

Common Genetic Influences on Impulsivity Facets Relate to Goal Management, Psychopathology, and Personality

Background:

“Impulsivity” is a heterogeneous construct
The UPPS-P highlights five facets

- (1) Negative Urgency (giving into cravings in good or bad moods)
- (2) Positive Urgency
- (3) Lack of Premeditation (acting without thinking)
- (4) Lack of Perseverance (giving up on difficult tasks)
- (5) Sensation Seeking (enjoying exciting activities)

Goals of the Study

Hypothesis: Impulsivity facets are united to the extent that they index an inability to activate/maintain goals

Other comparisons:

- Is sensation seeking unrelated to other facets?
- Are emotional facets more related to psychopathology?
- Is lack of perseverance more like urgency or premeditation?

Method:

Participants: 754 individuals. All same-sex twins
M = 22.80 yrs, *SD* = 1.27, 398 females

Impulsivity: UPPS-P Impulsive Behavior Scale

Other Measures (All Latent Variables)

Goal Management Failures (2 questionnaires)

Procrastination (3 questionnaires)

Neuroticism (age 17 and age 21)

Extraversion (age 17 only)

Internalizing Symptoms (GAD, MDD)

Externalizing Symptoms (ASPD, 4 substance use disorders)

Summary and Discussion

Main Hypothesis was Supported:

Goal management abilities were strongly related to the common genetic factor (& moderately with the environmental factor)

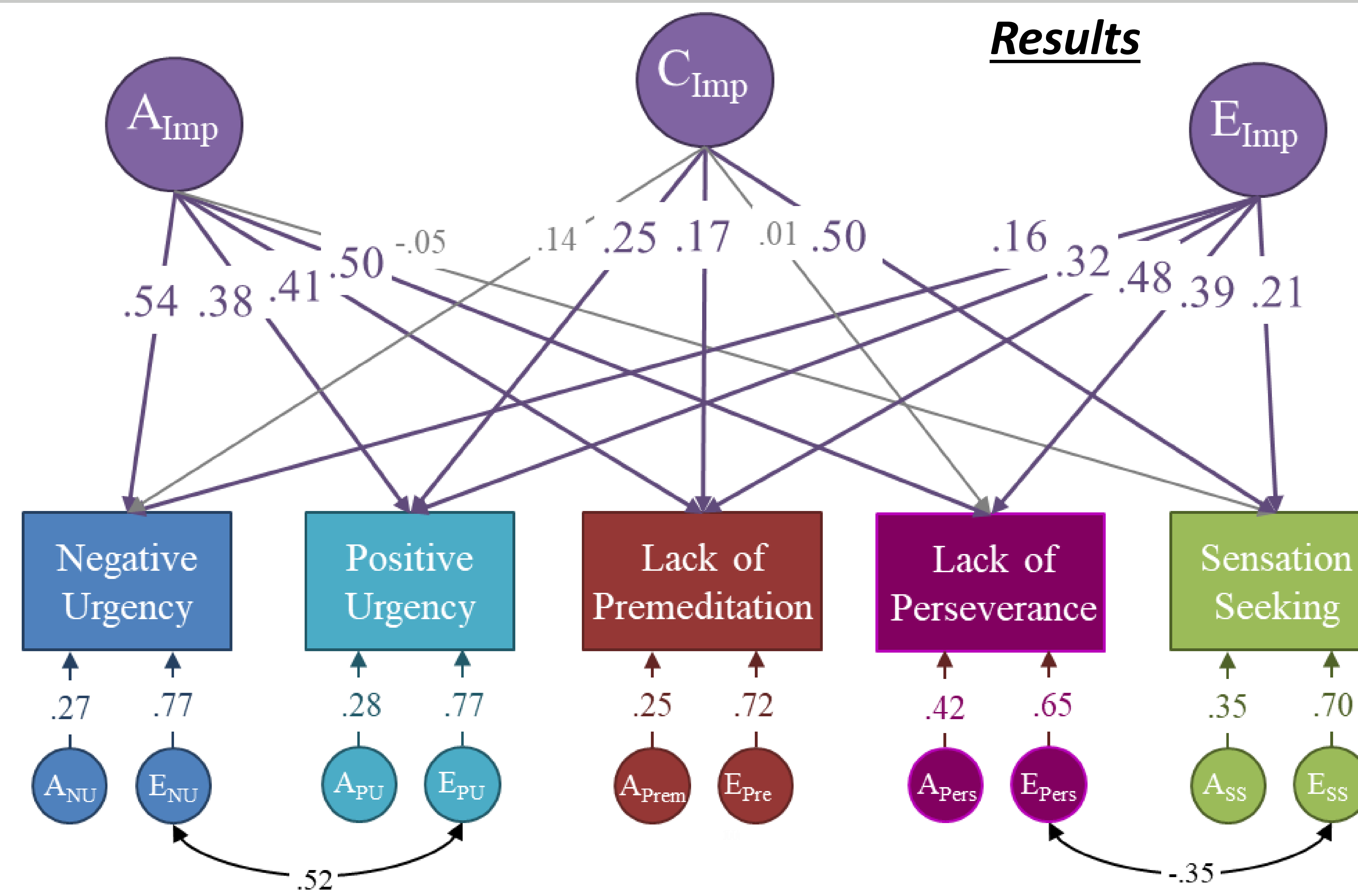
Other Comparisons:

Sensation seeking was mostly unrelated to other facets

Non-emotional facets (premeditation, sensation seeking) were less related to psychopathology than emotional facets

Lack of perseverance was more similar to urgency than premeditation (but uniquely predicted procrastination)

Results



1. Independent Path Model

Common genetic influences on all facets except sensation seeking (A_{imp})

Nonshared environmental influences on all facets (E_{imp})

Little evidence for shared environmental influences (C_{imp})

Different genetic/environmental factor structures

2. Genetic Associations with Self-Regulation, Personality, and Psychopathology

- Genetic influences common to all facets (A_{imp}) accounted for 14-40% of variance in other constructs

- Environmental influences common to all facets (E_{imp}) were only moderately associated with Goal Management Failures and Extraversion

- After accounting for impulsivity, genetic influences unique to most constructs were nonsignificant

- Each construct was predicted by unique variance in at least one facet (e.g., E_{NU})

	Variance Explained by General Impulsivity			Variance Explained by Facet-Specific Components										Variance Unique to the That Construct		
				Negative Urgency		Positive Urgency		Lack of Premeditation		Lack of Perseverance		Sensation Seeking				
	A	C	E	A	E	A	E	A	E	A	E	A	E	A	C	E
Self-Regulation																
Goal-Management Failures	40%		6%		4%									17%		34%
Procrastination	36%		3%		2%					7%	14%			2%		36%
Personality																
Neuroticism	25%		<1%		13%			12%				12%		<1%		38%
Extraversion	14%		3%					7%						4%		64%
Psychopathology Symptoms																
Internalizing	27%	3%	5%		5%									3%	52%	6%
Externalizing	30%	2%	2%		2%									45%		20%

Negative associations are displayed RED TEXT Nonsignificant associations are displayed in GREY TEXT