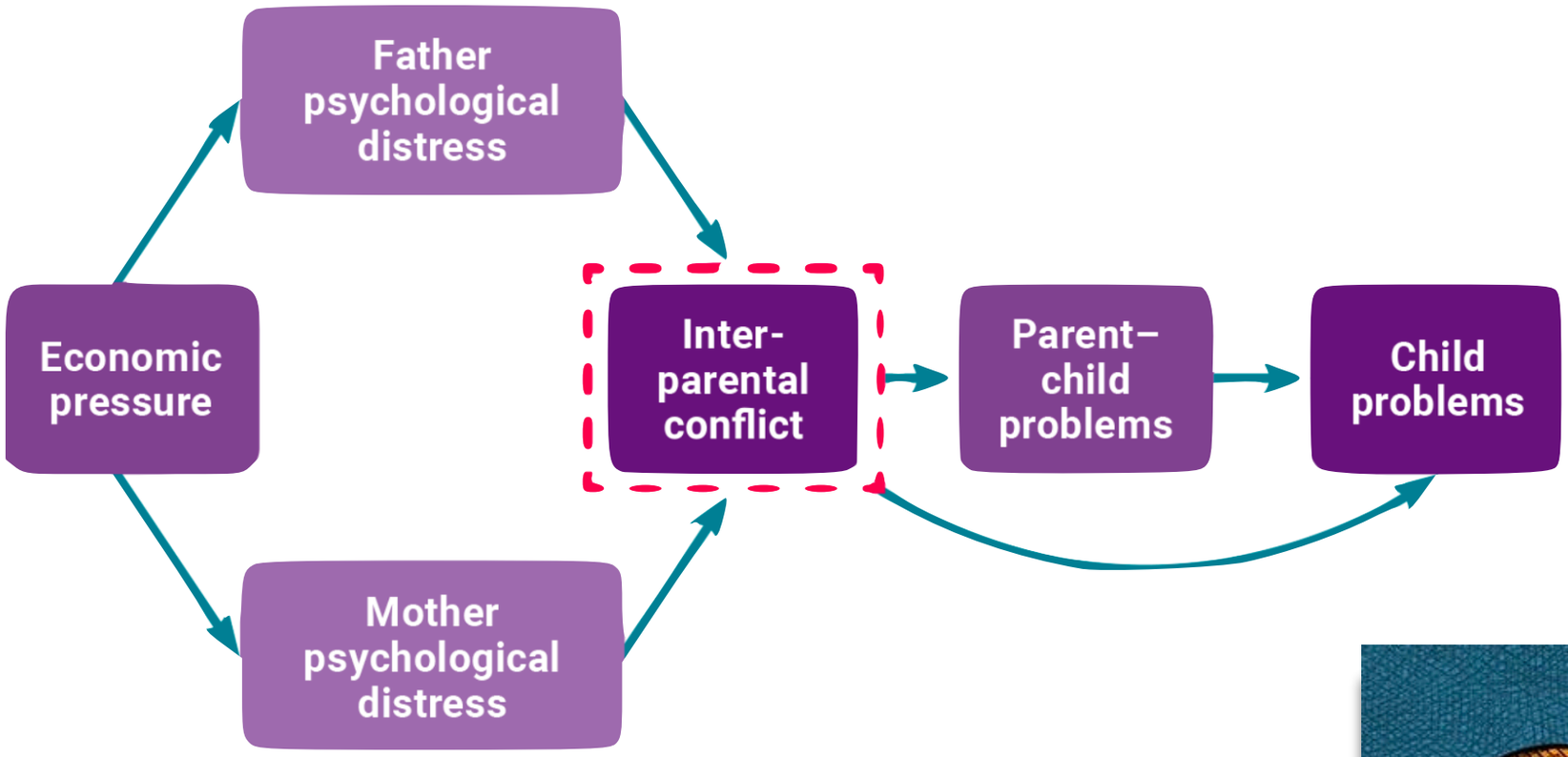
Roadmapping the Future

1) Centralizing Who's Perception?



Conger Family Stress Model

2) Dimensions (& Dynamics?) of Stress

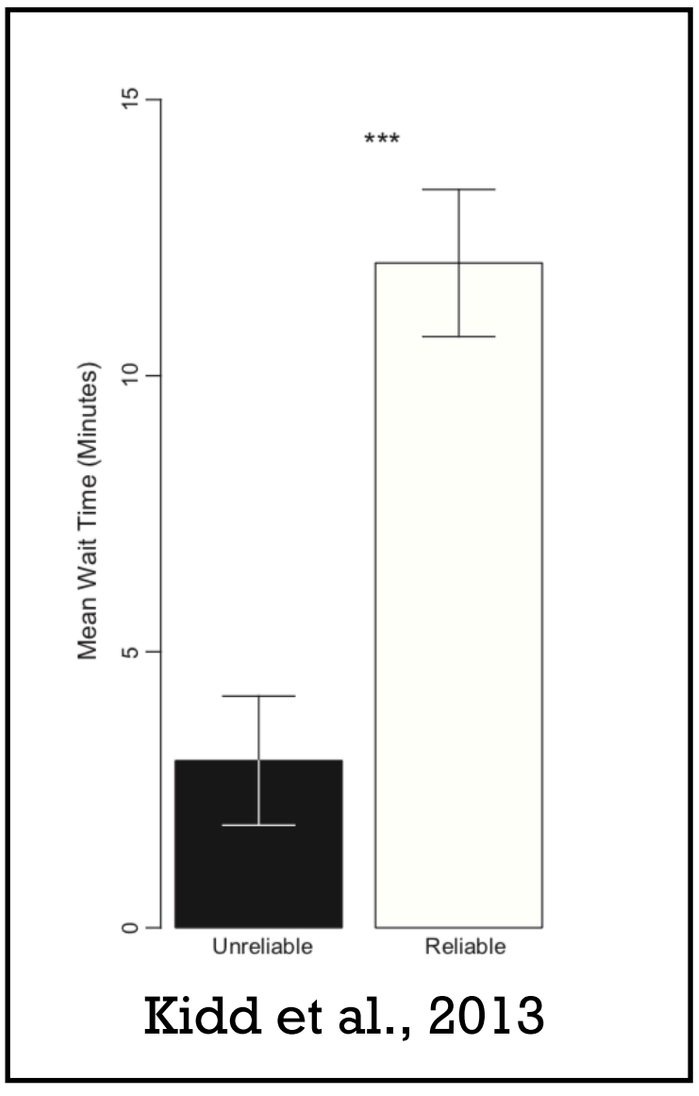
Journal of Abnormal and Social Psychology
1961, Vol. 63, No. 1, 116–124

FATHER-ABSENCE AND DELAY OF GRATIFICATION:

CROSS-CULTURAL COMPARISONS[1]

WALTER MISCHEL[2]

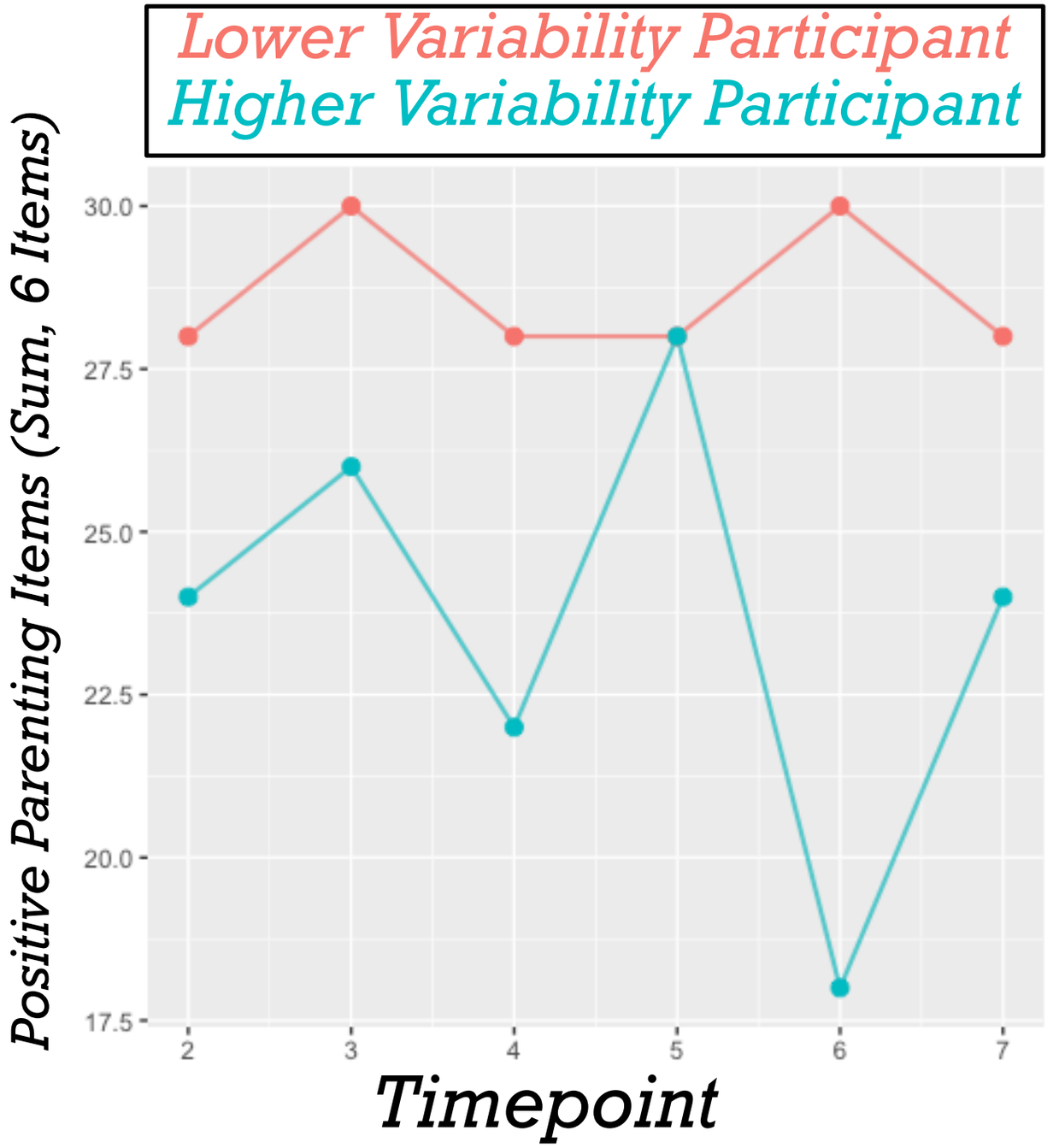
Harvard University



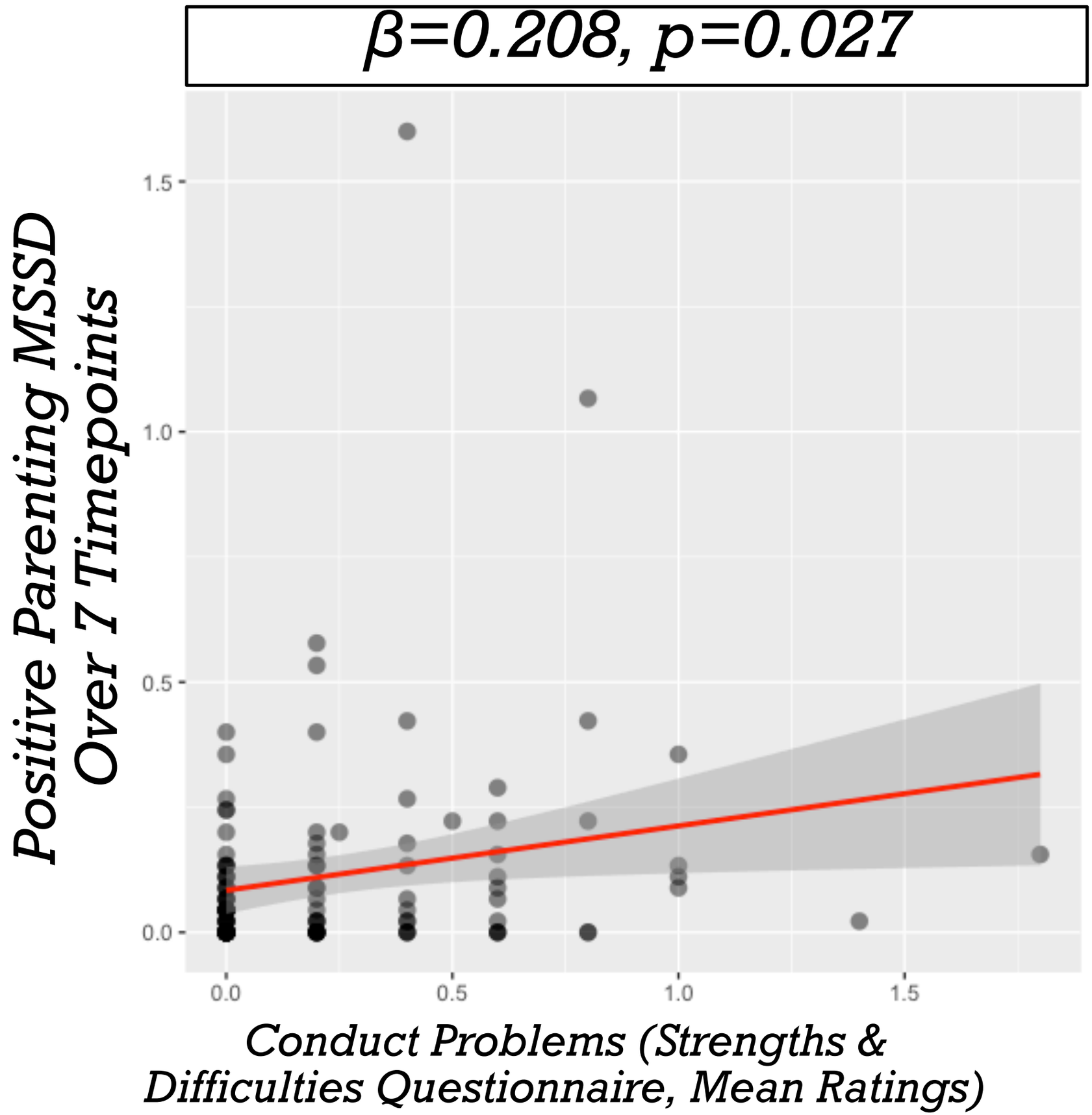
Kidd et al., 2013

Sample Characteristics	N = 147[1]
Caregiver.Age	39.6 (6.0)
Caregiver.Race	
Asian	3 (2.0%)
Black or African American	15 (10%)
Hispanic or Latino	5 (3.4%)
Native Hawaiian or other Pacific Islander	1 (0.7%)
White	123 (84%)
Caregiver.Current.Employment	
Formal Work	90 (61%)
Homemaker	19 (13%)
Informal Work	16 (11%)
Looking for work/unemployed	5 (3.4%)
On disability	10 (6.8%)
Other	6 (4.1%)
Student	1 (0.7%)

[1] Mean (SD); n (%)



$$MSSD = \frac{\sum_{i=1}^{n-1}(x_{i+1} - x_i)^2}{n-1}$$


β=0.208, p=0.027
Positive Parenting MSSD
Over 7 Timepoints
1.5
1.0
0.5
0.0
0.0
0.5
1.0
1.5
Conduct Problems (Strengths &
Difficulties Questionnaire, Mean Ratings)

3) Data Science & Analytics

Yule, Houston, & Grych, 2019

Table 4 Effect sizes for additive tests of protective factors predicting adaptive functioning

Protective factor	Methodology	Additive effects							
		# Of studies	*N*	Weighted effect size *r*	95% CI		Q	I^2 %	*Fail-safe N*
					LL	UL			
Positive self-perceptions	Cross-sectional	10	5282	0.22**	0.10	0.33	12.61	93%	424
	Longitudinal	1	–	–	–	–	–	–	–
Cognitive ability	Cross-sectional	1	–	–	–	–	–	–	–
	Longitudinal	1	–	–	–	–	–	–	–
Self-regulation	Cross-sectional	6	1243	0.52***	0.40	0.62	3.91	80%	815
	Longitudinal	4	1984	0.06	−0.01	0.14	2.79	24%	4
Coping	Cross-sectional	6	577	0.12*	0.01	0.24	3.85	47%	12
	Longitudinal	2	481	0.04	−0.05	0.13	0.79	0%	0
Family support	Cross-sectional	27	33,380	0.16***	0.12	0.20	32.48	81%	4276
	Longitudinal	20	22,046	0.10**	0.04	0.15	16.88	93%	890
Parental effectiveness	Cross-sectional	8	6013	0.20***	0.10	0.30	8.66	75%	183
	Longitudinal	7	5802	0.14	−0.09	0.35	4.10	99%	341
School support	Cross-sectional	10	26,429	0.15*	0.04	0.26	4.57	98%	2151
	Longitudinal	2	6470	0.03*	0.01	0.05	0.86	0%	2
Peer support	Cross-sectional	7	2180	0.13**	0.04	0.22	5.65	73%	54
	Longitudinal	7	6276	0.06**	0.02	0.10	5.90	58%	40
Community cohesion	Cross-sectional	3	3313	0.13*	0.01	0.24	2.16	70%	17
	Longitudinal	4	5354	0	−0.03	0.03	0	0%	0
Extra-curricular activities	Cross-sectional	1	–	–	–	–	–	–	–
	Longitudinal	3	3026	0	−0.04	0.04	0	0%	0
Religious involvement	Cross-sectional	3	813	0	−0.1	0.1	0	0%	0
	Longitudinal	1	–	–	–	–	–	–	–

– Not enough studies to calculate an effect size

*$p < .05$; **$p < .01$; ***$p < .001$

Challenges with Collinear and Small Effects…

Positive self-perceptions	Cross-sectional	10	5282	0.22**
	Longitudinal	1	–	–
Cognitive ability	Cross-sectional	1	–	–
	Longitudinal	1	–	–
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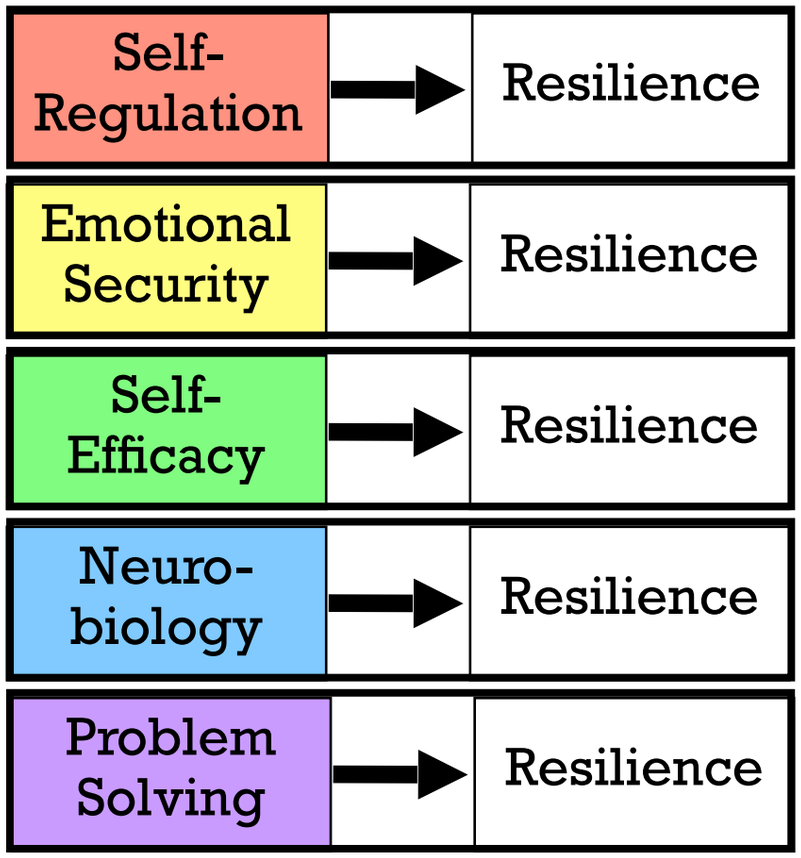
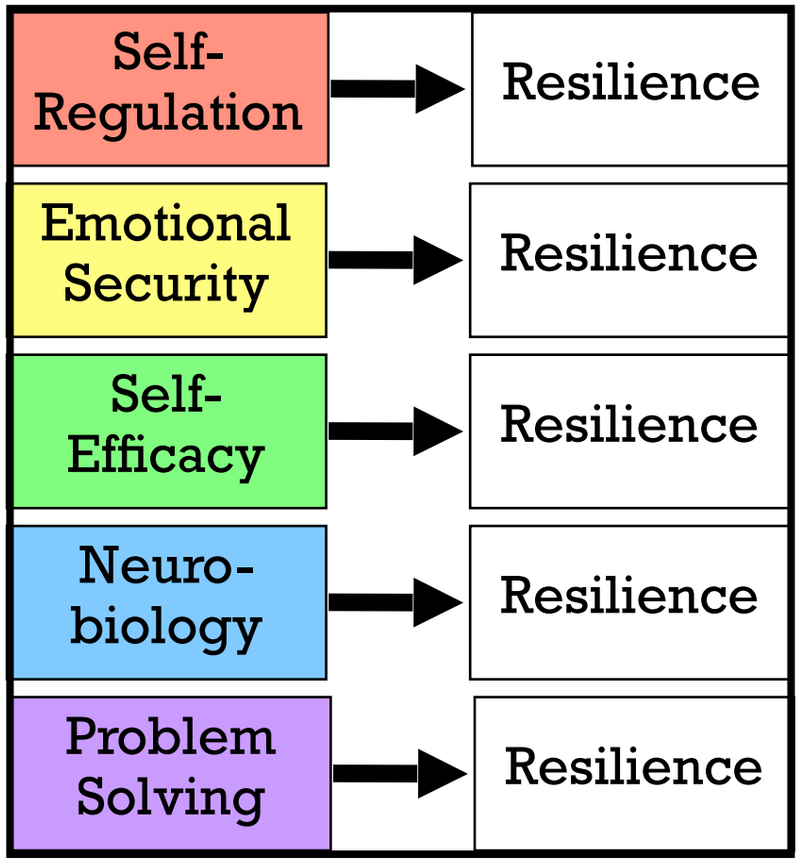
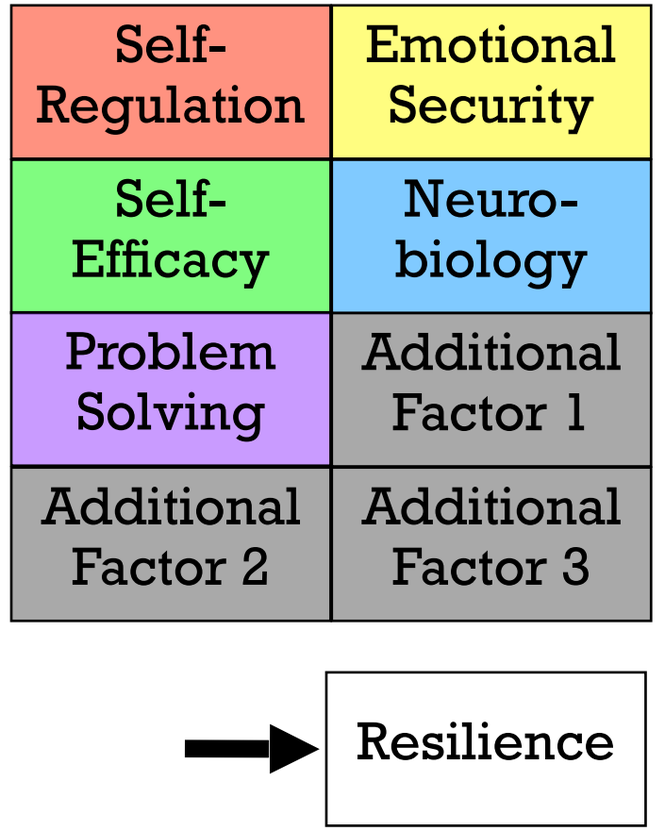
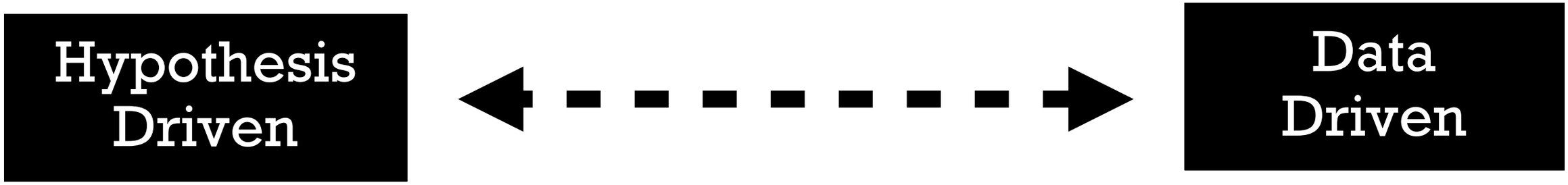
Move to Data Driven Approaches?









Data Analysis Inspired by Wednesday's Talks…

- Recent waves of ABCD included many different measures of protective factors

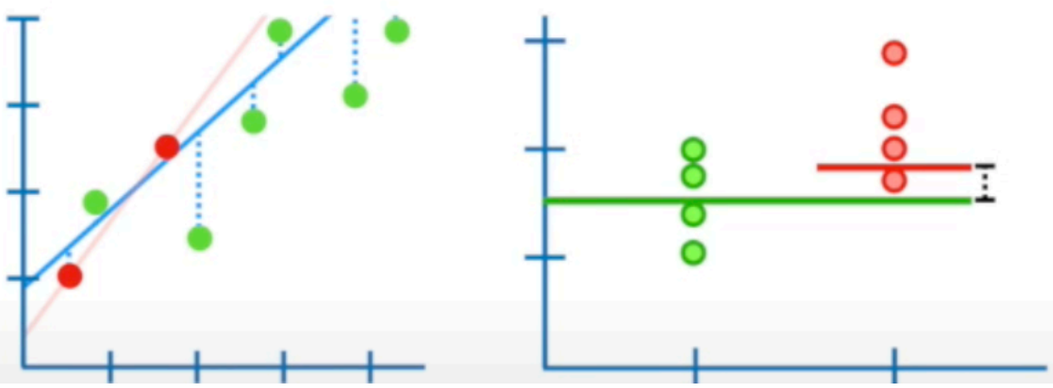
Sample Characteristics	N = 2,715[1]
Child.Age *(Months)*	120 (7)
Child.Sex	
F	1,289 (47%)
M	1,426 (53%)
Youth.of.Color	
0 *(Yes)*	553 (20%)
1 *(No)*	2,162 (80%)
Internalizing.Sx.T	48 (10)
Externalizing.Sx.T	45 (10)

[1] Mean (SD); n (%)

- Intended to use a penalized regression framework ("*elastic net*") in prediction of <u>prosocial behavior</u>
  - Maximizing prediction of DV, via tuning of penalty term *(from ridge, alpha=0, to lasso ,alpha=1)*
  - Out-of-bag Cross-Validation Predictions
  - Comparison to a set of null models generated by random permutations of the DV

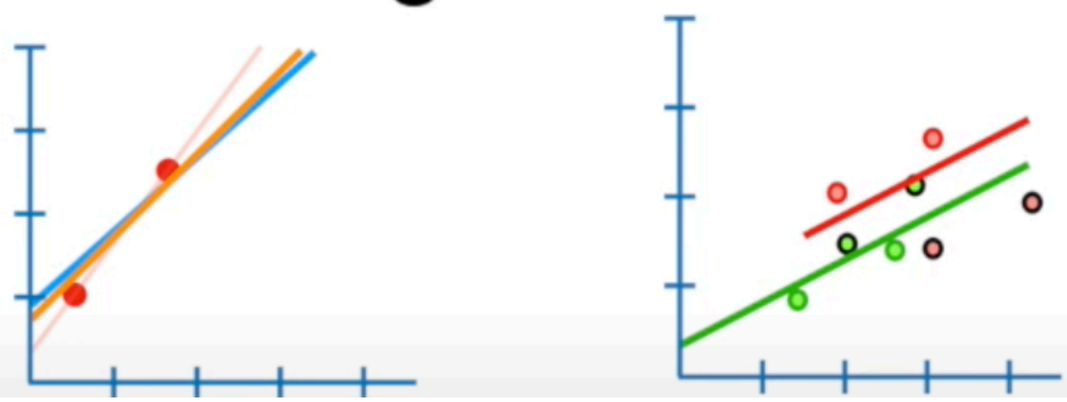
Multicollinearity (L2)

Ridge Regression....



Sparsity (L1)

Lasso Regression....

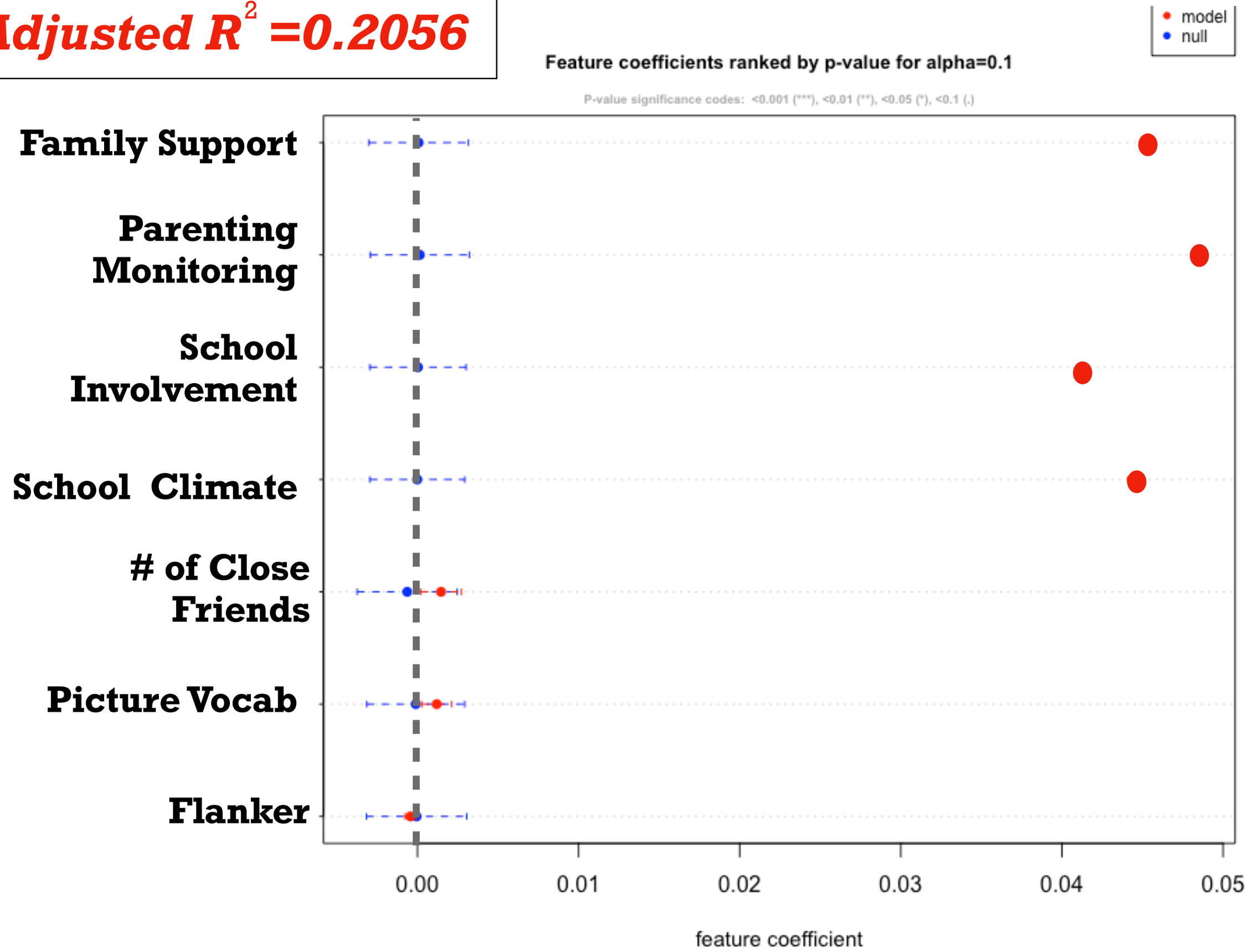


Outcome of Interest— Prosociality (Strengths & Difficulty Questionnaire)

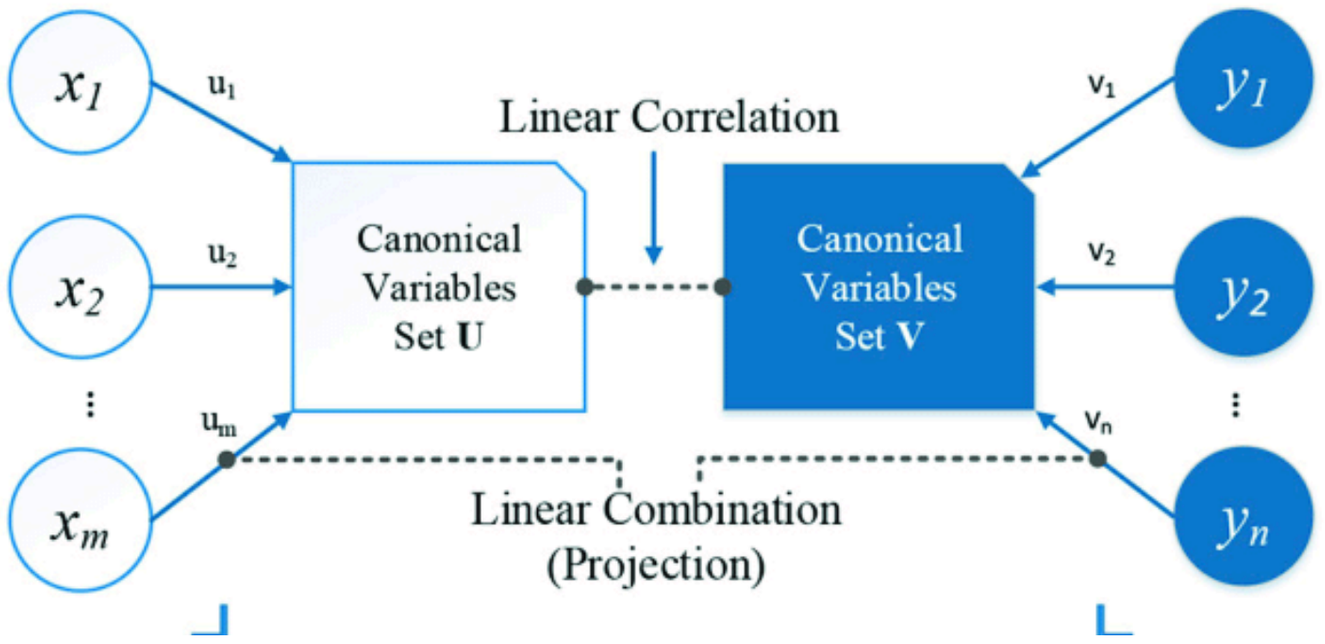
Domain	*Construct*	*Example Item*
Peer Relations	Close Friends	
Neurocognition	Picture Vocabulary Test	NIH Toolbox Picture Vocabulary Task
Neurocognition	Inhibitory Control	NIH Toolbox Flanker Task
Parenting	Parental Monitoring	How often do your parents know who you are with when you are not at school and away from home?
Family Climate	Family Support	Family provides a sense of security because they will always be there for you.
School	School Climate	I get along with my teachers.
School	School Involvement	There are lots of chances to be part of class discussions or activities.

+ 10 other person, family, neighbor constructs…

Adjusted R^2 =0.2056



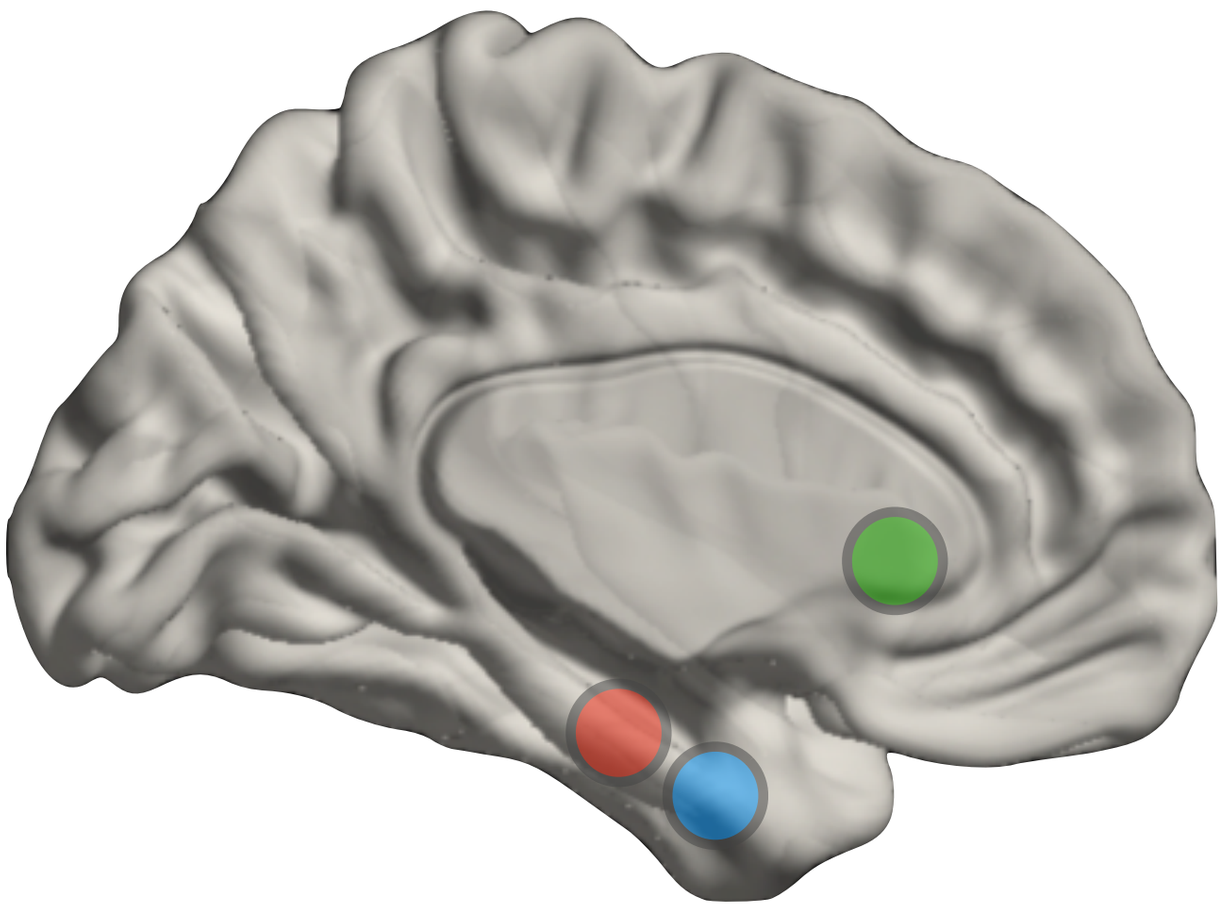
Assets & Protective Factors



Behavioral Processes & Outcomes

3. What fosters adaptive success?	2. How well is the person doing?
Assets/Protections	**Adaptive success**
Neurobiological	Developmental tasks
Individual	Mental health
Family & relational	Physical health
Community	Happiness
Cultural	School or job achievement
Societal	Parenting

Latent Profiles of Neurobiology



"Incremental Feedback"
"Relational Learning"
"Vigilance"

Ventral Striatum

Hippocampus

Amygdala