interlingual interference.

L.L.

Chandler, J.T. and Plakos, J. (1969). Spanish-speaking pupils classified as educable mentally retarded. *Integrated Education*, 7(6), 28-33.

This study was conducted for the California State Board of Education to determine whether educable mentally retarded (EMR) classes have been used as a dumping ground for minority group children.

The study was conducted in one rural and one urban school district on a sample of Mexican-American children whose native language was Spanish. 47 children in grades 3 to 8 were tested.

Test scores on previously given WISC were compared to scores on a Spanish version of the test, modified for this study to reflect knowledge and language use of Mexican-Americans. The average gain in test scores was about 13 IQ points, thus qualifying 37 of the 47 children to be removed from EMR classes.

The authors concluded that WISC is an invalid IQ test for many Mexican-American children who lack a facility and understanding of English. Placement in an EMR class may actually retard their development.

L.L.

Colvin, S. & Allen, R. D. (1923). Mental tests and linguistic ability. *Journal of Educational Psychology*, 14, 1-20.

Comparison of Italian and American children on Binet and National Intelligence Tests, among other results. Generally more of a discrepancy in the Italian than the American group, especially in higher Mental Age groups. Concludes there is a language handicap.

Has a cryptic discussion of "fluency" as unrelated to intelligence, perhaps a precursor of Cummins' BICS.

Darcy, N. T. (1946). The effect of bilingualism upon the measurement of the intelligence of children of preschool age. *Journal of Educational Psychology*, 37, 21-44.

Statement of the problem: Lots of studies of bilingualism thanks to wide-spread use of intelligence tests, which have "provided the educator interested in the problem of bilingualism with an objective means of determining whether or not intellectual differences exist between the bilingual and the monolingual child"(21). However, very few studies of preschoolers, so here is one such.

Italian versus "English-speaking" in Brooklyn/Manhattan. Unclear whether this division reflected racial division, immigrant cohort, or what. Based on interview with mother, bilingual if child spoke Italian at home always or most of the time but English outside home. On all other grounds, study was well controlled, compulsively so in fact, 106 mono's and 106 bi's, divided equally in 4 age groups between 2;6 and 4;5. Balanced in each cell by sex and SES.

Measures: Stanford-Binet (verbal) and Atkins Object-fitting Test (Nonverbal). Results:

	Monolinguals	Bilinguals
Verbal	98.7	90.9
Nonverbal	89	97.5

All differences are significant.

Correlation between Verbal and Nonverbal is .62 for Monos, .61 for Bi's.

No inferences drawn from the data, other than that "the bilingual subjects of this investigation suffered from a language handicap in their performance on the Stanford-Binet Scale" (41).

Darsie, M. L. (1926). The mental capacity of American-born Japanese children. *Comparative Psychology Monographs*, 3 (15), 1-89.

Darsie was Terman's student.

Subjects: 570 Japanese children from city, urban, and rural environments, "more fluent in English than in Japanese" (although no data on Japanese). Comparison group were American (mostly northern European), but from a higher occupational level (see table on page 7, indicating greater representation of Japanese in semi-skilled and unskilled labor than Americans, and a smaller representation in commercial and skilled labor categories).

Measures: Stanford-Binet and Army Beta tests.

Results: "Japanese children as compared with American show a mean retardation of 14.25 months in reading, 12.5 months in language, 1.75 months in arithmetic, and 6.0 months in general information. In spelling they average 2.75 months above American children . . . Their retardation based upon a composite educational score is 6.25 months."(p. 86). Chart 8, page 69 shows that difference varies with respect to amount of language in subtests.

Three conclusions (85):

1. Japanese children are inferior to those of American and northern European parentage in mental processes involving memory and abstract thinking based on meanings or concepts represented by the verbal symbols of the English language. (Note that this may have been phrased as follows: when English is used as the means of testing for memory and abstract thinking, Japanese children are inferior to American children who are more fluent in English).

2. Japanese children are at least equal and possibly superior to American in mental processes involving memory and thinking based upon concrete, visually presented situations in a non-verbal character.

3. Japanese children are superior to American in mental processes involving acuity of visual perception and recall, and tenacity of attention. (Note the acrobatics performed on 26-27, where the subtests labelled by the author to represent these processes are first found to have the highest correlation with "general intelligence" (Tests 5 and 4), but rejected).

Implications drawn from the study: "The foregoing analysis together with that of the preceding chapter conclusively establishes the essentially linguistic character of the Binet scale. It should be strongly emphasized that this finding in no way invalidates the scale as a measure of intelligence, providing the individuals or groups compared have had equal opportunity and stimuli to master the English language. *It is highly probable, both from the standpoint of theory and of experimental psychology that the more complex thought processes are possible only through the use of concepts represented by verbal symbols.* Tests of the performance or non-verbal character have thus far proven inadequate to measure the higher ranges of mental capacity. It is plain, however, that with groups or individuals having had widely different opportunity and stimuli to master the language, Binet's I.Q.'s must be accepted with extreme caution as indices of innate differences in mental capacity" (59).

Having found the "language handicap" was responsible for poor performance on the IQ tests, author goes on to say: "It must not be overlooked, however, that the existence of pronounced language handicap may itself be indicative of lack of capacity to master the language adequately. Brown's data (Brown, G.L. Intelligence as related to nationality. *Journal of Educational Research*, 1922, 5, 324-327) for children of northern European parentage show an average IQ of 99.6. In his study as in ours, English was not generally spoken in the homes. Apparently children of northern European stocks have less difficulty in mastering the language than do Japanese. It should be borne in mind, however, that the affinities between English and both Germanic and Latin tongues are very marked, while this is obviously not the case with Japanese. *Furthermore, in Brown's investigation Binet elements were translated into the native tongue where marked unfamiliarity with English existed.* Lastly, the northern European immigrants are as a rule readily accepted as social equals, a factor contributing to language mastery which should not be overlooked" (84-85).

Interesting interpretation of the better performance of Japanese on spelling: "At first sight the constant superiority of the Japanese in spelling seems rather startling. If our inference, based on the Beta results, that the Japanese excel in types of learning demanding acute visual perception and sustained attention, is correct, their superiority in spelling is easy to understand, as spelling depends largely upon these capacities."(33).

Comment at beginning of paper: "In common with other immigrant groups, the Japanese child is handicapped by language in fully assimilating American culture. Though the importance of such handicap is perhaps less than is commonly supposed, nevertheless it is real. At home Japanese is usually spoken almost exclusively by the parents. Thus the child starts to school without the English vocabulary ordinarily acquired during the first five or six years of life. *Furthermore the Japanese child usually attends a Japanese language school from three to five hours a week after leaving the public school. While one appreciates the sentiment responsible for such schools, it must be that they retard somewhat the acquisition of English.*"(10)

Davies, M. & Hughes, A. G. (1928). An investigation into the comparative intelligence and attainments of Jewish and non-Jewish school children. *British Journal of Psychology*, 18, 134-146.

Total of about 1900 Jewish and non-Jewish children from 3 schools in London, each of the schools being from different SES groups (good district, moderately poor district, very poor district). 8-14 year olds. Northumberland Standardized Test including English and Arithmetic. 1 to 1 1/2 year advantage for Jewish children. Use teacher ratings to compare their study with a study by Karl Pearson, who found Jews to be inferior. Authors attribute difference to the fact that in Pearson's study, 28.3% were born abroad, but in their investigation 3.1% . Authors thank Cyril Burt.

Delmet, D. T. (1930). A study of the mental and scholastic abilities of Mexican children in the elementary school. *Journal of Juvenile Research, 14*, 267-279.

Report of a Masters thesis by the Superintendent of Schools in Norwalk, California, on Mexican children. Bunch of tests, compared to American norms. On the whole, 2;2 to 4;10 behind age norms. Good-hearted conclusion in general: "We should not forget that the Mexican children studied come from a social environment which is vastly different from the environment which shapes the mentalities of the white children" (278).

However, it is unclear where the author fits in with respect to language. He writes, "The results show that the Mexican children in this kindergarten scored below the norms established by other children on the test used. One reason for this difference may be the fact that most of the children in this kindergarten understand very little English, so that the instructions were given in the Spanish language. Allowance should be made for this" (270). From this, it almost appears as if the allowance to be made is for the fact that the instructions were given in Spanish, not the fact that the items in the test were English-based. This is perhaps a good example of the error of equating measurement items with intelligence.

Diebold, A.R. (1968). The consequences of early bilingualism in cognitive development and personality formation. In E. Norbeck, D. Price-Williams, and W. McCord (Eds.), *The study of personality: An interdisciplinary approach*. New York: Holt, Rinehart and Winston.

Points out that bilingualism has historically been viewed as a damaging experience by U.S. researchers. Many studies have found an intellectual deficit in bilingual children and personality disorders. There are two major fallacies: (1) interpreting an observed association in cause and effect terms; and (2) bilingualism is not necessarily the critical variable, therefore the monolingual group is not necessarily "otherwise equally matched."

Different kinds of bilingualism reflect different sociocultural experiences, e.g., "subordinate" vs. "proficient" bilingualism; "compound" vs. "coordinate" bilingualism.

Re: cognitive development—most studies do show cognitive deficits. But monolinguals were of a socially prestigious language group with greater communicative utility. Usually bilinguals were of disadvantaged SES and subject to acculturative pressures and racist attitudes. Thus, because many variables besides bilingualism are operative it is irresponsible to conclude that bilingualism leads to intellectual deficits.

Re: psychopathology—does appear to be a higher incidence among bilinguals. But likely not due to "mental confusion" or split personality arising from bilingualism. More likely to be due to the crisis in social and personal identity caused by antagonistic pressures from monolingual community who stigmatizes them as socially inferior.

L.L.

Ellis, N. C. & Hennelly, R. A. (1980). A bilingual word-length effect: implications for intelligence testing and the relative ease of mental calculation in Welsh and English. *British Journal of Psychology, 71*, 43-51.

Experimental evidence using adult Welsh-English (Welsh-dominant) bilinguals showing that word length (in amount of time taken to read the words, rather than measured in number of syllables) varies across languages, and that this variable can have a measurable effect on tasks such as the digit span. In particular, Welsh numerals are longer than English, and because of this, even Welsh-dominant bilinguals perform better in English than in Welsh. Authors argue that "digit span norms cannot be compared across languages as an indicator of cultural intellectual differences" (50).

Feingold, G. A. (1924). Intelligence of the first generation of immigrant groups. *Journal of Educational Psychology*, 15, 65-82.

Purpose of the study: (1) to find out if mental differences among racial groups of the first generation are as great as those among the original immigrants (2) to determine the mental status of the Jewish youth. The interest in (1) above stems from the findings from Army test that the mental difference between native white and foreign born draftees was approximately 2 years; that mental difference between foreigners of over 20 years U.S. residence and those of less than 5 years was also about 2 yrs.

Author points out that Army test were not based on longitudinal data. Good research requires one to wait and test newer residents after they too have been in the U.S. for 20+ years (possible effect of Americanization, experience with U.S. culture, etc.)

Thus, this study is undertaken to control for unknown factors of foreign birth and foreign upbringing in order to be more accurate regarding the mental differences of racial groups by testing American born samples of various immigrants groups.

Subjects: High school students in Freshmen, Junior and Senior years were tested on a modified (by Feingold) form of the Army Alpha. The racial groups tested are listed below. The numbers given are the numbers tested. Note the wide range in the number of cases for each racial group at each grade.

	Fresh.	Jr.	Sr.
English and Scotch	76	17	19
Native born American	892	286	264
Germans	86	20	13
Jews	518	208	146
Danish and Swedish	114	28	30
French	35	(6)	(6)
Irish	278	44	53
Polish	90	11	11
Italian	206	29	16
Colored	58	15	9

Note: numbers in parentheses are too small and did not figure into the ranking.

Above ordering reflects average ranking found by Feingold. The ranking is very similar to results obtained by the Army. However, Feingold found that the differences between the various racial groups were insignificant. This shows the effectiveness of American schools acting as a melting pot. Note: there is only a 9 month mental difference between native American and lowest ranking white foreign ancestry children. This is compared to Army tests which showed a 2 year mental difference. The gap is almost bridged possibly as a result of the increased educational opportunity offered to these children. This would support the experiential environmental view, rather than heredity.

Feingold emphasizes that mental alertness, as measured by these tests, is not the sole component of general intelligence. Effort, application, exertion of the will are all involved. Thus, even if there are some differences in mental alertness, these can be made up for by "tenacity of will and constancy of purpose," "for while mental alertness or intelligence may be limited, there is no limit to the amount of effort a person may put forth in any undertaking(78)." In order to objectively measure effort, Feingold devised a scale of effort (scholarship divided by intelligence).

L.L.

Fitz-Gerald, J. (1921). The bilingual-biracial problem of our border states. *Hispania*, 4, 175-186.

Policy of one language is part of our patriotic ideal. So what can we do about the problem of Spanish-speaking children of the border states? Examples from other countries that deal with language minorities.

Fitz-Gerald sees some "inherent dangers" to programs that do not promote linguistic assimilation. He cites other examples from the British Empire (Quebec and India) where, because linguistic and racial assimilation have not taken place, there is not absolute homogeneity of national sentiment. Instead, he examines the French practice. French, Breton, Provençal and Basque all spoken in various regions of France. All instruction, at all grade levels, in all districts of France is in French. Where French is not the home language, the teachers must be able to speak it to provide supplemental remarks in that language. Result: "There was no lack of homogeneity of ideals in the entire nation, during all the storm and stress of the World War."(183). Spain, which also has four languages, has a similar policy. But there are not enough government schools, so many local schools are conducted in the language of the province. These are "precisely the districts in which one finds the most ample evidence of a lack of national solidarity."(184).

Fitz-Gerald recommended, and it was accepted by the New Mexico Legislature, that all teaching be done in English, but that teachers in Spanish-speaking districts be able to speak both languages.

L.L.

Fritz, R. A. & Rankin, N. R. (1934). The English handicap of junior high-school pupils from foreign speaking homes, and remedial suggestions. *Journal of Educational Research*, 27, 412-421.

201 Grades 7-9 children in Arma, Kansas classified as only English speaking, English-foreign speaking, or usually foreign speaking. Compared only the two extreme groups, 97 in only English, and 34 in Usually foreign (what happened to the middle 70? Probably messy data!). Administered Stanford Achievement Test, Otis self-administering Test of Mental Ability, and Sim's Socio-Economic Score Card. On both English and non-English items in the Achievement test, foreign children did worse than English-only. This was seriously confounded with SES, however. Some matched comparisons are made, but ambiguous.

Fukuda, T. (1925). A survey of intelligence and environment of school children. *American Journal of Psychology*, 36, 124-139.

Study to look at intelligence norms and their relation to nationality, school training and environment because these factors are regarded as having direct bearing on intelligence of children. Subjects were 257 of 265 students at a school in Evanston, Ill. Grades 1-8, age range 5-17. Of particular interest was a comparison of English-speaking (n=109) with non-English speaking (n=148) children and a comparison of white US English-speaking children with other English speakers.

Tests

1. Terman Revised Binet-Simon Individual Test: This test was further revised by the author to substitute non-language tests for vocabulary tests where possible and to group administer all portions of the test;

2. Whittier Scales for Grading Home and Neighborhood Conditions Scales were modified by author because the original weighted home and neighborhood as equally influential on child and because they failed to assess the influence of friends and relatives and "life and manner of the child's habit and character." These scales, particularly as modified, involve completely subjective ratings and are extremely value-laden with emphasis on specific cultural experiences and ways of child-rearing. For example, factors such as speaking a language other than English at home, or frequently going to movies resulted in low ratings of home and neighborhood.

Results: Correlation between teachers estimate of intelligence and IQ scores was .55

Average IQ

- 97 for white English-speaking Americans
- 95 for all English-speaking children
- 91 for non-English speakers

No information on the significance of these differences. Author did say that more high IQ's among English-speaking, than non-English speaking children. Correlation between IQ and environment score was .53. The environment score could range from 10-50.

Average

- 33 for white English-speaking Americans
- 32 for all English-speakers
- 30 for non-English speakers

No information on the significance of these differences. Relation between IQ and parents occupation: high IQ if parent in business or office work; low IQ if parent an unskilled laborer. More favored occupations taken by English-speakers, especially white Americans; less favored occupations left for non-English speakers.

Conclusion

"From these facts we may conclude that there exists a rather close relationship between intelligence, nationality and environment. High IQ, high environment score, and brain work go with the people of the English Speaking class, and the reverse is true with those of the Non-English Speaking class." (138).

L.L.

Genesee, F. (1981). A comparison of early and late second language learning. *Canadian Journal of Behavioral Science*, 13, 115-128.

Comparison of 3 types of French immersion programs:

1. total immersion—(early): complete French instruction in K-2. Follow-up with % of coursework in French, % in English (by subject); (late): K-6 FSL (20-30 minutes daily);
2. one-year late immersion—at grade 7 all courses except English language arts in French;
3. two-year late immersion—grades 7 and 8, all courses except English language arts in French;

Note: by grade 9 all students in above programs receiving 40% instruction in French as part of a follow-up program.

4. English-controls—only exposure to French in FSL classes;
5. French-controls—native speakers attending all-French schools.

Approximately same amount of out-of-school exposure to French for English-speaking sample. Canadian Lorge-Thorndike Test of Intelligence given to English-speaking sample showed average to above average students. Schools in middle-class neighborhoods. Children in grades 7, 8 and 9 were tested.

Tests: French language arts skills (appropriate to grade level); reading (cloze for 7 & 8; multiple choice for 9); dictation; writing composition (8 & 9 only); listening comprehension (tape recorded with MC questions); speaking (sub-sample of each group interviewed by blind native French-speaking interviewers; rated on comprehension, pronunciation, grammar, vocabulary, communicativeness).

ANOVA using language program as basis of classification Newman-Keuls for follow-up when significance obtained.

General results: Testing at grade 7 showed early immersion significantly better on all tests than one-year late immersion (note: two-year late immersion not tested at grade 7 because assumed to be similar to one-year immersion); testing at grade 8 showed early immersion and two-year late immersion significantly better on most tests than one-year late immersion; testing at grade 9 showed early and two-year late immersion better on only a couple tests than one-year late immersion. Note: differences between the three immersion programs are narrowing.

In general,

- English-controls scored significantly lower than all other groups at all grade levels;
- early and two-year late immersion scored at same level on most tests.

Compared to French controls, early and two-year late immersion: average range for French language arts skills, reading and dictation; for listening comprehension—varied performance; consistently lower on oral production.

One-year late immersion group showed consistently poorer performance at all grade levels.

Discussion: immersion programs more effective than traditional second language programs; comparable performance between early and two-year late immersion programs attests to robustness of early acquired L2 competence (author suggests that other programs with greater French follow-up would show early immersion to be superior in French than two-year late immersion); less cumulative exposure to French at time of testing on part of two-year late immersion, as compared to early immersion, students suggests that faster learning occurs at older ages; when designing bilingual education programs, if there is a high probability of extra-curricular use of L2, then immersion programs should begin early so L2 can be used in natural settings.

L.L.

Giardini, G. & Root, W.T. (1923). A comparison of the Detroit First Grade Tests given in Italian and English. *Psychology Clinic*, 15, 101-108.

Purpose of investigation:

- effect of foreign home language on intelligence
- are Italian children less intelligent than Americans or is low rating due to difficulty of learning 2 languages at same time?

340 first grade children in Pittsburg were given the Detroit First Grade Tests, Form A (subtests include information, similarities, memories, absurdities, comparisons, relationships, symmetries, designs, counting, directions). There were four groups in each of two classes, making a total of 8 groups.

home language test language

group W	Italian	English	
group X	Italian	Italian	
group Y	Italian	Italian, then English	item by item
group Z	English	English	

(group Z was about half second-generation Italians)

The authors looked at the following, but did not perform any tests of significance.

- average percent of individual tests passed for each group
- total group average
- rank ordering of test difficulty for each group

—median IQ for each group (an arbitrary method was used for converting test scores to IQ scores; this was done to control for age as many of the children had repeated the first grade) From the above they drew the following conclusions

- inconclusive evidence; cannot support or refute language difficulty as a factor in intelligence testing
- slightly lower scores obtained when tests given in both languages; appears to confuse rather than help because meaning does not translate equally, probably because of different contexts of use
- comparison of the IQ distribution of group Z shows even distribution for both second-generation Italians and Americans; at least second-generation Italians are no less intelligent than Americans
- factors other than language probably play a role in test performance—general cultural adaptation.

L.L.

Goddard, H. H. (1913). The Binet tests in relation to immigration. *Journal of Psycho-Asthenics*, 18, 105-110.

Conference paper in which he reports on his visit to Ellis Island equipped with the Binet scale in search of “defectives.” Tests were administered through translators. “I am sure it would be a good plan to take the names and addresses of these people about whom there is any doubt, and try to look them up a year or two later. Every one who makes good and becomes a useful citizen, will discredit our test; but every one who becomes a public charge, will confirm our diagnosis” (106). Referenced in Gould; quotes: “The interpreter said, ‘I could not have done that when I came to this country,’ and seemed to think the test unfair. We convinced him that the boy was defective” (105).

Goddard, H. H. (1917). Mental tests and the immigrant. *Journal of Delinquency*, 2, 243-277.

Report of study of various immigrant groups in Ellis Island. Particularly interesting is the study of the Jews, since he claims to have gotten over the difficulty of language by using a tester who knew Hebrew. Yet they still performed miserably. Out of 30 adults in the Jewish group, 25 were feeble-minded (247). A detailed table on p. 246 shows the original data, which is worthy of close inspection, especially the comments.

Does some individual item analysis of the test, showing that some of the items are correctly answered by over 75% of the testees. After some finagling, and “generosity”, he still comes up with an assessment that 40% are feeble-minded.

Goddard expresses surprise that many of the immigrants could not provide the date, which is one of the test items: “What shall we say of his ignorance of the date? This does not mean the *exact* date, since a leeway of a few days is always allowed. Must we again conclude that the European peasant of the type that immigrates to America pays no attention to the passage of time? That the drudgery of life is so severe that he cares not whether it is January or July, whether it is 1912 or 1906? Is it possible that the person may be of considerable intelligence and yet, because of the peculiarity of his environment, not have acquired this ordinary bit of knowledge . . . ? If so what an environment it must have been!” (250).

Another: “What shall we say of the fact that only 45 per cent can give sixty words in three minutes, when normal children of eleven years sometimes give 200 words in that time! It is hard to find an explanation except lack of intelligence or lack of vocabulary and such a lack of vocabulary in an adult would probably mean lack of intelligence. How could a person live even fifteen years in any environment without learning hundreds of names of which he could certainly think of 60 in three minutes?” (251).

Notes that physicians at Ellis Island showed preference for “performance tests as against those involving language”. However, Goddard dismisses these performance tests as being just as contradictory among themselves as they contradict language tests (260).

Fascinating account (261-266) of attempts to follow up on the individuals two years later. They succeed in finding only two, and three cases heard from, but what is more interesting is the style of the narrative giving away the attitude of Goddard.

Notes that the finding that over half of the immigrants are feeble-minded may appear absurd, "but we know that it is never wise to discard a scientific result because of apparent absurdity. Many a scientific discovery has seemed at first glance absurd" (266). One explanation he provides is the familiar one of old versus new immigrants. "It is admitted on all sides that we are getting now the poorest of each race. This makes them a highly selected group at the start" (266).

Appeals to Salmon (*Immigration and the mixture of races in relation to the mental health of the nation*, In White & Jelliffe, *Modern Treatment of Nervous and Mental Diseases*, Phila. 1913, Chap. VI, Vol. I, pp. 241-286) for distinction between old and new immigration and consequences.

Asks the profound question, "May it be that possibly the moron has his place?" (269)

Asks nature-nurture question, ending up favoring environment (270), which is somewhat surprising. "It need only be suggested here that what we urge for our own native morons will accomplish the same results with the moron children of the moron immigrants" (271).

In conclusion, cites "untiring efforts" of physicians (references Williams, chief medical officer at Ellis) resulting, "beginning at about the time of our experiment, the number of aliens deported because of feeble-mindedness increased approximately 350 per cent in 1913 and 570 per cent in 1914 over what it had been in each of the five preceding years" (271).

"All of this means that if the American public wishes feeble-minded aliens excluded, it must demand that Congress provide the necessary facilities at the ports of entry" (271).

Goodenough, F. (1940). New evidence on environmental influence on intelligence. *The Thirty-Ninth Yearbook of the National Society for the Study of Education. Intelligence: its nature and nurture. Part I: Comparative and Critical Exposition*. Bloomington, Illinois: Public School Publishing Company, 307-384.

Best illustration of the selective migration argument found on pp. 328-9. Discusses a study (by M. Sherman & T. R. Henry, *Hollow Folk*. New York: Thomas Crowell & Co., 1933) of Colvin Hollow, a backward mountain community which apparently is not very far from civilization, "within three miles is a large mountain summer resort". "Under these conditions one has a right to suspect that the cultural and educational backwardness so vividly described is a result, rather than a cause, of mental backwardness of the people" (328). Then came inbreeding, "marriage of relatives from first cousins to distant relatives is common. This has led Colvin Hollow to the practical loss of the family name. Almost everyone is named Colvin" (329).

Goodenough: "Given two centuries of social anemia, during which time all the ablest members of the group have been continuously drained away, leaving only the intellectual and volitional weaklings to interbreed and reproduce their kind, need we seek further for an explanation of the state of educational backwardness and intellectual degeneracy found? Lack of schooling? But our pioneering ancestors did not find schools ready built in the wilderness. They made schools, and it did not require two centuries of residence for them to do so. Accordingly, I find it hard to accept the idea that the low IQ's of the mountain children are to be explained solely on the basis of educational deprivation. One is forced to ask: Why were they so deprived?" (329).

Goodenough, F. (1926). Racial differences in the intelligence of school children. *Journal of Experimental Psychology*, 9, 388-397.

One of the most thoroughly racist papers I have read, though allowing for the possibility of selective immigration, argues against environmental factors, that "it seems probable, upon the whole, that inferior environment is an effect at least as much as it is a cause of inferior ability, as the latter is indicated by intelligence tests" (391). The purpose of the paper is to rebut the problem presented by language handicap: "the question of a possible handicap in language as a cause of low scores on intelligence tests is, however, more serious" (391).

Admits that nonverbal tests do show foreign children to be less inferior than verbal tests. "On the other hand, the use of a non-language scale does not result in equal ratings for the various nationality groups. The Italian continues to rank low even on the non-verbal tests; while the average Japanese child who has had three or four years' training in American schools makes a good showing, despite the handicap of language, on such a test as the Stanford-Binet" (391).

Presents a re-analysis of Jordan's data, where she calculates "the ratio of the number of parents who have been in this country twenty years or longer and still use the foreign language in the home to the total who have either been in this country twenty or more years or have adopted English as the home language" (quite meaningless). Nevertheless, she finds a strong negative relationship between amount of foreign language in the home and the median IQ of these groups. "This might be considered evidence that the use of a foreign language in the home is one of the chief factors in producing mental retardation as measured by intelligence tests. A more probable explanation is that those nationality-groups whose average intellectual ability is inferior do not readily learn the new language" (393). No data to go either way.

Goodenough's study: 2,457 children "practically all of whom were American-born but in whose immediate ancestry a number of racial stocks are represented," using Goodenough's drawings of people test. Table 2 (394) shows the following rank order, based on the median: Jewish, Danish/Swedish/Norwegian, Chinese, American, Japanese, English/Scotch, Germans, Assyrian/Slavonian/Serbian, Portuguese, French/Swiss, Armenian, Italian, Spanish-Mexican, Hoopa Valley Indians, California Negroes, Southern Negroes. Good to use some time in a caricature of such research.

Only control for SES: "In order to be absolutely fair to the foreign groups, it was decided not to include any schools from superior residential districts in these distributions" (395).

Conclusions: "these differences cannot be explained on the basis of a linguistic handicap," and "the rank-orders of the various racial groups correspond very closely to the results of other investigators using verbal tests" (395).

Goodenough, F. L. (1946). The measurement of mental growth in childhood. In L. Carmichael (Ed.), *Manual of child psychology*. First Edition. New York: Wiley & Sons.

Good history of mental testing. Points to J. McK. Cattell as the father of the movement to test for individual differences in this country. Cattell worked for a time in Wundt's laboratory, where his "attention had been captured by the idea that the study of differences among individuals in their responses to the same stimuli might be of even greater psychological importance than the study of the typical effect upon people in general of a measured physical change in the stimulus itself" (450). Article in *Mind* in 1890 is historically the first.

Documents burst of interest in testing in America: a bibliography by Hildreth is cited (1939) which is 251 pages long, with over 4000 titles. A bibliography of bibliographies takes a full six pages!

Attributes great interest in this topic to several reasons:

1. opportune appearance at a time when compulsory attendance in school was becoming law in many states, and children who otherwise would not have attended school were not entering. Cites Ayres's *Laggards in our schools* (1909) as influential in arousing public sentiment about school retardation.
2. scientific interest in juvenile delinquency also became active.
3. rapid increase of organized agencies for social welfare, who saw mental tests as improving the efficiency of their work.

4. World War I, when "the possibility of testing large groups of individuals at one time was clearly demonstrated" (453).

5. rise of the "mental hygiene" movement.

Graham, V. T. (1926). The intelligence of Chinese children in San Francisco. *Journal of Comparative Psychology*, 6, 43-71.

Subjects: 73 12-year-olds from an exclusively Chinese public school in San Francisco, one-fifth of whom were born in China.

Measures: Lots, including Cornell series, Kohs Block-Design Test, NIT, Stanford-Binet.

Results: In all but the Cornell subtests for visual memory, Chinese children fall below American norms. A truly amazing comparison is made, where the American and Chinese children are equated on reading level, then compared on performance in an opposites test, and Americans are still superior. "Thus we see that, irrespective of ability to read and understand English in such manner as is required by the Thorndike-McCall reading test, the Americans manifest a superiority to the Chinese; that something more than this type of reading ability must be called upon to explain the difference in intelligence scores; that were they equal in respect to reading the American would still possess ability that goes beyond that of the Chinese, the explanation of which must be sought elsewhere"(63). Yes, that something else is called regression to the mean.

Conclusions: "If we said that the Chinese were not sufficiently intelligent to learn English well enough to pass a good intelligence test, after twelve years of American life and education, it would sound epigrammatic but would be a legitimate statement of the case. The great majority of our subjects are American born; all have had considerable American schooling. Yet the fact remains that at present they pass rather inferior mental tests and give evidence of the existence of language insufficiencies; and in consideration of the close inter-relationship existing between language and intelligence, it is fair to say that these same language limitations are a result of, or at least are concomitant with, mental limitations."(69)

Author relates the difference to "social efficiency," in which "the Chinese appear to fall below the American norms, just as their intelligence scores are seen to fall below the American mental norms" (70). She concedes, surprisingly, that intelligence may be a relative concept, "a pragmatic and provincial rather than an absolute or international one"(70). However, she isn't quite ready to give up the idea of American supremacy, for she concludes the article as follows: "Finally, we may well wonder what would be the results of analogous tests made upon Americans in China. If the Chinese intelligence measures were so constructed as to measure fitness for and to predict success in the eyes of the Chinese in China, is it safe to say that American tradesmen and laborers in Canton would make a much higher score than the Chinese in America?" (70).

Green, J. (1941). An experiment in English. *Harpers Magazine*, 183, 397-405.

Personal thoughts on plight of foreign authors having to write in English. (They had to leave their homeland because of war.) Literary. Speculation on the relation between language and thought. Difficulty of expressing oneself in another language—not simple translation. Almost a different way of thinking in the two languages. Personal account of becoming bilingual.

L.L.

Haight, B. F. (1931). The language difficulty of Spanish-Americans. *Journal of Applied Psychology*, 15, 92-95.

Elegant, three and a half-page example of research arguing that foreign children are not suffering from a language handicap when tested for intelligence. Wishes to rub out the "inclination to assume that this

[lower intelligence test scores of Hispanics] does not mean an inferiority but a language difficulty encountered in taking the tests" (92).

Usual IQ tests given to Spanish-speaking children in Grades 1 to 12, and finds "no evidence that intelligence quotients increase with age and school attendance" (94), so "there seems to be no justification for assigning the difficulty to inability to use or understand English" (95).

Haven, S.E. (1931). The relative effort of children of native vs. foreign born parents. *Journal of Educational Psychology*, 22, 523-535.

Problem: "to determine by objective means the relative effort of children of native vs. foreign born parents."(523).

$$\text{Accomplishment Quotient} = \frac{\text{Educational Quotient}}{\text{Intelligence Quotient}}$$

AC assesses concentration, effort, interest (factors other than intelligence that contributes to academic success); EC is educational attainment; actual rate of progress; IQ is native ability; potential rate of progress.

Subjects: American-born children (Grades 4-8) in mining communities of Ohio; majority heard a foreign language at home. There were 2 groups: foreign children of foreign born parents (n=125); native children of American born parents (n=274). Subjects came from 4 schools and were of similar SES. Two of the schools had native and foreign students and 2 only native students. This was to determine whether the presence of foreigners made a difference for natives. Note: Haven recognizes that the native group may be selected and not representative of the over-all native population. He refers to Goodenough in saying "a person of low intelligence tends to gravitate to those neighborhoods where the economic requirements are minimal." The economic situation of the area is generally good, although a severe depression has hit due to a year long strike in progress.

There were 2 parts to the study: (1) Otis Classification Forms A and B were given which includes educational and mental ability tests. It was given twice to check achievement of the two groups during the same amount of time. (2) sentence completion and auditory memory tests were given. The children were told that similar test would be given in 2 weeks and the names of the stories that would be covered were written on the board. The test was given again, looking for improvement due to effort (preparation).

Results: children of foreign born parents have higher IQ scores; slightly higher, possibly nonsignificant, IQ scores for native children; both groups were handicapped in use of language; presence of foreigners in school had no adverse effect on academic progress of native children; foreigners were superior to natives in effort, which Haven speculates is because they must overcome obstacles in making new adjustments, accounting for the "thrift and rapid economic rise of the foreigner."

L.L.

Hill, H. (1936). The effect of bilingualism on the measured intelligence of elementary school children of Italian parentage. *Journal of Experimental Education*, 5, 75-78.

Abstract of author's thesis. Compared Italian children who use Italian at home with Italian children who use English on a variety of verbal and nonverbal tests. Unfortunately, the groups were matched on too many characteristics, including IQ, and the dependent measure was other measures of IQ. Not surprisingly, no differences were found between the two groups.

Hill, H. (1936). Correlation between I.Q.'s of bilinguals at different ages on different intelligence tests. *School and Society*, 44, 89-90.

Part of doctoral thesis at Rutgers. 40 Italian children, tested once when 6-7 years old, then again in their fifth year in school on different IQ measures. High correlations between the measures even across time, suggesting stability.

Reports that he administered a test of Italian word-meaning, "designed to measure comprehension of the Italian dialect spoken in the community" (90). These scores correlated moderately with the Otis Test (.31), concluding that "a combination of factors, and not the foreign-language-speaking factor alone, may account for the low IQ's of many bilingual children" (90).

Holland, W.R. (1960). Language barrier as an educational problem of Spanish-speaking children. *Exceptional Children*, 42-50.

Is a language barrier the cause of the educational problems of many Spanish-speaking children?

Subjects: 36 Spanish-speaking children in the public school system of Tucson. They had all been recommended for testing because of educational problems and therefore are not representative of the Spanish-speaking population in general.

Procedure: The WISC was administered bilingually, i.e., instructions were given in English and if not understood or only partially understood were repeated in Spanish. Scores: English Verbal IQ represented child's present level of functioning in English, determined by the number of correct answers given in English to English questions; bilingual Verbal IQ represented future potential for verbal skills once knowledge of English is approximately equal to knowledge of Spanish, determined by number correct when instruction was supplemented by Spanish; performance IQ represented approximate intellectual potential under optimal conditions. Language Barrier = Bilingual Verbal IQ—English Verbal IQ.

Results: A direct relationship between amount of Language Barrier and difficulty with academic progress was found. Over 40% had serious (4-6 IQ point difference) or very serious (7+ IQ point difference) language barriers "which must be considered as fundamental in their educational difficulties." Language difficulties diminished with each successive year of schooling. Both English Verbal IQ and Bilingual Verbal IQ scores significantly lower than Performance IQ. This suggests that they are not functioning at potential. Holland says this is probably because with Spanish used at home and English at school, a concept learned at school must be expressed in English, but for affective expression Spanish must be used. "Their typical speech patterns are most often a complex mixture of both languages, and seldom exclusively one or the other. These children then cannot really be thought of as fully bilingual, but rather as sub-standard or partial speakers of two languages." (48).

Other language problems: interference of phonemic systems; mistakes in grammar and sentence structure; "Due to their lack of necessary language symbols, Spanish-speaking children may find it somewhat more difficult to deal in abstract concepts than do comparable monolingual youngsters." (49).

L.L.

Hollingworth, L. S., Terman, L. M. & Oden, M. (1940). The significance of deviates. *The Thirty-Ninth Yearbook of the National Society for the Study of Education. Intelligence: its nature and nurture. Part 1: Comparative and Critical Exposition*. Bloomington, Illinois: Public School Publishing Company, 43-89.

Classic hereditarian argument against Klineberg's study of Southern and Northern Blacks: selective migration (47). Also, use of data on Japanese to argue against language handicap: "If bilingualism, differences in economic ways and means, and other such environmental conditions are adequate to explain why some of our ethnic groups contribute so much more heavily than others to inferior deviation, then it is hard to say why groups like the Japanese do not contributed more than their 'quota'. . . . If

different environments cause the differences found between ethnic groups, why are not the Japanese of the second generation handicapped in comparison with the generality of Americans as much as second-generation Sicilians or Negroes are?" (47).

Johnson, G.B. (1953). Bilingualism as measured by a reaction-time technique and the relationship between a language and a non-language intelligence quotient. *The Journal of Genetic Psychology*, 82, 3-9.

Objective tests of intelligence are often not valid for speakers of other languages because they do not have a firm hold on the cultural nuances contained in the tests. Culture is represented by language, thus without a strong command of the language, one would not perform well on these types of intelligence tests. Purpose of this study to compare language and non-language tests of intelligence and how the degree of bilingualism relates to these two kinds of tests.

Subjects: 30 Spanish boys in southwest US ranging in age from 9-12 were tested. All boys had a knowledge of the Spanish language, but used English in school.

Tests: (1) Otis Self-Administering Test of Mental Ability (language intelligence quotient); (2) Goodenough Draw a Man Test (non-language intelligence quotient); (3) Hoffman Test of Bilingualism (assesses bilingual background); (4) Reaction-Time Test of Bilingualism (ratio of number of Spanish words recalled in 5 minutes to number of English words recalled in 5 minutes) The 2 parts of this test were given 2 weeks apart, and were administered by an Anglo experimenter for the English section and a Spanish experimenter for the Spanish section.

Results: Goodenough IQ about average for the total population; Otis IQ significantly lower and below average. Subjects were English-dominant, responding with an average of 7 English words to every 5 Spanish words. The two bilingual tests (Hoffman and Reaction-Time) appear to measure common factors because their relationships to the intelligence tests are in the same direction (although there was an insignificant correlation between the two tests of bilingualism). A negative relationship was found between the Otis and the tests of bilingualism (less knowledge of Spanish in relation to English yielded higher Otis scores). Opposite result with the Goodenough. More balanced bilingualism associated with superior performance. Non-significant relation between the two measures of intelligence appear to be testing separate factors. Discrepancy between Otis and Goodenough is least the greater the knowledge of English in comparison to Spanish. (significant correlation between Goodenough-Otis discrepancy and Reaction-Time Test of Bilingualism)

Conclusion: complex problems in measuring intelligence of bilinguals. Possibly both linguistic (Otis) and performance (Goodenough).

L.L.

Jones, A.M. (1928). A vocabulary study of children in a foreign industrial community. *Psychological Clinic*, 17, 13-21.

Author is a clinical psychologist to whom large numbers of foreign children are referred. How valid is it to assign mental age scores based on tests involving language? 552 public school children in Aliquippa, Pa., a foreign industrial community, were tested individually on the Stanford Revision Binet Tests with vocabulary list I, an oral test. Children ranged from 8 to 16, in grades 1 to 8. Approximately 90% of these children are of foreign parentage.

Results

—very wide range and extremely low medians at each grade and age level

—only 14.6% attained the expected score for their age or better (of the small American group, 53.5% attained the expected norm)

—42% of the entire school had a vocabulary score of less than 8 years of age (no children under 8 and only 17% under 9)

Discussion

Test results rigidly interpreted would result in many diagnoses of Borderline or Moron for children who are not dull when compared to their own linguistic group; thus there is a need to establish norms for each foreign-language group if language tests continue to be used for labeling of intelligence. Through her work with the schools, the author feels that this is a normal group of children for an industrial town with a largely foreign population. The children progress satisfactorily in school. Using a vocabulary test as a test of intelligence fore-dooms many foreign children to a low mental age score.

L.L.

Jordan, R. H. (1921). The retention of foreign language in the home. *Journal of Educational Research*, 3, 35-42.

Strongly advocates the equation of Americanization with the use of English at home. Presents statistics and some individual cases showing that various nationalities in the Minneapolis area continue to maintain their home language: "two Swedes, one German, one Finn, and one Russian have lived in this country fifty years and still speak the foreign language in the home circle!" (39). Generally, "only from 20 to 25 percent of our immigrants have adopted English as the home language and more than one-half have not come to use English at home after living here for ten years or longer" (41). Advocates English all the way, "the final proof of his complete assimilation as an American" (42).

Kelley, V. H. (1935). The reading abilities of Spanish and English speaking pupils. *Journal of Educational Research*, 29, 209-211.

Uninteresting study, but interesting first paragraph, where it is clear that the author believes the problem to rest in bilingualism: "Bilingualism and its effects upon the reading aspects of language is a problem of vital significance Large groups of the population are bilingual, a circumstance which language teachers have oftentimes been eager to encourage" (209).

Northern Arizona, 692 children from Grade 4 to 8, of which 303 were from Spanish-speaking homes. No criteria for selection of subjects. Iowa Elementary Test in reading. Spanish speakers fall below norms; subtest analysis shows that the deficit is across-the-board.

Livesay, T. M. (1936). Racial comparisons in performance on the American Council Psychological Examination. *Journal of Educational Psychology*, 27, 631-634.

A prototypical cross-racial study (Hawaii, including Chinese, Japanese, Caucasian and part-Hawaiian); no interpretation, simple "stick-to-the-facts."

Loevinger, J. (1940). Intelligence as related to socio-economic factors. *The Thirty-Ninth Yearbook of the National Society for the Study of Education. Intelligence: its nature and nurture. Part 1: Comparative and Critical Exposition*. Bloomington, Illinois: Public School Publishing Company, 159-210.

Brief discussion of bilingualism and race and SES (193 ff.), concluding that "the low IQ of many bilinguals may be due to a combination of factors rather than language handicap alone" (196).

Macnamara, J. (1970). Bilingualism and thought. In J. Alatis (Ed.), *Bilingualism and language contact*. Washington, D. C.: Georgetown University Press, 1970.

Discussion of the Sapir-Whorf hypothesis, the compound-coordinate distinction, and bilingualism and intelligence. Argues that the belief in the compound-coordinate distinction and in the influence of bilingualism on thought is based on the belief in Sapir-Whorf. Rejects it, and argues for the need for a theory of semantics which he claims will straighten out the issues.

Nice quote: "From their earliest beginnings intelligence tests have been designed to reveal individual differences in intelligence; they have never been designed for the purpose of revealing the essentials of intelligence. No analysis of IQs, then, however sophisticated or however comprehensive, could ever reveal what intelligence is; so it is little wonder that psychometric discussions on the topic have been barren." (33).

Manuel, H. T. & Wright, C. E. (1929). The language difficulty of Mexican children. *Journal of Genetic Psychology*, 36, 458-466.

Quotes Otis: "The Otis Classification Test, like all so-called verbal tests, requires familiarity with the printed English language. Pupils from homes where a foreign language is spoken cannot be considered as properly tested by this test. This simply means that some allowance must be made for such a pupil's score being lower than otherwise on account of what is generally termed 'language difficulty.' How much allowance to make is not known"(458-9 in M&W).

Authors raise "two interesting questions: (1) should we carry on instruction in Spanish in the early grades; and (2) should we start instruction in oral English much earlier than we do—say in compulsory part-time primary schools, as early as four years of age?" (461).

Measure: Paragraph Meaning of the Stanford Achievement Reading Examination. Relatively carefully translated into Spanish.

Subjects: High School and College in Austin, Texas. Only high schoolers are of interest for us because the college students with two exceptions were Anglos. 669 high school students, of whom 166 "spoke the Spanish language as their native tongue." It is unclear whether the high school Anglos were enrolled in Spanish classes, but one must assume that they were. It's also unclear what sort of instruction the Mexican students were receiving in Spanish reading.

Results plotted in accompanying Figure. Actually remarkable how well the Mexican students do in Spanish, suggesting ready transfer of skills.

Authors' conclusions are well qualified in the form: the test in Spanish is either comparable or not comparable to the English test score. If they are comparable, "the Mexican students as a group have less reading ability in any language than the English-speaking students," and that "the Mexican students as a group read as well in English as in Spanish, or perhaps better" (466). This is the more often quoted conclusion. However, if they are not comparable, "the experiment has failed to produce a Spanish translation of a difficulty equivalent to that of the English edition" (466).

Mead, M. (1927). Group intelligence tests and linguistic disability among Italian children. *School and Society*, 25, 465-468.

Otis Group Intelligence Scale administered to 6-10th Graders in Hammonton, NJ, Italians. Compared 276 Italian children with 160 American children. She finds steadily increasing mean with the amount of English spoken at home, in addition to a steadily increasing score as the length of time since immigration increases (both on 467). Overall, Italians did much poorer than Americans, although occupational levels are also different. Conclusion: "Classification of foreign children in schools where they have to compete with American children, on the basis of group intelligence test findings alone, is not a just evaluation of the child's innate capacity" (468).

Miller, J. H. (1930). Foreign born parentage and social maladjustment. *Psychological Clinic*, 19, 19-25.

Written from the viewpoint of a "psychologist who comes in daily contact with the maladjusted school child of foreign born parentage," in particular delinquency, and that "the most important of these [factors] . . . is the lack of knowledge of the English language in the home" (19).

Discusses problem at school: the child feels inferior as he enters school, and at the same time feels that special allowances should be granted him because of his language handicap. The child will find difficulty making friends. "He feels different from the group . . . , and consequently does not mind increasing this difference by unconformed behavior" (20). Furthermore, as the child learns English, a second difficulty crops up: the child feels superior to his parents, and has no respect to authority, and "will naturally later sneer at other kinds of authority and try to outwit other laws and rules" (21).

Offers case study of Catherine, a girl of Russian parentage referred to him for sex delinquency, who scored 97 in the Simon-Binet test, yet 20 years or over on a nonverbal test, indicating "language handicap." "She wears much cheap jewelry and makes an effort to appear sophisticated" (22).

There is nothing in the discussion indicating that her delinquency was in any way related to her foreign parentage. Guilt by contiguity.

Another case, David, who was referred to for stealing. One of the causes of the behavior, aside from feeling of inferiority based on the foreign origins and customs of the parents, is "lack of free time for recreation due to Hebrew school after public school hours" (24).

SOLUTION TO DELINQUENCY: 1. "Gives these children better informed parents" by restricting immigration to a number such that they can all be educated and assimilated. 2. Educate the community, to make the foreign born parents feel more welcomed. 3. Keep an eye out from early on. 4. "Restrict the number of hours spent by children in national schools after public school hours. The added strain has often been found to cause difficulties." (25).

Mitchell, A. J. (1937). The effect of bilingualism in the measurement of intelligence. *Elementary School Journal*, 38, 29-37.

Study reflecting the testing of bilingual children in the best-intentioned tradition, namely, how much the children are handicapped by being tested in English. Translated the Otis Classification Test into Spanish, and administered English and Spanish versions to 236 Grade 1-3 Mexican Americans in Nogales, Arizona. Well balanced design with respect to order of presentation. Found IQ's considerably higher in Spanish than in English, the mean difference for the groups being over half to one standard deviation. Correlation between English and Spanish is .61 for Gr. 1, .81 for Gr. 2, .71 for Gr. 3, as compared to .97 reported by the publisher for two English forms.

Remarkable, given studies of those days, that no attention is paid to the fact that their mean IQ even in Spanish is 2 to 5 points below 100. Well intentioned. However, faith in IQ tests is definitely persistent, as the recommendation based on this research is that "thousands of cases" be tested in the future for each grade, and a "correction figure" be estimated accurately so that scores could be adjusted from English testing. But for what purpose, one wonders.

Murdoch, K., Maddow, D. & Berg, N. (1928). A study of the relation between intelligence and the acquisition of English. *The Twenty-Seventh Yearbook of the National Society for the Study of Education. Nature and Nurture, Part I, Their Influence upon Intelligence*. Bloomington, Illinois: Public School Publishing Company, 343-353.

Jewish girls (N=149) all from Grade 7 (ages between 10 and 16), New York City.

Verbal, nonverbal tests, and measures of degree of English at home. Verbal: Otis Intelligence Scale, Thorndike Word Knowledge; non-verbal: International Test (?), which apparently requires "ability to generalize, analyze and understand analogies" (345). Instructions given in English and Yiddish. Proportion of English measured in two ways, correlating .57 with each other.

Results show positive correlation between the International and the verbal tests, on the order of .60. *Both the Otis and the International correlate around .15 with measures of English at home, suggesting to the authors that there is no language handicap.* "To summarize, all the evidence tends to establish that

a large amount of English spoken at home is not any more connected with high scores on a verbal intelligence test, than it is with high scores on an intelligence test like the International which obviates all necessity of understanding English. In other words, in the group studied, the Otis Test, representing the standard verbal intelligence test, would seem to be as fair a measure of mental ability as a similar test which does not involve knowledge of English." (351).

Interesting use of correlational argument. They are not concerned with the group means on the test, which in fact are reported on the tables but no norms are available to check what they mean. Certainly to conclude that "standard verbal tests when applied to Jewish children of foreign-born parentage who have reached Grade VIIA in school are valid measures of intelligence" (352) is a bit stretched.

Olmedo, E. L. (1981). Testing linguistic minorities. *American Psychologist*, 36, 1078-1085.

Not a terribly impressive article, but important because it appeared in a special issue on testing, so can be considered to be "APA-approved" (also the fact that author lists his affiliation as APA). Gives some historical perspective on bilingualism and intelligence; mentions importance of cultural pluralism of the 1960's. Good synopsis of 2 court cases: *Diana vs Board of Education*, and *Lau vs Nichols* (1081). Some interesting references.

Pearson, K. & Moul, M. (1925). The problem of alien immigration into Great Britain, illustrated by an examination of Russian and Polish Jewish children. *Annals of Eugenics*, 1, 5-127.

The first article in the new journal, edited by Pearson. It was referred to, and data compared with, an article by Davies & Hughes. Discusses at length how to restrict immigration, whether the "average" person should be admitted, or only the superior. Claims that English Jews are well selected, but expresses concern about the Russian and Polish Jews, since in their case, "there has been more or less continuous oppression, nay a veritable selection going on for a much longer period. Such a treatment does not necessarily leave the best elements of a race surviving. It is likely indeed to weed out the mentally and physically fitter individuals, who alone may have had the courage to resist their oppressors" (8).

Data based on about 600 cases of boys and girls; intelligence assessed through the "Biometric Laboratory scale," which is a 7-point teacher rating (55) ranging from "mentally defective" to "very able." Authors claim that it is "sensibly independent" of age, and that it correlates .6 to .9 with the Stanford-Binet (10).

Interesting point of comparison with the Davies-Hughes study, which D-H point out, is that the P-M study looks at newer arrivals. In P-M, 28.3% of the children were born abroad, 71.7% in England. The difference in their results obtained suggests that it is due to their length of residence in England.

Many tables of breakdown of intelligence by parent variables, such as their education, occupation, health. For our purposes, the relevant comparison is between Jews and non-Jews, found in Table CXLIV (126, xeroxed). "What is definitely clear, however, is that our alien Jewish boys do *not* form from the standpoint of intelligence a group markedly superior to the natives. But that is the sole condition under which we are prepared to admit that immigration should be allowed. Taken *on the average*, and regarding both sexes, this alien Jewish population is somewhat inferior physically and mentally to the native population. It is not so markedly inferior as some of those who wish to stop *all* immigration are inclined to assert." Interesting analogy with cattle breeding follows (see xerox).

Pintner, R. (1923). Comparison of American and foreign children on intelligence tests. *Journal of Educational Psychology*, 14, 292-295.

Data from various foreign groups showing that they fall behind national norms on the National Intelligence Test (37% of foreigners above national median) but are equivalent on Pintner Non-Language (50%). Data not terribly striking, but good discussion of issues in the introduction, taking issue with Kimball Young and others who "are inclined to believe that [verbal group tests] give an

accurate rating of our foreign children and that their reputed language handicap is itself an index of lack of intelligence. In this connection, Young has shown that correlations of intelligence ratings with teachers' estimates and school work generally run higher for a verbal than for a non-verbal test. But we should not forget that a teacher's estimate of a child's intelligence will unquestionably be influenced by the child's ability to use the English language, and, of course, all the child's school work is conditioned by his ability to understand and make use of English. It may be true, therefore, that for purposes of classification a verbal test is as good as a non-verbal, because ability to get on in school requires the use of the English language" (292).

"It is inconceivable that children living in an English-speaking environment, hearing, speaking, reading nothing but English should not have a distinct advantage in tests requiring the finding of opposites of words, the hunting for an appropriate analogy, the filling in of an uncompleted sentence, and the like, as compared with children who hear a foreign language at home and in many cases are required to communicate in a foreign language to some people in their environment" (292).

Pintner, R. & Arsenian, S. (1937). The relation of bilingualism to verbal intelligence and school adjustment. *Journal of Educational Research*, 31, 255-263.

Competent attempt to compare low and high bilingual Jewish groups. Hoffman Bilingual Schedule, Pintner Intelligence test, and Pupil Portraits Test (for measure of school adjustment, including peer relationship etc.). 469 6th & 7th graders from Brooklyn. Correlation between Hoffman Bilingual Schedule and is negligible (-.06), even more so if SES controlled. Extreme group comparisons show no difference between high and low bilinguals on either the Pintner Test nor on school adjustment. Authors caution though that "Jewish children have generally ranked high on verbal intelligence tests" (259) and that bilingualism may still cause a problem for Mexican and Italian children.

Pintner, R. & Keller, R. (1922). Intelligence tests of foreign children. *Journal of Educational Psychology*, 13, 214-222.

Youngstown, Ohio, children in K-2, given the Binet Test (which in this group correlates .97 with the Stanford Revision). Nationalities included German, Greek, Hungarian, Polish, Finnish, Croatian, Austrian, French, Swedish, Syrian, Gypsy, Lithuanian, Rumanian, Spanish, Russian, Indian. When given Binet, English-speaking children have median IQ of 94, compared with 85 for foreign. However, when the Pintner Non-Language Test given to a subset (unclear how they were selected), the results were as follows:

	N	Binet	Pintner
English	49	99	109
Foreign	56	89	103

Also presented are results from a "series of performance tests" (Pintner Cube Test, the Form Board, the Witmer Cylinders Test, Healy Construction Puzzle A, Mare and Foal Test), from a not well described but presumably selected group of children drawn from school records. The correlation between performance age and IQ for English-speakers is .64, for foreign, .48.

Conclude that "when classified according to mental age, those children who hear a foreign language in their homes may suffer a serious handicap when tested only by the revisions of the Binet test" (222).

Saer, D. J. (1924). The effect of bilingualism on intelligence. *British Journal of Psychology*, 14, 25-38.

Two studies involving Welsh-English bilingualism, both using urban and rural samples crossed with lingualism.

1. School children 7-12 years, on Stanford-Binet, "dextrality," etc. (full information reported in *Journal of Experimental Pedagogy*, 1922, Vol. 6). Tests given in Welsh for bilinguals, even though children were schooled in English. Authors show some signs of psychodynamic orientation, where language of home

and friends is seen as less threatening: "In rural Welsh speaking districts, when the children were addressed in Welsh, their shyness disappeared, they immediately became interested, natural in attitude and responsive, their best effort being thus readily secured"(26).

S-B's, no difference in urban groups, but difference in favor of monos in rural sample. Table on 27 shows distributions, but no means given. Also, test of dextrality shows that 10.3% of children 8+ years consistently reversed right-left, and 15.1% were confused or hesitated. Funny speculation with handedness and affective value of mother tongue to account for this (29).

On vocabulary test, "the mean range of vocabulary of monoglot children in English was higher than that of bilingual children either in English or Welsh" (30).

On composition, similar deficit, but "while the rudiments of an individual style of expression were evident in the Welsh sentences, the English phrases were palpably snatches of school lessons and indifferently memorized verbal expressions that had not yet been comprehended by the child or adopted by him as his very own, for the disconnected expressions in English can hardly be said to be fully appreciated by him"(31-32).

2. University students. Regular paper and pencil test, bilinguals did 25% worse. On a second test to another group of students, divided by urban and rural, once again, no differences on urban, but difference in rural sample.

General: Why no difference in urban but differences in rural? Saer argues that it's because English is the language of play for urban children. "Under such circumstances any emotional conflict between the use of Welsh and English that may arise is resolved by the child at an early age" (37).

Concludes: [For the rural child], "since the Welsh symbols that are ignored have for him a high affective tone, and since the cathartic influence of play does not operate, for he uses Welsh in play, a conflict must arise between his self-regarding sentiment or positive self-feeling and his negative self-feeling or his instinct for submission" (37). Quite psychodynamic.

Sanchez, G. I. (1934). Bilingualism and mental measures: a word of caution. *Journal of Applied Psychology*, 18, 765-772.

Considered the father of Chicano psychology. Interesting that he defers to Terman: "The caution with which such prominent students as Terman, Garrett, Otis, Pintner, Freeman and others have approached the use of tests in instances where language or environmental problems enter into the testing situation has been largely ignored or misinterpreted . . ." (765). Moral is that tests should be used by intelligent professionals. Gives example of abuse from work by Garth, who found 50% of his 4th grade Mexican children to be morons or worse. Summarizes own work where he increases the measured IQ from 72 to 100.

Violently criticizes the translation of a test into another language without establishing norms in the new language. He echoes most of the relevant criticisms still heard today:

Referring to a study by Sheldon: "One investigator used a makeshift 'translation' of a test and found that there was no language handicap because the IQ's were not raised by such a procedure! What assurance did he have that the IQ's obtained from the 'translated' test were comparable to the norms? Why should the IQ be raised by this procedure? And, is the evidence conclusive that the IQ's were not raised? The whole question is that of whether or not the revised test was the same test as the original in terms of difficulty, suitability, validity, reliability, etc." (768).

Concludes: "a mental test is not a measure in the same sense that yardsticks or meters are measures" (771).

Sandiford, P. & Kerr, R. (1926). Intelligence of Chinese and Japanese children. *Journal of Educational Psychology*, 17, 361-367.

British Columbia sample of 400 Japanese and Chinese children, Grades 1 through 8, on the Pintner-Paterson Scale of Performance Tests. Mean IQ of Japanese was 114.2, for Chinese 107.4. More interesting for the conclusion, that "the Japanese form the cleverest racial group resident in British Columbia The presence of so many clever, industrious and frugal aliens constitutes a political and economic problem of the greatest importance" (367).

Also, interesting argument for the selection factor. "The American army tests showed that those who had forged the Rocky Mountain barrier and reached the Pacific slopes were of higher intelligence than the groups they left behind," and in a similar way, the more intelligent of the Chinese and Japanese crossed the Pacific.

that "a compensatory drive arising from general insecurity, which was created by poor rapport with the environment, was a contributory cause in their difference in achievement" (156).

Finally, bilingual students evidenced a slight but not significant trend for a higher level of vocational plans.

"If there were a bilingual handicap in childhood functioning in either academic or verbal adjustments it has certainly become stabilized by the first year of college" (156).

Sattler, J. M., Avila, V., Houston, W. B. & Toney, D. H. (1980). Performance of bilingual Mexican-American children on Spanish and English versions of the Peabody Picture Vocabulary Test. *Journal of Consulting and Clinical Psychology*, 48, 782-784.

English and Spanish translations (translated by collaborators of the authors) of the PPVT (presumably 1966 version, since Forms A and B were used, and the new version are Forms L & M) administered to 75 children between 3;6 and 12;5, all Mexican-American in bilingual classes in San Diego County, determined to be balanced bilinguals on the Bilingual Syntax Measure. 9 (age levels) x 2 (Spanish/English) ANOVA show both main effects significant, i.e., older the better, better on Spanish than on English (although 3;6 to 4;5 group did better on English than on Spanish, but interaction not significant). Not exciting results, since all it tells us is that older children test better. Authors are led to non-exciting conclusion that PPVT should not be used to assess intelligence in these children. Authors should, but do not, report correlations between English and Spanish versions.

Smith, M. E. (1931). A study of five bilingual children from the same family. *Child Development*, 2, 184-187.

Subjects: 5 children from same family, lived part of lives in China with Chinese caretaker. Uses mother's record of children's vocabulary at 21 and 24 mos., unclear who the mother was, possibly but not likely Smith herself. The children varied in their bilingualism, and also over time they became more monolingual after moving back to the United States. Smith also gave Stanford-Binet IQ tests, and found that the "the more bilingual the child was at the earlier age, the more her IQ was affected" (185-6). As they became more monolingual, their IQ increased.

Very impressionistic and hard to interpret. However, the importance of this study is in the conclusion that seems to be reflected: early change in verbal environment seems to cause "enough mental confusion to a child . . . to cause him to tend to cease further attempts at speech for a time" (note that this could be non-linguistic); confusion arising from use of two language in pre-school years, reflected in lower IQ initially (as evidenced in later rise of IQ, considered an otherwise stable entity; but note that she does not question the fact that the test is simply reflecting English ability). "The larger size of the vocabularies of the monolingual child, especially when the IQ's of the children are taken into consideration, would also suggest a confusion in learning to talk on the part of the bilingual children" (187).

Smith, M. E. (1942). The effect of bilingual background on college aptitude scores and grade point ratios earned by students at the University of Hawaii. *Journal of Educational Psychology*, 23, 356-364.

Adaptation of the Hoffman Bilingual Schedule, the American Council Psychological examinations (apparently given to all students before entrance) and the GPA's.

Smith makes much of the low negative correlation between Aptitude and Bilingual Scores, roughly $-.15$ across groups and at most $-.25$ among Koreans, suggesting that "our students are still handicapped by bilingualism at the time of college entrance" (361).

However, bilingual background simply has no effect on the GPAs, with the exception of the Korean group where bilingualism and GPA are positively correlated $.43$ (Smith fails to mention this). *Overall, the positive correlation between the degree of bilingualism and GPA is more impressive than the negative correlation between bilingualism and aptitude.* To this, Smith remarks that "the majority of the students able to pass the college entrance examinations despite bilingual handicap are better than average students" (362).

A swipe is made at the foreign language schools (see article by Symonds) on the basis of weak data, showing that except for the Hawaiians, the aptitude scores of those attending language schools were lower than that of those not attending (however, very weak since the number of those not attending is very small, and the case is not supported in Hawaiians, who have the greatest number of non-language schoolers). No effect here on GPA's.

In general, this study provides good evidence that *degree of bilingualism affects aptitude, but not GPA.* Apparently, this is supported by a study by McBride (Master's Thesis, Univ. of Hawaii), who "found the scores of the college entrance test of Chinese and Japanese students who attended foreign language school slightly lower than the scores of those who had not. Yet the grade-point ratios of these students averaged higher for those who had attended foreign language school than for those who had not" (363).

Smith, M. E. (1939). Some light on the problem of bilingualism as found from a study of the progress in mastery of English among pre-school children of non-American ancestry in Hawaii. *Genetic Psychology Monographs*, 21, 119-284.

Subjects: 875 children, ages 2 to 6, from Chinese, Japanese, Korean, Hawaiian, Portuguese, and Filipino backgrounds. Comparison group primarily of white children in Iowa. SES measure for these groups is slightly lower than for the monolingual Iowa group.

Measures: analysis of 50 consecutive utterances by child, with no intrusion by investigator. Utterances were analyzed with respect to errors (by standard English as criterion) and length of utterance in words. Interviewers also rated the homes of the children with respect to: 5=only correct English; 4=correct English and another language; 3=another language, correct English and pidgin English; 2=only pidgin English; 1=only foreign language.

Results: Many more errors committed by the ethnics, with decrease in the older groups. Classification by error type showed largest proportion were of the type "incomplete sentences," then error of verbs. Others included substantives, agreement, negatives, articles, etc. See Table 14 on p. 174. Table 15 on 175 shows distribution of error types by ethnicity, including the Iowa sample (presumably, since she does not mention otherwise). A rambling discussion of different error types and their sources, primarily pidgin English, appears 171-179. Discussion of "idiomatic errors" (!) appear in the pages following. They are good testimony to the imperialism of standard English.

Smith goes through a perverse exercise in comparing the standard expected length of "childish utterances" across languages, by providing translators with English utterances, and measuring the word length of the translations. Conclusion is that if anything, other languages require longer utterances to say the same thing (188). This is truly bizarre, because translation more or less requires the same

number of words to be preserved. At any rate, she compares groups regardless of language used, and finds the results in Table 18 (191), which is perhaps the most "dramatic" of her findings, that average length across age were: Japanese=2.7; Chinese=3.2; Korean=3.1; Filipino rural=3.0; Filipino city=3.4; Hawaiian=3.1; Portuguese=3.3; Caucasian=3.6. Age effects appear substantial, with increases for both. Age trends in the difference between the Caucasians and the ethnics are:

	2	3	4	5	6
Caucs	1.8	3.2	4.3	4.7	-
Ethnics 1.9	3.0	3.4	3.6	3.7	

Smith concludes, "by this measure, the preschool population of Hawaii is decidedly retarded in speech" (192). Separated by language (English versus non-English), except for the Japanese, the English sentences are longer than the non-English (Table 20, p. 193).

The argument that bilingualism caused language retardation is made in several ways. First, consistent variation in extent of English used at home with various indices (length, inflections, errors) is shown (Table 44, p 247). Second, children from homes where only "good" English is spoken (category 5) are compared with children where "good" English and a foreign language are spoken (category 4). The data are in Table 45 (p 249). Similar effects are found, where the length of utterances were longer and fewer errors observed for children from category 5. When category 1 and 2 were compared, children from category 1 did better than category 2. These findings suggested to Smith that "it would appear that a more correct English would be used by young children if those parents whose English is inadequate would use only their mother tongue when talking to their children and let them learn English from other sources, preferably kindergarten." and that "the advantage in sentence length found where only one language is used by the adults in the home suggests that the bilingual handicap is lessened when the sources of the two languages are different" (251). She continues: "These comparisons point rather strongly to attempted bilingualism, as well as the use of pidgin English, as a source of retardation in speech; but these comparisons are according to home language used by the child himself" (251). In sum, better to use one language than two.

A final comparison that argues for negative effects of bilingualism: Smith divided groups by percent of English used, 95 to 100%, and 27 to 89%. Comparison is in Table 47 (252). The more English, the more sentence length and fewer errors, leading Smith once again to conclude that "although this evidence is insufficient to prove anything, still it all suggests that an important factor in the retardation in speech found in the preschool population is the attempt to make use of two languages" (253).

Note: length is an index that is used across both languages. In general, it was shown except for the Japanese group that the non-English language is shorter than the English sentences. However, Smith has not taken account of the sociolinguistic nature of the situation, where utterances in the non-English language may be restricted to some specific function, where the utterances may be shorter for functional reasons rather than structural.

Smith, F. (1923). Bilingualism and mental development. *British Journal of Psychology*, 13, 271-282.

Interesting beginning: "... no educationist now questions the supreme claim of the vernacular to the first place in the curriculum, long and bitter though the controversy has been. No second language can be so intimate as the mother tongue, so bound up is it with the child's personal life, so overlaid and intensified by emotional currents, and so closely wedded to his intimate and commonplace experiences" (271). Suggests that Smith favors education in Welsh.

Study 1. dictation, mutilated passage test, sentence-forming, composition given to Grade 3 and 7 mono-bi's from same school (though he admitted that such schools where they are found in roughly equal proportion are hard to find). Mono's better than bi's.

Study 2. 2-year longitudinal study, using measures similar to study 1 but also analogies. More improvement in mono's than bi's.

Concludes: "Bilingualism may yet be shown to be no intellectual disadvantage in the young; but the tests described in this paper clearly support the view that under present methods it is a positive disadvantage" (281).

Spoerl, D. T. (1944). The academic and verbal adjustment of college age bilingual students. *Journal of Genetic Psychology*, 64, 139-157.

Study of 69 freshmen at American International College, all child bilinguals, matched on the basis of the Henmon-Nelson Test of Mental Ability, with a control group. Bilingual group came from a slightly lower SES.

Basically, no differences found on the Stanford-Binet. No significant differences on the Purdue Placement Test in English either, although the trend was in favor of the bilinguals. No differences on Reading ability either.

In terms of academic work, bilingual students did consistently better work in both semesters of their freshman year. Investigation of their high school performance showed that the same held true then, although a slight trend of decreasing differences in earlier years is pointed out by Spoerl.

Symonds, P. A. (1924). The effect of attendance at Chinese language schools on ability with the English language. *Journal of Applied Psychology*, 8, 411-423.

Asks question: does attendance at a Chinese language school retard children's achievement in regular English public schools? Studied children in Hawaii in two public schools. Could not study Japanese schools because, although they are the primary target of criticism, the children attend Japanese schools all the time, apparently.

Divided children into no attendance, 0-2 years attendance, 2+ years attendance in Chinese schools, used as measure the mean chronological age per grade. No difference between these groups.

Measures included Reading and language tests, and Pintner Non-Language Mental Tests. Attendance in Chinese school correlates .28 with Pintner, but no other measure.

Amount of Chinese spoken at home does not vary by attendance in foreign language school, but very confused interpretation and questionable statistics (420).

Although author concludes that English at home is the critical variable, there is nothing in the data that leads to this conclusion; seems like random noise.

"If we are really interested in the English of the children and the kind of English they will speak as adults we had better let the foreign language school alone and turn our attention to the home, the playground, and to the kind of individuals who are born" (422).

Terman, L. M. (1918). The vocabulary test as a measure of intelligence. *Journal of Educational Psychology*, 9, 452-459.

Although this article is not directly addressing the problem of bilingualism, Terman reports data showing that vocabulary is just as good a measure of intelligence for Portuguese and Italian children as it is for Anglos. "The fact that a majority of these children had learned another language before learning English is reflected in their inferior vocabulary scores for three or four years after entering school. After that, however, the vocabulary rapidly catches up with mental age. After the mental age of 12 years these children are practically on a par with their fellow pupils of the same mental level who have known no other language than English." Vocabulary and mental age scores correlate .84 for foreigners, .86 for Anglos. Note how this could actually reflect the degree of English.

- Tomb, J. W. (1925). On the intuitive capacity of children to understand spoken language. *British Journal of Psychology*, 16, 53-55.

Based on writer's informal observations in India. Language learning does not depend on "intelligence." Good observation that children have great "intuitive," "subconscious" powers to learn second language.

"It is not unusual to see English parents in India unable to understand what their servants are saying to them in Hindustani, and being driven in consequence to bring along an English child of four or five years, if available, to act as interpreter" (53).

- Tsushima, W. T. & Hogan, T. P. (1975). Verbal ability and school achievement of bilingual and monolingual children of different ages. *Journal of Educational Research*, 68, 349-353.

American children Grades 3-5 in army school in Camp Zama, Japan. Bilinguals were those with Japanese mother and American father, monolinguals were of both parentage American. Thorndike-Lorge Intelligence Test, verbal and nonverbal, also Iowa Test of Basic Skills for achievement. 142 bilinguals and 265 monolinguals. Subjects were divided by non-verbal intelligence test in three-way split, used Grade x Nonverbal Intelligence x Mono/bilingual ANOVA design. On Thorndike-Lorge verbal, significant differences were in favor of monos at grade 5, but not at 3 or 4. Similar results in the Iowa achievement measure: differences on verbal items, but not on arithmetic, etc. Conclusion that bilingualism associated with impairment in verbal functioning.

- Williams, L. L. (1914). The medical examination of mentally defective aliens: its scope and limitations. *American Journal of Insanity*, 71, 257-268.

Report by the chief medical officer at Ellis Island on the exclusion of immigrants using mental tests. Does not specify what tests have been used, but appear to be many. I was struck by the reasonably compassionate tone in which the article is written, stating that error is minimized by allowing for appeals, disagreement among doctors, and so forth. No apparent horns on his head. Presents statistics showing the increasing exclusion of categories of idiots, imbeciles, and feeble-minded. From 1 to 7 annually in late 1800's to 555 in 1913 to an estimated 930 in 1914. However, the rate is quite low, .157% at the highest. Advocates "scientific" grounds for exclusion, "I believe that in the long run immigration will be restricted by a process of intensive selection based upon scientific grounds and resulting from scientific study of all of the conditions" (267).

- Witty, P. & Garfield, S. (1942). Trends in discussions of intelligence: race differences. *Journal of Educational Psychology*, 33, 584-594.

Not terribly relevant to question of this bibliography, since it refers exclusively to black-white differences, with the exception in a few cases to Indians. Orientation of authors is towards "nurture". A few good quotes showing a priori racism of some textbook authors. One textbook author, Carroll, apparently makes use of Goodenough's (1926) data to support his point.

Other 1989 BRG Working Papers titles:

Aída Hurtado and Gloria Cuádras, *A Selected Bibliography on Watsonville History*. An annotated bibliography of historical and demographic documents on the city of Watsonville, California. (BRG #89-01)

Kenji Hakuta, *Language and Cognition in Bilingual Children*. Two studies with Spanish-English bilingual Puerto-Rican children are described. The first study examined the issue of cross-language transfer of skills. The results suggest a better fit with a model of transfer that is more holistic rather than of specific skills. The second study investigated translation skills in 4th and 5th grade students. The results show that bilingual children separate the two languages effectively and that they are extremely good translators. (BRG #89-02)

Aída Hurtado, *Language as a Social Problem: The Repression of Spanish in South Texas*. Data from a survey of 680 Chicano college students at Pan American University examines how school personnel discouraged and encouraged the use of Spanish in South Texas schools. (BRG #89-03)

Viljo Kohonen, *Experiential Language Learning—Towards Second Language Learning as Learner Education*. An approach to second language learning within the framework of experiential learning theory is outlined. (BRG #89-04)

Maria Eugenia Matute-Bianchi, *Situational Ethnicity and Patterns of School Performance Among Immigrant and Non-immigrant Mexican-Descent Students*. Persistent school failure among nonimmigrant Mexican-descent high school students is compared to patterns of school success observed among immigrant Mexican-descent students. (BRG #89-05)

Catherine Snow and Kenji Hakuta, *The Costs of Monolingualism*. An implicit analysis of costs and benefits of bilingualism in U.S. society is conducted, highlighting educational, economic, national security, and psychological considerations. The paper concludes that common concerns about bilingual education reflect a very narrow view of costs. (BRG #89-06)

Kenji Hakuta, *An Interview with Werner F. Leopold*. An interview with Werner Leopold reflecting on his life, career and the historical course of linguistics and the study of child language and bilingualism. (BRG #89-07)

Kenji Hakuta, *Bilingualism and Intelligence: An Annotated Bibliography*. A listing and annotated bibliography of the extensive literature on bilingualism and intelligence, focusing on works from the early 1900's. (BRG #89-08)

For further information contact: Gini Matute-Bianchi or Barry McLaughlin,
Bilingual Research Group, Merrill College, UCSC, Santa Cruz, CA 95064,
(408) 429-3351.