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HUMAN DEVELOPMENT, BIRTH TO DEATH

Moffitt & Caspi
Genes Environment Health Behavior

Concept Paper Form

Provisional Paper Title: The role of personality in the link between early-life adversity and adult stressful life events
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P.I. Sponsor: Terrie Moffitt, Avshalom Caspi (if the proposing author is a student or colleague of an original PI)
Today's Date: 12/8/2022

Please describe your proposal in 2-3 pages with sufficient detail for helpful review.

Objective of the study:

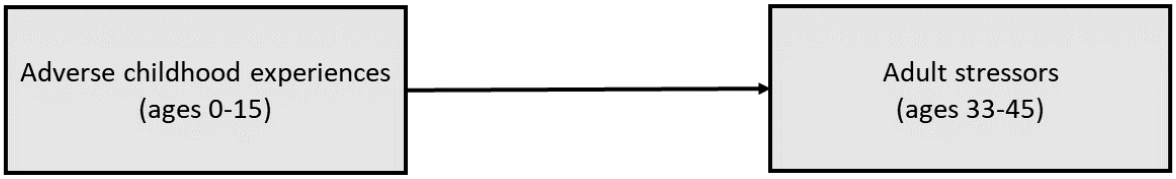
Disparate bodies of research suggest that stressors commonly co-occur and re-occur. For example, sociologists have noted the "chaining of adversity" among individuals of low socioeconomic status (Pearlin et al., 2005). Psychotherapists discuss "reenactment" among patients who have experienced trauma (Levy, 1998). Psychologists have observed that women who have experienced childhood sexual abuse are more likely to experience sexual revictimization in adulthood (Messman-Moore & Long, 2003). Recent evidence points to an overarching "s-factor" that represents the tendency for different dimensions of stress to co-occur in adulthood (Mann et al., 2021). However, very little research has examined the extent to which cumulative adversity in childhood is associated with cumulative adversity in adulthood across a range of stressful experiences. Moreover, almost no research has focused on psychological factors that may explain the accumulation of stressors across the lifespan.

Personality represents one under-explored avenue that might link adversity during childhood with adversity during adulthood. On the one hand, research and theory on the effects of early life stress suggest that childhood adversity has long-term impacts on cognitive, affective, and biological functioning (Lambert et al., 2017; Slavich et al., 2020). On the other hand, research and theory on stress generation suggest that individuals with psychopathology and certain personality traits (e.g., neuroticism) are more likely to experience stressful life events that are dependent in nature (i.e., events in which the individual could have played some role, such as divorce; Conway et al., 2012; Allen et al., 2020). Although a great deal of research has focused on the association between childhood adversity and later psychopathology, far less research has investigated the association between childhood adversity and later personality traits. Thus, personality traits represent an under-explored avenue through which early-life adversity proliferates across

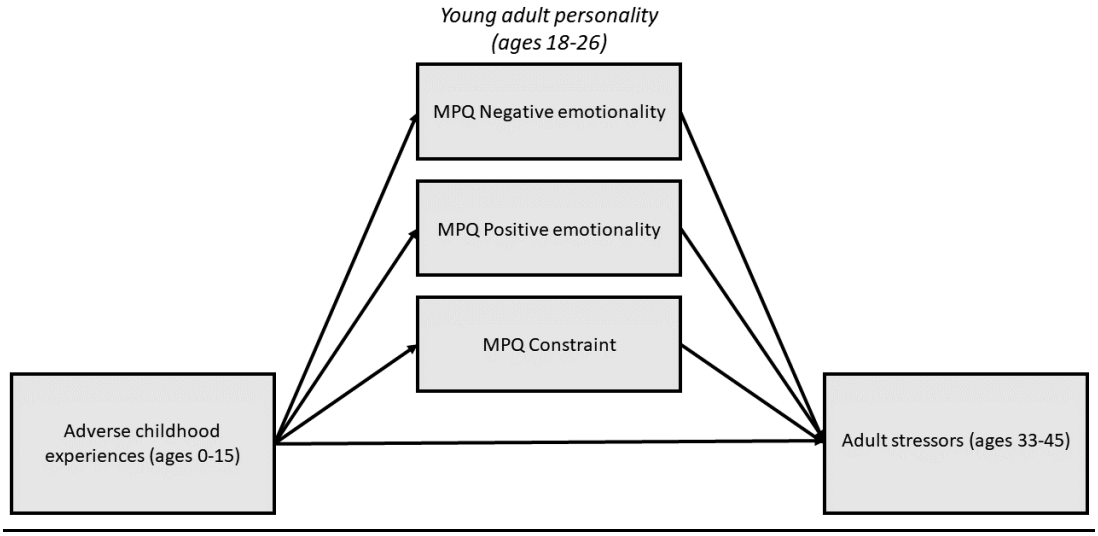
the life course. Personality traits are a favorable candidate for exploration because they exhibit both continuity and change across the life course (Roberts & Caspi, 2003) and are influenced by life experiences (e.g., Roberts et al., 2003). They are also robust predictors of a wide range of deleterious physical and mental health outcomes (Strickhouser et al., 2017). They may also be particularly fruitful targets of psychological treatments (Sauer-Zavala et al., 2021).

Different theoretical perspectives yield distinct predictions regarding how early life stress may relate to young adult personality traits and adult stressful life events. The *cumulative* approach to conceptualizing early life stress (e.g., Felitti et al., 1998) yields the prediction that the totality of adversity experienced in childhood should exert the strongest impact on young adult personality. However, if the *dimensional* model of conceptualizing early life stress (McLaughlin et al., 2014) is more appropriate for characterizing the impact of early life stress on young adult personality, then threat-related adversity (e.g., physical abuse) and deprivation-related adversity (e.g., physical neglect) should exhibit differential associations with young adult personality.

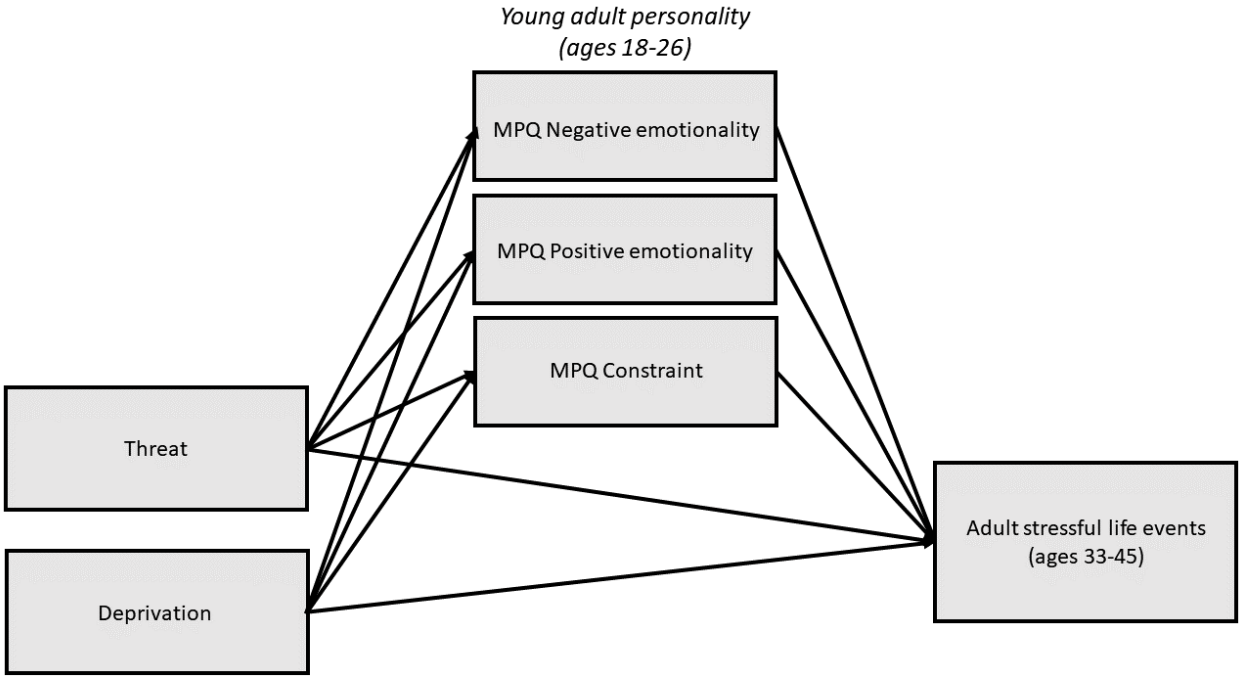
Aim 1: To examine the association between adversity in childhood and stressors in adulthood, before and after controlling for sex, childhood socioeconomic status, and childhood IQ. It is unclear whether low SES is better conceptualized as an adverse childhood experience in its own right, so sensitivity analyses will examine its effects as both a predictor (i.e., part of the ACEs measure) and a covariate. Supplementary analyses will examine associations between ACEs and each type of adult stressor individually.



Aim 2: To examine whether personality traits mediate the association between adversity in childhood and stressful life events in adulthood, before and after adjusting for sex, childhood SES, childhood IQ, and temperament at age 3. We will adjust for temperament as a way of modeling whether adversity in childhood predicts young adult personality above and beyond the effects of temperament, an early-life foundation of adult personality traits (Caspi et al., 2003). We will first test mediation via personality factors individually, followed by simultaneously to examine the unique effects of each of the three personality factors.



Aim 3: To examine whether distinct dimensions of adverse childhood experiences (i.e., threat versus deprivation) differentially relate to young adult personality traits and adult stressful life events. We will first test effects of threat and deprivation individually, followed by simultaneously to examine the unique effects of each of the dimensions of ACEs.



Data analysis methods:

We will perform path analyses in Mplus. To be included in analyses, study members must have data available for at least 50% of the variables examined. We will use full information maximum likelihood to estimate parameters in the context of missing data.

Variables needed at which ages:

*Variable names are provided for measures currently listed in the data dictionary

Category	Variable Description	Variable Name
Adverse childhood experiences		
	Prospective ACEs	ProACEs
	Prospective ACEs (truncated at 4+)	ProACEs_trunc
	Prospective ACEs (threat)	ACE_Pro_Threat
	Prospective ACEs (deprivation)	ACE_Pro_Depr
	Retrospective ACEs	RetroACEs
	Retrospective ACEs (truncated at 4+)	RetroACEs_trunc
	Retrospective ACEs (threat)	ACE_ret_threat
	Retrospective ACEs (deprivation)	ACE_ret_Depr
Adult stressors		
	Total SLEs from age 32 to 38	totSLEs_38
	Total SLEs from age 38 to 45	totSLEs_45
	Total SLEs from age 32 to 38 (truncated at 30+)	totSLEs_38trnc
	Total SLEs from age 38 to 45 (truncated at 30+)	totSLEs_45trnc
	Death of close family member or friend (age 38)	
	Job loss (age 38)	
	Serious physical/mental illness or injury/accident to self (age 38)	
	Serious physical/mental illness or injury/accident to friend or family (age 38)	
	Legal problems (age 38)	
	Physical or sexual assault (age 38)	
	Serious financial problems (age 38)	
	High number of moves (i.e., 10+; age 38)	
	Homelessness (age 38)	
	Incarceration (age 38)	
	Breakups (age 38)	
	Natural or human-made disaster (e.g., fire, earthquake; age 38)	
	Other spontaneously reported events (age 38)	
	Death of close family member or friend (age 38)	
	Job loss (age 45)	
	Serious physical/mental illness or injury/accident to self (age 45)	
	Serious physical/mental illness or injury/accident to friend or family (age 45)	
	Legal problems (age 45)	
	Physical or sexual assault (age 45)	
	Serious financial problems (age 45)	

	High number of moves (i.e., 10+; age 45)	
	Homelessness (age 45)	
	Incarceration (age 45)	
	Breakups (age 45)	
	Natural or human-made disaster (e.g., fire, earthquake; age 45)	
	Other spontaneously reported events (age 45)	
Young adult personality variables		
	Age-18 MPQ Negative Emotionality	MPQNEM18
	Age-18 MPQ Alienation	MPQALN18
	Age-18 MPQ Aggression	MPQAGR18
	Age-18 MPQ Stress Reaction	MPQSTR18
	Age-18 MPQ Constraint	MPQCON18
	Age-18 MPQ Achievement	MPQACH18
	Age-18 MPQ Control	MPQCTR18
	Age-18 MPQ Traditionalism	MPQTRA18
	Age-18 MPQ Harm Avoidance	MPQHA18
	Age-18 MPQ Positive Emotionality	MPQPEM18
	Age-18 MPQ Social Potency	MPQSP18
	Age-18 MPQ Social Closeness	MPQSC18
	Age-18 MPQ Wellbeing	MPQWB18
	Age-18 MPQ Agency	MPQAG18
	Age-18 MPQ Communion	MPQCOM18
	Age-26 MPQ Negative Emotionality	MPQNEM26
	Age-26 MPQ Alienation	MPQALN26
	Age-26 MPQ Aggression	MPQAGR26
	Age-26 MPQ Stress Reaction	MPQSTR26
	Age-26 MPQ Constraint	MPQCON26
	Age-26 MPQ Achievement	MPQACH26
	Age-26 MPQ Control	MPQCTR26
	Age-26 MPQ Traditionalism	MPQTRA26
	Age-26 MPQ Harm Avoidance	MPQHA26
	Age-26 MPQ Positive Emotionality	MPQPEM26
	Age-26 MPQ Social Potency	MPQSP26
	Age-26 MPQ Social Closeness	MPQSC26
	Age-26 MPQ Wellbeing	MPQWB26
	Age-26 MPQ Agency	MPQAG26
	Age-26 MPQ Communion	MPQCOM26
Background and control variables		
	Participant ID number	SNUM
	Participant sex	SEX
	Childhood SES	SESchildhd
	Childhood IQ	ChildIQ_chstd
	Age-3 temperament: Approach	APP3
	Age-3 temperament: Sluggish	SLUG3
	Age-3 temperament: Lack of control	DIFF3

Significance of the Study (for theory, research methods or clinical practice):

Stressful events, both in childhood and adulthood, have deleterious effects on physical and mental health. Understanding links between stressful events across the life course and the intervening role of personality is important for mitigating the negative impact of stress on well-being. Although stressful life events are often not preventable, if personality is an avenue through which early-life adversity begets later-life adversity, young adult personality may be an extremely worthy target of treatment. Indeed, mounting evidence suggests that psychological interventions can indeed change personality traits (Sauer-Zavala et al., 2021; Stieger et al., 2021). It may be that targeting personality traits in treatment could have more stable and long-reaching influences on wellbeing than targeting symptoms of psychological disorders, which tend to morph over time (Caspi et al., 2020) and have lower value in predicting future mental health outcomes (Waszczuk et al., 2022).

Findings of this study would also add to theory regarding the lifelong impact of early life adversity. Stress sensitization theory (Hammen et al., 2000; Stroud, 2020) suggests that children who experience adversity go on to become more sensitive to stressful events (i.e., more vulnerable to psychopathology in response to stress) later in life. Existing research exploring mechanisms of stress sensitization have tended to focus on biological mechanisms of sensitivity to stress. However, if personality is shown to play a mediating role in the association between early life stress and adult stressful life events, this finding would help elucidate a new level at which risk for psychopathology is transmitted (e.g., heightened neuroticism among individuals who experienced early life stress could help explain increased vulnerability to depression following stressful life events in adulthood). Furthermore, if adverse childhood experiences are indeed associated with adult stressful life events, this finding would enrich our understanding of how early-life and later-life adversity are linked. It would suggest that not only are adults who experienced adversity in childhood more sensitive to stressful events in adulthood (i.e., *reactive* person-environment interactions); they are, in addition, more vulnerable to experiencing further adversity in adulthood to begin with (i.e., *active* and *evocative* person-environment interactions).

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Data Security Agreement

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Proposing Author: Grace Brennan
Today's Date: 12/8/2022

☒	I am current on Human Subjects Training (CITI (www.citiprogram.org) or equivalent)
☒	My project is covered by the Duke ethics committee OR I have /will obtain ethical approval from my home institution.
☒	I will treat all data as "restricted" and store in a secure fashion. My computer or laptop is: a) encrypted (recommended programs are FileVault2 for Macs, and Bitlocker for Windows machines) b) password-protected c) configured to lock-out after 15 minutes of inactivity AND d) has an antivirus client installed as well as being patched regularly.
☒	I will not "sync" the data to a mobile device.
☒	In the event that my laptop with data on it is lost, stolen or hacked, I will immediately contact Moffitt or Caspi.
☒	I will not share the data with anyone, including my students or other collaborators not specifically listed on this concept paper.
☒	I will not post data online or submit the data file to a journal for them to post. *Some journals are now requesting the data file as part of the manuscript submission process. Study participants have not given informed consent for unrestricted open access, so we have a managed-access process. Speak to Temi or Avshalom for strategies for achieving compliance with data-sharing policies of journals.*
☒	I will delete all data files from my computer after the project is complete. Collaborators and trainees may not take a data file away from the office. This data remains the property of the Study and cannot be used for further analyses without an approved concept paper for new analyses.
☒	I have read the Data Use Guidelines and agree to follow the instructions.

Signature: