

ROLES Revision Project

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Sample Description

- Forms were completed on 394 youth
 - 59% male
 - Mean age = 16.6 years
 - Less than 6 years of age: 3%
 - 6 – 10 years: 3%
 - 11 – 14 years: 12%
 - 15 – 18 years: 49%
 - 19 – 21 years: 33%
 - Race/ethnicity
 - Caucasian: 39%
 - African American: 41%
 - Amer. Indian/Alaskan: 3%
 - Hispanic/Latino(a): 16%
- 58% received psychological, educational, substance abuse, welfare related, or court ordered services

Sample Descriptive: Residential Setting

Independent living by self	1.8%
Independent living with friend	1.0%
Home of natural parents for an 18 -year old	1.0%
Home of natural parents for a child	6.6%
School dormitory	3.0%
Home of a relative	3.6%
Adoptive home	1.3%
Home of a family friend	.3%
Supervised independent living	1.3%
Regular foster care	4.1%
Specialized foster care	4.3%
Individual -home emergency shelter	.3%
Foster -family -based treatment home	4.6%
Group home	10.9%
Residential Job Corps center	38.8%
Group emergency shelter	1.8%
Residential treatment center	11.2%
Wilderness camp 24 -hour year round	.5%
Intensive treatment unit	.5%
Youth correction center	1.3%
County detention center	.8%
State mental hospital	.3%

61.9%

The Rasch Measurement Model

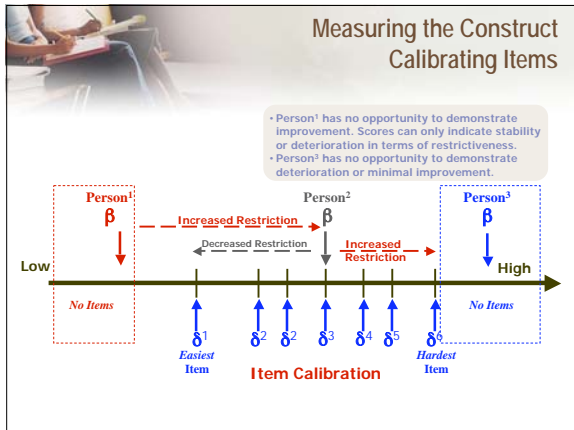
- The Rasch model, as opposed to 2- and 3-parameter models, questions how well empirical data (measure scores/responses) fit in terms of the measurement model constraints.
 - The additional parameters in 2PL (item difficulty) and 3PL (respondents guessing) models are used to explain variance in the measurement model.
- The Rasch model provides “*sample invariant*” (sample independent) item calibrations, item difficulties (δ), from easy to hard – no impairment to severe impairment.
- Rasch also yields fit statistics that provide information regarding a respondent's expected response in comparison to his/her actual response.

Summarizing The Advantages Of The Rasch Measurement Model

- Ability to perform item level analysis
 - Error estimates and item fit indices
 - Reliability (both person and item reliability)
 - Assessment of item independence and item redundancy
 - Category (scale) analysis
 - Identification of response scale categories that offer little or no information
 - Identification of idiosyncratic use of scale categories
- Items are calibrated in terms of *difficulty*, and contribute differentially to the construct being measured
- Rasch model is closest in correspondence to the raw score model
- Differential item function (DIF)
 - Group bias (age, gender, racial/ethnic, cultural, language groups)

Hypothetical Example

Scale items represent a construct along a continuum from low to high, minimal to maximal, etc. Every scale item is calibrated along this continuum.



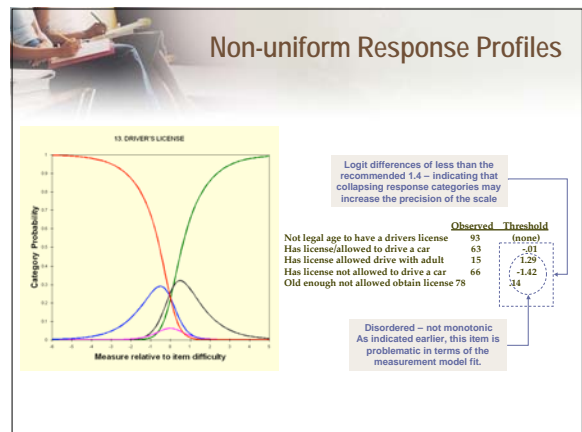
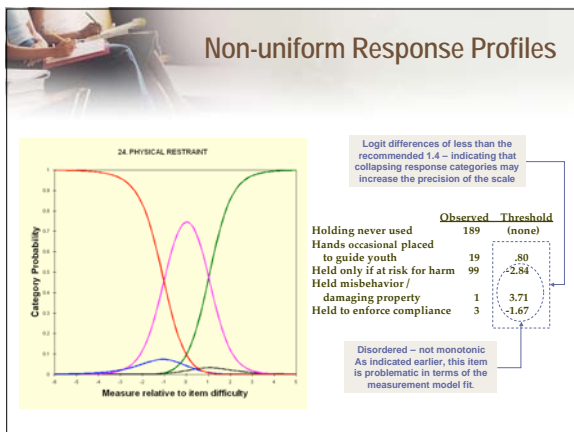
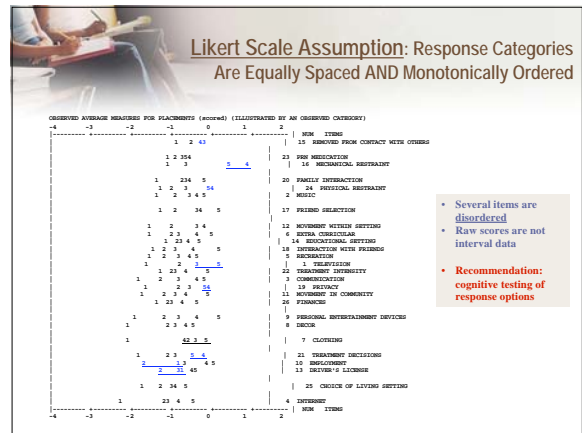
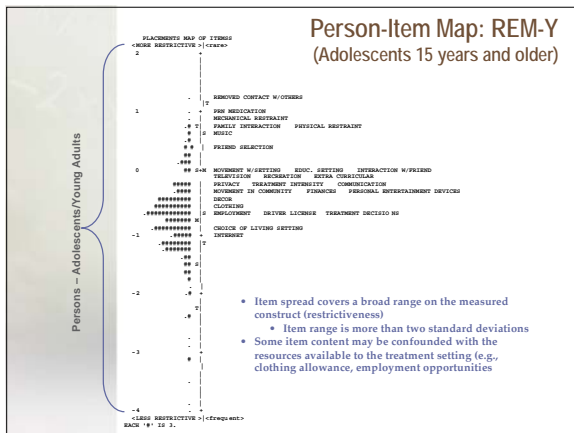
Data Issues: Item Misfit*

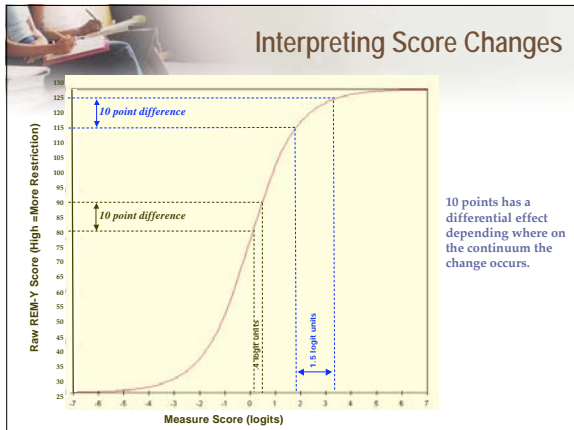
PERSON	SCORE	COUNT	MEASURE	R.M.	INFO	DIFFIC	OUTFIT	IPPROB	ERRACT	MATCH	RESID	P	ITEM
14	928	319	-.53	-.01	1.18	5.11	1.59	0.918	.22	21.7	33.1	.07	2.98
7	932	322	-.47	-.01	1.10	6.21	1.51	1.12	.68	32.0	49.1	.09	2.98

Reliability = 0.87
 Separation Index = 2.85 (measure can segment sample into three statistically distinct subgroups)

Estimates indicate minimal data misfit. Item inquiring about driver licenses has the most misfit, which is due to statutory age requirements in addition possible restrictions placed by the living situation.

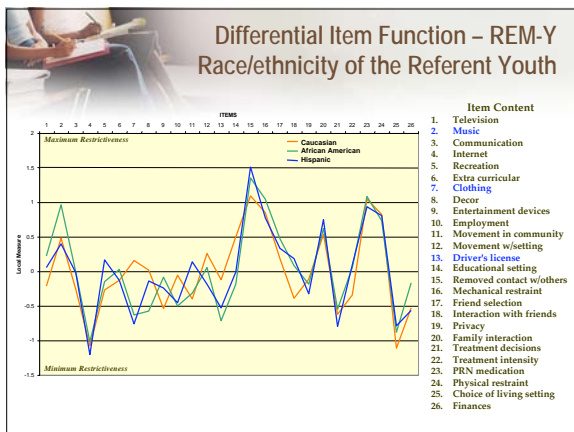
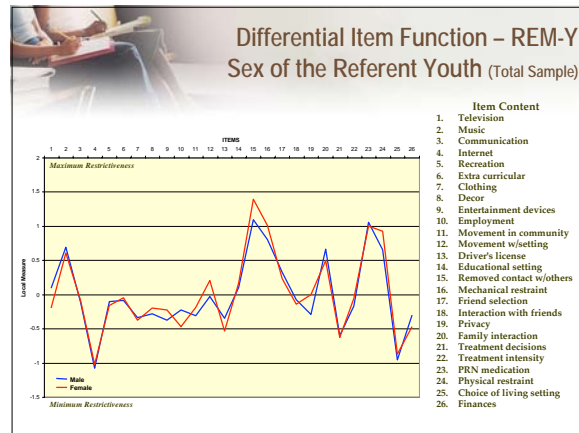
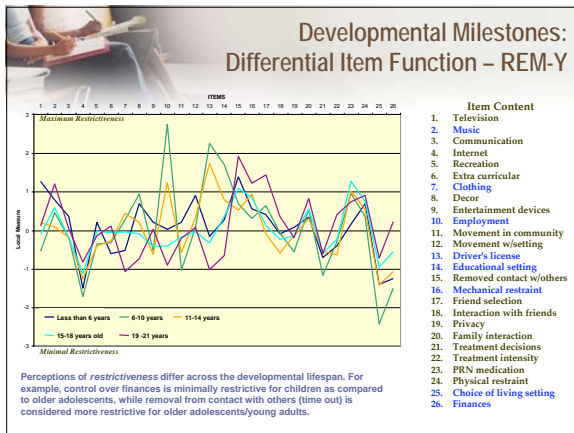
*Estimates based on adolescent/young adult sample.



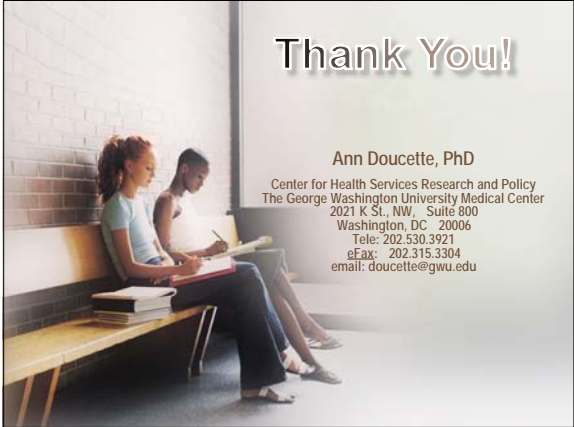


Preliminary Exploratory Factor Analysis (EFA)

Pattern Matrix (PAF – PROMAX Rotation)	1	2	3	4	5
4. INTERNET	.336				
3. COMMUNICATION	.433				
11. MOVEMENT WITHIN SETTING	.424				
9. PERSONAL ENTERTAINMENT DEVICES			.479		
8. DECOR	.484				
7. CLOTHING	.460				
11. MOVEMENT IN COMMUNITY	.443				
14. EDUCATIONAL SETTING	.425				
6. EXTRA CURRICULAR	.337				
18. PRIVACY	.213				
25. FINANCES		.801			
25. CHOICE OF LIVING SETTING		.615			
15. REMOVED FROM CONTACT WITH OTHERS		.479			
21. TREATMENT DECISIONS		.459			
22. TREATMENT INTENSITY		.459			
20. FAMILY INTERACTION		.422			
5. RECREATION		.313			
1. TELEVISION			.761		
2. MUSIC			.796		.640
17. FRIEND SELECTION			.584		.613
18. INTERACTION WITH FRIENDS			.439		.516
19. EMPLOYMENT				.640	
12. DRIVER'S LICENSE				.613	
23. PRN MEDICATION				.516	
24. PHYSICAL RESTRAINT					.584
16. MECHANICAL RESTRAINT					.373



- ### Next Steps
- Continued scale refinement
 - Profile development
 - General Environment Types
 - Developmental
 - Examine relationship with outcomes
 - Extend use beyond change in restrictiveness at exit



Thank You!

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