Personality and Individual Differences 177 (2021) 110789

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Childhood resilient personality trajectories and associations with developmental trajectories of behavioral, social-emotional, and academic outcomes across childhood and adolescence: A longitudinal study across 12 years☆

Qinxin Shi [a,b], Jeffrey Liew [a,*], Idean Ettekal [a], Steven Woltering [a]

[a] Department of Educational Psychology, Texas A&M University, USA
[b] Department of Psychology, University of Utah, USA

ARTICLE INFO

Keywords:
Resilient personality
Behavioral problems
Socio-emotional functioning
Academic performance
Development
Heterogeneous
Childhood

ABSTRACT

This study examined the continuity and change of childhood resilient personality (first three years in primary education), and how differential trajectories in resilient personality were dynamically associated with behavioral problems, social-emotional functioning and academic performance across the primary and secondary school years (Grade 1–12). Participants were 784 academically at-risk students predominantly from low SES families (47% girls, 37.4% Latino or Hispanic, 34.1% European American, and 23.2% African American) who were recruited in grade 1 (Mean age = 6.57) and followed annually through the final year of high school (Grade 12). Results revealed three distinct trajectories of childhood resilient personality, including an ego-resilient or flexible group (26.8%), an ego-brittle or inflexible group (21.9%), and an ordinary or common group (49.9%). Children in the ego-brittle group were at a greater risk for sustaining high levels of behavioral problems, low socio-emotional functioning (based on parent and teacher report), and poor academic performance across formal schooling. In contrast, the resilient children exhibited persistently low behavioral problems, high social-emotional functioning, and better academic performance across formal schooling. Findings also indicated that the protective effect of childhood resiliency was sustained even after the transition from childhood to adolescence.

1. Introduction

Childhood temperament or personality has long-term impacts on development and life outcomes, and early childhood personality has more unique predictive power of life outcomes than personality assessed later in life (Hill et al., 2019). For example, the literature shows that children exhibit early individual differences in personality that can be classified as overcontrolled or undercontrolled, with the latter being associated with poor psychosocial adjustment and psychopathology later in life (Hart et al., 1997; Kim et al., 2009; Rogosch & Cicchetti, 2004). Although researchers have tended to focus on over- and under-controlled personality types as risk factors for maladjustment or psychopathology, it is equally important to consider how resilient personality types (characterized as being flexible and/or adaptive) are promotive of positive adjustment and protective against maladjustment or psychopathology (Oshio et al., 2018; Shi, Ettkela, Deutz, & Woltering, 2020).

In the present study, we focused on the construct of *resilient personality*, which is considered a subtype of adaptive or positive personality, characterized by high ego-resiliency, agreeableness, and conscientiousness (Asendorpf & van Aken, 1999; Block & Block, 1980, 2006; Kwok et al., 2007). A fundamental component of resilient personality pertains to an individual's ability to organize thought and exercise flexible control over behavior or action in order to adapt to the demands of varying situations or contexts. The development of resilient personality in childhood is believed to be linked with temperament (Shiner

☆ This research program was supported by Grant R01 HD39367 to Dr. Jan Hughes from the National Institute of Child Health and Human Development (NICHD). The authors are grateful to Dr. Jan Hughes for her leadership on this longitudinal study and for sharing the dataset, to Jan Hughes' research staff for their tireless efforts collecting the data, and to the families and teachers for participating in this study year after year.

* Corresponding author at: Department of Educational Psychology, Texas A&M University, College Station, TX, USA.
E-mail addresses: qinxin.shi@psych.utah.edu (Q. Shi), jeffrey.liew@tamu.edu (J. Liew), iettekal@tamu.edu (I. Ettekal), swolte@tamu.edu (S. Woltering).

https://doi.org/10.1016/j.paid.2021.110789
Received 28 October 2020; Received in revised form 9 February 2021; Accepted 19 February 2021
Available online 19 March 2021
0191-8869/© 2021 Elsevier Ltd. All rights reserved.

et al., 2013). Temperament refers to individual differences in emotional, attentional, and behavioral styles or traits that are present as early as infancy, which enable executive control over attention and behavior. Furthermore, the three temperament types labeled as easy, difficult and slow to warm map onto resilient, undercontrolled, and overcontrolled personality types (Shiner et al., 2013). In our study, the aspect of conscientiousness is highly similar to the temperamental dimension of inhibitory or effortful control while agreeableness and ego-resiliency overlap with the temperamental dimension of adaptability (e.g., Jensen-Campbell et al., 2002).

Previous studies have demonstrated concurrent and longitudinal relations between resilient personality and children's behavioral adjustment, social competence, and academic outcomes (e.g., Eisenberg et al., 2002; Juffer et al., 2004). However, to the best of our knowledge, relatively few studies have considered the *heterogeneity* in resilient personality development and simultaneously examined how these heterogeneous classes are longitudinally linked to behavioral adjustment, socio-emotional functioning, and academic performance across childhood and adolescence, particularly for children from minority, marginalized, low-income, or at-risk backgrounds. Using a multi-informant approach, the present study examined the heterogeneous developmental trajectories of resilient personality in childhood and investigated how differentiated trajectory classes are related to subsequent behavioral, social-emotional, and academic outcomes across the primary and secondary school years (Grades 1–12), focusing on a sample of academically at-risk children who were from predominantly low-income families.

1.1. The development and heterogeneity of childhood resilient personality

Studies on childhood resilient personality have documented individual differences in the ways that children strive, adapt, and thrive in challenging and at-risk environments or contexts (Cicchetti & Rogosch, 1997; Eisenberg et al., 2010). Ego-resiliency reflects temperamental adaptability that allows individuals to be flexible and resourceful in adapting to external and internal stressors (Block & Block, 1980) and involves a regulatory adaptation process by which individuals modify their behaviors and emotions to meet the demands of their circumstances. Agreeableness has been strongly associated with social adaptability, and is characterized by empathy, kindness, prosociality, cooperation, social compliance or conformity, and likeability (Graziano et al., 1996). The conscientiousness component can be characterized by being dependable or responsible, following rules, and fulfilling commitments or meeting agreed upon expectations (Barbaranelli et al., 2003). In the continuum of resilient personality, individuals who are at the extremely low end are considered ego-brittle or fragile and are characterized as rigid and show little adaptive flexibility when encountering novel or stressful situations (low on all dimensions of ego-resiliency, agreeableness, and conscientiousness). In contrast, children with resilient personality exhibit high ego-resiliency, agreeableness, conscientiousness, and are more likely to have secure attachments with their parents, healthy relationships with peers, empathy towards others, and more advanced problem-solving and self-regulation skills (Masten, 2016; Taylor et al., 2013).

In the present study, we were particularly interested in charting the differentiated resilient personality trajectories across childhood (Grades 1 to 3). During this period, individual differences in children's resilient personality are likely to become more stable and could have long-term impacts on their behavioral, social-emotional, and academic adjustment (Moffitt et al., 2011). For example, it is plausible that an individual who displays a resilient personality in childhood is more likely to become a resilient adolescent. *Personality stability* likely involves stability in not only individuals' traits but also their environments over time and can be reflected through *differential continuity* (i.e., consistency of relative placement in a group) or *absolute continuity* (i.e., constancy of an attribute over time, see details in Caspi & Roberts, 2001). Another mechanism by which childhood personality affects later development and adjustment is through *selection effects* (Roberts et al., 2008) where early dispositions afford or restrict encounters with future risks and opportunities (Hill et al., 2019). In sum, early resilient (flexible) and brittle (inflexible) personality prototypes may have implications for later behavioral, social-emotional, and academic trajectories and outcomes across the childhood and adolescent years. However, personality characteristics may also change through transactions with environments, experiences, and relationships that press and reinforce individuals to go against their natural tendencies or comfort zones. However, such changes in personality tend to be modest, because any press for change typically will be in (rather than against) the direction of individuals' personality qualities or natural tendencies that drew them to those environments, experiences, and relationships in the first place (Roberts et al., 2008).

Consistent with the view that selection effects maintain or enhance continuity in personality characteristics across time and contexts, empirical studies have shown relatively high rank-order stability in the development of personality in childhood, adolescence, and adulthood (Caspi & Roberts, 2001; Chuang et al., 2006; Syed, Eriksson, Frisén, Hwang, & Lamb, 2020; Vecchione et al., 2010). In addition to studies reporting rank-order stability, we identified one published study which explicitly examined *heterogeneity* in developmental trajectories of resilient personality. In a longitudinal study including both maltreated and nonmaltreated children from 6 to 10 years of age, Kim et al. (2009) identified two distinct ego-resiliency trajectories for maltreated children including a declining class (41%), and an increasing class (59%). These two trajectories started at similar levels at age 6 but diverged at age 7, with one trajectory showing a U-shaped increasing trend and the other showing a continuously declining trend across the childhood years.

Although there have been few prior studies which have explored the heterogeneity of resilient personality, there has been more extensive research on a broader domain of personality development using the Five-Factor Model of Personality (i.e., Emotional Stability, Extraversion, Openness, Agreeableness, and Conscientiousness; John, 1990). Based on the empirical and theoretical evidence derived from the Five-Factor Model of Personality, a 3-class solution, consisting of resilient, overcontrolled, and undercontrolled personality prototypes, has most frequently been observed and replicated in childhood (Hart et al., 1997; Kim et al., 2009; Rogosch & Cicchetti, 2004), adolescence (Meeus et al., 2011; Robins et al.,1996), and adulthood (Alessandri et al., 2014), from childhood to early adulthood (Asendorpf et al., 2001; De Haan et al., 2013) and late adulthood (Specht et al., 2014). Though there is strong evidence of a three-prototype model of personality based on the extant previous literature, it is still important to acknowledge that personality patterns can be "partly discrete and partly fuzzy" (Asendorpf et al., 2001, p.172) representing the possibility of a smooth and gradual transition from one personality type to another at certain developmental stages (Meeus et al., 2011; Specht et al., 2014).

1.2. Resilient personality and behavioral problems

Children who experience family and academic adversities may be vulnerable to exhibiting behavioral or adjustment problems (Cicchetti & Rogosch, 1997), and children with lower resiliency, adaptability and flexibility are likely to respond to adversity (e.g., risky and challenging contexts) in rigid or under-controlled (e.g., anxious, rebellious, aggressive, impulsive) ways. Prior cross-sectional and longitudinal studies indicate that individuals low in ego-resiliency, agreeableness, and conscientiousness are more likely than individuals high in these factors to exhibit externalizing problems, including conduct and hyperactivity-inattention problems (Juffer et al., 2004; Vecchione et al., 2010). Although conduct problems and hyperactivity-inattention tend to be moderately to highly correlated with one another, they represent distinct constructs. Thus, one of the aims of the present study was to examine the effect of childhood resilient personality on the development

of behavioral problems with conduct problems and hyperactivity-inattention as two independent but correlated indicators of behavioral problems.

1.3. Resilient personality and social-emotional functioning

Positive social-emotional functioning can be characterized by low levels of emotional problems and high levels of social-emotional competencies such as peer competence and prosociality (Bukowski et al., 2007). Consistent with the notion that resilient personality facilitates flexibility in regulation and the recruitment of social support and social resources to adapt to new and challenging environments, resilient (flexible) and brittle (inflexible) personality may contribute to the differentiated development of social-emotional functioning. Brittle (inflexible) personality may predispose children to being over-controlled and exhibiting emotional problems (e.g., anxiety and depression), particularly for children living with adversities or in risky and challenging contexts. Indeed, prior studies indicate that individuals with low resiliency or brittle (inflexible) personality are more likely than their resilient peers to exhibit emotional problems (Eisenberg et al., 2004, 2010; Hofer et al., 2010; Martel et al., 2007). Similar results were also found in children living with adversities or in risky and challenging contexts (Causadias et al., 2012; Taylor & Jones, 2020). For example, Causadias et al. (2012) found that for children living in poverty, those with the lowest levels of ego-resiliency in childhood had the highest trajectories of internalizing problems as adults.

Longitudinal studies have shown that resilient personality predicts peer competence and quality of peer relationships (e.g., Liew, Cao, Hughes, & Deutz, 2018). It is plausible that resilient children are able to flexibly manage themselves during interpersonal conflicts by using more resourceful strategies suppressing negative emotions during social interactions, and bonding with their peers during school-based tasks (Graziano et al., 1996). In contrast, ego-brittle or fragile and inflexible individuals may be lacking these adaptive capacities to interact and work with peers in flexible, cooperative, and diligent ways, thus increasing the likelihood of interpersonal conflicts.

Research has documented the association between resiliency and prosocial behavior, highlighting the role of resilient personality in children's abilities to manage their attention, emotions, and behavior including coping with or recovering from stress, attending to others' emotional distress, and exhibiting responsive and prosocial behaviors (Alessandri et al., 2014; Taylor et al., 2013; Shi, Ettekal, Liew, & Woltering, 2020). However, longitudinal relations between resilient personality and long-term prosocial behavior across childhood and adolescence remain understudied. For instance, Taylor et al. (2013) studied resiliency and empathic responding in early childhood (18 to 54 months old), and Alessandri et al. (2014) studied resiliency and prosociality in late adolescence to early adulthood. Thus, the present study addresses a gap in the literature by examining the longitudinal relations between resilient personality and prosocial behavior across childhood and adolescence (Grades 1 to 12).

1.4. Resilient personality and academic performance

While there is clear evidence showing that cognitive ability (e.g., intelligence) is related to academic performance and a large body of studies also show that factors such as ego-resiliency, conscientiousness, persistence, grit, hope, agreeableness, and coping strategies (e.g., Ayyash-Abdo et al., 2016) provide unique contributions to learning or academic outcomes. Among personality dispositions, a series of studies have shown concurrent and longitudinal positive relations between resilient personality and academic achievement (Kwok et al., 2007; Liew, Cao, Hughes, & Deutz, 2018). In particular, earlier studies (based on the same sample as the present study) found that resilient personality at first grade predicted reading and math achievement when controlling for covariates that included general cognitive ability, externalizing problems, and family economic adversity (Kwok et al., 2007), and that peer competence was a mediating mechanism in the longitudinal relation between resilient personality and academic achievement (Liew, Cao, Hughes, & Deutz, 2018). The present study aims to extend extant findings by examining the role of resilient personality in the longitudinal prediction of behavioral, social-emotional, and academic outcomes across Grades 1 to 12.

1.5. The present study

This study had three primary aims. First, we aimed to identify subgroups (i.e., classes) of children with heterogeneous developmental trajectories of resilient personality in childhood. Based on prior evidence (Asendorpf et al., 2001; Hart et al., 1997; Kim et al., 2009; Robins et al., 1996; Rogosch & Cicchetti, 2004; Syed, Eriksson, Frisén, Hwang, & Lamb, 2020), we expected to identify at least two classes: an ego-resilient class (high on ego-resiliency, agreeableness, and conscientious) characterized by either a stable or increasing trajectory; and an ego-brittle class (low on ego-resiliency, agreeableness, and conscientious) characterized by either a stable or decreasing trajectory in their resiliency across time. In addition to these two classes, it is also possible that a subgroup of children who are neither resilient nor brittle and display an average level of resiliency may also be identified. Because previous studies have varied considerably with respect to their sampling, developmental timing, and personality measures, it remains unclear whether the hypothesized classes, trajectories, and prevalence they reported would be reflective of our sample, consisting of children who were academically at-risk and predominantly from low-income families.

Second, we aimed to trace the development (i.e., growth and continuity) of children's behavioral problems, socio-emotional functioning, and academic performance based on their resilient personality subgroups across the entirety of formal schooling (Grades 1 to 12). Consistent with the view that continuity in personality characteristics can be maintained or enhanced by selection effects, we expected that the resilient (flexible) group would be characterized by low behavior problems, high social-emotional functioning, and high academic achievement. In contrast, the ego-brittle (inflexible) group would be characterized by high levels of behavior problems, poor socio-emotional functioning, and poor academic achievement. We considered two distinct aspects of behavioral problems (i.e., conduct problems and hyperactivity-inattention), three domains of social-emotional functioning (i.e., emotional problems, peer problems, and prosocial behaviors), and academic performance (i.e., reading and math standardized test scores). It is essential to note that the purpose of this study was not to examine the causal-relations among resilient personality with behavioral problems, social-emotional functioning, and academic performance, but rather to examine how distinct personality classes are associated with their long-term development.

The third aim of this study was to investigate whether these associations between resilient personality classes and trajectories of behavioral, social-emotional, and academic outcomes varied before and after the transition from childhood to adolescence. As children transition into adolescence and middle school, they are exposed to novel contexts and experiences that place them at elevated risks for emotion dysregulation as well as behavioral, social-emotional, and academic problems (Shi & Ettekal, 2020). Thus, we expected that resilient (flexible) personality may be particularly important during the developmental transition from childhood to adolescence and buffer youth from potential elevated stress and risks during this period. In contrast, individuals with ego-brittle (inflexible) or fragile personalities may find the transition from childhood to adolescence particularly difficult, and thus are more negatively impacted during this transitional period, such that they exhibit increases in their behavioral, social-emotional, and academic problems.

2. Method

2.1. Participants

Participants were 784 children who were part of a twelve-year prospective longitudinal study on the effects of grade retention on children's academic achievement and socio-emotional adjustment from ages 6 to 17 (Grades 1 to 12). Our sample is characterized as being academically at-risk since all 784 children enrolled in the study had literacy standardized test scores below the median (Texas Education Agency, 2004). Participants receiving special education services, whose first language was neither English nor Spanish and participants who were previously retained in first grade, were not included in the present study. During the first assessment year (Year 1), the average age of the sample was 6.57 (SD = 0.38). About 65% of participants qualified by income for free or reduced lunch (an index of low socioeconomic status), and 42.5% had parents with a high school diploma or less educational attainment. The sample was ethnically diverse: 34.1% was White, 23.2% African American, 37.4% Latino or Hispanic, 3.6% Asian or Pacific Islander, and 1.8% other.

2.2. Procedure

Information on participants' demographic information and family socioeconomic status were collected from parents or extracted from school records. In addition, early literacy scores were obtained from children's school records, and participants' intelligence was assessed by standardized tests that were individually administered by trained research staff in Year 1 of the study. To assess childhood resilient personality, participants' primary teachers rated children's personality characteristics using questionnaires from Year 1 to Year 3 (i.e., ages 6 to 8 years). Children's and adolescents' behavioral problems and socio-emotional functioning were assessed annually from Year 1 to Year 12 (i.e., ages 6 to 17 years) by teachers and parents using questionnaires (see details in Hill & Hughes, 2007). Academic achievement was measured using standardized tests (the Woodcock-Johnson or Batería), from Year 1 to Year 9 (i.e., ages 6 to 14 years), administered individually to students by trained and qualified assessors. More details on the participants recruitment and informants' information (i.e., parents and teachers) can be found in Supplemental material Section A.

2.3. Measures

2.3.1. Resilient personality

The measure of resilient personality consisted of a total of 24 items taken from the Child California Q-Set (CCQ; Block & Block, 1980) and the Big Five Inventory (BFI; John, 1990). Both the CCQ and BFI use a 1–5 Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*). This measure is adapted from a previously validated measure with this same dataset (Kwok et al., 2007) based on the Ego-Control/Ego-Resiliency Model (Block & Block, 1980) and the Five-factor model of personality (John, 1990). Specifically, Kwok et al. (2007) performed factorial analysis and validated a second-order *resilient personality factor* which included three first-order factors: (a) *resiliency* (consisting of 7 items from the CCQ: e.g., being resourceful, open to new experiences, being confident, being persistent), (b) *agreeableness* (consisting of 9 items from the BFI: e.g., is helpful and unselfish with others, likes to cooperate with others), and (c) *conscientiousness* (consisting of 8 items from the BFI: e.g., does a thorough job, is a reliable worker, tends to be disorganized; reverse coded). The average score of all 24 items was used to represent children's resilient personality (with scores ranging from 1 to 5). This measure had adequate internal consistency (Cronbach's alpha = 0.95–0.96). Additionally, to ensure that the measurement of the second-order factorial structure of resilient personality is comparable across time, we performed longitudinal measurement invariance (MI), and the results for MI analyses are reported in Table S1. The values of ΔRMSEA and ΔCFI indicated that longitudinal measurement invariance was demonstrated.

2.3.2. Behavioral problems and social-emotional functioning

Each year (from Year 1 to 12), teachers and parents reported on children's behavioral problems and socio-emotional functioning using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001). The SDQ consists of 25 items with 5 subscales each containing 5 items: (1) conduct problems, (2) hyperactivity-inattention, (3) emotional problems, (4) peer problems, and (5) prosocial behavior. Teachers and parents responded to each item using a 3-point Likert-scale (0 = *not true*, 1 = *somewhat true*, 2 = *certainly true*), and scale scores were derived by summing the scores from individual items (ranging from 0 to 10). The reliability of these measures was adequate with both parent and teacher reports (see details in Table 1). Confirmatory factor analysis was performed on each subscale for both parent and teacher-reported measures. Results indicated that these measurement models demonstrated sound psychometric properties and adequate model fit (see Table S2 for teacher-report and Table S3 for parent-report in the online Supplemental materials). We also performed longitudinal measurement invariance tests for both teacher and parent reported SDQ subscales and the results indicated that all scales exhibited metric invariance and conduct problems approached scalar invariance (see Table S4 for teacher-report and Table S5 for parent-report in the online Supplemental materials).

When comparing the current sample to the SDQ-based large normative community sample (i.e., 5% of children categorized as having "very high" rates of problem behaviors in normative samples), across 12 time points, about 6.7% to 14.5% (teacher-report) and 0.6% to 4.1% (parent-report) of the current sample was categorized as "very high" on conduct problems, 5.9% to 16.1% (teacher-report) and 1.5% to 6.6% (parent-report) of the sample had "very high" levels of hyperactivity-inattention, 3.2% to 8.5% (teacher-report) and 0.9% to 3.8% (parent-report) had "very high" levels of emotional problems,1.9% to 5.4% (teacher-report) and 2.9% to 8.2% (parent-report) had "very high" levels of peer problems, and finally 5.5% to 10.8% (teacher-report) and 3.1% to 9.6% (parent-report) had "very low" levels of prosocial behavior. These data further indicate that our sample is more at-risk with respect to their behavior problems and social-emotional functioning compared to the community sample.

2.3.3. Academic achievement

The Woodcock-Johnson Tests of Achievement Third Edition (WJ-III ACH; Woodcock et al., 2001) is a standardized test for evaluating reading and math achievement. Reading achievement was measured using the age-standardized score of WJ-III Broad Reading W score (Letter-Word Identification, Reading Fluency, and Passage Comprehension). Math achievement was measured using the age-standardized score of WJ-III Broad Math W score (calculations, math fluency, and math calculation skills). The internal consistency reliability, as reported in the manual, is 0.93 for the broad reading score and 0.92 for math (Woodcock et al., 2001).

If children or their parents spoke any Spanish, children were administered the Woodcock–Muñoz Language Survey (Woodcock & Muñoz-Sandoval, 1993) to determine the child's language proficiency in English and Spanish and selection of either the WJ-III or the Batería–R. The Woodcock Compuscore program (Woodcock et al., 2001) yields *W*-scores for the Batería–R that are comparable to *W*-scores on the WJ–R. From Years 1 to 9, approximately 2.1% to 12.7% of participants completed the Spanish version.

In comparison to normative samples assessed by the scale developers (e.g., above, at, and below-average; Woodcock et al., 2001), about 28%–35% of participants had reading scores below average (i.e., low-average, low, and very low), and 15%–32% had math scores below average. These findings indicated that our sample was also at-risk with respect to their academic performance.

Table 1
Descriptive statistics (sample size, observed means, and standard deviations) and scale reliabilities for resilient personality, emotional, peer, conduct, hyperactivity-inattention problems, prosocial behavior, and reading and math academic performance.

			Conduct problems			Hyperactivity-inattention			Emotional Problems			Peer Problems			Prosocial Behavior		
Year	*Reporter*	*N*	*Mean*	*SD*	*a*	*Mean*	*SD*	*a*	*Mean*	*SD*	*a*	*Mean*	*SD*	*a*	*Mean*	*SD*	*a*
1		677	1.83	2.42	0.84	4.35	3.26	0.88	1.95	2.11	0.72	1.83	1.92	0.62	7.05	2.53	0.84
2		621	1.81	2.47	0.83	4.02	3.20	0.87	1.75	2.03	0.70	2.05	1.91	0.59	7.14	2.65	0.86
3		547	1.73	2.33	0.82	4.23	3.23	0.88	1.72	1.96	0.69	1.94	1.91	0.63	7.07	2.61	0.84
4		528	1.71	2.35	0.82	3.98	3.12	0.86	1.88	2.25	0.76	2.00	2.07	0.68	7.10	2.55	0.84
5		541	1.65	2.35	0.84	3.75	3.13	0.87	1.62	2.15	0.78	2.04	2.04	0.66	6.75	2.67	0.86
6	**Teacher**	439	1.59	2.31	0.84	3.67	3.09	0.88	1.26	1.93	0.79	1.91	1.99	0.70	6.56	2.68	0.87
7		430	1.47	2.05	0.79	3.76	2.96	0.86	1.15	1.69	0.74	1.90	1.81	0.61	6.15	2.67	0.86
8		437	1.39	2.07	0.80	3.38	2.78	0.85	0.95	1.59	0.73	1.92	1.84	0.65	5.72	2.78	0.87
9		406	1.15	1.73	0.77	3.36	2.66	0.84	1.50	1.74	0.76	1.66	1.75	0.63	6.33	2.60	0.84
10		436	1.24	1.91	0.77	3.46	2.76	0.84	1.19	1.96	0.81	1.86	1.78	0.62	6.23	2.57	0.85
12		390	1.01	1.76	0.76	3.14	2.78	0.86	1.03	1.71	0.76	1.94	1.75	0.76	6.53	2.64	0.87
1		496	1.82	1.97	0.72	4.40	2.69	0.80	2.27	2.26	0.72	2.04	1.87	0.57	7.91	1.95	0.72
2		480	1.97	1.97	0.72	4.40	2.64	0.78	2.22	2.13	0.69	2.03	1.78	0.55	7.96	1.92	0.72
3		477	1.82	1.97	0.72	4.10	2.61	0.81	2.25	2.18	0.70	2.09	1.80	0.50	8.05	1.82	0.69
4		446	1.74	1.97	0.73	3.98	2.58	0.79	2.30	2.12	0.67	1.90	1.71	0.47	8.24	1.85	0.72
5		432	1.71	1.84	0.69	3.90	2.54	0.79	2.26	2.20	0.71	1.86	1.73	0.56	8.19	1.83	0.68
6	**Parent**	363	1.63	1.77	0.65	3.85	2.48	0.77	2.07	2.19	0.73	2.03	1.73	0.49	8.20	1.94	0.76
7		335	1.61	1.84	0.71	3.55	2.54	0.79	2.02	2.08	0.68	2.03	1.78	0.55	7.95	1.99	0.73
8		352	1.68	1.92	0.73	3.48	2.61	0.81	1.88	2.05	0.69	2.02	1.77	0.54	7.89	2.01	0.74
9		352	1.57	1.92	0.73	3.36	2.48	0.78	1.77	1.96	0.72	1.94	1.67	0.49	8.13	1.88	0.71
10		345	1.59	1.81	0.67	3.31	2.56	0.80	1.99	2.21	0.74	2.02	1.82	0.56	7.90	2.03	0.72
12		281	1.20	1.61	0.67	2.88	2.60	0.81	1.86	2.13	0.75	1.92	1.62	0.48	8.40	1.74	0.68

			Reading			Math			Ego-resilient Personality				
Year	*Reporter*	*N*	*Mean*	*SD*	*a*	*Mean*	*SD*	*a*	*Reporter*	*N*	*Mean*	*SD*	*a*
1		757	96.5	18.1	0.98	101	14.3	0.96		707	3.45	0.80	0.95
2		687	96.9	17.1	0.98	100	12.8	0.94	**Teacher**	624	3.49	0.82	0.96
3		668	95.4	14.2	0.97	101	12.4	0.92		547	3.54	0.80	0.95
4		664	95.1	13.5	0.96	101	12.1	0.94					
5	**Test**	647	95.7	13.2	0.95	100	11.6	0.93					
6		542	95.6	13.8	0.92	99.2	11.5	0.93					
7		513	95.8	14	0.92	98.1	12.1	0.93					
8		504	96.6	14.8	0.92	97.1	12.6	0.94					
9		487	97.2	15.6	0.96	94.5	13.0	0.95					

2.4. Covariates

Covariates included kindergarten literacy skills, intelligence, family socioeconomic adversity, gender, ethnicity, and grade retention status. These variables have previously shown strong associations with children's behavioral, social-emotional, and academic outcomes, and therefore, were controlled in the analyses. Due to limited space, the detailed description for each covariate can be found in online Supplemental materials Section B.

3. Analysis plan

All analyses were performed in Mplus version 7.4 (Muthén & Muthén, 2012), using full information maximum likelihood (FIML) with robust standard error (MLR) estimation. First, we performed growth mixture models (GMMs) to assign children into distinct classes based on their resilient personality trajectories from Years 1 to 3. GMMs were specified with varying numbers of classes (i.e., 2 to 6 classes), and for each model, model fit was assessed using a combination of fit indices including the Akaike information criterion (AIC), Bayesian information criterion (BIC), sample size-adjusted Bayesian information criterion (SSABIC), Lo-Mendell-Rubin adjusted likelihood ratio test (LMR-LRT), and entropy (Nylund et al., 2007). A series of fit indices were used to guide our selection of the best-fitting model. For instance, a model with smaller values on the AIC, BIC, and SSABIC are indicative of a better solution (Schwarz, 1978). A nonsignificant LMR-LRT statistic suggests that a model with one fewer class is preferred (Nylund et al., 2007). An entropy value approaching 1 indicates a clear delineation of classes (Celeux & Soromenho, 1996). We also ascertained the qualitative nature of the selected classes in terms of their conceptual meaning and interpretability.

Second, we estimated piecewise latent growth models on the development of children's behavior problems (i.e., conduct problems, hyperactivity-inattention), social-emotional functioning (emotional problems, peer problems, and prosocial behavior), and academic performance trajectories (i.e., reading and math) with one piece (i.e., growth factor) examining ages 6 to 10 (Years 1 to 5) to represent childhood and the second piece examining ages 11 to 17 (Years 6 to 12) to represent adolescence. These piecewise latent growth models were conditioned on children's class identification (i.e., class assignments) derived from the GMMs assessing their resilient personality trajectories. This approach allowed us to evaluate the extent to which children's resilient personality was associated with variations (i.e., growth and continuity) in their adjustment. Moreover, these models included gender, ethnicity, retention status, early family socioeconomic adversity, early literacy, early intelligence (mean-centered) as covariates to control for potential confounding variables.

4. Results

4.1. Descriptive statistics

Descriptive statistics are reported in Table 1. On average, mean level decreases were identified in both parent and teacher-reported behavioral problems, socio-emotional functioning, and academic performance (except for reading performance showing a slight upward trend in adolescence). The details on missing data analyses and bivariate correlations were reported in Supplementary material Section C and Tables

S6 and S7.

4.2. Resilient personality trajectories

GMMs were specified to identify children with heterogeneous resilient personality trajectories from Year 1 to 3 (see Table 2 for model fit indices). Both linear and quadratic latent factors were examined initially. Since the quadratic effects were consistently small and not statistically significant, results are reported for the more parsimonious linear growth models. The variance and covariances of both intercept and slope latent factors were freely estimated within each class; however, these parameters were consistently nonsignificant and approximated zero. To facilitate model estimation and convergence, these parameters were fixed to zero (Jung & Wickrama, 2008). After comparing the 2 to 6-class models, the 3-class model was selected as the optimal solution. This model had the smallest BIC, acceptable entropy, adequate average class assignment probabilities, and the LMR-LRT was statistically significant. Specifically, when comparing the 3- class with the 4-class, 5-class, and 6-class models, although the 4-class, 5-class, and 6-class solution had the smaller AIC, SABIC and larger entropy, the additional classes identified in these models did not improve model fit according to the LMR-LRT. Additionally, the 3-class model also identified three conceptually meaningful and interpretable classes. Moreover, the additional classes identified in the 4-class (about 5.1% of children), 5-class model (about 0.4% and 4.4% of children), and 6-class model (about 5.4%, 1.0%, and 0.7% of children) were relatively small and were not distinct conceptually from the classes identified in the 3-class model.

The trajectory classes identified in the 3-class model are illustrated in Fig. 1. About 26.9% ($N = 210$, 33.8% female, 30.5% Caucasian, 25.7% Hispanic, 40.5% African American, 1.4% Asian) of children had consistently low scores on the measure of ego-resiliency (labeled ego-brittle) showing a low level of resiliency at the first assessment point and across 3-time points, without any change in slope ($i = 2.63$, $p < .001$; $s = 0.037$, $p = .739$). About 21.9% ($N = 172$, 62.8% female, 35% Caucasian, 40.2% Hispanic, 18.9% African American, 3.6% Asian) of children exhibited consistently high scores on the measure of resilient personality (labeled ego-resilient) that remained stable over time ($i = 4.30$, $p < .001$; $s = -0.130$, $p = .431$). About 51.2% ($N = 402$, 47.8% female, 36.6% Caucasian, 45.9% Hispanic, 11.0% African American, 5.8% Asian) exhibited a moderate stable level of ego-resiliency (labeled ordinary) and there was no significant change in slope over time ($i = 3.53$, $p < .001$; $s = 0.076$, $p = .421$).

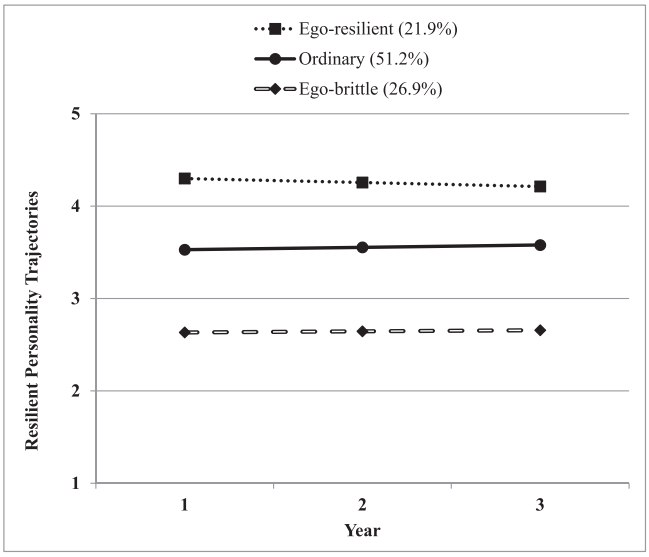

Fig. 1. Differentiated developmental trajectories of resilient personality from Year 1 to Year 3 (ages 6 to 8 years).

4.3. Associations between the resilient personality groups and their behavioral problems, social-emotional functioning and academic performance trajectories

After establishing that the baseline (unconditional) models exhibited adequate model fit (see details in Supplemental material Section D for the specifications for the piecewise unconditional growth models), these growth models were specified as conditional models by including effects for the resilient personality trajectory classes and the covariate effects. More specifically, for the resilient trajectory classes, each child's class assignment into one of the three identified classes was extracted and used to create a series of three dummy coded variables reflecting the ego-resilient, ego-brittle, and ordinary class. For each construct of behavioral problems, social-emotional functioning, and academic performance, these dummy coded variables (using the ordinary class as the reference group) and the covariate effects were all included in one model as predictors of the latent intercept factor and slope factors (assessing two different growth rates from Year 1 to 5 and Year 6 to 12 for conduct problems, hyperactivity-inattention, emotional problems, peer problem, prosocial behavior and for math and reading performance from Year 1 to 5 and year 6 to 9). As shown in Table 3, the conditional piecewise linear growth models exhibited excellent model fit with both teacher and parent-reports. The visual representation of the longitudinal associations of resilient personality and child adjustment outcomes are shown in Fig. 2.

4.3.1. Conduct problems

The results indicated that, during childhood, compared to the ordinary group, the ego-brittle group had the highest teacher and parent-reported conduct problems at Year 1, which persisted in childhood. In contrast, the resilient group had the lowest teacher and parent-reported conduct problems from Year 1 to 5 (see Table 4). Contrary to expectations, the ego-brittle group showed a significant decreasing trend, and the resilient group displayed an increasing trend at a faster rate than the ordinary group. No such significant slope effects were identified with parent-report. After the transition to adolescence, compared to the ordinary group, the ego-brittle group maintained the highest level of teacher and parent-reported conduct problems from Year 6 to 12, while the resilient group exhibited the lowest level of conduct problems.

4.3.2. Hyperactivity-inattention

The results indicated that, during the childhood period, compared to

Table 2
Fit indices of models examining the developmental trajectories of resilient personality from Year 1 to Year 3.

Model	LogL	AIC	BIC	SABIC	Entropy	LMR-LRT	*p*
2-Class	−4075.64	8165.28	8197.83	8175.60	0.67	407.82	<0.001
3-Class	**−4043.93**	**8109.85**	**8161.00**	**8126.07**	**0.61**	**61.13**	**0.029**
4-Class	−4035.05	8100.09	8169.85	8122.22	0.66	17.11	0.235
5-Class	−4029.27	8096.54	8184.89	8124.56	0.70	11.14	0.031
6-Class	−4024.14	8194.28	8194.59	8124.73	0.72	11.09	0.428

Notes: the optimal model is shown in bold font. AIC = Akaike information criterion; BIC = Bayesian information criterion; SABIC = sample-size adjusted Bayesian information criterion; LMR-LRT = Lo-Mendell-Rubin likelihood ratio test.

Table 3
Model fit indices of the unconditioned and conditioned piecewise latent growth models.

Unconditioned model	Reporters	χ^2	df	P value	RMSEA	RMSEA 90% CI	CFI	TLI	SRMR
Conduct problem	Teacher				0.020	[0.000–0.032]	0.988	0.987	0.052
	Parent	78.84	52	<0.01	0.028	[0.014–0.040]	0.983	0.982	0.043
Hyperactivity-inattention	Teacher	94.88	52	<0.001	0.033	[0.022–0.043]	0.976	0.975	0.037
	Parent	56.14	52	=0.32	0.011	[0.000–0.027]	0.998	0.998	0.024
Emotional problems	Teacher	73.02	52	<0.05	0.023	[0.008–0.034]	0.948	0.944	0.054
	Parent	63.61	52	=0.13	0.018	[0.000–0.032]	0.991	0.990	0.040
Peer problems	Teacher	63.73	52	=0.13	0.017	[0.000–0.030]	0.986	0.986	0.044
	Parent	81.65	52	<0.01	0.029	[0.016–0.041]	0.977	0.975	0.046
Prosocial behavior	Teacher	104.11	52	<0.001	0.036	[0.026–0.046]	0.951	0.948	0.046
	Parent	72.82	52	<0.05	0.024	[0.008–0.037]	0.985	0.984	0.062
Reading performance	Assessment	84.18	31	<0.001	0.047	[0.035–0.059]	0.987	0.985	0.055
Math performance	Assessment	112.48	31	<0.001	0.058	[0.047–0.070]	0.986	0.984	0.043

Conditioned model	Reporters	χ^2	df	P value	RMSEA	RMSEA 90% CI	CFI	TLI	SRMR
Conduct problem	Teacher	150.98	122	<0.05	0.017	[0.004–0.026]	0.987	0.983	0.035
	Parent	151.16	122	<0.05	0.017	[0.005–0.026]	0.987	0.983	0.036
Hyperactivity-inattention	Teacher	192.19	122	<0.001	0.027	[0.020–0.034]	0.974	0.965	0.030
	Parent	116.26	122	=0.63	0.000	[0.000–0.016]	1.000	1.003	0.020
Emotional problems	Teacher	170.94	122	<0.01	0.023	[0.014–0.030]	0.926	0.900	0.041
	Parent	129.19	122	=0.31	0.009	[0.000–0.020]	0.996	0.994	0.029
Peer problems	Teacher	152.95	122	<0.01	0.018	[0.006–0.026]	0.974	0.965	0.033
	Parent	159.84	122	=0.03	0.020	[0.010–0.028]	0.977	0.969	0.032
Prosocial behavior	Teacher	210.79	122	<0.01	0.030	[0.023–0.037]	0.949	0.932	0.035
	Parent	147.87	122	=0.06	0.016	[0.000–0.025]	0.985	0.980	0.039
Reading performance	Assessment	167.74	81	<0.001	0.044	[0.036–0.051]	0.982	0.972	0.025
Math performance	Assessment	202.09	81	<0.001	0.037	[0.029–0.045]	0.987	0.980	0.029

Note: RMSEA = Root Mean Square Error of Approximation, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, SRMR = Standardized Root Mean Residual. T = teacher-report, P = parent-report.

the ordinary group, the ego-brittle group displayed a significantly higher level of hyperactivity-inattention with both teacher and parent reports, albeit a significant decline in teacher-reported hyperactivity-inattention from Year 1 to 5. Moreover, the resilient group had a significantly lower level of teacher and parent-reported problems and also demonstrated an increasing trend only with teacher-reports during childhood. After the transition from childhood to adolescence, compared to the ordinary group the ego-brittle group maintained the highest level of hyperactivity-inattention, and the resilient group continued to exhibit the lowest levels of hyperactivity-inattention, based on teacher and parent reports.

4.3.3. Emotional problems

The results indicated that, during childhood, compared to the ordinary group the ego-brittle group appeared to have the most elevated levels of teacher-reported emotional problems, which persisted through childhood (Year 1-Year 5). However, such a pattern was not observed in the first assessment year with the parent report. In contrast, the resilient group had the lowest level of teacher-reported emotional problems during childhood and a comparable level of parent-reported emotional problems with the ordinary group in Year 5. There were no significant slope effects that emerged during childhood, indicating that the developmental patterns for resilient and ego-brittle groups were comparable to the ordinary group. After the transition from childhood to adolescence, compared to the ordinary group the ego-brittle group maintained elevated teacher and parent-reported emotional problems across adolescence, except for Year 12 with parent-report. In contrast, the resilient group showed the lowest emotional problems from Year 6 to Year 12, though no difference was identified between the resilient group and the ordinary group with parent-reported emotional problems in Year 6.

4.3.4. Peer problems

The results indicated that, during childhood, compared to the ordinary group the ego-brittle group had significantly higher levels of teacher and parent-reported peer problems throughout childhood (Year 1 to Year 5), except for parent-reports in Year 5. The ego-brittle group also demonstrated a decreasing trend in peer problems during childhood. In contrast, the resilient class had lower teacher and parent-reported peer problems during childhood. No significant slope effect was identified for the resilient group. After the transition in adolescence, compared to the ordinary group the ego-brittle group persistently had more serious peer problems based on both parent and teacher-report, except for Year 12 with teacher-reports. In contrast, the resilient group had the lowest peer problems based on both parent and teacher reports. No significant slope effects were identified.

4.3.5. Prosocial behavior

The results indicated that, during childhood, compared to the ordinary group the ego-brittle group had significantly lower prosocial behavior based on both parent and teacher reports. Though there was a significant increasing trend for the ego-brittle class from Year 1 to 5. The resilient class had the highest prosocial behavior from Year 1 to 5. After the transition from childhood to adolescence, compared to the ordinary group, the ego-brittle group continuously demonstrated lower prosocial behavior during adolescence except at Year 12 with parent-report. The resilient class showed significantly higher scores on prosocial behavior with teacher-report at Year 6, but these differences were attenuated (non-significant) by Year 12.

4.3.6. Reading performance

Compared to the ordinary class the ego-brittle group maintained a significantly lower reading performance in Year 1, which persisted until Year 9 throughout childhood and adolescence. Compared to the ordinary group, the resilient group had comparable reading scores in Year 1 and Year 5. After the transition from childhood to adolescence, compared to the ordinary group, the resilient group started to show significantly higher reading performance, while the ego-brittle group performed significantly lower on reading.

4.3.7. Math performance

During childhood, compared to the ordinary group the ego-brittle

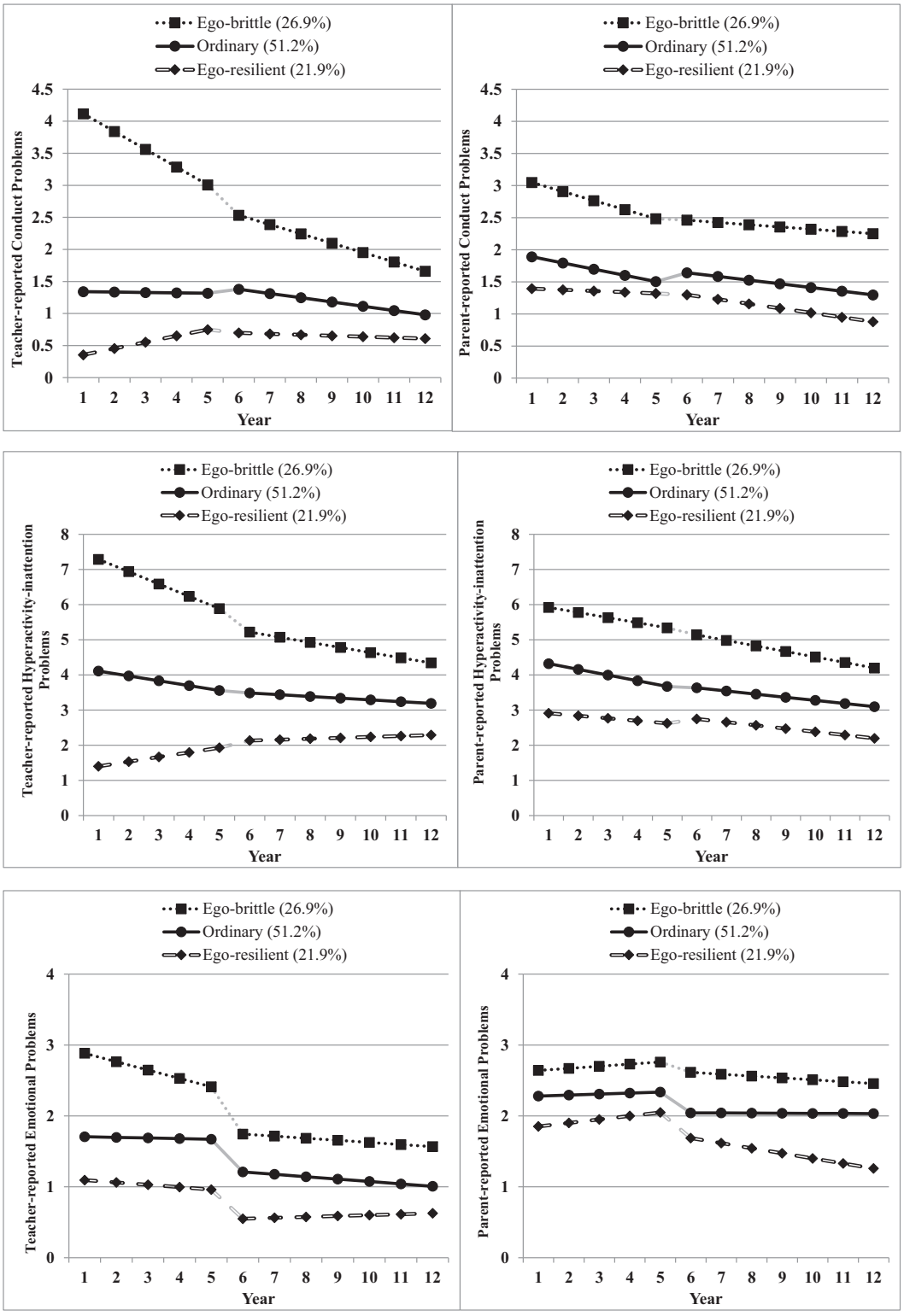

Fig. 2. Children's predicted trajectories for both teacher and parent-reported emotional problems, peer problems, conduct problems, hyperactivity-inattention, prosocial behavior, reading, and math performance for each of the three development trajectories of resilient personality (i.e., ego-resilient, ego-brittle, and ordinary group).
Notes. Figure indices are based on conditional piecewise linear growth model.

group showed persistently lower math performance. In contrast, the resilient group showed persistently higher math performance. After the transition to middle school, compared to the ordinary group, the ego-brittle group had persistently lower, and the resilient group had persistently higher math performance.

Due to space limitations, we provided detailed descriptions of the covariates and their effects in the Supplementary document Section E and coefficient indices in Table S8. Moreover, to ascertain the degree of

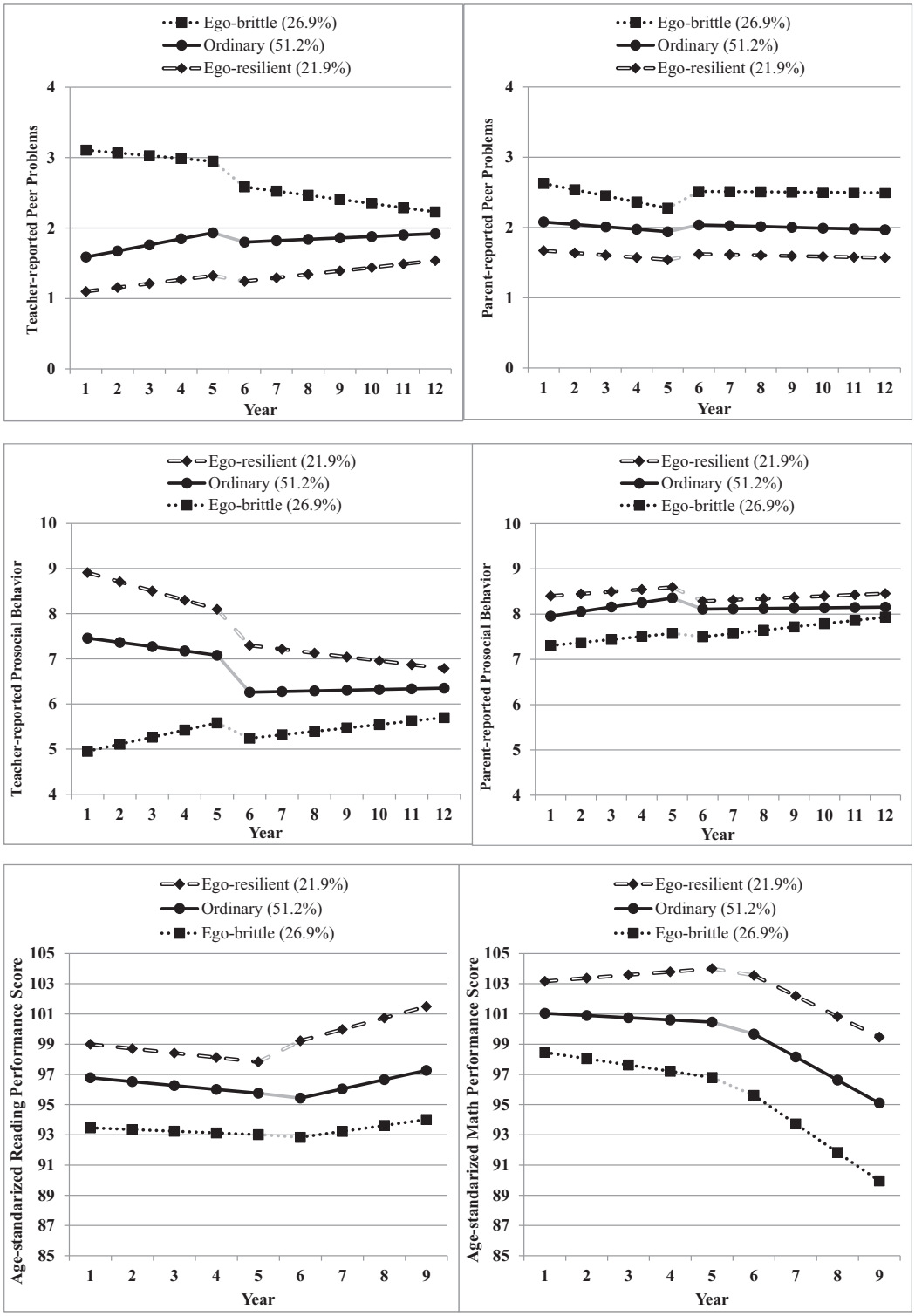

Fig. 2. (*continued*).

behavioral, social-emotional, and academical risks in each trajectory class, post hoc analyses were performed to examine the percentage of children in each class that fell into the categorization scheme according to the SDQ manual (i.e., close to average, slightly raised, high, and very high) and Woodcock-Johnson manual (i.e., above average, average, and below-average). These results are presented in the online Supplemental materials Section F and Tables S9 to S14. These analyses demonstrated that children in the ego-brittle class had a much higher rate of being classified as the 'Very High' categorization for conduct problems, hyperactivity-inattention, emotional problems, and peer problems, and 'Very Low' categorization for prosocial behavior based on both teacher and parent-reports. Similarly, ego-brittle children also had a higher percentage to belong in the Below Average categorization for both reading and math performance. In contrast, ego-resilient children performed much better than both ordinary and ego-brittle children in all of the measured domains.

Table 4
Conditional piecewise latent growth models of children's and adolescents' behavioral problems, social-emotional functioning, and academic performance by ego-resilient and ego-brittle personality types (with the ordinary class serving as the reference group).

Predictors	Teacher-conduct			Parent-conduct			Teacher-hyperactivity			Parent-hyperactivity		
	Estimates	*p*	SE	Estimates	*p*	SE	Estimates	*p*	SE	Estimates	*p*	SE
EC intercept effects (Y1)												
Ego-resilient personality	−0.98	***	0.1	−0.5	***	0.14	−2.71	***	0.17	−1.41	***	0.22
Ego-brittle personality	2.78	***	0.19	1.16	***	0.2	3.18	***	0.2	1.6	***	0.23
C slope effects (Y1-Y5)												
Ego-resilient personality	1.04	*	0.42	0.78		0.44	2.71	***	0.68	0.91		0.65
Ego-brittle personality	−2.72	***	0.66	−0.44		0.52	−2.12	**	0.8	0.17		0.64
LC intercept effects (Y5)												
Ego-resilient personality	−0.57	***	0.13	−0.18		0.15	−1.63	***	0.22	−1.05	***	0.23
Ego-brittle personality	1.69	***	0.22	0.98	***	0.19	2.33	***	0.26	1.67	***	0.25
EA intercept effects (Y6)												
Ego-resilient personality	−0.68	***	0.14	−0.34	*	0.16	−1.35	***	0.22	−0.88	***	0.23
Ego-brittle personality	1.16	***	0.23	0.82	***	0.2	1.73	***	0.27	1.51	***	0.24
A slope effects (Y6-Y12)												
Ego-resilient personality	0.52		0.34	−0.13		0.35	0.75		0.59	−0.03		0.44
Ego-brittle personality	−0.79		0.52	0.22		0.43	−0.97		0.67	−0.68		0.49
LA intercept effects (Y12)												
Ego-resilient personality	−0.37	*	0.15	−0.42	*	0.42	−0.9	***	0.25	−0.9	***	0.26
Ego-brittle personality	0.68	**	0.22	0.96	***	0.49	1.15	***	0.29	1.1	***	0.29

Predictors	Teacher-emotion			Parent-emotion			Teacher-peer			Parent-peer		
	Estimates	*p*	SE	Estimates	*p*	SE	Estimates	*p*	SE	Estimates	*p*	SE
EC intercept effects (Y1)												
Ego-resilient personality	−0.61	***	0.14	−0.43	*	0.19	−0.49	***	0.13	−0.41	**	0.16
Ego-brittle personality	1.18	***	0.17	0.36		0.21	1.52	***	0.16	0.55	***	0.17
C slope effects (Y1-Y5)												
Ego-resilient personality	−0.24		0.54	0.36		0.59	−0.3		0.53	0.02		0.52
Ego-brittle personality	−1.09		0.71	0.16		0.65	−1.26	*	0.57	−0.53		0.5
LC intercept effects (Y5)												
Ego-resilient personality	−0.71	***	0.16	−0.29		0.21	−0.61	***	0.16	−0.4	*	0.16
Ego-brittle personality	0.74	***	0.2	0.42	*	0.21	1.02	***	0.18	0.34		0.18
EA intercept effects (Y6)												
Ego-resilient personality	−0.66	***	0.14	−0.36		0.21	−0.56	***	0.15	−0.41	**	0.16
Ego-brittle personality	0.53	***	0.17	0.57	**	0.22	0.78	***	0.18	0.48	*	0.2
A slope effects (Y6-Y12)												
Ego-resilient personality	0.47		0.35	−0.7		0.48	0.29		0.39	0.03		0.39
Ego-brittle personality	0.04		0.49	−0.25		0.51	−0.79		0.43	0.08		0.43
LA intercept effects (Y12)												
Ego-resilient personality	−0.38	*	0.15	−0.77	***	0.24	−0.38	*	0.17	−0.4	*	0.2
Ego-brittle personality	0.56	*	0.23	0.42		0.26	0.31		0.19	0.53	*	0.23

Predictors	Teacher-prosocial			Parent-prosocial			Reading			Math		
	Estimates	*p*	SE	Estimates	*p*	SE	Estimates	*p*	SE	Estimates	*p*	SE
EC intercept effects (Y1)												
Ego-resilient personality	1.45	***	0.15	0.44	**	0.17	2.21		1.42	2.12	*	1.03
Ego-brittle personality	−2.51	***	0.18	−0.65	***	0.19	−3.32	**	1.29	−2.59	**	0.96
C slope effects (Y1-Y5)												
Ego-resilient personality	−1.09		0.64	−0.52		0.54	−0.35		3.11	3.55		2.45
Ego-brittle personality	2.52	***	0.74	−0.32		0.56	1.47		2.76	−2.7		2.25
LC intercept effects (Y5)												
Ego-resilient personality	1.02	***	0.18	0.24		0.18	2.07		1.12	3.54	***	0.92
Ego-brittle personality	−1.5	***	0.23	−0.78	***	0.19	−2.74	**	1.04	−3.67	***	0.86
EA intercept effects (Y6)												
Ego-resilient personality	1.04	***	0.2	0.18		0.19	3.79	***	1.14	3.88	***	0.84
Ego-brittle personality	−1.02	***	0.24	−0.61	**	0.21	−2.59	*	1.07	−4.06	***	0.92
A slope effects (Y6-Y9/12)												
Ego-resilient personality	−1.00		0.56	0.21		0.40	1.47		2.45	1.65		2.51
Ego-brittle personality	0.61		0.69	0.64		0.44	−2.19		2.45	−3.63		2.55
LA intercept effects (Y9/12)												
Ego-resilient personality	0.44		0.25	0.3		0.2	4.23	**	1.37	4.38	***	1.04
Ego-brittle personality	−0.66	*	0.31	−0.22		0.23	−3.25	**	1.19	−5.15	***	1.11

Notes. Results are based on conditional piecewise latent growth model, using the ordinary-class as the reference group. Due to the space limitations, the detailed coefficients for all covariates were not included in this table and can be found in Table S8 For the Y9/12 intercept effects, intercept effects were assessed at year 12 for conduct problems, hyperactivity-inattention, emotional problems, peer problems, and prosocial behavior, and at year 9 for math and reading performance. *$p < .05$. **$p < .01$. ***$p < .001$. Y = Year.
Notes. EC = early childhood, C = childhood, LC = late childhood, EA = early adolescence, A = adolescence, LA = late adolescence.

5. Discussion

The results of this study make several novel contributions to what is known about the development of resilient personality in childhood, and how distinct classes of resilient personality are associated with behavior problems, social-emotional functioning, and academic performance across childhood and adolescence. Our study identified three distinct subtypes of resilient personality trajectories including ego-resilient (flexible), ego-brittle (inflexible), and ordinary or common classes, which were stable from ages 6 to 9 (Years 1 to 3). Furthermore, our findings elucidated the long-term (i.e., from early childhood to adolescence) developmental patterns of children's social, behavioral and academic adjustment, and perhaps more importantly, how these developmental patterns were associated with variations in children's resilient personality, and the transition from childhood to adolescence. These data were derived from children who were academically at-risk and predominantly low-income, and thus findings address how resilience develops in children who may be experiencing diverse and multiple forms of adversity.

5.1. The development of childhood resilient personality

Our measure of resilient personality was adapted from a previously validated measure (Kwok et al., 2007), the Ego-Control/Ego-Resiliency Model (Block & Block, 1980), and the five-factor model of personality (John, 1990). Confirmatory factor analysis has provided evidence of both good convergent and discriminant validity of this higher-order measure of resilient personality composed of ego-resiliency, agreeableness, and conscientiousness (see details in Kwok et al., 2007). The three trajectory classes we identified across childhood were largely consistent with what has been reported previously indicating the heterogeneity in personality development (Asendorpf et al., 2001; Hart et al., 1997; Kim et al., 2009; Meeus et al., 2011; Robins et al., 1996; Rogosch & Cicchetti, 2004). We identified three latent classes as ego-resilient (flexible), ego-brittle (inflexible), and ordinary and their differentiated trajectories remained stable across childhood. Resilient and brittle profiles are conceptualized as corresponding to two opposing poles of the ego-resiliency dimension. The majority of our sample (51.2%) was characterized as having average levels of resilient personality, with a smaller portion of children (21.9%) having a resilient personality, and also a similar portion of children (26.9%) exhibiting ego-brittle personality.

All three trajectory classes of resilient personality identified in our study demonstrated absolute (mean-level) stability. This aligns with the concept of continuity in personality characteristics that can be maintained or enhanced by selection effects such that children have a proclivity to seek out situations or contexts which align with their temperament or personality characteristics (Caspi et al., 1989; Roberts et al., 2008). Though we observed absolute stability in these data, it is important to note that personality type may change across development. For instance, Meeus et al. (2011) focused on a group of middle-to-late adolescents (aged 12 to 20 years) and found 73.5% of adolescents maintained the same personality type across time; however, some adolescents (roughly 1 in 4) exhibited changes in their personality types across this developmental period. Similarly, Specht et al. (2014) examined personality changes among individuals ranging from 15 to 82 years and found there were more resilient and fewer undercontrollers in older participants, suggesting that personality types may continue to change as people age.

We did not identify any quadratic trends as Kim et al. (2009) identified (i.e., a class which had a U-shaped ego-resiliency trajectory), though a large number of studies have reported that, consistent with our findings, personality tends to be stable on average over time (Caspi & Roberts, 2001; Vecchione et al., 2010). This may be due to the fact that our study covered a comparatively shorter period of time, (i.e., across 3 years from 6 to 8 years) relative to Kim et al.'s study which examined ego-resiliency development from 6 to 11 years. It is notable that children in the two classes identified by Kim et al. (i.e., a U-shaped increasing class, and a continuously decreasing trend) started with almost the same initial resiliency level. However, these classes became more distinguishable by around seven years of age, and the differences became more pronounced from 8 to 11 years, as children were making the transition from middle childhood to early adolescence. In addition to the developmental periods or stages that differed between the current study and that of Kim et al., there are also considerable differences between the samples of these two studies. Specifically, Kim and colleagues focused on a group of maltreated children based on their occurrence of sexual abuse, physical abuse, physical neglect, and emotional maltreatment. Thus, the nature and level of adversities or trauma experienced by children appears influential in their differentiated developmental trajectories of resiliency.

5.2. The associations among resilient personality, behavioral problems, socio-emotional functioning, and academic performance

Further, our findings underscore the importance of children's resilient personality, or adaptive dispositions, on their subsequent behavioral adjustment, social-emotional functioning, and academic performance. Consistent with our hypotheses, compared to children in the ordinary class, those who were classified into the resilient (flexible) group showed the lowest behavioral problems, best socio-emotional functioning, and highest academic performance across the entire formal schooling period, even after controlling for the effects of gender, ethnicity, family socioeconomic adversity, intelligence, grade retention, and kindergarten literacy skills. In contrast, compared to the ordinary class, the ego-brittle (inflexible) or fragile group exhibited the highest levels of behavioral problems, lowest social-emotional functioning, and worst academic performance. Our study supported the conclusion that young elementary school children who demonstrated strong positive characteristics associated with ego-resiliency, agreeableness, and conscientiousness will accumulate social connections (e.g., social capital) and coping strategies that can be applied to various domains of functioning and individual development. Taken together, across the indicators of behavioral problems and social-emotional functioning, we observed patterns largely similar across both parent- and teacher-reports. Thus, the findings cannot be attributed solely to a shared measurement source, because both parents and teachers reported on behavior problems and social-emotional functioning, and achievement was assessed by assessing children's performance on a nationally standardized math and reading test. Nonetheless, it appeared that the variations among the three groups were more pronounced when examining teacher-reported measures compared to parent-reports, especially during the childhood period.

When examining the developmental trajectories of behavioral problems, social-emotional functioning, and academic performance before and after the transition to from childhood to adolescence, we identified several interesting and meaningful patterns. Specifically, behavior problems (i.e., conduct problems and hyperactivity-inattention) gradually decreased over time for all three classes (except for the resilient class during the childhood period) and the resilient (flexible), brittle (inflexible), and ordinary classes became more similar over time. This is not surprising as extant studies showed the normative decline over time for behavioral problems (Bongers et al., 2003) potentially due to increased self-regulation capacities (Perry, Calkins, Dollar, Keane, & Shanahan, 2018). Nonetheless, the resilient (flexible) class was still significantly lower in behavioral problems by Year 12.

In terms of socio-emotional functioning, emotion problems were relatively stable for each group but exhibited a normative drop after the transition from childhood to adolescence. This may be due to gains in adolescent's self-regulatory abilities such as effortful control and executive functioning (Martel et al., 2007), and perhaps, expressing fewer emotional issues in front of adults (i.e., parents and teachers). Despite the overall drop in emotional problems, resilient adolescents still scored

the lowest on emotional problems based on both parent and teacher's report. Findings pertaining to peer problems and prosocial behaviors indicated similar developmental patterns for these two domains. More specifically, there was a relatively larger discrepancy among resilient, brittle, and ordinary children during childhood than adolescence, and the trajectories converged across time. Although it is possible that the effects of early resilient personality are attenuated across longer periods of time, differences across the three personality classes largely remained significant in Grade 12.

In terms of reading and math performance, the developmental patterns across the three classes were relatively stable in childhood; however, after transitioning to adolescence, all three classes showed an increasing trend for reading and a decreasing trend for math performance. Moreover, the resilient class demonstrated the highest increasing rate in reading, and by Year 9, the discrepancies between resilient and brittle children were the most pronounced. With respect to math performance, although all three classes exhibited a decline in adolescence, children in the resilient class exhibited the smallest decline, and differences among the three personality classes became more pronounced over time. Thus, in contrast to some of the group differences in behavioral problems and socio-emotional functioning which attenuated over time, differences in academic performance became more pronounced in adolescence. The transition from childhood to adolescence is an important developmental period as children need to adjust to physical and hormonal changes, increased autonomy requirements, and excessive school-related task demands (Paikoff & Brooks-Gunn, 1991), which may put adolescents at a higher risk for maladjustment. However, the findings implied that resilient personality buffers adolescents from some of these potential challenges and is associated with more optimal rates of academic performance.

In sum, our study supported the scientific premise that resilient personality development may facilitate how capable a child is at adjusting and adapting to the early risks and vulnerabilities they face in their everday lives at home and at school. Although studies have consistently reported that early academic difficulties and family socioeconomic adversity may hinder long-term development (Cicchetti & Rogosch, 1997), the findings of our study elucidate how children with more resilient personalities were able to maintain long-term advantages in their social, behavioral and academic adjustment; findings which persisted over and above the effects of multiple other individual characteristics (e.g., intelligence, early literacy scores, family socioeconomic adversity, grade retention status, gender, and ethnicity). Since our study addressed mean-level development for all children with given personality characteristics, it is important to note that even if ego-brittle personality is thought of as representing a vulnerability and at higher risk for maladjustment, not all children with this fragile or vulnerable personality type necessarily exhibit problematic development. It may be because of their received support from external environments (e.g., warm and responsive parents and/or positive and supportive teachers and peers).

5.3. Limitations and future directions

The results of our study must be considered in the context of its limitations. First, future studies will need to replicate our GMM results for childhood resilient personality to further validate the replicability and robustness of each identified subgroup. It is also important to incorporate multiple informants' perspectives on children's resilient personality processes to have a more comprehensive examination of the measure. It is possible that certain contexts require higher levels of resilient personality, and a multi-informant perspective may provide additional insights about how this construct is observed and manifested in different contexts. Secondly, though we incorporated many relevant covariates to statistically control for the potential confounding effects, it is necessary for future researchers to consider how biological processes (e.g., cortisol, heart rate, and respiratory sinus arrhythmia) are associated with children's resilient personality since psychological and neurobiological and physiological responses may be related to personality characteristics (Caspi et al., 2005; Eisenberg et al., 2009). Thus, an important avenue for future research is to explore the determinants and pathways to resilience incorporating multiple biological and psychological levels of analysis. Thirdly, we suggest that future studies may benefit from further distinguishing the different facets of resilient personality (e.g., ego-resiliency, conscientiousness, agreeableness) to better understand whether there are certain aspects of personality that may be more influential than others in resiliency. Lastly, examining resilient personality across longer developmental periods (e.g., childhood and adolescence) may provide additional insights about patterns of heterogeneity in personality development which were not possible to investigate in the present study. It is conceivable that patterns of discontinuity or dynamic changes in resilient personality are more likely to be detected or observed when multiple major transitions occur.

6. Conclusion

Findings from this study suggest that children with maladaptive developmental patterns of personality, as shown by the ego-brittle (inflexible) or fragile/vulnerable trajectory class, may be particularly at risk for developing behavioral, social-emotional, and academic problems. In contrast, children with resilient (flexible) personality patterns demonstrated better outcomes in multiple domains across their entire formal schooling years. While further prospective longitudinal studies on the association among childhood adversity, resilient personality, and a broader range of developmental outcomes across the life span are needed, our results support the viewpoint that there are buffering effects of childhood resiliency and demonstrate strong associations between early resiliency and future positive social-behavioral and academic outcomes, even after transitioning into adolescence.

Our study findings highlight the importance of cultivating resilience beginning in early childhood, especially for children who are academically at-risk and living in families facing economic challenges. These types of adversities are the very same types of challenges that have become common for many families and children around the world during the COVID-19 pandemic. Although longitudinal studies have shown that individual differences in personality characteristics in adulthood are not closely related to the same traits in childhood or adolescence (e.g., Harris et al., 2016), the potential long-term effects of childhood resilient personality underscore the need to create supportive and positive environments that support its development in order to facilitate a foundation of resilience early in life that can be sustained across the lifespan.

CRediT authorship contribution statement

Qinxin Shi: Conceptualization, Methodology, Formal analysis, Writing – original draft. **Jeffrey Liew:** Conceptualization, Writing – original draft. **Idean Ettekal:** Writing – review & editing. **Steven Woltering:** Writing – review & editing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2021.110789.

References

Alessandri, G., Luengo Kanacri, B. P., Eisenberg, N., Zuffianò, A., Milioni, M., Vecchione, M., & Caprara, G. V. (2014). Prosociality during the transition from late adolescence to young adulthood: The role of effortful control and ego-resiliency. *Personality and Social Psychology Bulletin, 40*(11), 1451–1465.

Asendorpf, J. B., Borkenau, P., Ostendorf, F., & Van Aken, M. A. (2001). Carving personality description at its joints: Confirmation of three replicable personality

prototypes for both children and adults. *European Journal of Personality, 15*(3), 169–198.
Asendorpf, J. B., & van Aken, M. A. (1999). Resilient, overcontrolled, and undercontroleed personality prototypes in childhood: Replicability, predictive power, and the trait-type issue. *Journal of Personality and Social Psychology, 77*(4), 815–832.
Ayyash-Abdo, H., Sanchez-Ruiz, M. J., & Barbari, M. L. (2016). Resiliency predicts academic performance of Lebanese adolescents over demographic variables and hope. *Learning and Individual Differences, 48*, 9–16.
Barbaranelli, C., Caprara, G. V., Rabasca, A., & Pastorelli, C. (2003). A questionnaire for measuring the Big Five in late childhood. *Personality and Individual Differences, 34*(4), 645–664.
Block, J., & Block, J. H. (2006). Venturing a 30-year longitudinal study. *American Psychologist, 61*, 315–327.
Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In Minnesota symposia on child psychology (Vol. 13, pp. 39–101).
Bongers, I. L., Koot, H. M., Van der Ende, J., & Verhulst, F. C. (2003). The normative development of child and adolescent problem behavior. *Journal of Abnormal Psychology, 112*(2), 179–192.
Bukowski, W. M., Brendgen, M., & Vitaro, F. (2007). Peers and socialization: Effects on externalizing and internal- izing problems. In J. Grusec, & P. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 355–381). New York: Guilford.
Caspi, A., Bem, D. J., & Elder, G. H., Jr. (1989). Continuities and consequences of interactional styles across the life course. *Journal of Personality, 57*(2), 375–406.
Caspi, A., & Roberts, B. W. (2001). Personality development across the life course: The argument for change and continuity. *Psychological Inquiry, 12*(2), 49–66.
Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology, 56*, 453–484.
Causadias, J. M., Salvatore, J. E., & Sroufe, L. A. (2012). Early patterns of self-regulation as risk and promotive factors in development: A longitudinal study from childhood to adulthood in a high-risk sample. *International Journal of Behavioral Development, 36*(4), 293–302.
Celeux, G., & Soromenho, G. (1996). An entropy criterion for assessing the number of clusters in a mixture model. *Journal of Classification, 13*(2), 195–212.
Chuang, S. S., Lamb, M. E., & Hwang, C. P. (2006). Personality development from childhood to adolescence: A longitudinal study of ego-control and ego-resiliency in Sweden. *International Journal of Behavioral Development, 30*(4), 338–343.
Cicchetti, D., & Rogosch, F. A. (1997). The role of self-organization in the promotion of resilience in maltreated children. *Development and Psychopathology, 9*(4), 797–815.
De Haan, A. D., Deković, M., Van den Akker, A. L., Stoltz, S. E., & Prinzie, P. (2013). Developmental personality types from childhood to adolescence: Associations with parenting and adjustment. *Child Development, 84*(6), 2015–2030.
Eisenberg, N., Haugen, R., Spinrad, T. L., Hofer, C., Chassin, L., Zhou, Q., … Liew, J. (2010). Relations of temperament to maladjustment and ego resiliency in at-risk children. *Social Development, 19*(3), 577–600.
Eisenberg, N., Spinrad, T. L., Fabes, R. A., Reiser, M., Cumberland, A., Shepard, S. A., … Thompson, M. (2004). The relations of effortful control and impulsivity to children's resiliency and adjustment. *Child Development, 75*(1), 25–46.
Eisenberg, N., Spinrad, T. L., & Morris, A. S. (2002). Regulation, resiliency, and quality of social functioning. *Self and Identity, 1*(2), 121–128.
Eisenberg, N., Valiente, C., & Sulik, M. J. (2009). How the study of regulation can inform the study of coping. *New Directions for Child and Adolescent Development, 2009*(124), 75–86.
Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*, 1337–1345.
Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. *Journal of Personality and Social Psychology, 70*(4), 820–835.
Harris, M. A., Brett, C. E., Johnson, W., & Deary, I. J. (2016). Personality stability from age 14 to age 77 years. *Psychology and Aging, 31*(8), 862–874.
Hart, D., Hofmann, V., Edelstein, W., & Keller, M. (1997). The relation of childhood personality types to adolescent behavior and development: A longitudinal study of Icelandic children. *Developmental Psychology, 33*(2), 195–205.
Hill, C. R., & Hughes, J. N. (2007). An examination of the convergent and discriminant validity of the Strengths and Difficulties Questionnaire. *School Psychology Quarterly, 22*, 380–406.
Hill, P. L., Edmonds, G. W., & Jackson, J. J. (2019). Pathways linking childhood personality to later life outcomes. *Child Development Perspectives, 13*(2), 116–120.
Hofer, C., Eisenberg, N., & Reiser, M. (2010). The role of socialization, effortful control, and ego resiliency in French adolescents' social functioning. *Journal of Research on Adolescence, 20*(3), 555–582.
Jensen-Campbell, L. A., Rosselli, M., Workman, K. A., Santisi, M., Rios, J. D., & Bojan, D. (2002). Agreeableness, conscientiousness, and effortful control processes. *Journal of Research in Personality, 36*, 476–489.
John, O. P. (1990). The Big Five factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality psychology: Theory and research* (pp. 66–100). Hillsdale, NJ: Erlbaum.
Juffer, F., Stams, G. J. J., & van IJzendoorn, M. H. (2004). Adopted children's problem behavior is significantly related to their ego resilaiency, ego control, and sociometric status. *Journal of Child Psychology and Psychiatry, 45*(4), 697–706.
Jung, T., & Wickrama, K. A. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass, 2*(1), 302–317.
Kim, J., Cicchetti, D., Rogosch, F. A., & Manly, J. T. (2009). Child maltreatment and trajectories of personality and behavioral functioning: Implications for the development of personality disorder. *Development and Psychopathology, 21*(3), 889–912.
Kwok, O. M., Hughes, J. N., & Luo, W. (2007). Role of resilient personality on lower achieving first grade students' current and future achievement. *Journal of School Psychology, 45*(1), 61–82.
Liew, J., Cao, Q., Hughes, J. N., & Deutz, M. H. (2018). Academic resilience despite early academic adversity: A three-wave longitudinal study on regulation-related resiliency, interpersonal relationships, and achievement in first to third grade. *Early Education and Development, 29*(5), 762–779. https://doi.org/10.1080/10409289.2018.1429766.
Martel, M. M., Nigg, J. T., Wong, M. M., Fitzgerald, H. E., Jester, J. M., Puttler, L. I., … Zucker, R. A. (2007). Childhood and adolescent resiliency, regulation, and executive functioning in relation to adolescent problems and competence in a high-risk sample. *Development and Psychopathology, 19*(2), 541–563.
Masten, A. S. (2016). Resilience in developing systems: The promise of integrated approaches. *European Journal of Developmental Psychology, 13*(3), 297–312.
Meeus, W., Van de Schoot, R., Klimstra, T., & Branje, S. (2011). Personality types in adolescence: Change and stability and links with adjustment and relationships: A five-wave longitudinal study. *Developmental Psychology, 47*(4), 1181–1195.
Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., … Sears, M. R. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences, 108*(7), 2693–2698.
Muthén, L. K., & Muthén, B. O. (2012). *MPlus: Statistical analysis with latent variables—User's guide*.
Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal, 14*, 535–569.
Oshio, A., Taku, K., Hirano, M., & Saeed, G. (2018). Resilience and Big Five personality traits: A meta-analysis. *Personality and Individual Differences, 127*, 54–60.
Paikoff, R. L., & Brooks-Gunn, J. (1991). Do parent-child relationships change during puberty? *Psychological Bulletin, 110*(1), 47–66.
Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 375–398). New York, NY: Guilford Press.
Robins, R. W., John, O. P., Caspi, A., Moffitt, T. E., & Stouthamer-Loeber, M. (1996). Resilient, overcontrolled, and undercontrolled boys. *Journal of Personality and Social Psychology, 70*, 157–171.
Rogosch, F. A., & Cicchetti, D. (2004). Child maltreatment and emergent personality organization: Perspectives from the five-factor model. *Journal of Abnormal Child Psychology, 32*(2), 123–145.
Schwarz, G. (1978). Estimating the dimension of a model. *Annals of Statistics, 6*, 461–464.
Shi, Q., & Ettekal, I. (2020). Co-occurring trajectories of internalizing and externalizing problems from grades 1 to 12: Longitudinal associations with teacher-child relationship quality and academic performance. *Journal of Educational Psychology*. https://doi.org/10.1037/edu0000525.
Shi, Q., Ettekal, I., Deutz, M. H., & Woltering, S. (2020). Trajectories of pure and co-occurring internalizing and externalizing problems from early childhood to adolescence: Associations with early childhood individual and contextual antecedents. *Developmental Psychology, 56*(10), 1906–1918.
Shi, Q., Ettekal, I., Liew, J., & Woltering, S. (2020). Predicting differentiated developmental trajectories of prosocial behavior: A 12-year longitudinal study of children facing early risks and vulnerabilities. *International Journal of Behavioral Development*. https://doi.org/10.1177/0165025420935630.
Shiner, R. L., Buss, K. A., McClowry, S. G., Putnam, S. P., Saudino, K. J., & Zentner, M. (2013). What is temperament now? Assessing progress in temperament research on the twenty-fifth anniversary of Goldsmith et al. (1987). *Child Development Perspectives, 4*, 436–444.
Specht, J., Luhmann, M., & Geiser, C. (2014). On the consistency of personality types across adulthood: Latent profile analyses in two large-scale panel studies. *Journal of Personality and Social Psychology, 107*, 540–556.
Syed, M., Eriksson, P. L., Frisén, A., Hwang, C. P., & Lamb, M. E. (2020). Personality development from age 2 to 33: Stability and change in ego resiliency and ego control and associations with adult adaptation. *Developmental Psychology, 56*(5), 815–832. https://doi.org/10.1037/dev0000895.
Taylor, Z. E., Eisenberg, N., Spinrad, T. L., Eggum, N. D., & Sulik, M. J. (2013). The relations of ego-resiliency and emotion socialization to the development of empathy and prosocial behavior across early childhood. *Emotion, 13*(5), 822–831.
Taylor, Z. E., & Jones, B. L. (2020). Cultural contributors to ego-resiliency and associations with depressive problems in Midwestern Latino youth. *Journal of Research on Adolescence, 30*, 349–361.
Texas Education Agency. (2004). TAKS information booklets. Retrieved from http://www.tea.state.tx.us/student.assessment/taks/booklets/index.html.
Vecchione, M., Alessandri, G., Barbaranelli, C., & Gerbino, M. (2010). Stability and change of ego resiliency from late adolescence to young adulthood: A multiperspective study using the ER89–R Scale. *Journal of Personality Assessment, 92*(3), 212–221.
Woodcock, R. W., McGrew, K. S., & Mather, N. (2001). *Woodcock–Johnson III tests of achievement*. Itasca, IL: Riverside Publishing.
Woodcock, R. W., & Muñoz-Sandoval, A. F. (1993). *Woodcock–Muñoz language survey*. Chicago: Riverside.
Perry, N., Calkins, S. D., Dollar, J. M., Keane, S. P., & Shanahan, L. (2018). Self-regulation as a predictor of patterns of change in externalizing behaviors from infancy to adolescence. *Developmental Psychopathology, 30*(2), 497–510. https://doi.org/10.1017/S0954579417000992.