

# The siren call of culture-fair testing and identification

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# A little history

- Ancient idea in psychometrics
- Culture-free, culture-fair, culture-reduced
- Unidimensional & basically innate
- Impact of education, language, & culture on all ability tests
- Recent resurgence as “nonverbal” tests

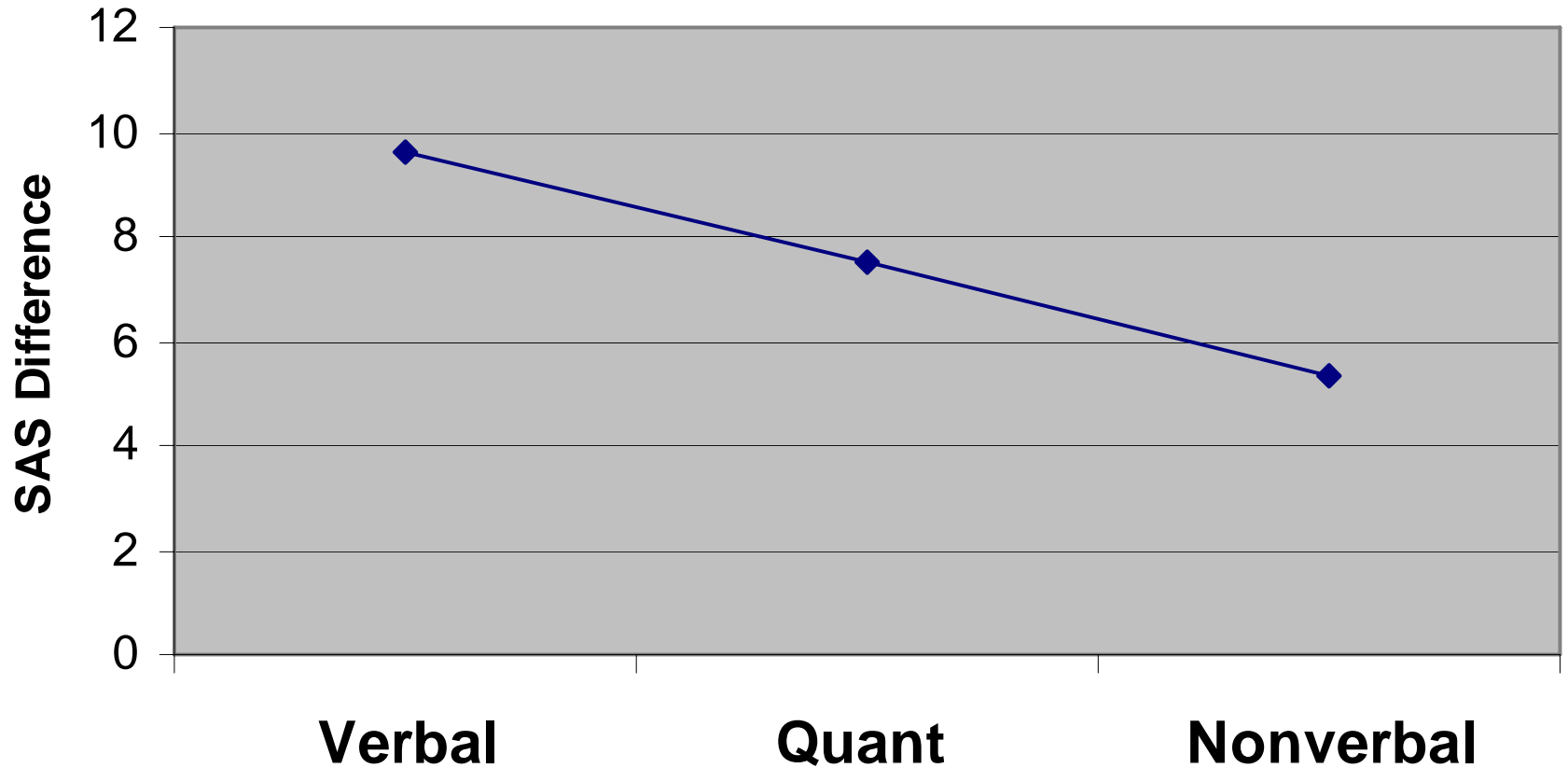
# Advantages of nonverbal tests

- English Language Learners are disadvantaged on tests that use English
  - Allow one to use common norms for all
- Often good measures of  $g$
- Appearance of measuring something more innate than tests that use other symbols
- Claims that they will solve the problem

# Disadvantages of nonverbal tests

- Construct under-representation
- Predict academic learning less well than measures of verbal & quant reasoning
  - Specific variance negatively related to success in verbal domains
- Sensitive to environmental changes:
  - Large Flynn, practice effects, and schooling effects

## White-Hispanic Effect Sizes for CogAT (random samples within bldg)



**Nonverbal the fairest test?**

# Level the playing field?

- 371 ELL & 332 Non-ELL K-6 children
  - All Hispanic
  - All free/reduced lunch
- ELL – Non-ELL score differences
  - CogAT Nonverbal      7.5      (.47 SD)
  - Raven SPM              7.3      (.46 SD)
  - NNAT                      10.1      (.63 SD)

# Means versus correlations

- Verbal and quantitative reasoning abilities are the best predictors of a wide range of educational and training outcomes - for all students
- Academic success for ELL and minority children requires the same knowledge, skills, abilities, interests, motivation, perseverance as their non-minority peers

# Project Bright Horizon Data

ELL Students Grade 3 (N = 74 - 81)

	CogAT V	CogAT Q	CogAT N	NNAT	Raven
Dev. Reading Assess.	0.63	0.43	0.24	0.11	0.32
Reading - Terra Nova	0.56	0.36	0.30	0.33	0.41
Reading - AIMS	0.73	0.45	0.34	0.39	0.43
Math - Terra Nova	0.57	0.61	0.51	0.42	0.43
Math - AIMS	0.61	0.70	0.57	0.50	0.47



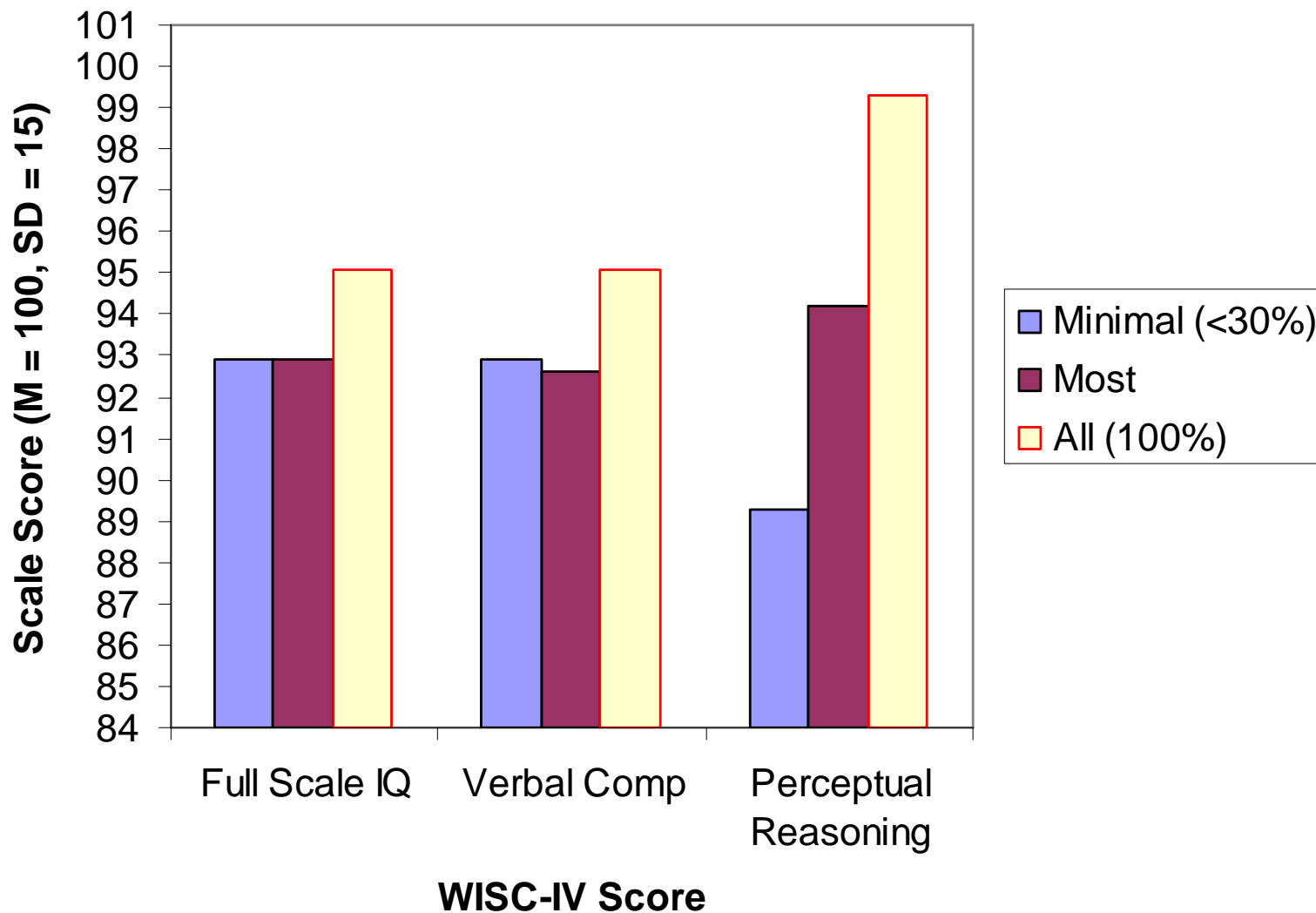
# Improvements in Measurement for ELL children

- One test for all (e.g., early Binet)
- “Nonverbal” tests (Army Beta)
  - Reduced difference between ELL and native speakers of English
- Translated/adapted English-language tests (Woodcock-Munoz)
- Translated tests with contextualized norms (WISC-IV Spanish)
- Simultaneous development in (both) languages with contextualized norms

# WISC-IV *Spanish*

- Target population: Bilingual Spanish-speaking children in the U.S. with no more than 5 years of U.S. schooling
- Translate & adapt the verbal tests
- Calibrate the Spanish Verbal Scale with the normative (English) Verbal Scale
- Index opportunity to learn by
  - % education in U.S.
  - Parental educational level

## WISC-IV Spanish Scores by Percent Education in the U.S.



“nonlanguage tests may be more culturally loaded than language tests”

Anastasi & Urbina, 1997, p. 344

**Non-normative  
Experiences**

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graph LR; A[Non-normative Experiences] --> B[Alternative assessments (common norms)]; A --> C[Common assessments (multiple norm groups)];
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**Alternative assessments  
(common norms)**

**Common assessments  
(multiple norm groups)**

# Multiple Perspectives

- For ELL students in grade 3, compare scores to:
  - Other grade 3 students in the nation (common norms)
  - Other students in grade 3 in the district/school
  - Other ELL students in grade 3 in the district
- Not a single statistical adjustment of scores (Mercer)

# Some suggestions

- Emphasize the search for talent, not giftedness
- Look first to serve those children who need advanced instruction
- Look next to identify those children who show exceptional promise – in spite of their circumstances
  - Rate of learning a particular content
  - Reasoning abilities, interest, perseverance