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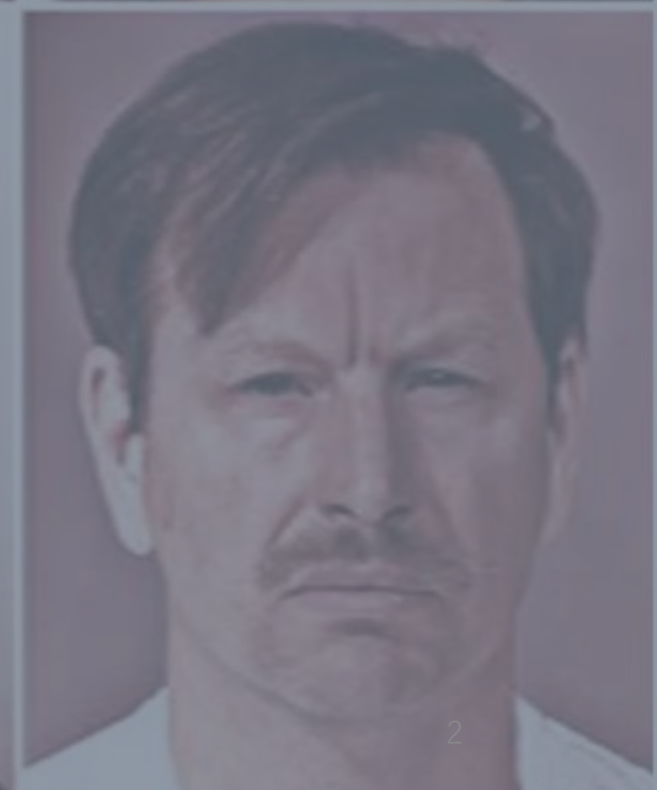
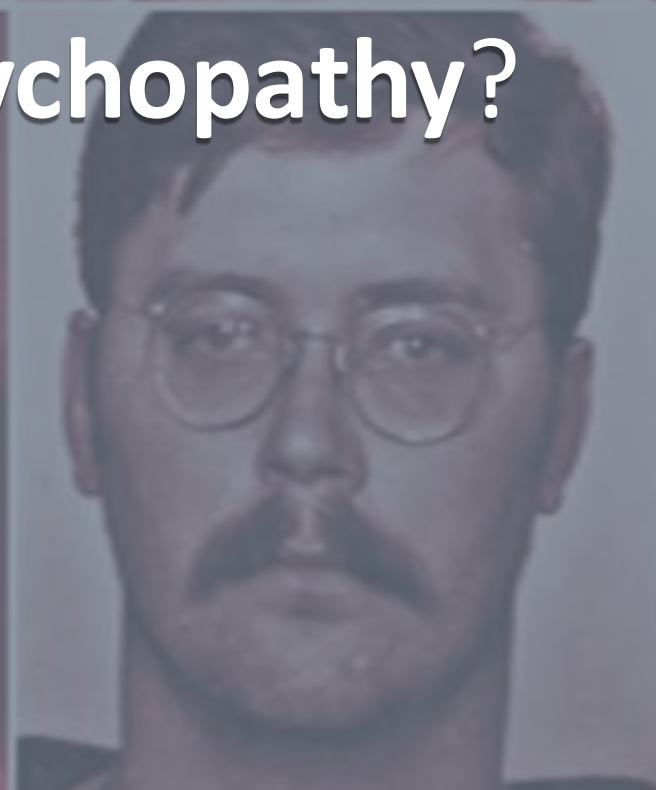
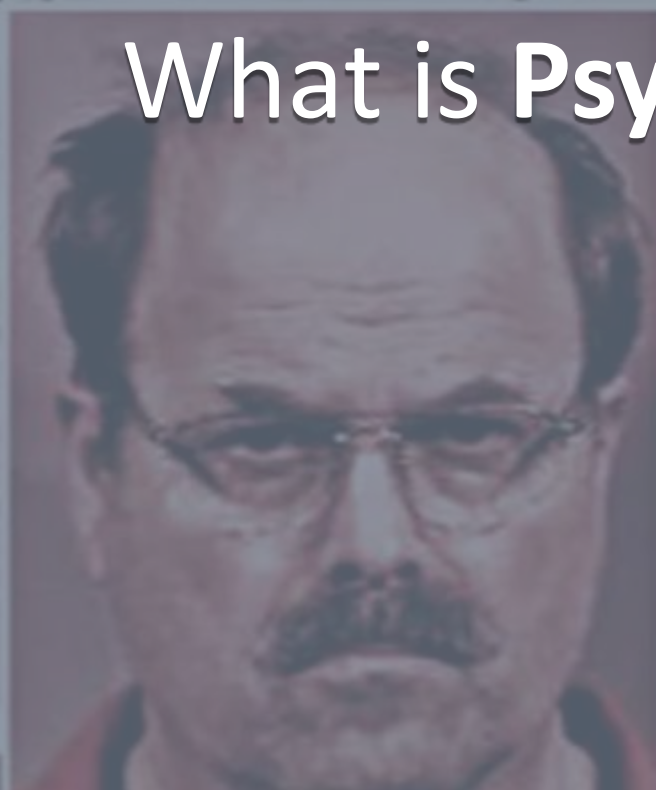
# Childhood Indirect Aggression as a Developmental Precursor to Adult Psychopathic Tendencies: A Longitudinal Study Using z-proso Data

**zIReN Meeting, 28-30 September 2025, Cambridge**  
Session 3: Violent Ideations & Psychopathy

**Presented by Cheryl Shihan Peng**  
Institute of Criminology, University of Cambridge  
28 September 2025

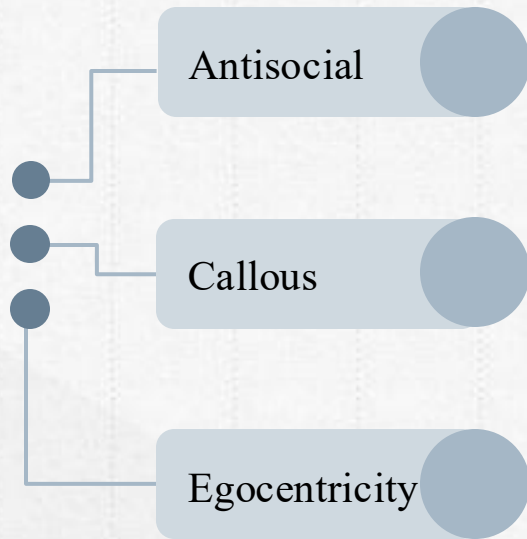


# What is Psychopathy?



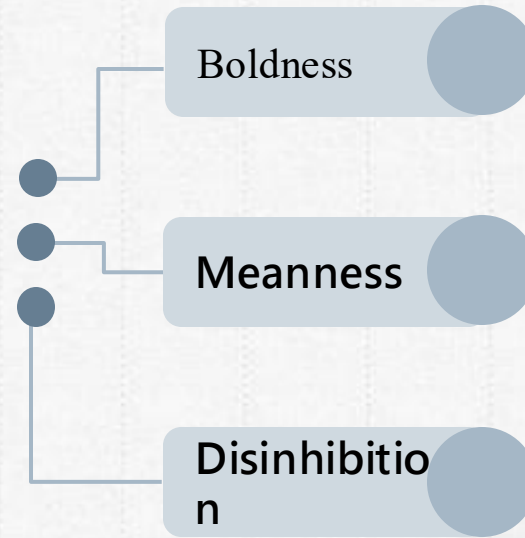
*“Superficial charm and good ‘intelligence’; absence of delusions or other signs of irrational thinking; absence of ‘nervousness’ or psychoneurotic manifestations; unreliability; untruthfulness and insincerity; lack of remorse and shame; inadequately motivated antisocial behaviour; poor judgement and failure to learn by experience; pathologic egocentricity and incapacity for love; general poverty in major affective reactions; specific loss of insight; unresponsiveness in general interpersonal relations; fantastic and uninviting behaviour with drink and sometimes without; suicide rarely carried out; sex life impersonal, trivial, and poorly integrated; and a failure to follow any life plan. ”.*

**Levenson's Model**



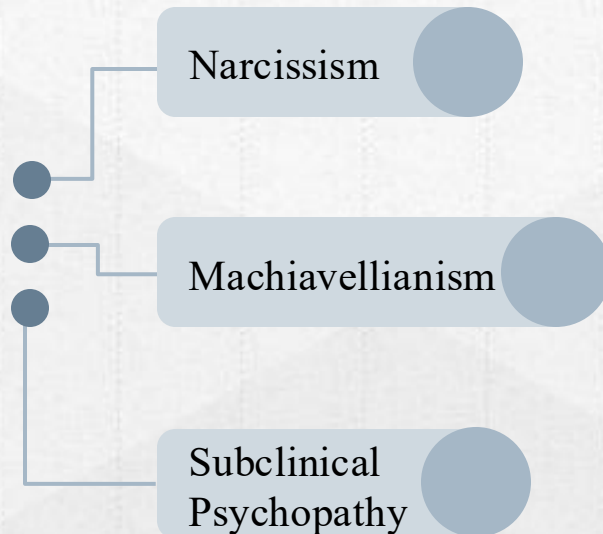
(Levenson *et al.*, 1995)

**Patrick's Model**



(Patrick *et al.*, 2009)

**Dark Triad**



(Paulhus & Williams, 2002)

# Predictors of psychopathy

## Research in past 10 years

### Childhood trauma

- Rejection from parent(s) (Zara, Bergström & Farrington, 2023)
- Maltreatment (Sexual abuse, physical abuse and emotional neglect) (Carvalho, Maciel & Basto-Pereira, 2020; Schimmenti et al. 2015; Dargis et al., 2015; Forouzan & Nicholls, 2015)
- Home chaos (Fisher & Brown, 2018)

### Socioeconomic environment

- Poor housing (Bergström & Farrington, 2021)
- Living in an overcrowded family (Zara, Bergström and Farrington, 2023)
- Neighborhood socioeconomic deprivation (Bamvita et al., 2017)

### Early behavioral problems

- **Physical aggression** (Hemphälä et al., 2015; Bégin et al., 2023)
- Opposition (Bégin et al., 2023)
- Delinquency/conduct problems (Fisher & Brown, 2018; Klingzell et al., 2015; Samuel et al., 2016)
- Impulsivity (Forouzan & Nicholls, 2015; Dapprich et al., 2022)

### Early personality trait and temperament

- Callousness (Klingzell, et al., 2015; Docherty, et al. 2019; Rhee et al., 2021)
- Emotional dysregulation (Sevecke et al., 2016)
- Infant difficult temperament (Javakhishvili & Vazsonyi, 2021)
- Toddlerhood antisocial personality disorder symptoms (Rhee et al., 2021)

# Predictors of psychopathy

## Research in past 10 years

Biological vulnerability

The poor health of the mother

Living in an overcrowded family

Parent(s)' criminal record

Mother's age at participant's birth

Mother's low level of education

Parental sensitivity

Mother's mental and personality problems

Higher levels of psychotropic exposures during pregnancy

Being a male (Hemphälä et al., 2015)

.....

# Aggression → Psychopathy

- **Robust longitudinal signal (small–moderate):**

Children with higher and/or persistent aggression are more likely to show adult psychopathy, especially lifestyle/antisocial facets; effects are typically small to moderate and remain after covariates in many models.

(Lynam et al., 2007; Burke et al., 2007; Hawes et al., 2017; Bamvita et al., 2017)

- **“Dual-risk” pattern:**

High aggression + high callous–unemotional (CU)/interpersonal callousness (IC) in late childhood uniquely predicts higher adult psychopathy across interpersonal/affective and antisocial dimensions.

(Burke et al., 2007; Hawes et al., 2017)

- **Reactive vs. proactive**

Reactive/irritable aggression in childhood shows consistent links to later antisocial/lifestyle psychopathy features; attention problems often co-predict.

(Bamvita et al., 2017)

# Aggression → Psychopathy

The Genetic and Environmental Covariation Among Psychopathic Personality Traits, and Reactive and Proactive Aggression in Childhood	Serena Bezdjian, Catherine Tuvblad, Adrian Raine, Laura A. Baker	2011	Cross-sectional
Examining the joint development of antisocial behavior and personality: Predictors and trajectories of adolescent indirect aggression and machiavellianism.	Farrell, Ann H. Vaillancourt, Tracy	2021	Longitudinal
The Role of Psychopathic Traits in Explaining Associations Between Childhood Traumatic Experiences and Aggression	Hedwig Eisenbarth and Carlo Garofalo	2021	Cross-sectional
The relationship between psychopathy and indirect aggression in a community sample	Gemma Carolyn Warren	2009	Quasi-experimental
Nipping psychopathy in the bud: An examination of the convergent, predictive, and theoretical utility of the PCLYV among adolescent girls	Odgers, C. L., Reppucci, N. D., & Moretti, M. M	2005	Cross-sectional
Exploring the cognitive and emotional correlates to proactive and reactive aggression in a sample of detained girls	Marsee, M. A., & Frick, P. J.	2007	Cross-sectional
The association of psychopathic traits with aggression and delinquency in non-referred boys and girls.	Marsee, M. A., Silverthorn, P., & Frick, P. J.	2005	Cross-sectional
The relation of psychopathy to concurrent aggression and antisocial behavior in high-risk adolescent girls and boys.	Penney, S. R., & Moretti, M. M.	2007	Cross-sectional
Psychopathy and the Five-factor model of personality: A replication and extension	Miller and Lynam	2003	Experiment
The interface between psychopathy and relational aggression in an incarcerated female population	Ben-Horin	2001	Cross-sectional
Psychopathy, aggression, and cheating behavior: A test of the Cheater-Hawk hypothesis	Coyne, S. M., & Thomas, T. J	2008	Cross-sectional
Trait correlates of relational aggression in a nonclinical sample: DSM-IV personality disorders and psychopathy	Kelly M. Schmeelk, Patrick Sylvers and Scott O. Lilienfeld	2008	Cross-sectional
The utility of forms and functions of aggression in emerging adulthood: Association with personality disorder symptomatology	Ostrov & Houston	2008	Cross-sectional
Early adolescent aggression predicts antisocial personality disorder in young adults: a population-based study	Alyce M. Whipp, Tellervo Korhonen, Anu Raevuori, Kauko Heikkilä, Lea Pulkkinen, Richard J. Rose, Jaakko Kaprio & Eero Vuoksima	2019	Longitudinal
Relationship between psychopathy and indirect aggression use in a noncriminal population	Gemma C Warren, Jane Clarbour	2009	Cross-sectional
Psychopathy Facets, Perceived Power, and Forms of Aggression	Edelyn Verona 1,2, Sean J McKinley 1, Amy Hoffmann 3, Brett A Murphy 4, Ashley L Watts 5	2024	Cross-sectional+ conceptual replication + meta-analysis across datasets
Psychopathy and indirect aggression: The roles of cortisol, sex, and type of psychopathy	Tracy Vaillancourt ; Shafik Sunderani	2011	Cross-sectional
Impacts of psychopathic traits dimensions on the development of indirect aggression from childhood to adolescence.	Boutin, Stéphanie,Bégin, Vincent,Déry, Michèle	2023	Longitudinal

# GAP

1. Limited research on association between indirect aggression and psychopathy
2. Very limited research on indirect aggression as a developmental precursor to adult psychopathy
3. Limited longitudinal data on long-term associations ——— most existing work is concurrent or short-term (child → adolescent/early-adult traits).
4. Focus on criminal populations

# Indirect Aggression is .....

*[...] is a type of social manipulation [whereby] the aggressor manipulates others to attack the victim, or, by other means, makes use of the social structure in order to harm the target person, without being personally involved in attack”*

Björkqvist, Österman & Kaukiainen (1992). The development of direct and indirect aggressive strategies in males and females

# Research Questions


- How is the performance of the 6-item short psychopathy scale?
- What is the role of childhood indirect aggression (IA) as a developmental precursor to adult psychopathic tendencies?
- How important is IA in the context of other subtypes of aggression (i.e. physical, reactive, proactive aggression)?
- Are there sex differences in the association between childhood IA and PTs?


# Methods

## Participants:

z-proso (Ribeaud et al., 2022): n = 1,676

## Sociodemographic variables:

 Sex (0/1)

 SES (Class score)

## Measures: (z-proso Project Team, 2024)

- Psychopathy Scale(short version of the Short Dark Triad SD3) K8-K9

- Social Behaviour Questionnaire (SBQ): K1-K4

### Aggression

- Physical Aggression
- Indirect Aggression
- Reactive Aggression
- Proactive Aggression

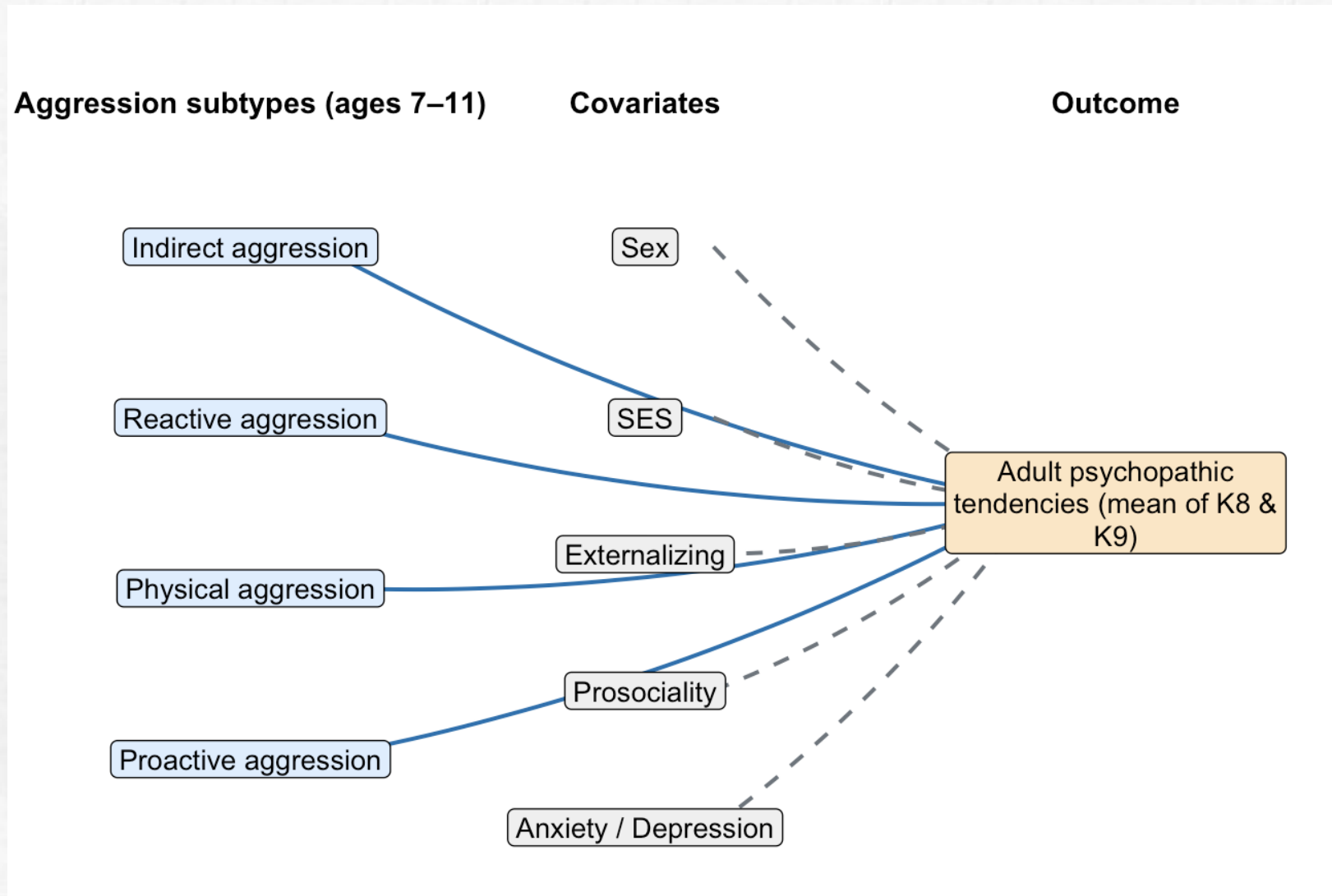
Internalising traits: Anxiety/Depression

Prosocial Behaviour

Externalising traits

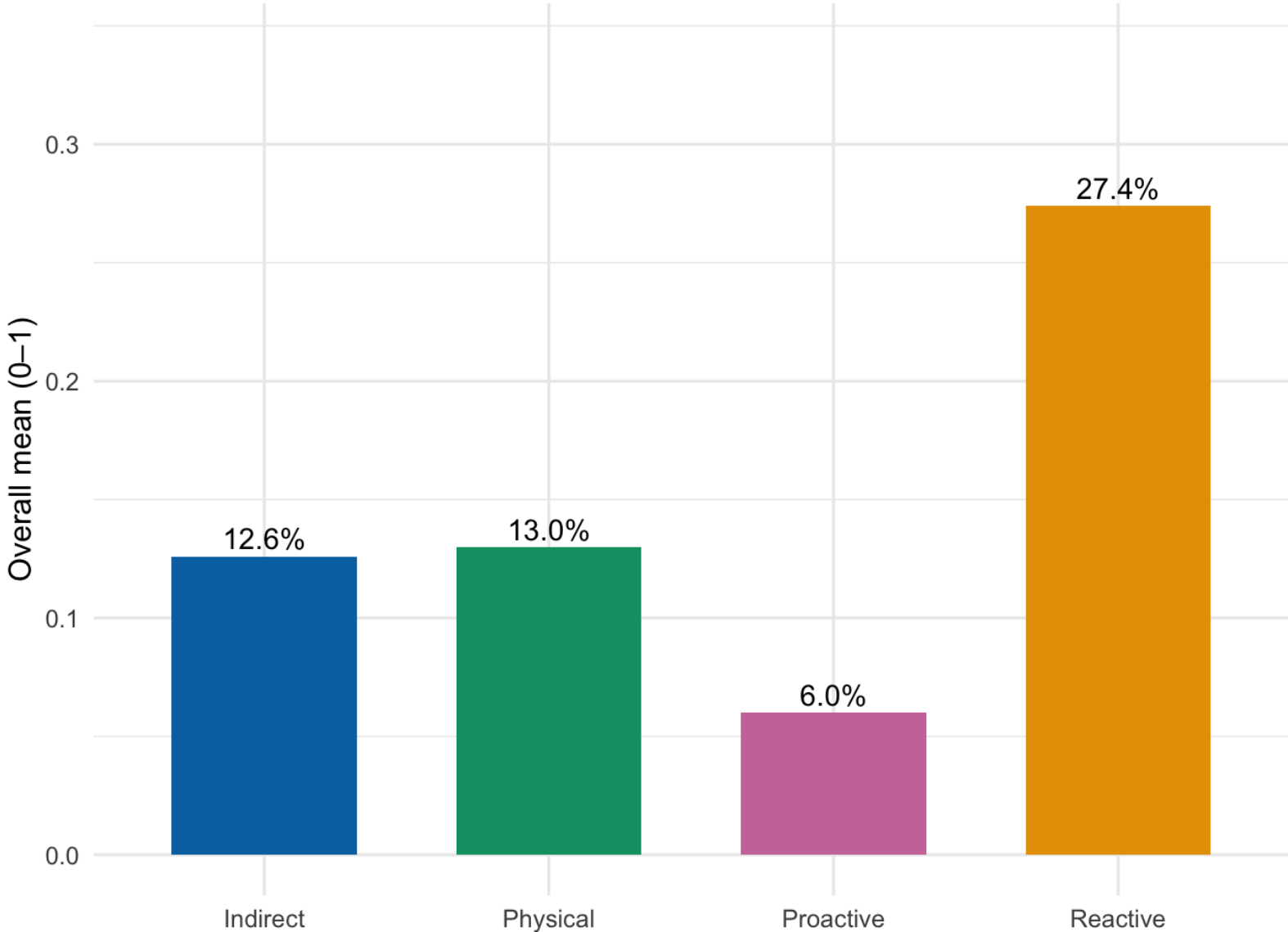
- ADHD
- Opposition/Defiance
- Non-Aggressive Conduct Disorder

# Sequential Equation Modelling

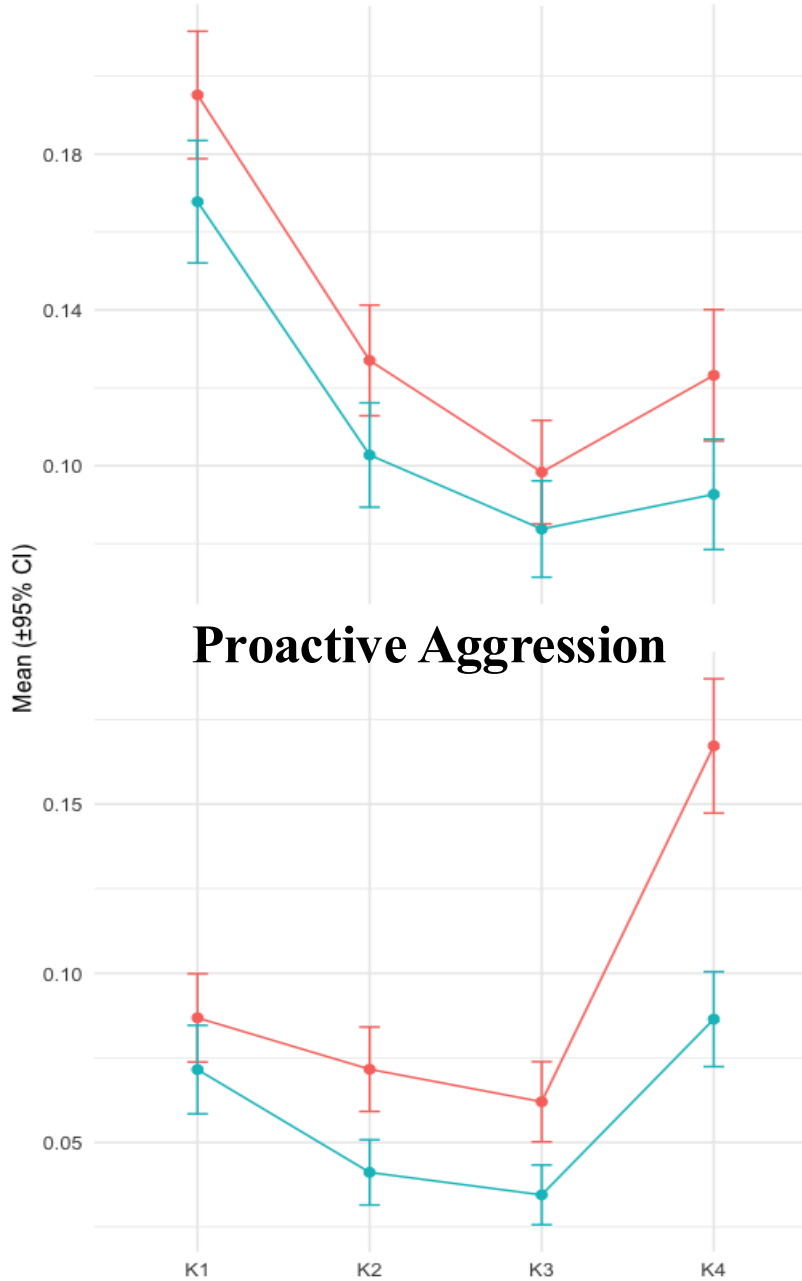


# Descriptive Statistics

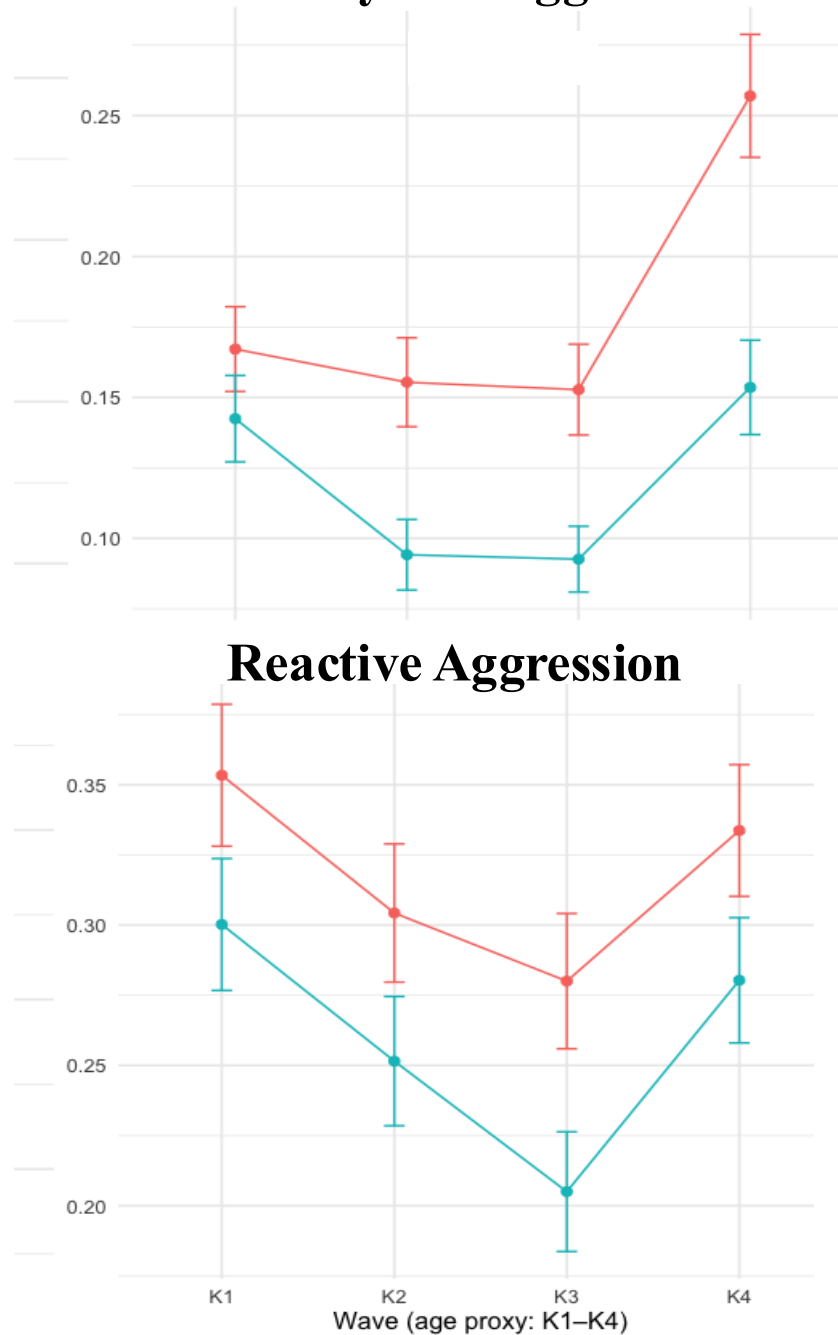
Overall aggression means across K1–K4 (K4 nSBQ rescaled to 0–1)



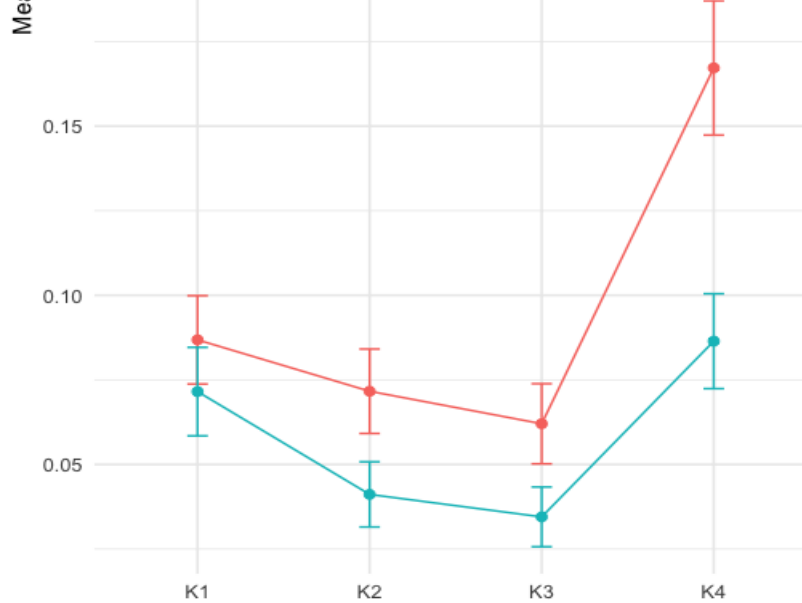
## Indirect Aggression



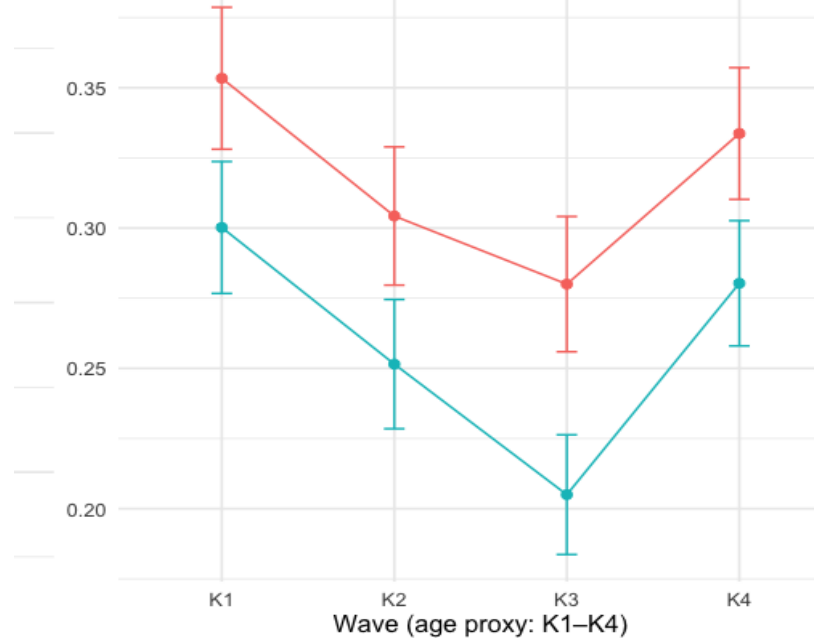
## Physical Aggression



## Proactive Aggression



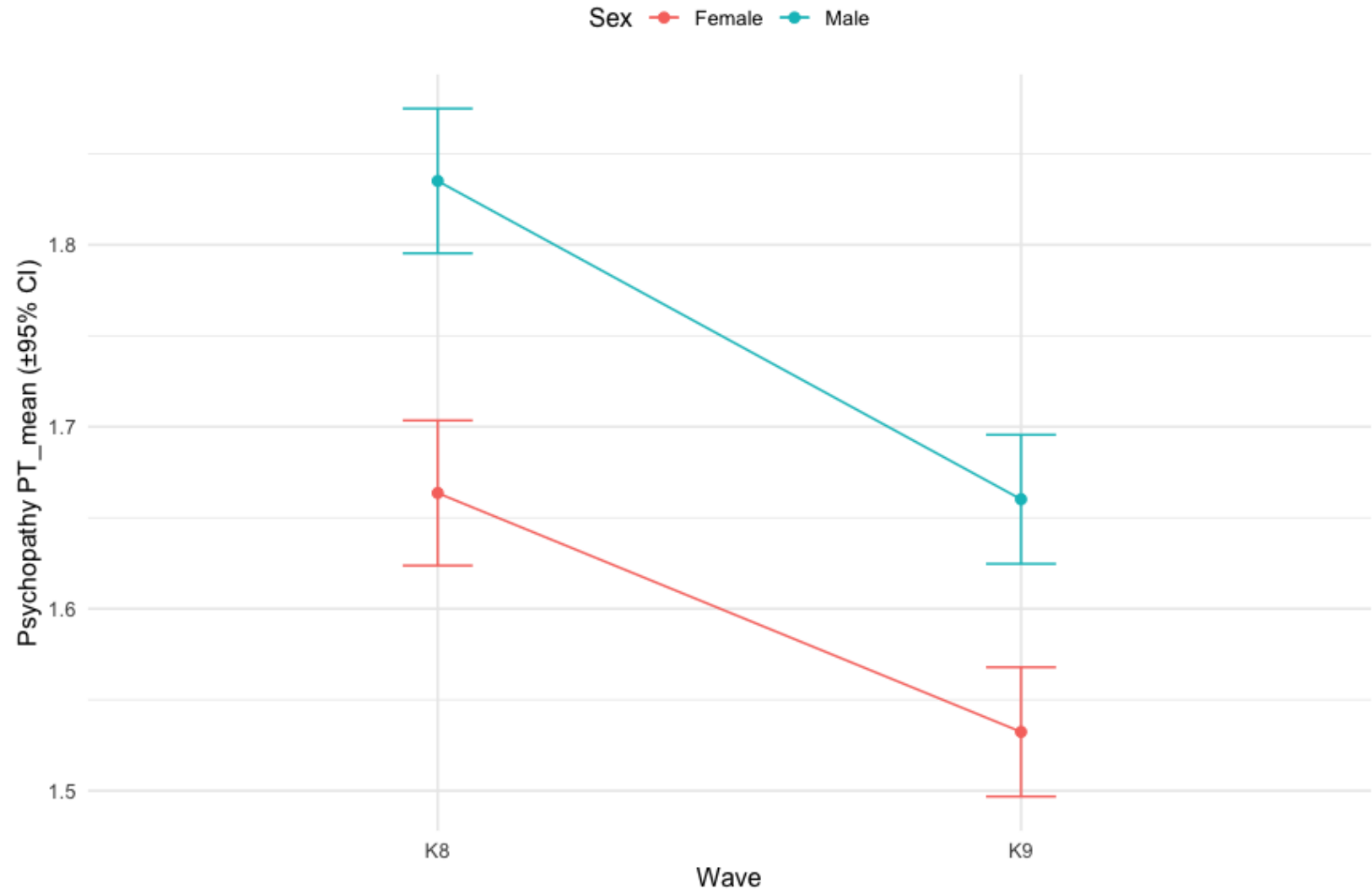
## Reactive Aggression



Subtypes of Aggression  
across 7-11 years old (K1-  
K4)

Sex ● Male ● Female

### Psychopathy (K8→K9) Mean by Sex



Psychopathy level across 20-24 years old (K8-K9)

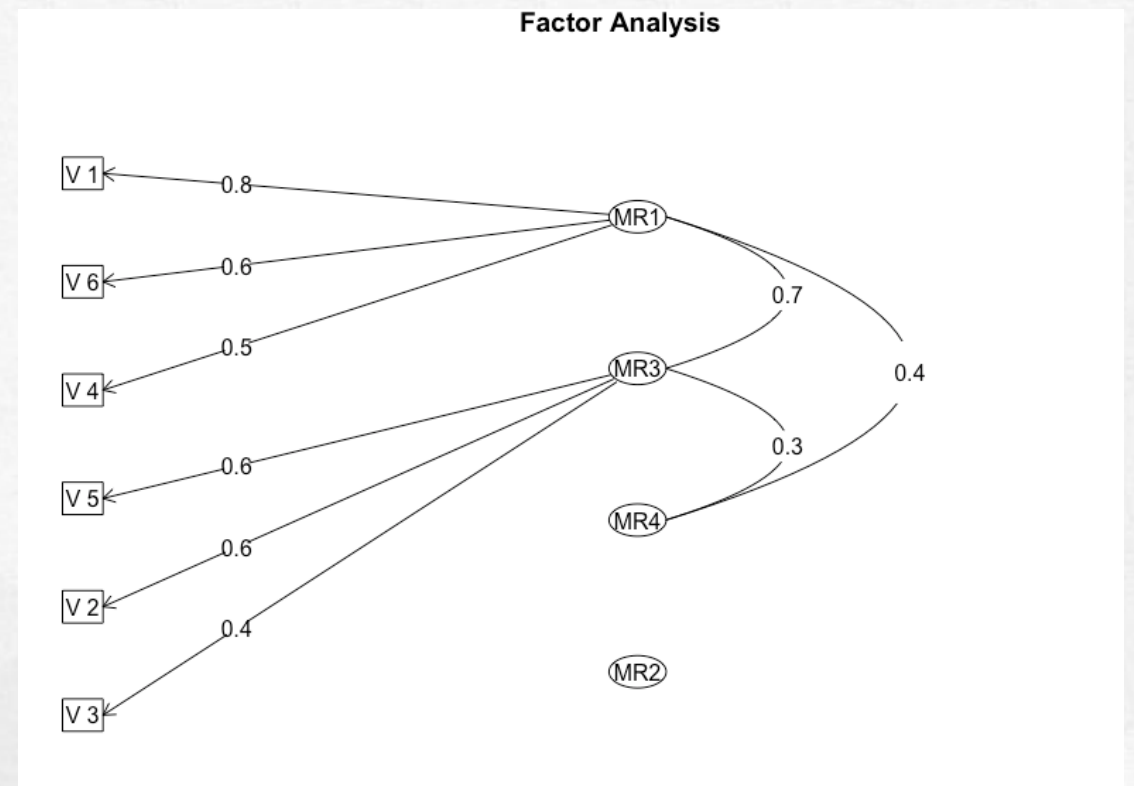
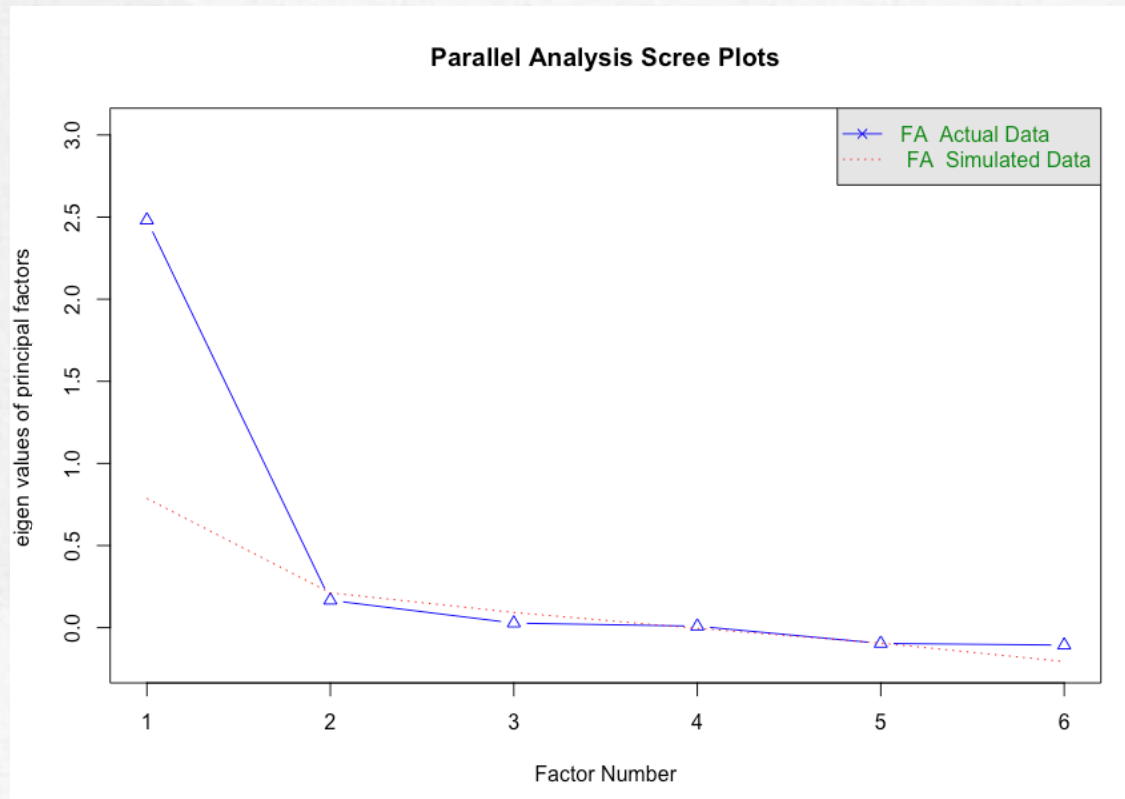
# Results: Psychopathy Scale Psychometric Property

## 18.3.2 Items

I/Q	Item (English) <i>Item (German)</i>	SPSS Varnames	Dimension	K8	K9
I	<p><b>How you see yourself</b> <i>Wie du dich siehst</i></p> <p><b>Here are some more general questions. First, they are about how you see yourself. Below are various statements. Please mark, how true these statements are for you.</b> <i>Jetzt kommen wieder ein paar allgemeine Fragen. Zuerst geht es darum, wie du dich siehst. Hier unten stehen verschiedene Aussagen. Markiere bitte, wie sehr diese Aussagen für dich stimmen.</i></p>			X	X
Q	<p><b>Payback needs to be quick and nasty.</b> <i>Rache muss schnell und kalt serviert werden.</i></p>	K8-9_1725	Callous Affect	21	08
Q	<p><b>People often say I'm out of control.</b> <i>Menschen sagen oft, dass ich ausser Kontrolle sei.</i></p>	K8-9_1727	Erratic Lifetyle	23	11
Q	<p><b>People who mess with me always regret it.</b> <i>Menschen bereuen es immer, wenn sie sich mit mir anlegen.</i></p>	K8-9_1729	Antisocial Behaviour	25	14
Q	<p><b>I like to get revenge on authorities.</b> <i>Ich mag es, mich an Autoritäten zu rächen.</i></p>	K8-9_1731	Antisocial Behaviour	27	17
Q	<p><b>It's true that I can be nasty.</b> <i>Es stimmt schon, dass ich gemein zu anderen sein kann.</i></p>	K8-9_1733	Callous Affect	29	20
Q	<p><b>I'll say anything to get what I want.</b> <i>Ich würde alles sagen, um zu bekommen, was ich will.</i></p>	K8-9_1736	Short-Term Manipulation	32	25

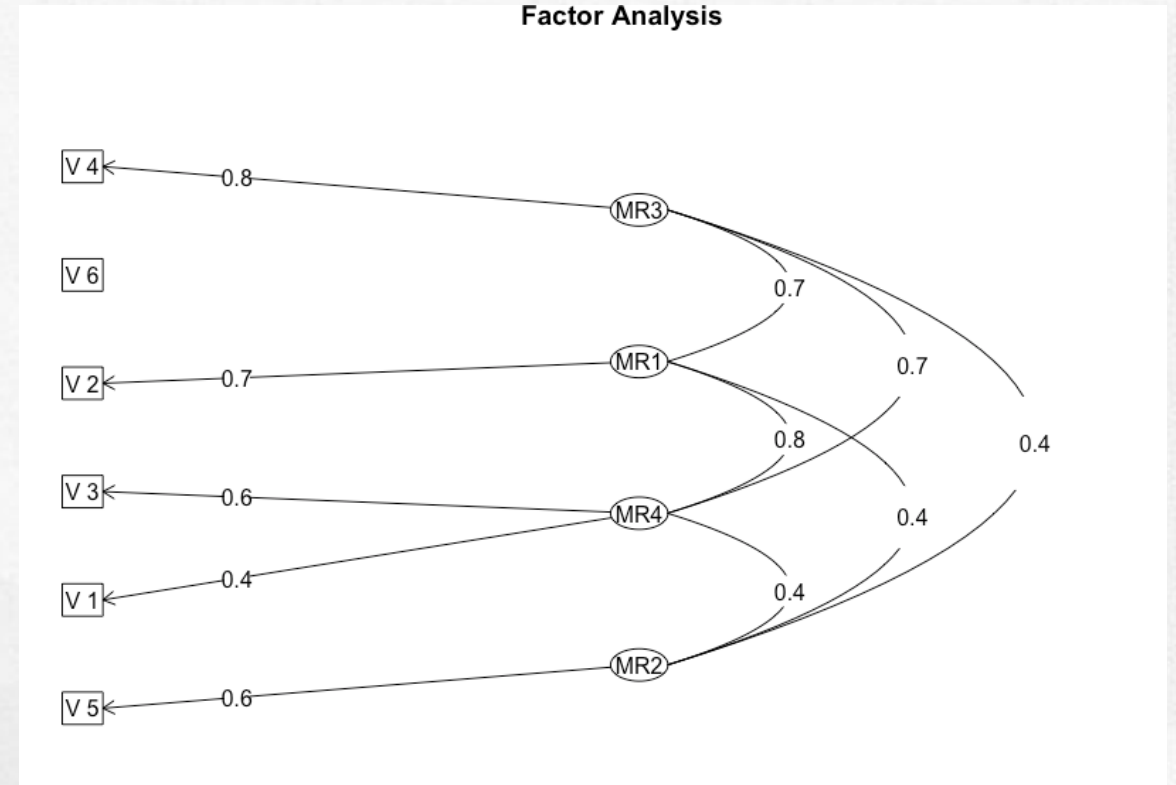
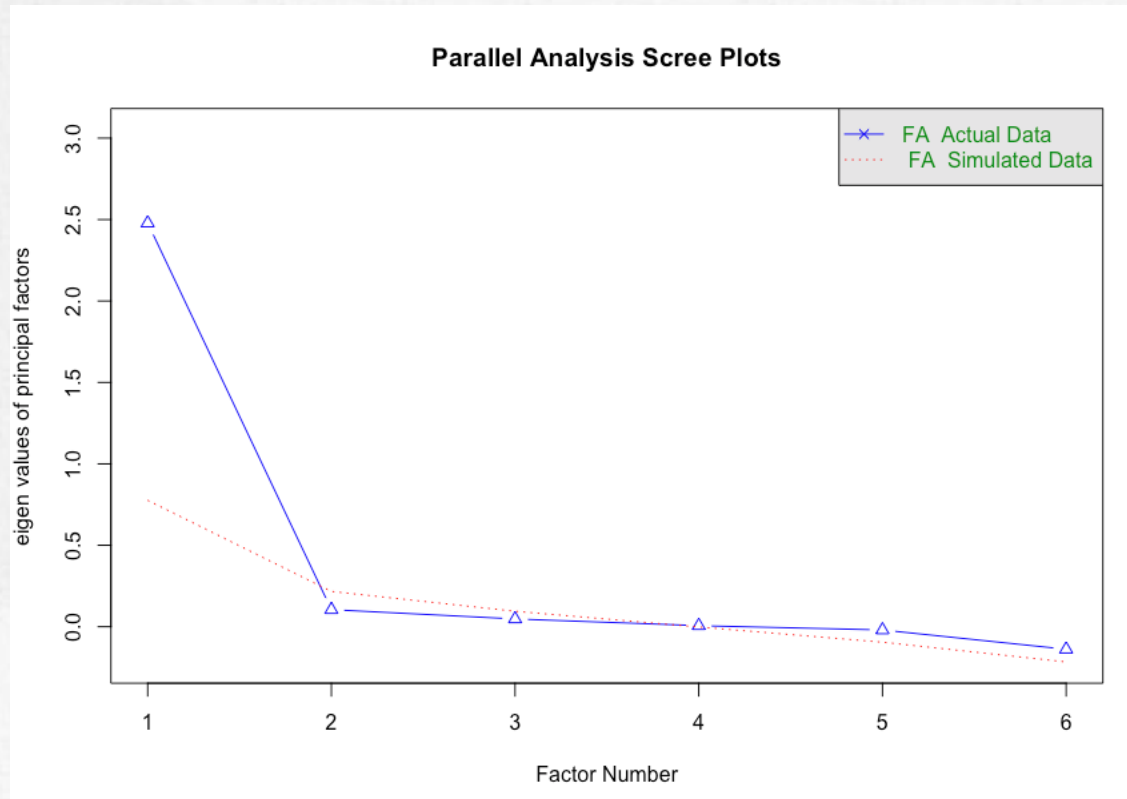
# Psychopathy Scale Psychometric Property - EFA

## K8



# Psychopathy Scale Psychometric Property - EFA

K8



# Psychopathy Scale Psychometric Property - CFA

## K8

CFI=.994

TLI=.990

RMSEA=.041

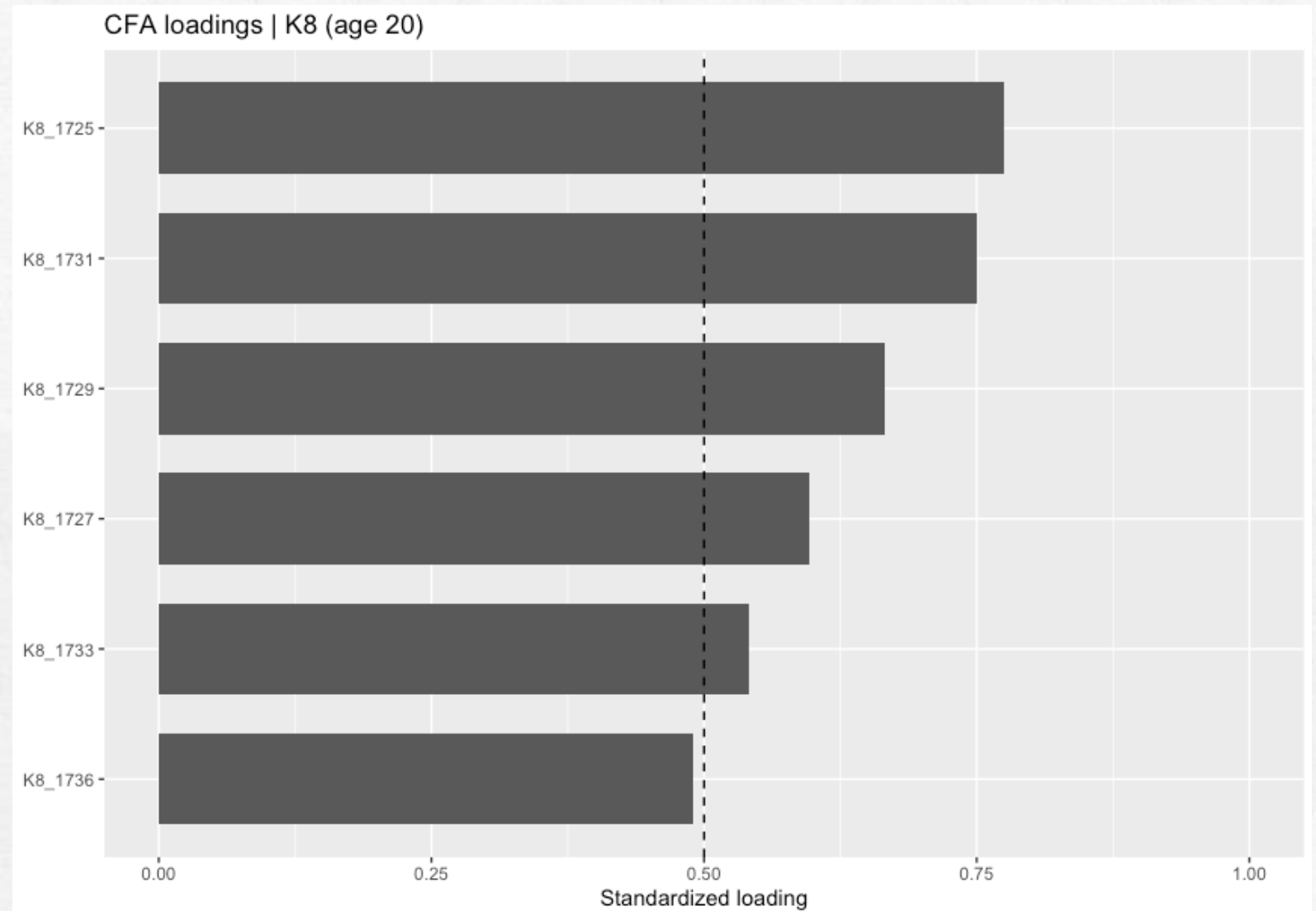
SRMR=.035

Standardized loadings  $\approx$  .49 - .78

Model-based reliability:

$\alpha \approx .80$

$\omega \approx .74$



# Psychopathy Scale Psychometric Property - CFA

**K8**

CFI=.998

TLI=.997

RMSEA=.021

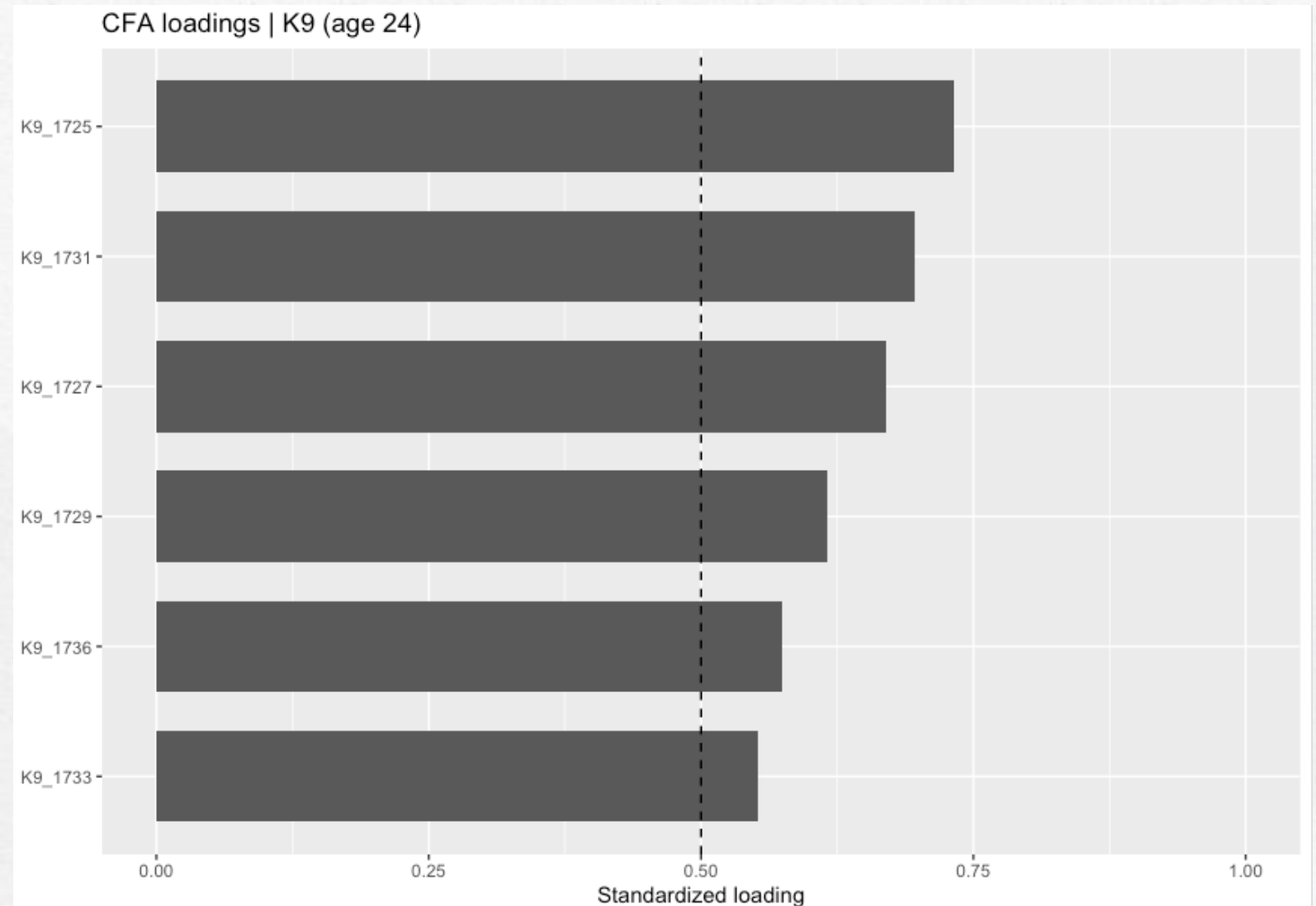
SRMR=.027

Standardized loadings  $\approx$  .55 - .73

Model-based reliability:

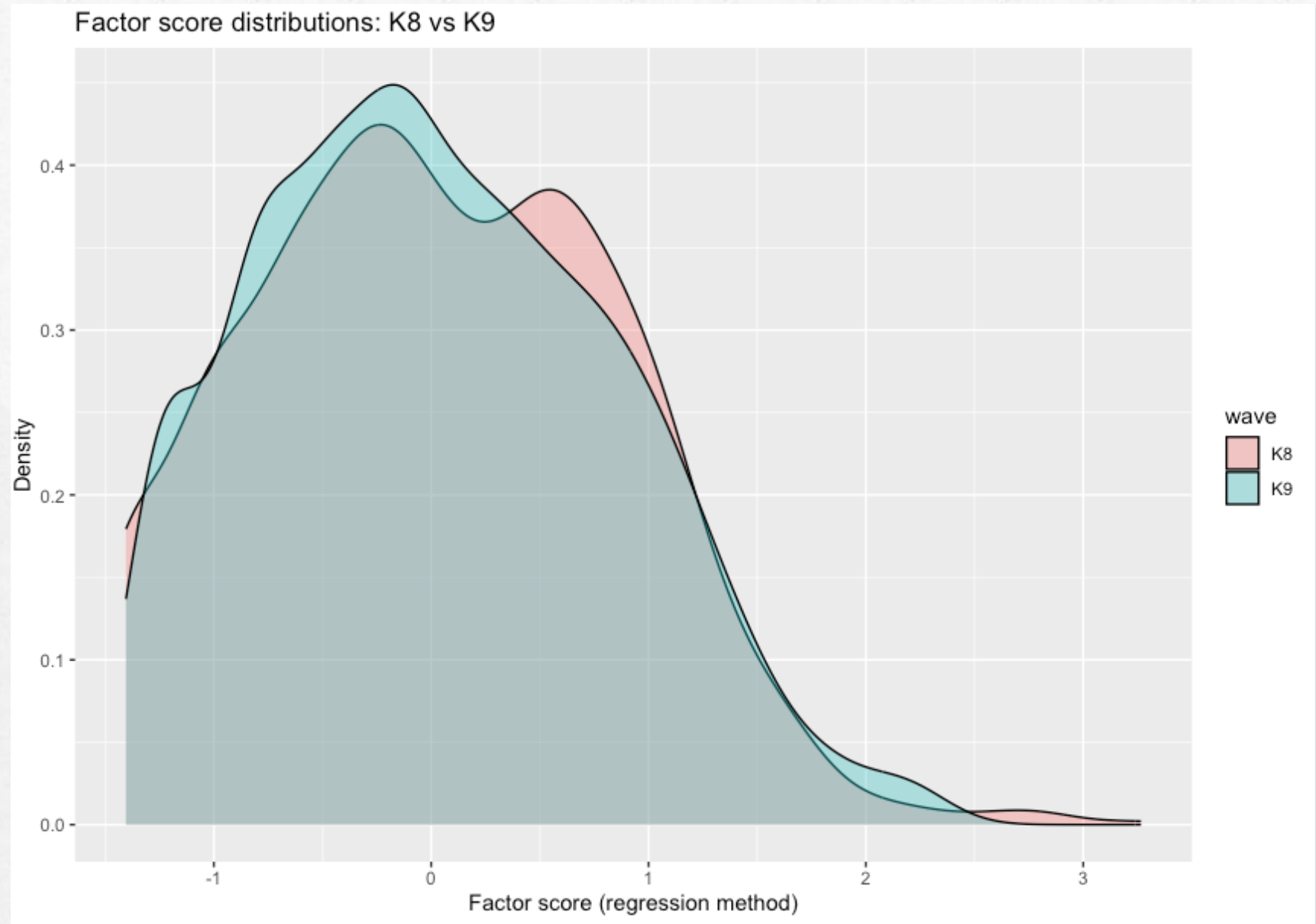
$\alpha \approx .80$

$\omega \approx .78$

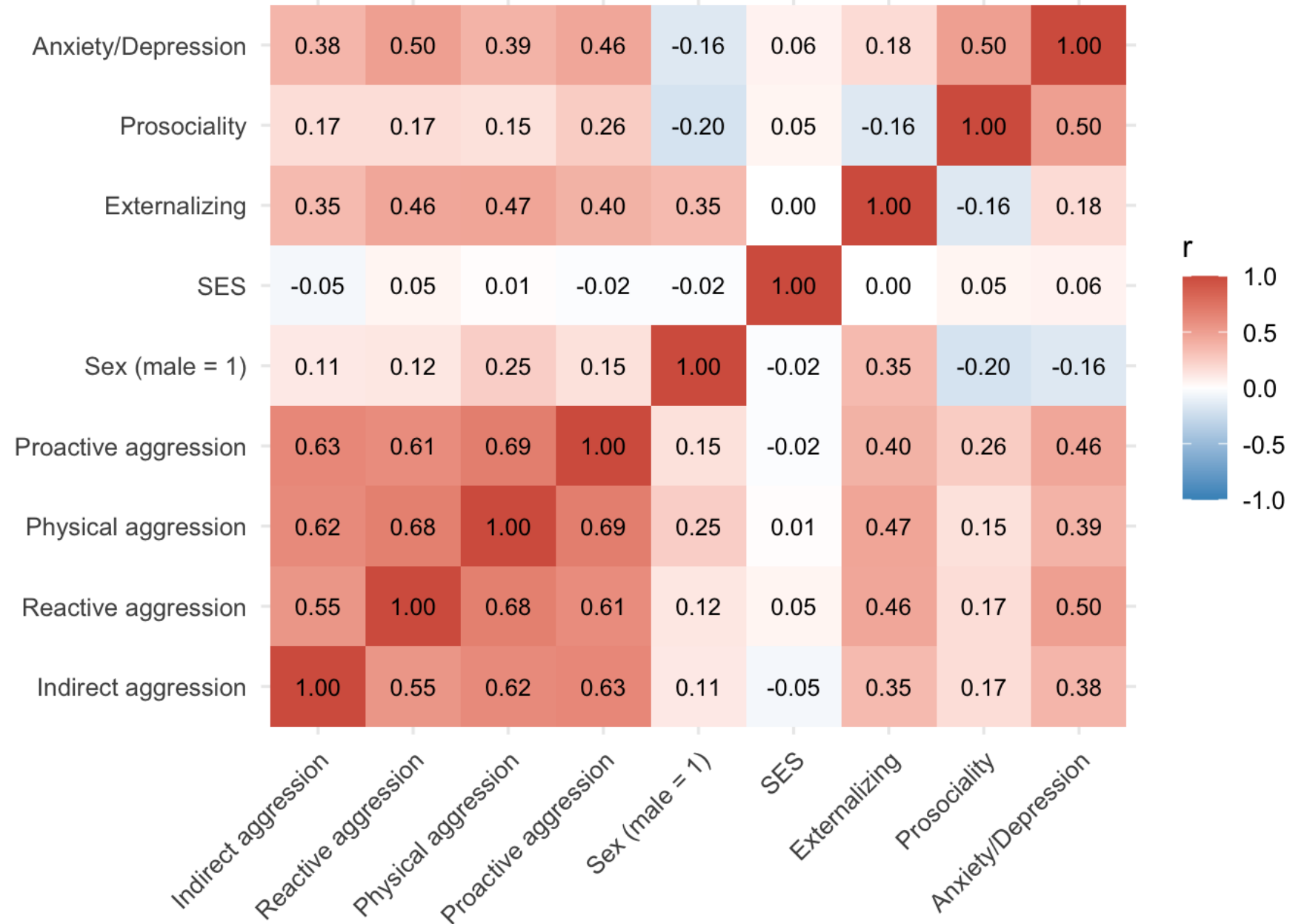


# Psychopathy Scale Psychometric Property – Test-retest stability

Configural: CFI=.996, RMSEA=.033



# Results: Correlation



# Results: SEM

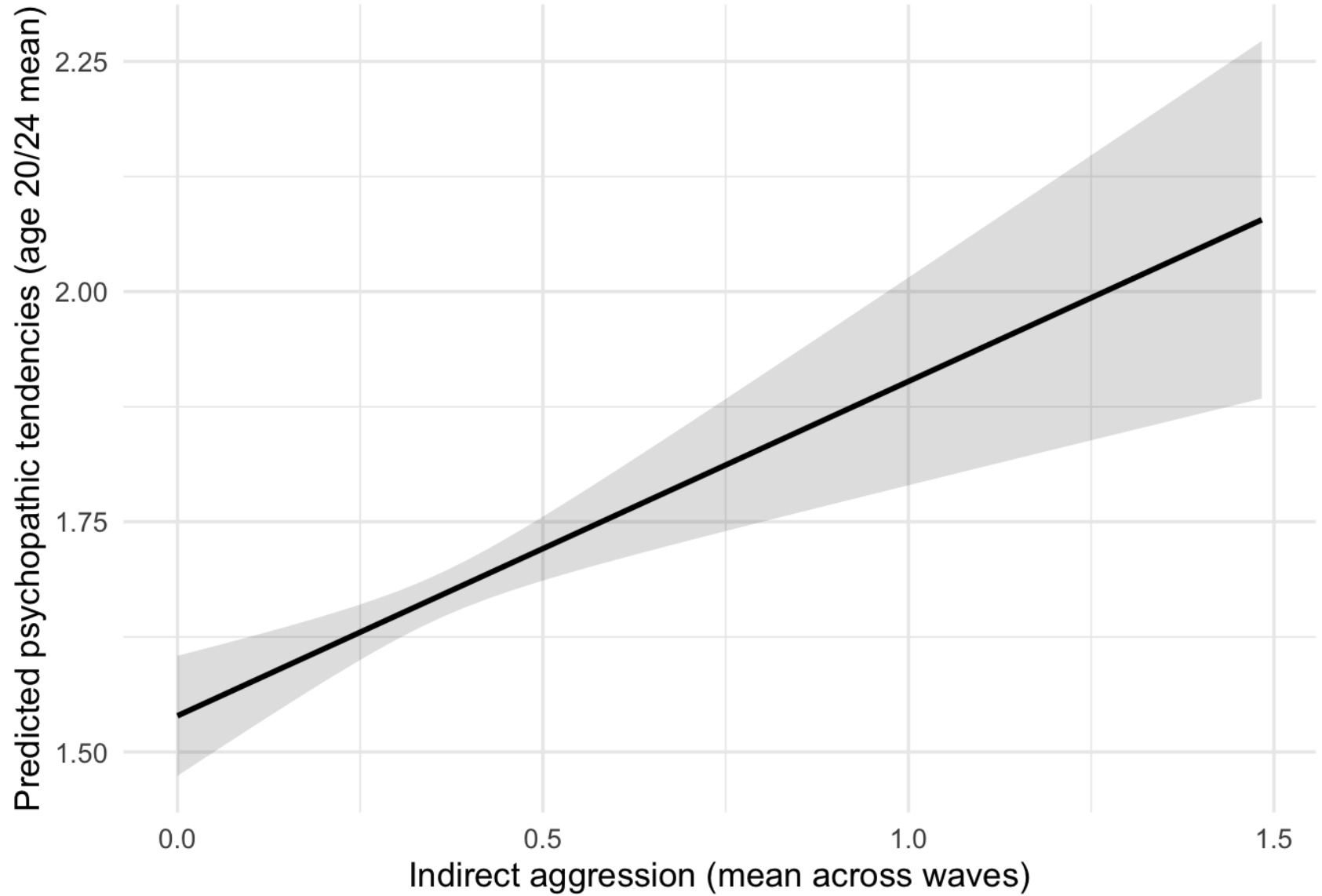
	Estimate (b)	$\beta$ (std.)	SE	z
Indirect aggression	0.363***	0.170***	0.091	3.978
Physical aggression	0.102	0.054	0.100	1.026
Reactive aggression	0.143*	0.091*	0.066	2.169
Proactive aggression	-0.130	-0.048	0.131	-0.993
Sex (male=1)	0.079**	0.092**	0.028	2.850
SES	-0.034**	-0.080**	0.011	-2.954
Externalizing	0.019	0.043	0.016	1.158
Prosociality	-0.069***	-0.160***	0.016	-4.316
Anxiety/Depression	-0.014	-0.032	0.017	-0.790

\* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

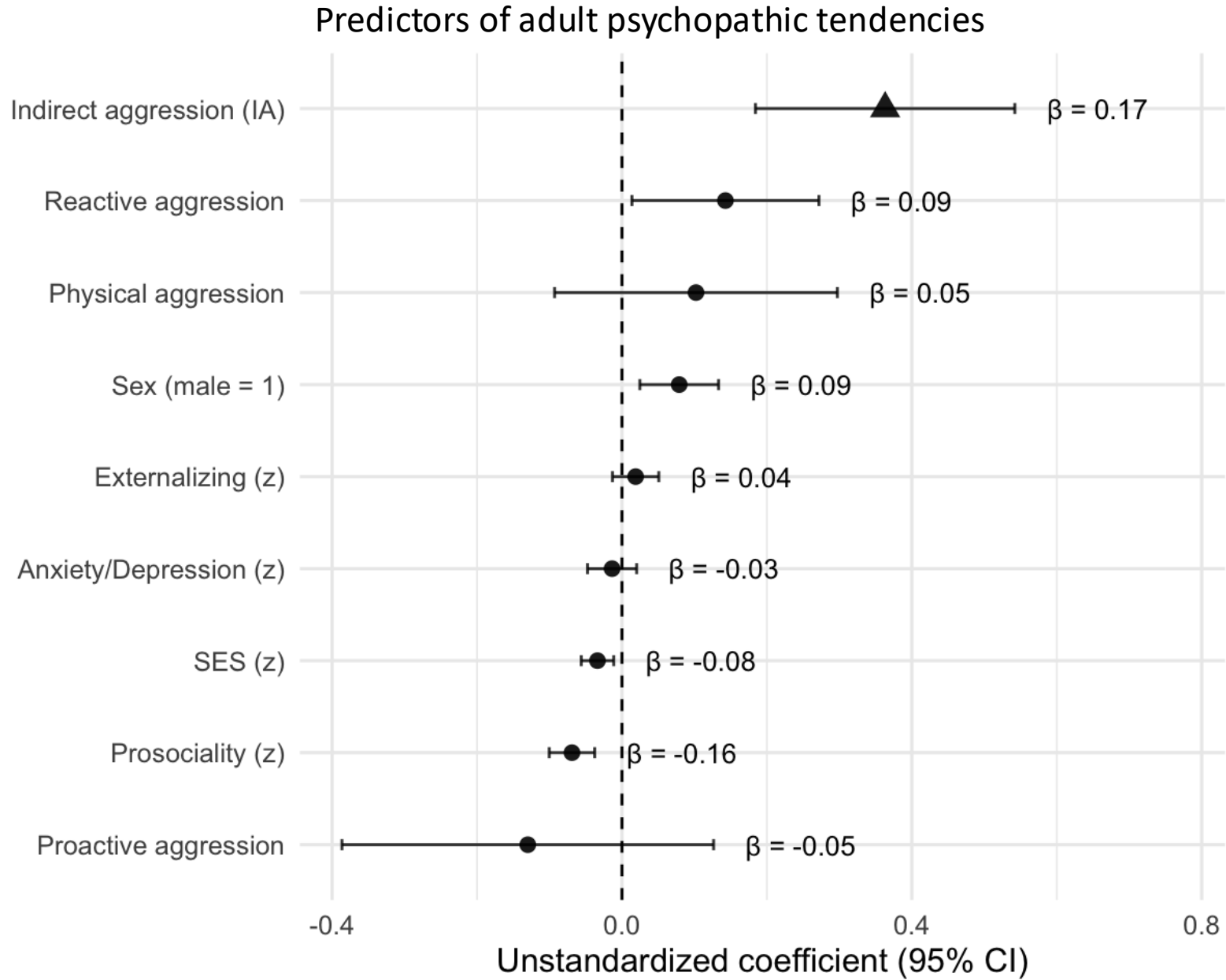
# Results: SEM

Adjusted effect of Indirect aggression

Other predictors held at sample means / majority category



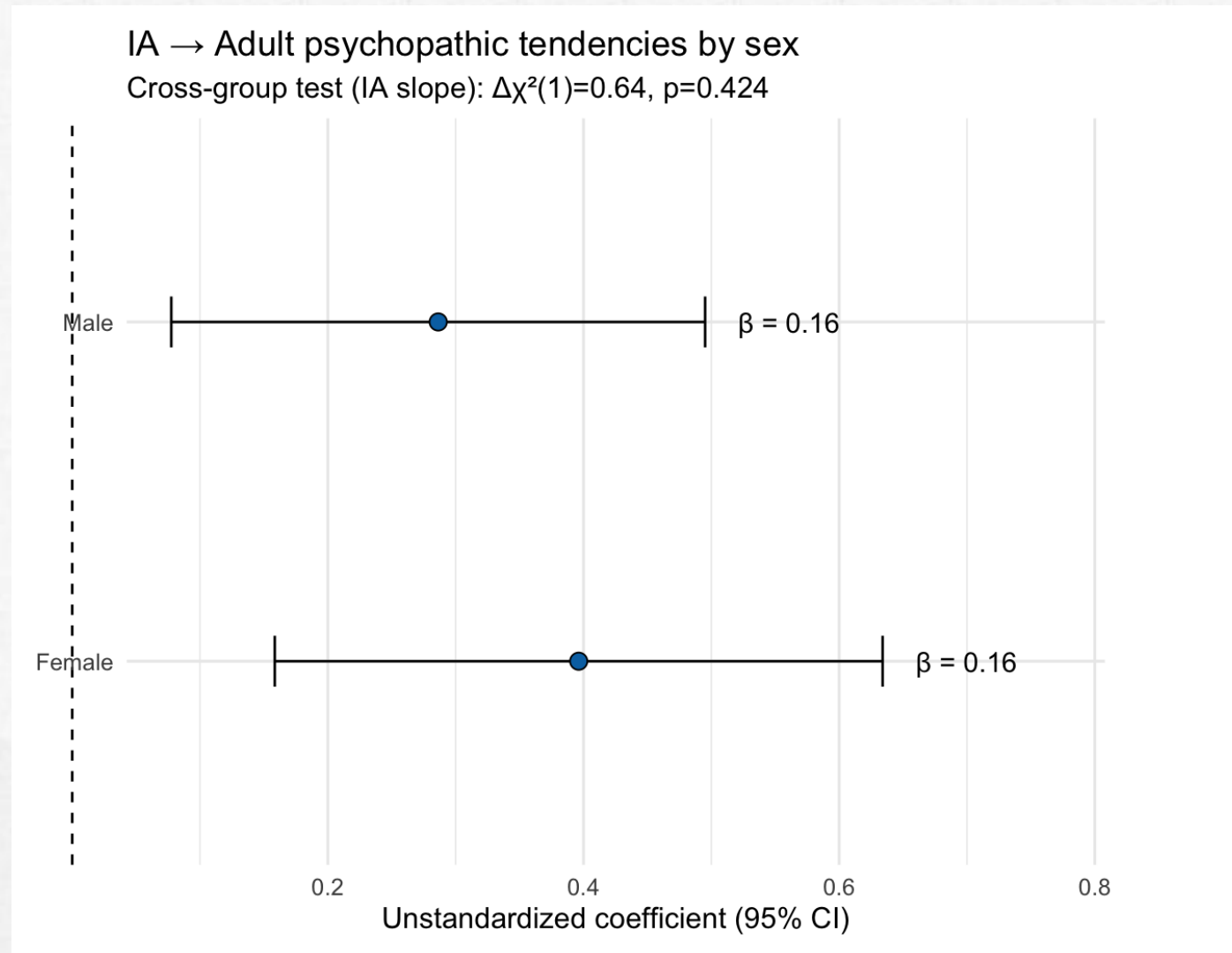
# Results: SEM



# Results: sex differences?

## Sex moderation: none.

IA predicts adult psychopathic tendencies **equally strongly** in females and males ( $\beta \approx .16$  in both;  $\Delta\chi^2(1)=0.64$ ,  $p=.424$ ).



Unstd b\_female = 0.396 [0.158, 0.634]

b\_male = 0.286 [0.078, 0.495]

standardized  $\beta$  in both groups = 0.16

# Conclusions

- **Scale performance:**  
The 6-item short psychopathy scale showed a **unidimensional, reliable, and stable structure** across K8 and K9 (good CFA fit, invariance supported).
- **Indirect aggression (IA) a precursor of psychopathy?**  
Yes childhood IA IS a robust developmental precursor of adult psychopathic tendencies ( $\beta \approx .17$ ,  $p < .001$ ).
- **IA compared to other subtypes of aggression:**  
IA provides the **largest unique contribution** (+1.3%  $R^2$ ).  
Reactive aggression adds a **small effect** ( $\beta \approx .09$ ).  
Physical and proactive aggression show **no independent predictive power** once overlap is controlled.
- **Sex differences:**  
The IA  $\rightarrow$  PT association is **equally strong for males and females** ( $\beta \approx .16$  in both;  $\Delta\chi^2 = 0.64$ ,  $p = .42$ ).  
 $\Rightarrow$  **No evidence of sex moderation.**



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**Thank you!**

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