



Academic Performance and Self-Assessed Skills: Vanishing gender gaps?

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- ◆ In a comparative cross-national assessment, USA students ranked first for self-perceived math ability and South Korea last, whereas in actual performance, South Koreans ranked first and the USA close to last (Educational Testing Service, 1992)



The data: 2000 YITS 18-20

- ◆ Based on Statistics Canada LFS
- ◆ Excludes Yukon, NWT, Nunavut
- ◆ Response rate: 80.9%
- ◆ $N = 22,378$
- ◆ Normalized weighted analyses



Self-reported skill assessment

- ◆ How would you rate your...
 - **Ability to use a computer (C)**
 - **Writing abilities (W)**
 - **Reading abilities (R)**
 - **Oral communication abilities (O)**
 - **Ability to solve new problems (P)**
 - **Mathematical abilities (M)**

Percentage of young adults who rate their skills as excellent

Percent "excellent" in...	Males	Females
using a computer	16.4	8.5
writing abilities	12.2	16.1
reading abilities	19.3	25.2
oral communication abilities	15.8	17.1
problem solving abilities	13.4	7.7
mathematical abilities	14.2	7.4

Highest grade and level of high school math and language classes

	Highest grade and level of...			
	Language		Math	
	Male	Female	Male	Female
<12 General	34.6	30.6	29.6	26.2
<12 University	5.6	4.4	22.6	24.4
Gr. 12 General	15.2	11.0	12.9	12.1
Gr. 12 University	44.7	54.0	34.9	37.3

Mean marks in mathematics and language

Grade and level	Language		Math	
	Male	Female	Male	Female
<12 General	2.76	3.23	2.69	2.72
<12 University	2.52	2.97	2.90	2.96
Gr. 12 General	2.71	3.04	2.84	2.91
Gr. 12 University	3.11	3.40	3.03	3.04



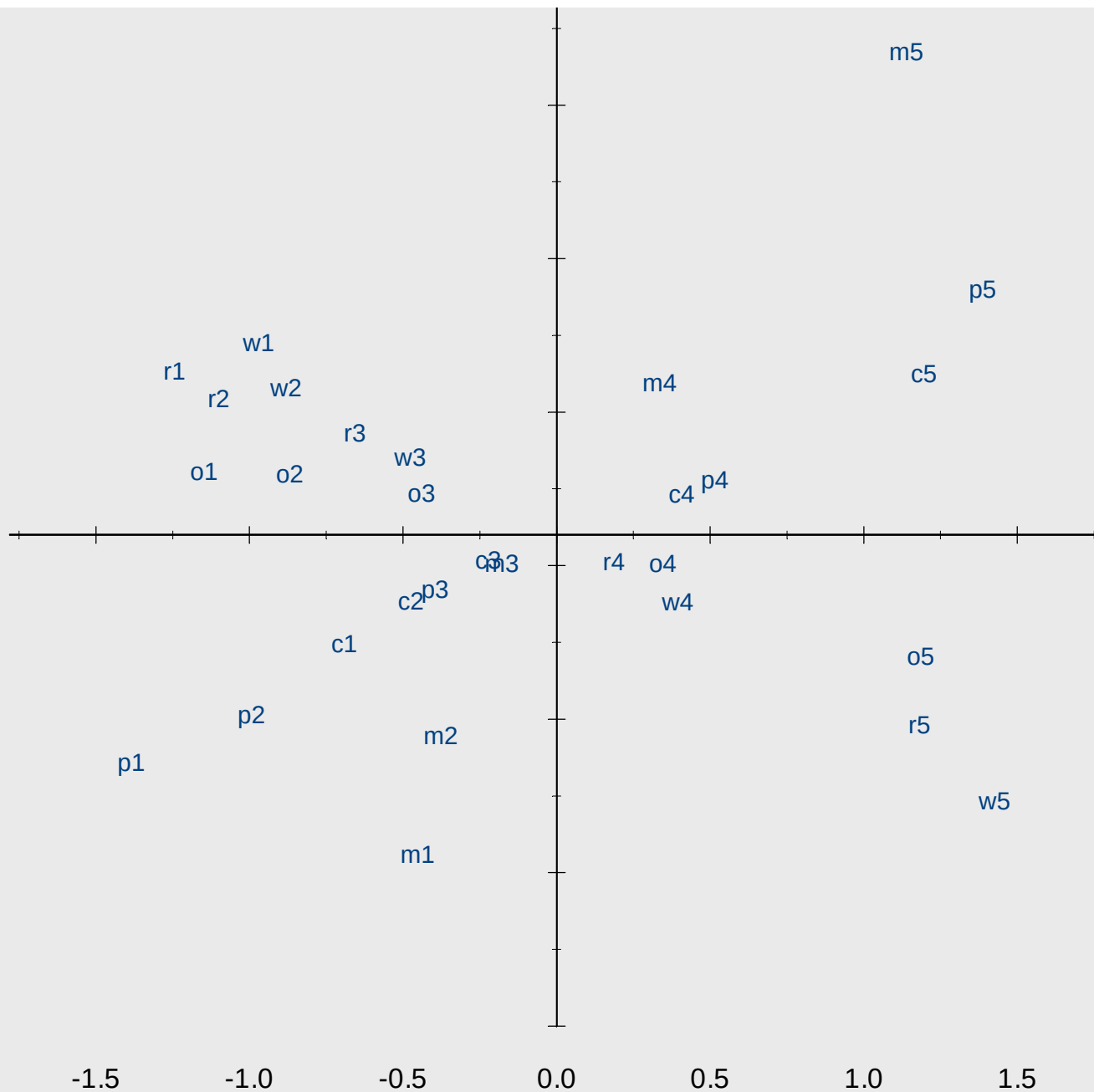
Mean math skills relative to other skill domains

Math skills relative to...	Males	Females
computer abilities	-0.01	-0.14
writing abilities	-0.11	-0.75
reading abilities	-0.40	-1.00
oral communication abilities	-0.26	-0.69
problem solving abilities	-0.32	-0.48

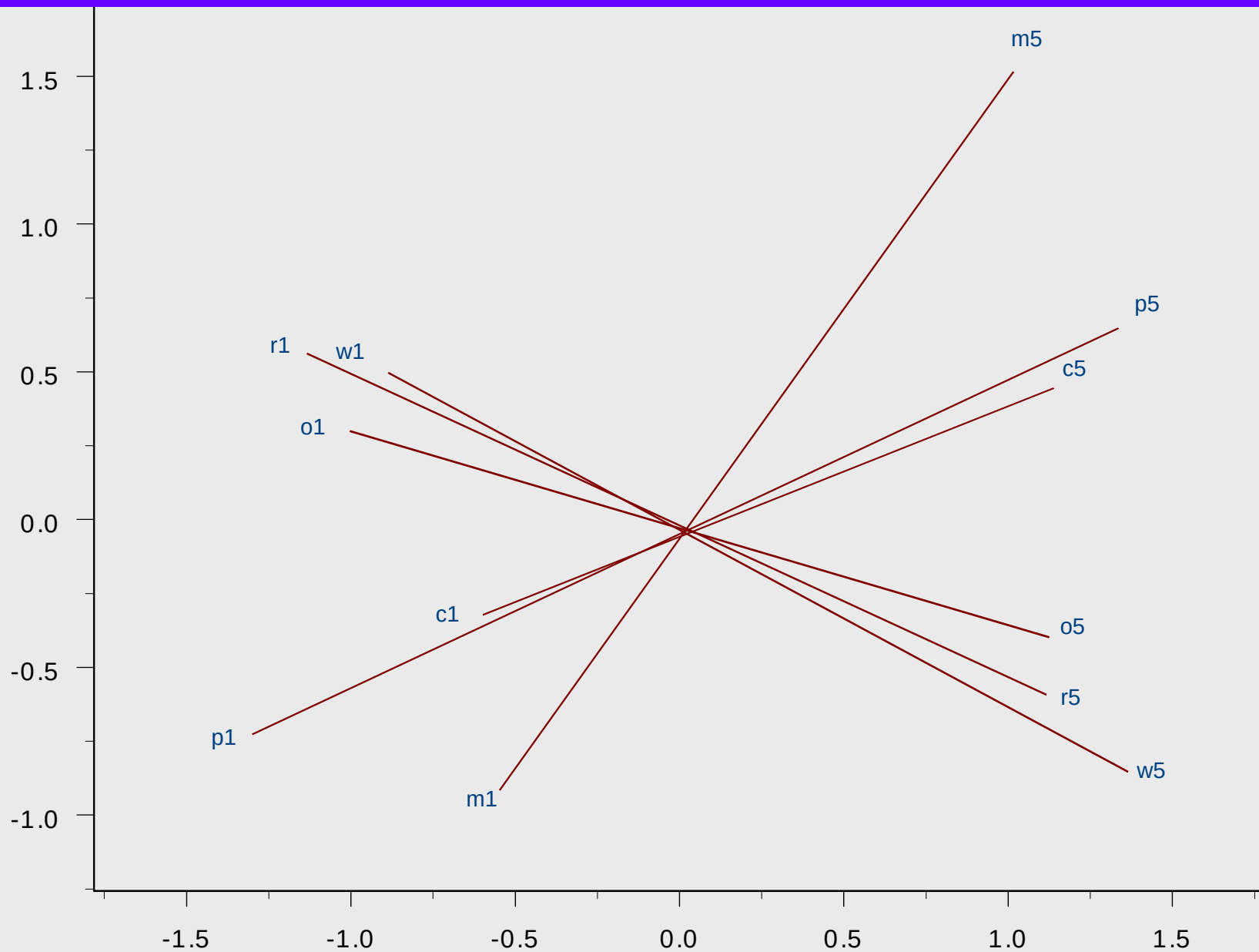


Map of human capital skills

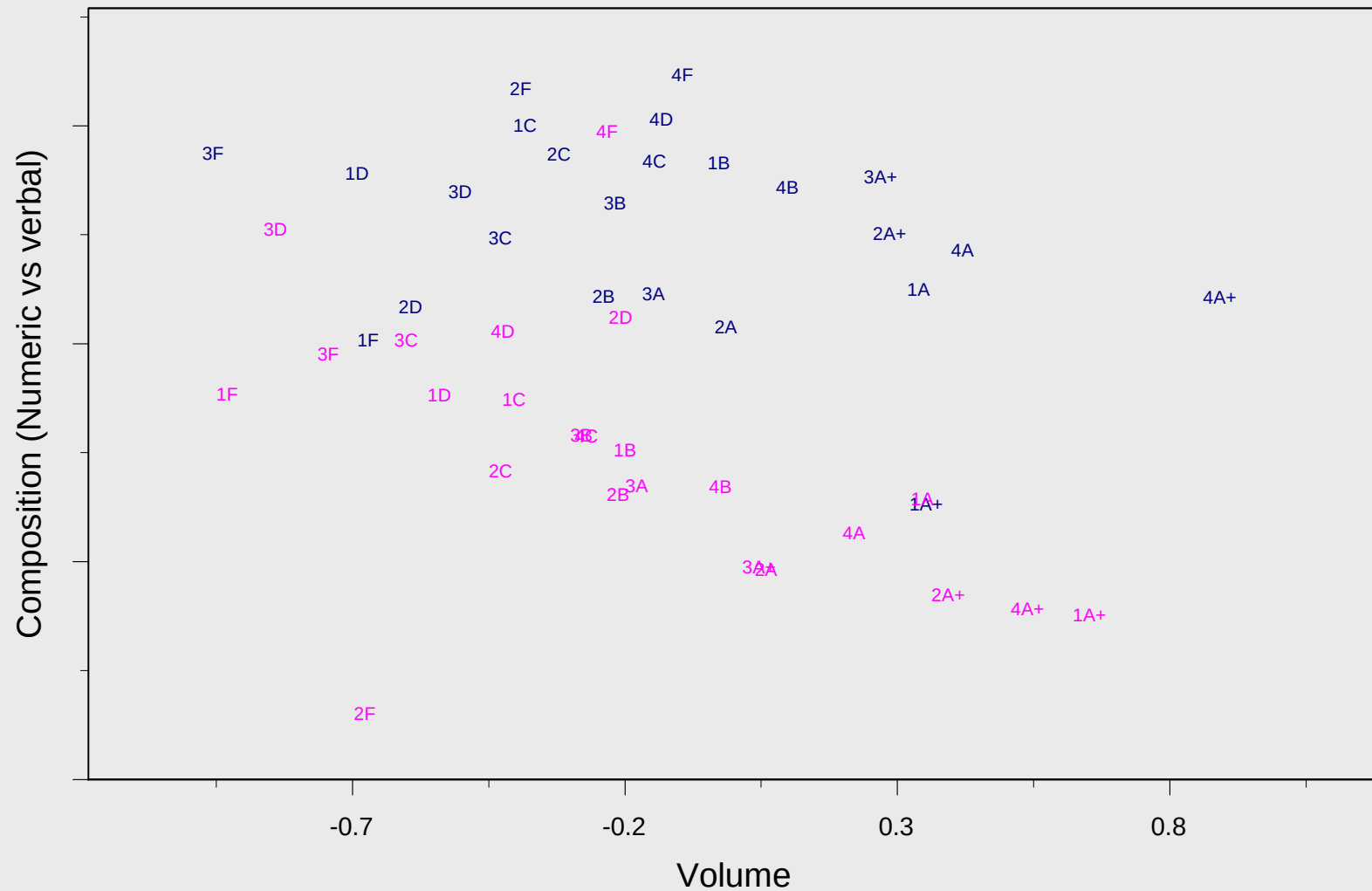
The structure of human capital skills



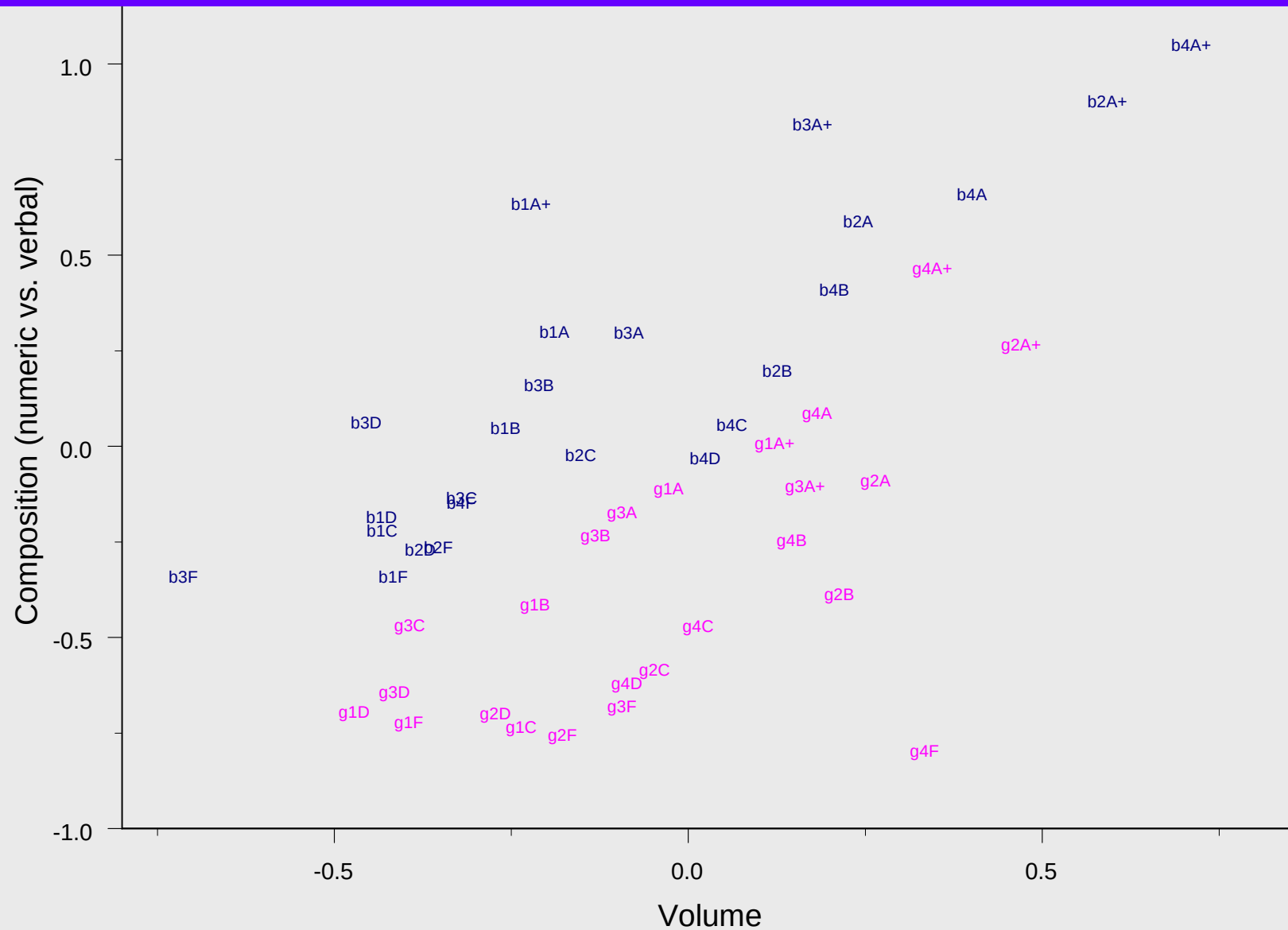
Biplot of human capital skills



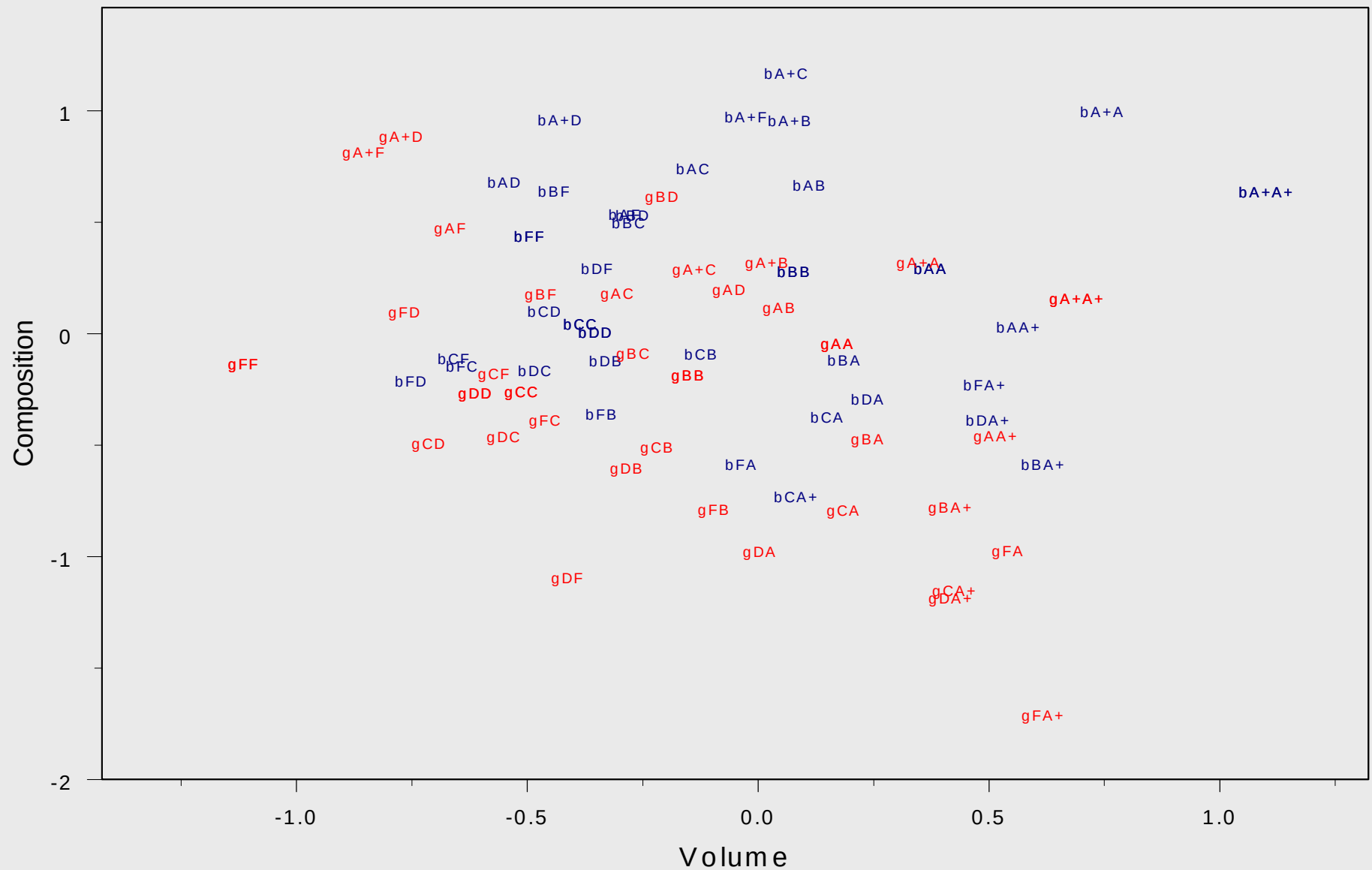
Perceived skills in relation to language marks



Perceived skills in relation to math marks

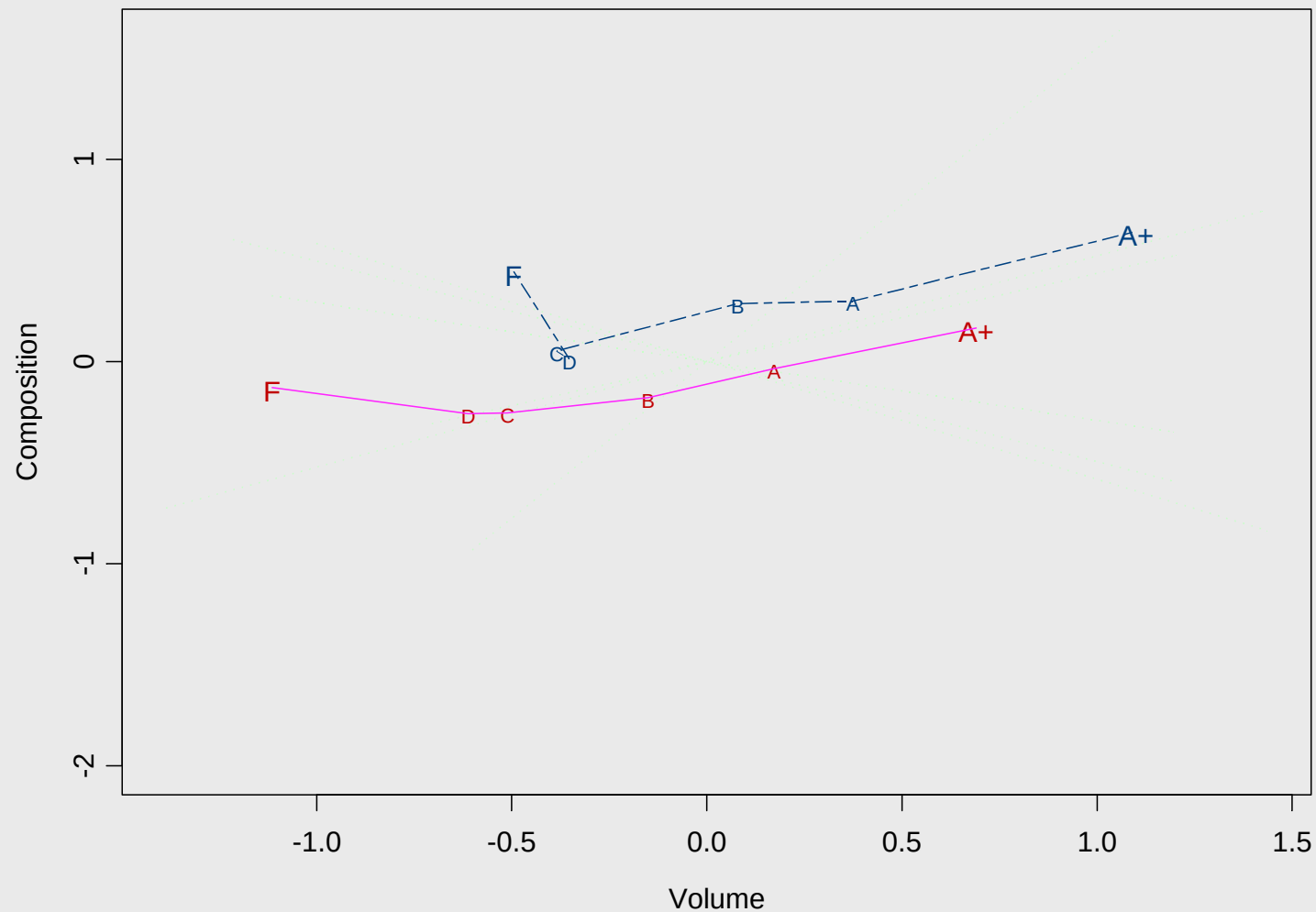


Perceived skills by math and language marks



Math mark = language mark

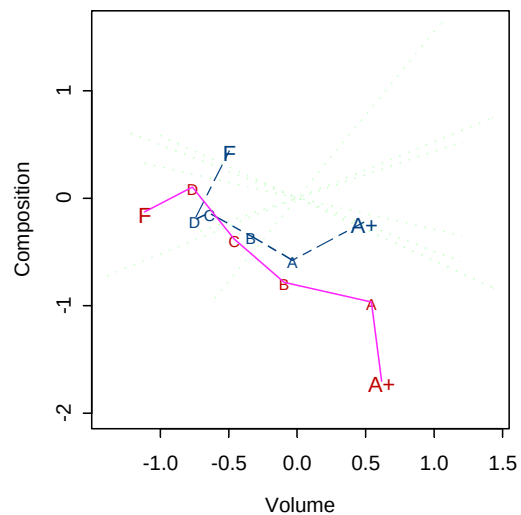
Math=Language



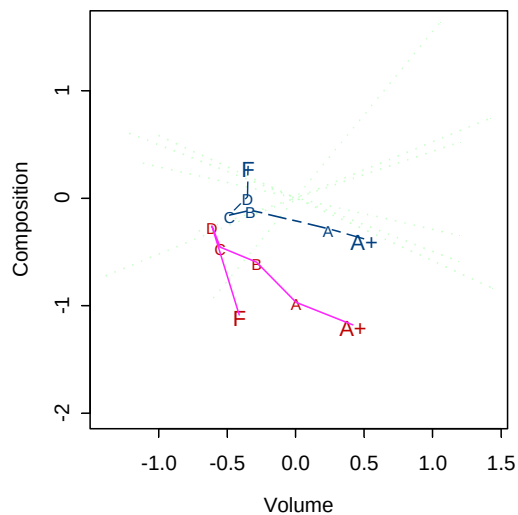
Combination of marks



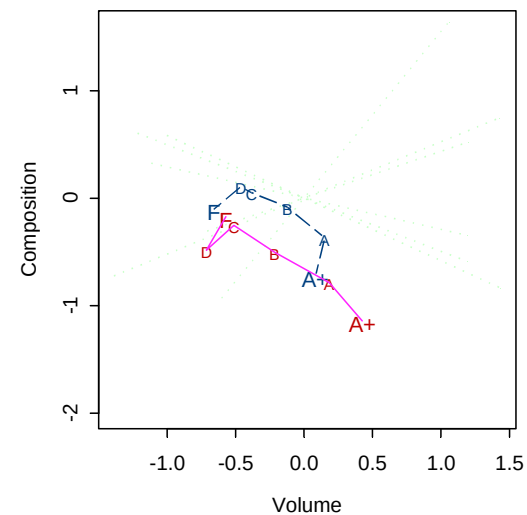
Math grade F



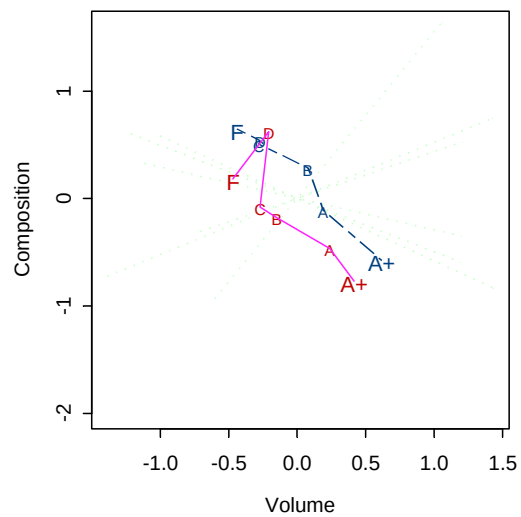
Math grade D



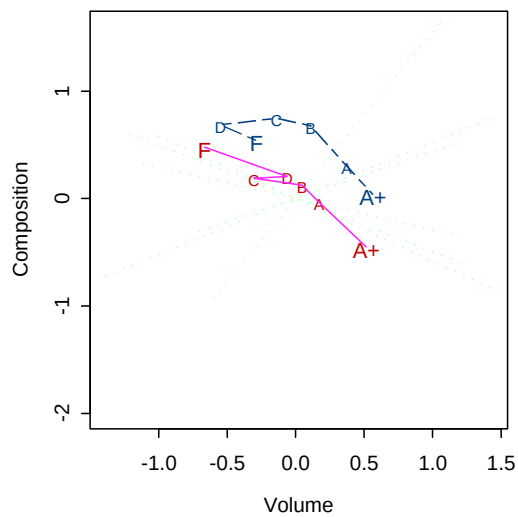
Math grade C



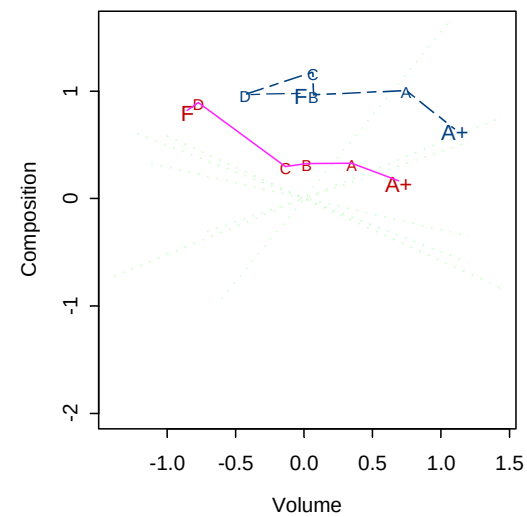
Math grade B



Math grade A



Math grade A+





Summary: Cognitive map

- ◆ Human capital skills differ by volume and composition
- ◆ Numeric and linguistic skills are independent of each other
- ◆ In between are problem solving and computer skills



Correspondence between actual and perceived locations

- ◆ There is a correspondence
 - It is not one-to-one
- ◆ Teacher assessments are crucial
- ◆ Language marks affect perception of volume and composition of skills for females, but only volume for males
- ◆ Math marks affect both volume and composition for both genders



Gender and human capital skills

- ◆ Gender differences in perceived numeric skills are NOT due to:
 - Women being less likely to take math courses
 - Women taking less advanced math courses
 - Women getting lower marks in math courses



So why the gendered map?

- ◆ Young women are superior in language
- ◆ Young women differentiate between their various skills
- ◆ There is a pervasive gender stereotype
- ◆ Young women are more modest
- ◆ Young women are somewhat less likely to discount a failing mark



Implications: That which is perceived as real is real in its consequences

- ◆ Gender differences in post-secondary educational programs
- ◆ Gender segregation of occupations
- ◆ School counseling must be based on performance rather than perception
- ◆ Occupational guidance should NOT be based on inventory of skills and aptitudes

Next steps

- ◆ Use cycle 3 data to assess:
 - Educational pathways taken by young men and women
 - Are self-assessed skills independently related to the decision to pursue PSE?
 - Field of study chosen
 - Do the lower self-assessed quantitative skills translate into young women avoiding fields that require math skills?

