

Mean-Level Personality Development Across Childhood and Adolescence: A Temporary Defiance of the Maturity Principle and Bidirectional Associations With Parenting

Alithe L. Van den Akker and Maja Deković
Utrecht University

Jessica Asscher
University of Amsterdam

Peter Prinzie
Utrecht University

In this study, we investigated mean-level personality development in children from 6 to 20 years of age. Additionally, we investigated longitudinal, bidirectional associations between child personality and maternal overreactive and warm parenting. In this 5-wave study, mothers reported on their child's personality from Time 1 (T1) through Time 4 (T4), and children provided self-reports from Time 2 (T2) through Time 5 (T5). Mothers reported on their levels of overreactive and warm parenting from T2 through T4. Using cohort-sequential latent growth curve modeling, we investigated mother reported child personality from 6 to 17 years of age and child reported personality from 9 to 20 years of age. Extraversion decreased linearly across the entire study. Benevolence and conscientiousness increased from middle to late childhood, temporarily declined from late childhood to mid-adolescence, and increased again thereafter. Imagination decreased from middle childhood to mid-adolescence and also increased thereafter. Mothers reported a temporary decline in emotional stability with an increase thereafter, whereas children did not. Boys and girls differed in mean-levels of the personality dimensions and, to a lesser extent, in the degree and direction of changes. Latent difference score modeling showed that child personality predicted changes in parenting and that, to a lesser extent, parenting predicted changes in child traits. Additionally, changes in child personality were associated with changes in maternal parenting. Results of the present study show that personality change is not directed at increasing maturity from childhood to mid-adolescence and that it elicits and is shaped by both positive and negative parenting.

Keywords: personality, development, childhood, adolescence, parenting

Although personality is by definition stable across time and contexts, a growing body of evidence shows that mean-level personality development occurs across the life-span, well into old age, and is mostly aimed at increasing “maturity” (Roberts, Walton, & Viechtbauer, 2006). However, much less is known about mean-level personality development across childhood and adolescence. The scarce evidence is mixed with regards to whether personality development at this age is aimed at increasing maturity (De Fruyt et al., 2006; Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2009; Soto, John, Gosling, & Potter, 2011; van den Akker, Deković, & Prinzie, 2010). Additionally, it is becoming clear that

individual differences in personality development are influenced by contextual factors, such as for instance, taking on roles of work (Roberts, Caspi, & Moffitt, 2003), involvement in a romantic relationship (Scollon & Diener, 2006), or even entering the military (Jackson, Thoemmes, Jonkmann, Lüdtke, & Trautwein, 2012). For children, an important contextual factor that may be associated with their personality development is the parenting they experience (Shiner & Caspi, 2003). The present study longitudinally investigates mean-level personality development from age 6 to age 20 years, as well as how individual differences in personality development influence, or are influenced by maternal overreactive and warm parenting.

Personality Development

Development of the Big Five dimensions has been investigated across the lifespan. Adults tend to become more agreeable, conscientious, and emotionally stable as they age (Roberts et al., 2006; Shiner, Masten, & Tellegen, 2002). These developments have been summarized in the “maturity principle,” that is, individuals increase on those traits that make them better able to perform tasks associated with the responsibilities of adult life (Roberts, Caspi, & Moffitt, 2001). Social Investment Theory posits that taking on new social roles is in fact what drives these changes in personality

This article was published Online First August 18, 2014.

Alithe L. Van den Akker and Maja Deković, Department of Child and Adolescent Studies, Utrecht University; Jessica Asscher, Research Centre for Forensic Child and Youth Care Studies, University of Amsterdam; Peter Prinzie, Department of Child and Adolescent Studies, Utrecht University.

Correspondence concerning this article should be addressed to Alithe L. Van den Akker, who is now at the Department of Child Development and Education, University of Amsterdam, Nieuwe Prinsengracht 130, 1018 VZ Amsterdam, the Netherlands. E-mail: a.l.vandenakker@uva.nl

(Roberts, Wood, & Smith, 2005). For instance, taking on the responsibility of a paid job requires individuals to become more punctual and organized, and entering a romantic relationship requires less egocentrism and more altruism. By placing these social roles as the driving force behind personality change, this theory predicts that most personality change would occur in young adulthood, when these types of social roles are taken on. Indeed, a meta-analysis of personality development across the lifespan indicated that personality change was greater in early adulthood than in adolescence (Roberts et al., 2006).

However, theories on personality development in childhood and adolescence state that individuals may start out with mostly biologically based individual differences in reactivity and regulation of emotions and behavior, which become elaborated into personality across development (Shiner & Caspi, 2003). More generally, children move from being entirely dependent on their parents in early childhood, to autonomous individuals with a sense of their own identity in adulthood (Galambos & Costigan, 2003). We could thus expect most change to occur during this period. However, there is not much longitudinal evidence available on mean-level development in childhood and adolescence. The meta-analysis on mean-level personality development summarized changes between age 10 and 18 into a single category (Roberts et al., 2006). When investigating development it is vital that the chosen time-interval is appropriate to capture change. As development may be faster paced in children and adolescents, shorter time-intervals may be necessary to capture changes, than would be necessary for adults.

The transition to adolescence may be especially interesting in terms of personality change. Children experience the biological and hormonal changes of puberty. Additionally, whereas most children have spent their entire childhood in a school class with the same children, they transition to a new school, where they need to adjust to new routines, an increased work load, and establish a new social circle. Simultaneously, they start to face the developmental task of increasing autonomy, and establishing a stable sense of identity (Galambos & Costigan, 2003). That the multiple changes associated with the transition to adolescence may be stressful for children, is shown by increased rates of depression and anxiety in this period (Petersen et al., 1993), and increases in parent-child conflict (Laursen, Coy, & Collins, 1998). The many changes children experience may well be reflected in mean-level personality change.

Results of one cross-sectional study of over a million individuals, ranging in age from 10 to 65 years of age (Soto et al., 2011), indicate that the transition to adolescence may indeed be different in terms of personality development from later life periods, in that personality development is not aimed at becoming more mature. Rather, levels of extraversion, agreeableness, conscientiousness, and openness decreased across early adolescence for both boys and girls, whereas neuroticism (the inverse of emotional stability), increased for girls. Thus, during early adolescence, there appeared to be a temporary change toward immaturity. From mid-adolescence onwards, development was in line with the maturity principle, with levels of agreeableness, conscientiousness, and openness increasing, and neuroticism decreasing. Results of this study indicate that when a broad time-interval is chosen to assess personality change from late childhood to emerging adulthood, it would appear that not much change has occurred. However, taking

a closer look at the changes between ages 10 and 20 results in an entirely different conclusion. Children first decrease on several dimensions and then increase again.

There are several longitudinal findings that also indicate that mean-level development of the personality dimensions defies the maturity principle in adolescence. Decreases in conscientiousness and imagination (i.e., the childhood Big Five domain most related to Openness to Experience in adults, which encompasses creativity, fantasy, curiosity, imagination, humor, and resourcefulness in initiating activities in children; De Fruyt, et al., 2006), as well as extraversion (Branje, van Lieshout, & Gerris, 2007; Loehlin, Horn, & Willerman, 1990), have been reported for adolescents. A study of the present sample that was limited to the age range of 9 to 15 years, also found decreases in extraversion, conscientiousness and imagination (van den Akker et al., 2010). However, there are also some findings which indicate that personality development does follow the maturity principle in adolescence: Openness to Experience has been found to increase in adolescence (Branje et al., 2007; Branje, van Lieshout, & van Aken, 2004; Klimstra et al., 2009; McCrae et al., 2002) as have agreeableness and emotional stability (Klimstra et al., 2009).

If personality change in this age range is non-linear (i.e., decrease followed by increase), mixed findings may be due to differences in the age ranges and intervals between assessments (Soto et al., 2011). To determine whether personality change across childhood and adolescence is indeed non-linear, a sufficient number of assessments and a large enough sample size are vital. Additionally, to assess whether a tendency to change toward immaturity is specific to the transition to adolescence, it is important to investigate children from well before this transition. Finally, incongruence in the longitudinal findings to date may also be due to differences in informants. In investigations of personality in younger age groups the use of other-reports to assess children's personalities (usually parents) is relatively common (e.g., De Fruyt et al., 2006; Loehlin et al., 1990). However, especially in older adolescents, self-reports are often used (e.g., Klimstra et al., 2009; Roberts et al., 2003). With regards to agreeableness for instance, parents may perceive their children as becoming less agreeable due to the increased conflict in the relationship. Children may have an entirely different view, basing their judgments on how agreeable they are in interaction with their peers, which become an increasingly more important social context than the family during this time. In the present study we investigate both mother- and self-reported mean-level personality development from middle childhood into emerging adulthood, covering ages 6–20.

When investigating personality development across this period, it is important to take into account the possibility of gender differences. Girls have been found to be more conscientious, agreeable and open to experience in late childhood (Soto et al., 2011), as well as in adolescence (Klimstra et al., 2009). These findings have been taken to indicate that for girls personality matures earlier, possibly due to their earlier pubertal timing (Branje et al., 2007). It has also been proposed that the difference between boys and girls is due to gender-specific socialization, in that girls may be socialized to be "better behaved" and more other-oriented (Bussey, & Bandura, 1999). If boys and girls exhibit equal levels of conscientiousness, agreeableness and openness to experience in middle childhood, but girls start changing earlier than boys on these dimensions, this would provide support for the

earlier maturing of girls being responsible for the gender differences. However, if gender differences are already present in middle childhood, well before the onset of puberty, it is more likely that they are due to gender-specific socialization.

Personality Development in Context

In addition to contextual factors that may affect an entire population of children simultaneously, such as the transition to adolescence or adulthood, there are contextual factors that are more specific to the individual which may be responsible for individual differences in personality development. For instance, in adults increased work and relationship satisfaction have been associated with increases in extraversion and emotional stability (Scollon & Diener, 2006), and entering the military has been associated with decreases in agreeableness (Jackson et al., 2012).

For children, the parenting context is likely an important environment for their developing personality (Shiner & Caspi, 2003). Parenting can broadly be divided into relatively independent dimensions of positive parenting, such as parental warmth, and negative parenting, such as overreactive parenting. Warmth comprises behaviors such as expressing affection, and showing interest in the child's activities (Robinson, Mandleco, Olsen, & Hart, 1995), whereas overreactivity is a tendency to respond with anger, frustration, and meanness to children's problematic behavior (Arnold, O'Leary, Wolff, & Acker, 1993).

Shiner and Caspi (2003) posit several processes that could explain how relations between personality and the parenting context may arise. A first process describes how parenting shapes the child's developing personality. Theories on parenting generally posit that parents exert influence on their developing child by providing working models of behavior that children internalize and bring with them to other contexts (for an overview, see Belsky & Jaffee, 2006). Children who experience warm parenting may for instance learn to act more warmly to others, resulting in increases in agreeableness for them. Warm parenting may foster the development of behavioral and emotional regulation in children, leading to increases in conscientiousness, and emotional stability. Through a similar process, children who experience overreactive parenting may model hostile behavior and become less agreeable. The development of their regulatory capacities may be impeded, leading them to become less conscientious and emotionally stable.

Several investigations of parenting and child temperament/personality indicate that parenting behavior may indeed shape child traits. For instance, maternal responsiveness has been shown to longitudinally predict predicted higher levels of effortful control in toddlers (Kochanska, Murray, & Harlan, 2000), and parental punitive reactions, a form of negative parenting, predict higher levels of negative emotionality in children (Eisenberg et al., 1999). Maternal rejection has been found to predict increases in fear and irritability, whereas inconsistent discipline predicted decreases in fear (Lengua, 2006). However, there is very little prospective longitudinal evidence on the bidirectional relations between parenting and child personality, especially in adolescence (Bates, Schermerhorn, & Petersen, 2012; Kiff & Lengua, 2011).

A second process that may explain associations between child personality and parenting behavior, is environmental elicitation, that is, relations between child personality and the parenting context may arise because child characteristics elicit certain maternal

parenting behavior (Shiner & Caspi, 2003). For instance, children who are low on agreeableness or conscientiousness may be frustrating to deal with for parents, leading them to display more overreactive parenting. Conversely, highly agreeable and conscientious children may be easier to interact with, and parents may be more likely to express warmth. Conscientiousness at age 12 has for instance been shown to predict levels of support perceived from fathers, but not mothers, at age 17, controlling for previous levels of support (Asendorpf & Van Aken, 2003). Rather than that parents influence their developing child, parents may thus be faced with individual differences in their children and respond to them differently (Prinz et al., 2012). Controlling for previous levels of temperament and parenting, child positive emotionality has been shown to longitudinally predict more maternal acceptance (Lengua & Kovacs, 2005). Child irritability has been shown to predict increases in rejection, whereas higher effortful control and higher child fearfulness predicted decreases in rejection (Lengua, 2006).

Although shaping and environmental elicitation are separate processes that posit different causal mechanisms as responsible for person-context associations, both processes may be at work simultaneously. In fact, change in children's personality and their mothers' parenting behaviors may be so interrelated, that the direction of effects cannot be easily separated. For instance, regardless of how agreeable children are initially, decreases in agreeableness may instantaneously lead to increases in overreactive parenting and decreases in warmth, or decreases in warmth and increases in overreactivity may lead to decreases in agreeableness. Increases in adolescents' perceptions of the support they perceived from their mothers have been shown to be associated with increases in their levels of agreeableness, conscientiousness, and openness to experience, regardless of initial levels (Branje et al., 2004). An investigation of the present sample has previously indicated that decreases in benevolence (i.e., the childhood Big Five domain most associated to the adult domain of agreeableness, but includes irritability, dominance and compliance in children) and emotional stability were associated with increases in overreactivity (van den Akker et al., 2010). Whereas this previous study investigated a composite of parent- and teacher reported personality, in the present study, we focus on self-reports of children's personality and maternal reports of her own parenting behaviors, including warmth in addition to overreactivity. It is important to investigate associations to self-reported child personality, as this would indicate that parenting affects children's personality development as they themselves experience it.

The Present Study

In this five-wave, multi-informant longitudinal study, we investigated children's Big Five development from age 6 to age 20, making optimal use of available data. Specifically, we modeled mother reported child personality development from age 6 to age 17 (mother reports were available from Wave 1 through Wave 4), and child self-reported personality from age 9 to age 20 (self-reports were available from Wave 2 through Wave 5), using cohort-sequential latent growth curve modeling. We expected that personality development would follow the maturity principle such that children would have higher levels of benevolence (agreeableness in adults), conscientiousness, emotional stability, and imagination (Openness to Experience in adults), and lower levels of

extraversion in emerging adulthood compared to middle childhood. However, based on cross-sectional findings of Soto et al. (2011), we expected that benevolence, conscientiousness, emotional stability, and imagination would show a temporary decrease across the transition to adolescence. We expected that girls would be higher on benevolence and conscientiousness than boys, but lower on emotional stability. Additionally, we investigated interrelations between child self-reported personality and mother reported overreactive and warm parenting (Wave 2 through Wave 4). We expected that children who are low on benevolence, conscientiousness, and emotional stability would elicit more overreactive parenting, while at the same time benevolence, conscientiousness, and emotional stability would decrease when children experienced higher levels of overreactive parenting. We expected that lower levels of extraversion, benevolence, and conscientiousness would be associated with decreases in maternal warmth, while at the same time these dimensions would decrease when children experienced lower levels of maternal warmth. Finally, we expected that decreases in child benevolence, conscientiousness, and emotional stability would be related to increases in maternal overreactivity, whereas decreases in benevolence, conscientiousness, and imagination would be related to decreases in maternal warmth.

In sum, this study longitudinally investigates mean-level development of personality from age 6 to age 20 years, as well as bidirectional relations between child self-reported personality and maternal reports of her warm and overreactive parenting behavior.

Method

Participants

For this study, we used data from the third through seventh (Time 1 [T1]: 2001; Time 2 [T2]: 2004; Time 3 [T3]: 2007; Time 4 [T4]: 2009; Time 5 [T5]: 2012) waves of the Flemish Study on Parenting, Personality and Development (FSPPD; Prinzie et al., 2003). At T1 through T4, mothers reported on their child's personality. From T2 to T5, children provided self-reports. The cohort-sequential design included four cohorts of children who were, respectively, 6, 7, 8, and 9 years of age at the first measurement. The total sample consisted of 596 children (49.8% boys; 50.2% girls), whose mean age at T1 was 7.5 ($SD = 1$ year, 1 month). At T1, 576 mothers reported on their child's personality; at T2, 492 mothers (response rate: 85%) and 510 children participated; at T3, 462 mothers (80%) and 433 children (85%) participated; at T4, 424 mothers (74%) and 409 children (80%) participated; and at T5, 423 children (83%) participated. Children who participated at all times differed from those who did not on 4 out of 26 study variables: They reported slightly lower levels of extraversion at T2 ($T(490) = -2.14, p = .033, d = 0.19$), slightly higher levels of benevolence at T2 ($T(490) = 2.30, p = .022, d = 0.21$), and conscientiousness at T4 ($T(421) = -3.13, p = .002, d = 0.31$), and for these children mothers reported slightly higher levels of warmth at T4 ($T(430) = -2.18, p = .030, d = 0.21$). Mothers who participated at all times differed from those who did not on 3 out of 26 study variables: They reported slightly lower levels of extraversion at T3 ($T(107.35) = -2.09, p = .039, d = 0.40$), moderately higher levels of benevolence at T4 ($T(39.55) = 2.17, p = .036, d = 0.69$), and slightly higher levels of emotional stability at T4 ($T(422) = 2.19, p = .029, d = 0.21$).

Measures

Child personality. Mothers and children reported on the child's Big Five personality dimensions by filling out the Hierarchical Personality Inventory for Children (HiPIC; Mervielde & De Fruyt, 1999). The HiPIC is an empirically derived questionnaire in the lexical tradition, based on an extensive analysis of free parental descriptions of their children. This instrument includes 144 items, 8 items per facet, assessing 18 facets that are hierarchically structured under five higher order domains. The higher order domains are labelled as follows: (1) extraversion (32 items), (2) benevolence (40 items), (3) conscientiousness (32 items), (4) emotional stability (16 items), and (5) imagination (24 items). Items were rated on a 5-point Likert-type scale, ranging from 1 (*barely characteristic*) to 5 (*highly characteristic*). The HiPIC's factor structure and high internal consistencies of domains have been established (Mervielde & De Fruyt, 1999). We obtained one score for each domain, by averaging the scores across the items. Cronbach's alphas ranged from .88 to .96 in the mother reports, and from .83 to .93 in the child self-reports.

Maternal overreactivity. Mothers reported on their levels of overreactivity at T2 through T4 by filling out the Dutch translation of the overreactivity subscale of the Parenting Scale (Arnold et al., 1993; Prinzie, Onghena, & Hellinckx, 2007). The overreactivity subscale contains nine items and measures parents' tendency to respond with anger, frustration, and meanness to their child's problematic behavior. Items represent discipline encounters (e.g., "When my child misbehaves . . ."), followed by two opposite anchor points for a 7-point Likert-type scale (e.g., *I speak to my child calmly* vs. *I raise my voice or yell*). The Parenting Scale has adequate test-retest reliability, distinguishes clinical from non-clinical samples, and has been validated against behavioral observations (Arnold et al., 1993; Irvine, Biglan, Smolkowski, & Ary, 1999). Scores were averaged across all items. Cronbach's alphas ranged from .77 to .80.

Maternal warmth. Mothers filled out the Parenting Practices Questionnaire (Robinson et al., 1995) at T2 through T4. The Warm Parenting Scale consists of 11 items measuring the degree to which parents are affectionate to their children and are involved in their lives (e.g., "I express affection by hugging, kissing, and holding my child"). Items are rated on a 5-point scale ranging from 1 (*never*) to 5 (*always*). Scores were averaged across items. Cronbach's alphas ranged from .84 to .86.

Statistical Analyses

For both mother and child reports, we estimated cohort-sequential latent growth curves for each of the Big Five personality dimensions, in Mplus 7 (Muthén & Muthén, 1998–2012), using maximum likelihood estimation. Mplus uses full information maximum likelihood to handle missing data, making optimal use of available data. Because of the cohort-sequential design, we could model development from age 6 to age 20 years. For each dimension, we fitted a model including an intercept and a linear slope factor and a covariance between these factors (linear growth model). Next, we investigated whether adding a quadratic growth factor provided a significant improvement in model fit, and finally we investigated whether adding a cubic growth factor provided a significant improvement in model fit. When model estimation

resulted in negative values for the factor variances, these were constrained to zero.

Next, we investigated the final growth model for gender differences. We compared a fully constrained model to model with all parameters freed across gender. If freeing the parameters resulted in a significant improvement in model fit, we constrained parameters that did not result in a significant decrease in model fit one at a time. Incremental fit of models was investigated using the chi-square difference test. We assessed model fit with the comparative fit index (CFI), with CFI > .90 indicating a good fit, and the root-mean-square error of approximation (RMSEA), with RMSEA < .05 indicating a good fit, and RMSEA < .10 indicating an acceptable fit (for an overview of model fit statistics, see Hu & Bentler, 1995).

To investigate relations between maternal parenting and child personality we fitted latent difference score (LDS) models (Selig & Preacher, 2009). For a graphical representation of the LDS model, see Figure 1. In these models the observed scores on personality and parenting at T1, T2, and T3 were included and stability paths between the same construct across time are constrained to 1. In addition, latent change variables, represented by a single indicator of the difference scores of personality and parenting between two subsequent time points, are included in the model. A main advantage of this model is that it allows for the specific prediction of change in the constructs over time. Difference scores of personality and parenting were predicted by levels of personality and parenting at the previous time point, as well as allowed to correlate with each other (within time points). Thus, initial levels predicted change over time, change was allowed to correlate, and cross paths between change in child personality and parenting were included, such that levels of child personality at each time predicted changes in parenting from that time to the next (the elicitation process), and levels of parenting at each time predicted changes in child personality over time (the shaping process). We fitted 10 models: one for each personality dimension (5) and parenting behavior (2) combination. We assessed model fit with the comparative fit index (CFI) and standardized root-mean-square residual (SRMR) statistics.

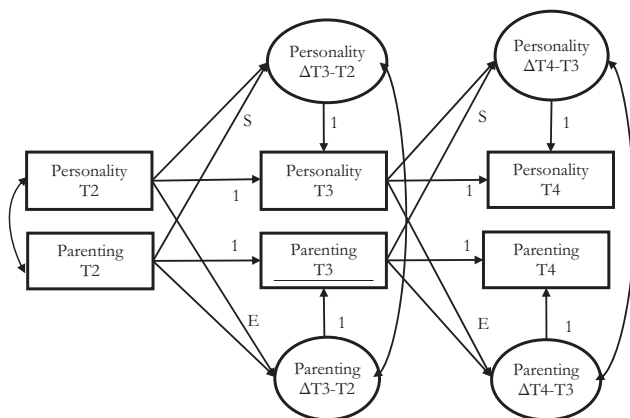


Figure 1. Graphical representation of the latent difference score model, predicting latent difference scores in personality and parenting, from previous levels of personality and parenting. Paths denoted by "S" represent the shaping process, and paths denoted by "E" represent the elicitation process. T2 = Time 2; T3 = Time 3; T4 = Time 4.

Results

Descriptives of the study variables are provided in Table 1. Within-, and between-informant correlations are provided in Tables 2 and 3, respectively. Relative stability of both the child self-reported and mother reported personality dimensions was moderate to large between consecutive measurements ($r = .51-.81$). In the mother reports, relative stability from T1 to T4 was also moderate to large ($r = .47-.62$), and in the child reports, relative stability from T2 to T5 was moderate ($r = .33-.44$). Maternal overreactivity was related to lower levels of child reported benevolence and conscientiousness at T2, T3, and T4, and to lower levels of imagination at T2 and T3. Maternal warmth was related to higher levels of child reported extraversion, conscientiousness, and imagination at T2, T3, and T3, and to higher levels of benevolence at T2 and T4.

Personality Development Across Childhood and Adolescence

For mother and child reports, we fitted cohort-sequential growth models for each of the Big Five dimensions. For both mother and child reports, we investigated the shape of growth by comparing linear-, quadratic-, and cubic growth models. Results of these model comparisons are shown in Table 4. For *mother reported* extraversion, benevolence, conscientiousness, and emotional stability, a quadratic model provided incremental fit over a linear model, whereas for imagination it did not. However, as for extraversion none of the parameters including the quadratic slope were significant, the linear model was chosen as the final model for both extraversion and imagination. For conscientiousness and emotional stability, a cubic growth model provided incremental model fit over the quadratic growth model, whereas for benevolence it did not. For the *child reported* personality dimensions, quadratic models provided incremental fit over linear models in all instances. However, for extraversion none of the parameters including the quadratic slope were significant. We thus chose the linear model as our final model. Finally, for conscientiousness, a cubic growth model provided incremental model fit over the quadratic model, whereas for benevolence, emotional stability and imagination it did not.

Next, we inspected these models for gender differences. In all instances, a model with all growth parameters freed across gender provided a significant improvement in model fit over a model with all parameters constrained (mother report: $\Delta\chi^2_{\text{extraversion}}(5) = 13.14$, $p = .02$; $\Delta\chi^2_{\text{benevolence}}(9) = 21.98$, $p < .01$; $\Delta\chi^2_{\text{conscientiousness}}(10) = 50.75$, $p < .01$; $\Delta\chi^2_{\text{emotional stability}}(7) = 14.78$, $p = .04$; $\Delta\chi^2_{\text{imagination}}(5) = 14.25$, $p = .01$; child report: $\Delta\chi^2_{\text{extraversion}}(5) = 14.59$, $p = .01$; $\Delta\chi^2_{\text{benevolence}}(6) = 13.34$, $p = .04$; $\Delta\chi^2_{\text{conscientiousness}}(7) = 16.95$, $p = .02$; $\Delta\chi^2_{\text{emotional stability}}(9) = 61.19$, $p < .01$, except for child-reported imagination ($\Delta\chi^2(6) = 2.25$, $p = .895$). Constraining the parameters one at a time, revealed that there were no gender differences in the growth factor (co)variances. Model fit indices of the final models are provided in Table 5. Estimated growth factor means for boys and girls are presented in Table 6, and growth factor (co)variances, which did not differ between boys and girls, are provided in Table 7.

Mothers reported that boys and girls did not differ in their levels of extraversion at age 6. Both boys and girls decreased linearly in

Table 1
Descriptives for the Study Variables

Measure	T1	T2	T3	T4	T5
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Mother report					
EXT	3.65 (0.51)	3.55 (0.52)	3.47 (0.53)	3.38 (0.55)	
BEN	3.44 (0.44)	3.49 (0.42)	3.43 (0.43)	3.42 (0.43)	
CONS	3.36 (0.51)	3.32 (0.54)	3.25 (0.55)	3.20 (0.58)	
ES	3.48 (0.63)	3.44 (0.64)	3.45 (0.64)	3.52 (0.61)	
IMAG	3.86 (0.56)	3.77 (0.57)	3.64 (0.58)	3.54 (0.60)	
Overreactivity		3.13 (0.83)	3.12 (0.86)	3.03 (0.86)	
Warmth		4.23 (0.43)	4.02 (0.50)	4.00 (0.52)	
Child report					
EXT		3.55 (0.46)	3.47 (0.48)	3.46 (0.53)	3.39 (0.54)
BEN		3.50 (0.40)	3.45 (0.38)	3.43 (0.37)	3.62 (0.40)
CONS		3.32 (0.45)	3.21 (0.47)	3.20 (0.47)	3.40 (0.56)
ES		3.52 (0.61)	3.47 (0.65)	3.41 (0.67)	3.29 (0.73)
IMAG		3.65 (0.53)	3.48 (0.51)	3.46 (0.49)	3.57 (0.49)

Note. T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4; T5 = Time 5; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

extraversion across time, with a stronger decrease for boys than for girls. Children reported that girls were more extraverted than boys initially (age 9), but that boys and girls decreased equally. Both mothers and children reported that girls were also more benevolent than boys initially. Mothers reported an increase in benevolence from age 6 to age 11, with a decrease thereafter, whereas children reported a decrease specifically across the transition to adoles-

cence (from age 9 to age 14), with an increase thereafter. Boys and girls did not differ in their development of benevolence across time. In addition to being more extraverted and benevolent initially, girls were also rated more conscientious initially, both according to mothers and children's self-reports. The development of conscientiousness provided the strongest evidence for a temporary decrease across the transition to adolescence: According to

Table 2
Within-Informant Correlations Between the Study Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1. EXT T1	—	.19**	.21**	.34**	.48**	.54**	.04	.11*	.17**	.28**	.46**	-.01
2. BEN T1	.16**	—	.53**	.24**	.25**	.09	.51**	.34**	.08	.13**	.12*	.37**
3. CONS T1	.12**	.36**	—	.29**	.48**	.20**	.26**	.55**	.19**	.32**	.11*	.16**
4. ES T1	.44**	.25**	.20**	—	.38**	.20**	.17**	.16**	.55**	.23**	.20**	.08
5. IMAG T1	.45**	.16**	.52**	.31**	—	.31**	.09	.32**	.21**	.62**	.20**	.04
6. EXT T2	.74**	.16**	.17**	.31**	.33**	—	.11*	.23**	.35**	.41**	.65**	.02
7. BEN T2	.06	.71**	.29**	.20**	.12**	.16**	—	.44**	.24**	.12*	.16**	.60**
8. CONS T2	.08	.30**	.73**	.19**	.39**	.16**	.41**	—	.13**	.47**	.12*	.18**
9. ES T2	.26**	.24**	.23**	.62**	.30**	.43**	.30**	.25**	—	.23**	.29**	.15**
10. IMAG T2	.30**	.14**	.44**	.30**	.74**	.42**	.21**	.53**	.38**	—	.23**	.06
11. EXT T3	.62**	.20**	.18**	.32**	.27**	.75**	.19**	.18**	.34**	.28**	—	.11*
12. BEN T3	.04	.55**	.25**	.13**	.08	.11*	.68**	.29**	.19**	.12*	.24**	—
13. CONS T3	.06	.24**	.60**	.10*	.31**	.14**	.25**	.76**	.14**	.38**	.21**	.40**
14. ES T3	.15**	.18**	.20**	.52**	.22**	.27**	.20**	.21**	.68**	.29**	.40**	.30**
15. IMAG T3	.32**	.12**	.42**	.32**	.70**	.37**	.16**	.49**	.32**	.80**	.44**	.22**
16. EXT T4	.49**	.21**	.16**	.25**	.28**	.66**	.19**	.20**	.32**	.32**	.79**	.24**
17. BEN T4	.02	.47**	.29**	.12*	.13**	.11*	.63**	.36**	.18**	.22**	.14**	.74**
18. CONS T4	.03	.21**	.52**	.05	.27**	.09	.23**	.67**	.12*	.39**	.11*	.33**
19. ES T4	.14**	.12*	.15**	.50**	.23**	.25**	.16**	.19**	.60**	.27**	.34**	.19**
20. IMAG T4	.25**	.12*	.40**	.27**	.62**	.28**	.18**	.47**	.27**	.74**	.31**	.21**
21. Overreactivity T2	-.03	-.34**	-.17**	-.15**	-.13**	-.08	-.38**	-.18**	-.20**	-.15**	-.08	-.26**
22. Overreactivity T3	.05	-.26**	-.22**	-.09	-.10*	-.02	-.30**	-.23**	-.11*	-.15**	-.09	-.39**
23. Overreactivity T4	.05	-.20**	-.22**	-.07	-.10*	.01	-.23**	-.20**	-.06	-.14**	-.00	-.27**
24. Warmth T2	.19**	.26**	.17**	.05	.28**	.31**	.29**	.21**	.15**	.29**	.22**	.18**
25. Warmth T3	.26**	.23**	.23**	.10*	.27**	.30**	.23**	.24**	.09	.28**	.36**	.31**
26. Warmth T4	.23**	.25**	.25**	.09	.29**	.29**	.25**	.22**	.10*	.28**	.28**	.24**

Note. Correlations from mother reported variables (Times 1–4) are presented below the diagonal, correlations from child reported variables (Times 2–5) are presented above the diagonal. T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

mothers, boys increased in conscientiousness from age 6 to age 9, and then decreased up to age 17, but less and less strongly so as they got older. Girls increased from age 6 to age 10, decreased until age 15, and then increased again. According to children, boys and girls did not differ in their development of conscientiousness across time: boys and girls decreased from age 9 to age 15, and then increased up to age 20, with this increase accelerating as children grew older. Mothers also reported a temporary dip in emotional stability across the transition to adolescence: boys and girls were equally emotionally stable at age 6, but boys decreased more up to age 11, and increased more afterwards, such that boys eventually ended up more emotionally stable than girls at age 17. Mothers reported that girls decreased again from age 16 to age 17. Children reported that girls and boys were equally emotionally stable at age 9, but that girls decreased more up to age 17. In contrast to girls, boys first increased and then decreased. Finally, both mothers and children reported that boys and girls were equally imaginative. Mothers reported that children decreased in imagination over time, with a stronger decrease for boys than for girls. Children reported a similar development for boys and girls with imagination decreasing from age 9 to age 15 and then increasing up to age 20, again indicating a temporary dip across the transition to adolescence. For a graphical presentation of the estimated growth trajectories of the mother and child reported Big Five dimensions, see Figures 2, 3, 4, 5, and 6.

Child Personality and Maternal Parenting

To investigate relations between the (child reported) personality dimensions and (mother reported) overreactive parenting, we investigated five latent difference score models, one for each personality dimension. In none of these models did freeing the cross paths and covariances across gender result in a significant improvement in model fit, so we fitted the models to boys and girls simultaneously. Results of these model comparisons, and model fit indices and parameter estimates for the final models are provided in Table 8.

Lower initial levels of benevolence, conscientiousness, and imagination were related to higher initial levels of overreactivity. Additionally, decreases in benevolence and conscientiousness from T2 to T3, and from T3 to T4 were related to increases in overreactivity. Two effects supported the notion that differences in child personality elicit overreactive parenting behavior: Higher levels of benevolence at T2 predicted decreases in overreactivity from T2 to T3, whereas higher levels of extraversion at T3 predicted increases in overreactivity between T3 and T4. Additionally, we found a shaping effect of overreactive parenting on child personality: higher overreactivity at T3 predicted decreases in conscientiousness from T3 to T4. All associations were of a small effect size.

To investigate relations between the (child reported) personality dimensions and (mother reported) parental warmth, we again investigated five latent difference score models, one for each per-

Table 2 (continued)

13	14	15	16	17	18	19	20	21	22	23	24	25	26
.07	.12*	.23**	.39**	.03	.14**	.13*	.23**	-.02	.04	.11*	.20**	.20**	.19**
.28**	-.02	.08	.07	.33**	.27**	-.07	.07	-.26**	-.26**	-.20**	.19**	.19**	.15**
.44**	.07	.25**	.09	.13*	.36**	.04	.12*	-.12*	-.14**	-.14**	.13**	.16**	.12*
.07	.39**	.17**	.16**	-.02	.01	.38**	.13**	-.03	-.08	-.01	.07	.02	.03
.25**	.14**	.47**	.18**	.03	.24**	.10*	.44**	-.10*	-.08	-.09	.22**	.23**	.21**
.18**	.17**	.31**	.54**	-.07	.14**	.18**	.26**	-.06	-.04	.03	.15**	.15**	.18**
.30**	.12*	.07	.14**	.41**	.25**	.05	.01	-.15**	-.27**	-.20**	.04	.09	.13**
.66**	.02	.29**	.14**	.12**	.55**	-.01	.19**	-.10*	-.19**	-.10*	.09	.15**	.15**
.08	.64**	.24**	.20**	.00	.02	.54**	.18**	-.02	-.08	-.04	-.06	-.05	.01
.32**	.15**	.67**	.20**	-.04	.21**	.10	.57**	-.14**	-.10*	-.13*	.12*	.18**	.18**
.14**	.39**	.43**	.75**	-.05	.09	.30**	.27**	-.06	.02	.06	.13**	.15**	.18**
.35**	.19**	.19**	.09	.56**	.22**	.06	.03	-.17**	-.25**	-.24**	.04	.06	.14**
—	.03	.42**	.09	.21**	.64**	-.02	.18**	-.12*	-.21**	-.18**	.04	.13*	.16*
.13**	—	.28**	.28**	.03	-.01	.70**	.19**	-.06	-.01	.03	-.06	-.04	-.03
.52**	.35**	—	.31**	.01	.27**	.16**	.64**	-.10	-.04	-.08	.11*	.15**	.20**
.18**	.38**	.38**	—	.02	.14**	.41**	.43**	-.07	-.02	.03	.09	.12*	.09
.37**	.17**	.23**	.24**	—	.33**	.09	.05	-.10*	-.16**	-.17**	.06	.10	.13*
.81**	.07	.41**	.20**	.52**	—	.03	.31**	-.09	-.11*	-.11*	.05	.09	.10*
.07	.77**	.30**	.47**	.17**	.08	—	.21**	-.01	.01	.04	-.07	-.04	-.06
.46**	.28**	.81**	.48**	.36**	.56**	.35**	—	-.14**	-.08	-.12*	.08	.08	.08
-.11*	-.09	-.13**	-.13*	-.23**	-.18**	-.12*	-.21**	—	.63**	.59**	-.25**	-.26**	-.25**
-.26**	-.13**	-.19**	-.10*	-.34**	-.32**	-.08	-.25**	.63**	—	.73**	-.20**	-.28**	-.25**
-.19**	-.02	-.15**	-.09	-.40**	-.33**	-.05	-.28**	.59**	.73**	—	-.21**	-.25**	-.31**
.17**	.04	.25**	.28**	.21**	.17**	.07	.25**	-.25**	-.20**	-.21**	—	.55**	.59**
.28**	.05	.33**	.31**	.23**	.21**	.05	.32**	-.26**	-.28**	-.25**	.55**	—	.70**
.24**	.04	.29**	.37**	.32**	.25**	.07	.38**	-.25**	-.25**	-.31**	.59**	.70**	—

Table 3
Between Informant Correlations Between the Study Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. EXT T2	.66**	.08	.12*	.27**	.33**	.52**	.02	.07	.10*	.22**	.45**	-.01	.03	.09	.18**
2. BEN T2	.08	.53**	.24**	.07	.12**	.13**	.35**	.11*	.08	.06	.15**	.34**	.16**	.04	.08
3. CONS T2	.09*	.35**	.68**	.18**	.38**	.17**	.21**	.50**	.10	.29**	.10*	.17**	.43**	.00	.25**
4. ES T2	.30**	.12**	.16**	.58**	.29**	.24**	.14**	.12*	.40**	.26**	.25**	.14**	.08	.31**	.19**
5. IMAG T2	.27**	.14**	.39**	.29**	.67**	.21**	.09	.26**	.15**	.55**	.12*	.06	.20**	.08	.42**
6. EXT T3	.51**	.10*	.15**	.21**	.24**	.63**	.11*	.15**	.21**	.24**	.55**	.07	.09	.17**	.20**
7. BEN T3	.03	.44**	.22**	.11*	.07	.08	.49**	.21**	.12*	.06	.096	.41**	.20**	.05	.04
8. CONS T3	.08	.30**	.55**	.12*	.31*	.11*	.29**	.64**	-.01	.28**	.07	.15**	.54**	-.10	.21**
9. ES T3	.23**	.10*	.18**	.51**	.25**	.29**	.20**	.07	.57**	.23**	.27**	.17**	.04	.41**	.21**
10. IMAG T3	.22**	.12*	.38**	.25**	.61**	.26**	.14**	.35**	.20**	.61**	.15**	.11*	.26**	.12*	.48**
11. EXT T4	.42**	.09	.13**	.23**	.24**	.52**	.13**	.15**	.22**	.25**	.60**	.08	.10*	.20**	.30**
12. BEN T4	.02	.40**	.24**	.10	.14**	.06	.43**	.18**	.08	.09	.01	.44**	.26**	-.02	.03
13. CONS T4	.05	.28**	.49**	.06	.28**	.10*	.26**	.56**	-.03	.27**	.01	.21**	.62**	-.13**	.22**
14. ES T4	.21**	.08	.18**	.45**	.28**	.274**	.14**	.08	.51**	.26**	.33**	.14**	.05	.50**	.29**
15. IMAG T4	.14**	.14**	.35**	.22**	.53**	.22**	.14**	.31**	.17**	.54**	.16**	.13**	.31**	.09	.50**

Note. Mother reported personality dimensions are presented vertically, and the corresponding adolescent reported personality dimensions are presented horizontally. T2 = Time 2; T3 = Time 3; T4 = Time 4; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

sonality dimension. Mothers who reported more warmth had children who reported that they were more extraverted, benevolent, conscientious and imaginative initially. Increases in warmth from T2 to T3 were associated with increases in conscientiousness and imagination, and increases in warmth from T3 to T4 were associated with increases in benevolence, conscientiousness and imagination. We found three eliciting effects of child personality on maternal warmth: children who were more benevolent and imaginative initially, had mothers who increased in warmth from T2 to T3, and children who were more extraverted at T3 had mothers who increased in warmth from T3 to T4. There were three associations that were only marginally significant: extraversion and conscientiousness at T2, and benevolence at T3, were marginally related to subsequent increases in warmth. Finally, there was one shaping effect: mothers who reported more warmth at T2, had

children who decreased more in emotional stability from T2 to T3. Again, the associations were of a small effect size.

Discussion

This study investigated the development of the Big Five personality dimensions across childhood and adolescence. Results indicate that mean level change occurred for all five dimensions. Mother- and self-reported extraversion and mother-reported imagination changed in a linear fashion, steadily decreasing from childhood to emerging adulthood. All other dimensions changed in a non-linear fashion, showing both increases and decreases over time. Thus, although mean-level differences are not large when comparing levels in childhood to those in emerging adulthood, the amount of change that occurs during this time-span cannot be

Table 4
Model Fit Indices of the Linear, Quadratic, and Cubic Growth Models

Measure	Linear growth (L.)			Quadratic growth (Q.)			L. vs. Q.	Cubic growth (C.)			Q. vs. C.
	$\chi^2(df)$	RMSEA	CFI	$\chi^2(df)$	RMSEA	CFI	$\Delta\chi^2(df)$	$\chi^2(df)$	RMSEA	CFI	$\Delta\chi^2(df)$
Mother											
EXT	101.57 (100)	.02	.999	91.89 (96)	.00	1.000	9.68 (4)*	90.27 (95)	.00	1.000	1.72 (1)
BEN	172.71 (103)**	.10	.930	151.11 (97)**	.09	.945	12.76 (4)*	150.08 (96)**	.09	.945	1.03 (1)
CONS	175.11 (96)**	.11	.934	153.53 (92)**	.10	.949	21.85 (4)**	145.78 (91)**	.09	.954	7.75 (1)**
ES	203.67 (102)**	.12	.892	166.16 (98)**	.10	.928	37.51 (4)**	159.35 (97)**	.10	.934	5.81 (1)*
IMAG	137.61 (102)**	.07	.974	130.64 (98)**	.07	.976	6.99 (4)				
Child											
EXT	128.16 (101)*	.06	.961	115.75 (97)	.05	.973	12.41 (4)*	114.60 (96)	.05	.973	1.15 (1)
BEN	252.49 (98)**	.15	.668	163.78 (97)**	.10	.856	88.71 (1)**	161.51 (96)**	.10	.859	2.27 (1)
CONS	274.79 (95)**	.17	.712	173.63 (94)**	.11	.873	101.16 (1)**	165.86 (93)**	.11	.883	7.77 (1)**
ES	197.34 (96)**	.13	.842	169.07 (92)**	.11	.880	28.27 (4)**	162.41 (87)**	.11	.882	6.66 (5)
IMAG	239.98 (99)**	.15	.802	151.37 (95)	.09	.921	88.61 (4)**	151.24 (94)	.10	.919	0.13 (1)

Note. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

Table 5
Model Fit Indices of the Final Growth Models

Measure	$\chi^2(df)$	RMSEA	CFI
Mother			
EXT	92.93 (99)	.00	1.000
BEN	142.37 (96)**	.08	.953
CONS	110.04 (89)	.06	.983
ES	162.11 (98)**	.10	.932
IMAG	130.68 (101)*	.06	.978
Child			
EXT	121.77 (100)	.06	.969
BEN	136.90 (96)**	.08	.912
CONS	153.27 (92)**	.10	.902
ES	108.84 (91)	.05	.972
IMAG	151.37 (95)	.09	.921

Note. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

inferred from these net changes. In addition to mean-level changes, we found that individual differences in personality change were related to the parenting context. Environmental elicitation occurred such that levels of child benevolence, conscientiousness, and emotional stability predicted subsequent changes in maternal overreactivity, whereas extraversion, benevolence and imagination predicted subsequent changes in maternal warmth. There was also some evidence that parenting behaviors shape child personality: maternal overreactivity predicted change in conscientiousness and maternal warmth predicted change in emotional stability. Finally, change in benevolence and conscientiousness was associated with change in overreactive parenting and warmth, and change in imagination was associated with change in warmth.

Dimension Development

Middle to late childhood. In the present study, we investigated mean-level personality change from age 6 to age 20, allowing us to model personality development from middle childhood

up to emerging adulthood. From middle to late childhood (6–9 years), mothers reported increases in benevolence and conscientiousness. Increasing self-regulatory capacities due to general maturation (Eisenberg, Duckworth, Spinrath, & Valiente, 2012) may lead children to become more planful and orderly, and increasing perspective taking skills (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991) may result in children's increasing tendency to take into account the needs of others. Extraversion decreased across this period. Increasing self-regulation may lead to lower activity levels (Soto et al., 2011), which is a component of extraversion. Additionally, imagination decreased. Perhaps this is due to children's increasing tendency to conform to the peer group, which has been found to increase across childhood, with a peak in early adolescence (Berndt, 1979). They may be less prone to try new things, but rather be most interested in mastering social norms to fit in. Finally, emotional stability also decreased. As children enter elementary school, they leave the relatively protected home environment, and need to live up to all kinds of expectations. Children's view of how competent they are in several domains, has been found to decrease from when children first enter elementary school (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002).

Late childhood to middle adolescence. From late childhood to middle adolescence (9–13 years), children in the present study continued to decrease in extraversion and imagination. Mothers reported that children continued to increase in benevolence up to age 11, at which point they started decreasing, whereas children reported a decrease from age 9 already. Children also started to decline in conscientiousness from age 9, both according to mother- and self-reports. According to mothers, emotional stability slightly increased. Boys also reported an increase in emotional stability, whereas girls reported a decrease. Overall, it thus appears that personality development during this period is not aimed at becoming more, but rather at becoming less mature.

One could argue that the development of benevolence and conscientiousness could be expected to be more in line with the maturity principle during this period. As children transition to secondary school, they gain responsibility over their own school work, need to make new friends, and so forth. However, at this

Table 6
Intercept and Slope Factor Means for the Final Growth Models

Measure	Intercept (SE)		Linear slope (SE)		Quadratic slope (SE)		Cubic slope (SE)	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Mother								
EXT	3.69 (0.02)**	3.69 (0.02)**	−0.40 (0.04)**	−0.25 (0.04)**				
BEN	3.37 (0.03)**	3.46 (0.03)**	0.22 (0.07)*	0.22 (0.07)*	−0.23 (0.06)**	−0.23 (0.06)**		
CONS	3.29 (0.04)**	3.39 (0.03)**	0.18 (0.18)	0.39 (0.18)*	−0.96 (0.35)**	−0.96 (0.35)**	0.54 (0.21)**	0.54 (0.21)**
ES	3.57 (0.04)**	3.57 (0.04)**	−1.14 (0.24)**	−0.81 (0.25)**	1.89 (0.48)**	1.47 (0.49)**	−0.73 (0.28)*	−0.73 (0.28)*
IMAG	3.93 (0.03)**	3.93 (0.03)**	−0.47 (0.04)**	−0.34 (0.04)**				
Child								
EXT	3.53 (0.03)**	3.62 (0.03)**	−0.17 (0.03)**	−0.17 (0.03)**				
BEN	3.52 (0.03)**	3.66 (0.03)**	−0.67 (0.08)**	−0.67 (0.08)**	0.69 (0.07)**	0.69 (0.07)**		
CONS	3.34 (0.04)**	3.46 (0.04)**	−0.43 (0.21)*	−0.43 (0.21)*	−0.28 (0.43)	−0.28 (0.43)	0.71 (0.25)**	0.71 (0.25)**
ES	3.53 (0.04)**	3.53 (0.04)**	0.25 (0.14)	−0.27 (0.14)	−0.24 (0.12)*	−0.24 (0.12)*		
IMAG	3.76 (0.03)**	3.76 (0.03)**	−0.94 (0.10)**	−0.94 (0.10)**	0.74 (0.09)**	0.74 (0.09)**		

Note. Values in italics represent statistically significant differences between boys and girls. EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

Table 7
Growth Factor (Co)Variances for the Final Growth Models

Measure	Variances			Covariances		
	I (SE)	S (SE)	Q (SE)	I-S (SE)	I-Q (SE)	S-Q (SE)
Mother						
EXT	0.24 (0.02)**	0.27 (0.03)**		-0.11 (0.02)**		
BEN	0.15 (0.02)**	0.31 (0.22)	0.21 (0.16)	-0.04 (0.06)	-0.03 (0.05)	-0.19 (0.18)
CONS	0.24 (0.04)**	1.13 (0.31)**	0.62 (0.24)*	-0.18 (0.09)*	0.06 (0.07)	-0.73 (0.27)**
ES	0.30 (0.03)**	0.27 (0.05)**		-0.12 (0.03)		
IMAG	0.25 (0.02)**	0.16 (0.03)**		-0.06 (0.02)**		
Child						
EXT	0.14 (0.02)**	0.26 (0.04)**		-0.07 (0.02)**		
BEN	0.09 (0.01)**	0.12 (0.03)**		-0.05 (0.02)**		
CONS	0.11 (0.02)**	0.18 (0.04)**		-0.03 (0.02)		
ES	0.33 (0.07)**	2.81 (0.72)**	1.54 (0.50)**	-0.53 (0.20)**	0.31 (0.15)*	-1.95 (0.58)**
IMAG	0.17 (0.04)**	0.72 (0.44)	0.25 (0.30)	-0.11 (0.12)	0.02 (0.09)	-0.40 (0.35)

Note. I = intercept; S = linear slope; Q = quadratic slope; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

age, children have not established a stable sense of identity nor are they autonomous in their decision making (Galambos & Costigan, 2003). They likely do not feel that they are choosing to take on these new roles, and as a result are not motivated to change their behavior. Although they may be getting a taste of the adjustments they will need to make when transitioning to adulthood, the sense of investment that is of course central to Social Investment Theory (Roberts et al., 2005) is lacking. Perhaps the fact that they face all these changes, but are not intrinsically motivated, is especially stressful, leading them to become less rather than more mature. Further research is necessary to elucidate the processes that lead to these mean-level decreases in early adolescence.

Middle adolescence to emerging adulthood. In line with the cross-sectional study by Soto et al. (2011), extraversion continued to decrease across late adolescence, whereas the decreases in benevolence, conscientiousness and imagination were temporary. Levels increased again from middle adolescence into emerging adulthood, at least according to children themselves. Social investment theory predicts increases in benevolence and conscientiousness occur across the transition to adulthood because adolescents

take on adult social roles that require them to behave responsibly. These behavioral changes then lead to personality change in a bottom-up fashion (Roberts et al., 2005). Increases in conscientiousness around this time have been linked to investment in school work and taking exams (Bleidorn, 2012). Theories on identity formation have placed openness to experience/imagination as central to the process of identity exploration (Ozer & Benet-Martinez, 2006), and empirical evidence shows that openness longitudinally predicts higher levels of identity exploration (Luyckx, Soenens, & Goossens, 2006). The normative increases in processes of identity exploration in this age period may be associated with these increase in imagination from mid-adolescence onward (Klimstra et al., 2009).

In contrast to the child self-reports, mother reports of benevolence, conscientiousness, and imagination did not show an increase around this time, except for conscientiousness in girls, which increased from age 15 up to age 17, although they did report that the decrease in benevolence leveled off. More generally, it appears that the largest differences between mothers and children's reports

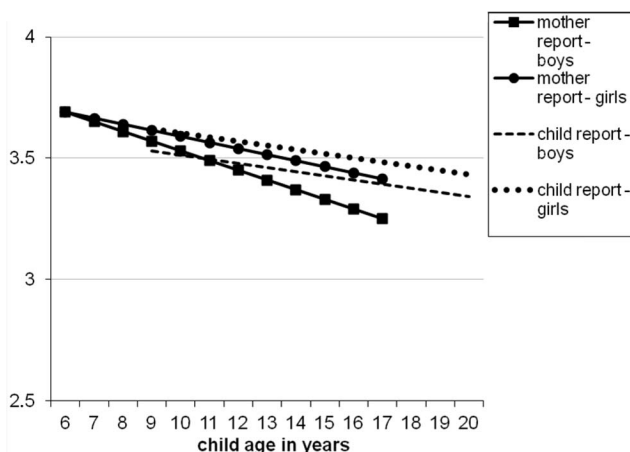


Figure 2. Estimated mean levels of extraversion.

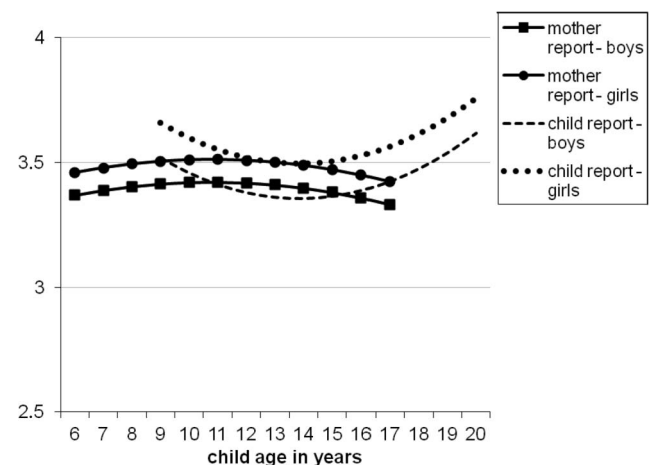


Figure 3. Estimated mean levels of benevolence.

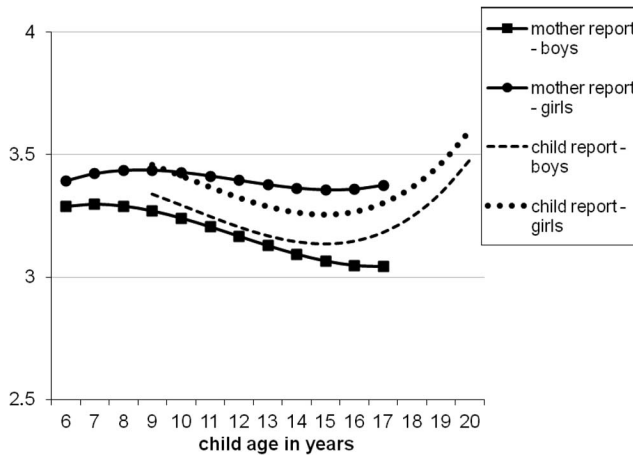


Figure 4. Estimated mean levels of conscientiousness.

occurred at age 17. Perhaps due to children's increasing autonomy and separation from the family context, parents have less access to the relevant information needed to judge the child's personality and become less good informants. It is also important to note that because no mother reports were available for the final measurement moment, we cannot rule out that mothers would report increases again at the final moment. More generally, informant discrepancies such as these are complex and have many possible causes. The fact that the mother-reported emotional stability model showed only marginal fit could, for instance, also explain the discrepancy between mother and child reports there.

Emotional stability differed most between mother and self-reports, and between boys and girls. Mothers and children both reported that boys and girls started out similarly, but that girls ended up less emotionally stable than boys in emerging adulthood. However, for girls' self-reports, a decrease started at age 9 and continued up to late adolescence, but for mothers, girls were only less emotionally stable from age 14 onward. Additionally, for girls it appears that the transition to adulthood may also be a transitional period that is stressful, as their levels of emotional stability declined at a stronger rate across this period, than across earlier

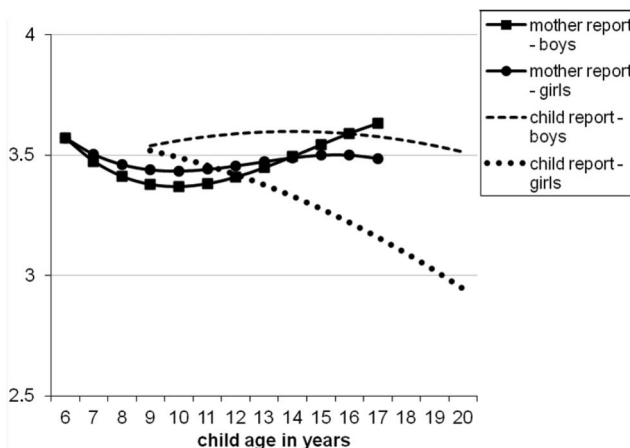


Figure 5. Estimated mean levels of emotional stability.

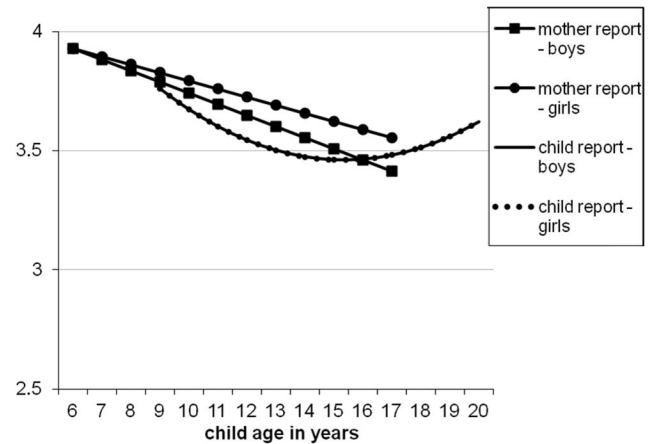


Figure 6. Estimated mean levels of imagination.

adolescence. Importantly, this decrease did not show up in the mothers' reports of their daughters' emotional stability. This may indicate that the decrease in emotional stability may be difficult to notice for caretakers. Declines in emotional stability in adolescence have been associated to higher levels of adjustment problems (van den Akker et al., 2010), and girls may not easily get help for the possible problems associated with it. In contrast to our findings, increases in emotional stability/decreases in neuroticism have been reported across this period (Klimstra et al., 2009; Soto et al., 2011).

In addition to these gender differences for emotional stability, we found that girls were more benevolent and conscientious than boys. These differences were present in both mothers' and children's own reports, and they were apparent at age 6 already. Thus, it appears unlikely that the differences found in the present study were due to differences in pubertal timing. Results of the present study are more in line with the notion that these gender differences are due to either initial biological differences, or due to gender-specific socialization in childhood (Bussey, & Bandura, 1999). Unlike for benevolence and conscientiousness, mothers reported that boys were equally extraverted and imaginative as girls at age 6, but decreased more on these dimensions, making them less extraverted and imaginative by late adolescence. In line with the mother-reports, self-reports also indicated that girls were more extraverted than boys from age 9 onward. According to children this difference remained stable. However, in contrast to mothers' reports, boys and girls reported similar levels of imagination at every age.

Personality Development and the Parenting Context

Shaping of child personality by maternal parenting. Although mean-level development of personality dimensions has been suggested to be due to intrinsic maturation, the dimensions are only partially heritable in childhood, and genetic effects mostly account for stability, whereas environmental factors mostly account for change (Spengler, Gottschling, & Spinath, 2012). Results of the present study supported the notion that maternal parenting behavior is such an environmental factor that is associated to personality change in children and adolescents. Two effects sup-

Table 8
Model Fit Indices and Standardized Parameter Estimates for the LDS Models

Measure	Gender differences	Fit statistics			Correlated (change)			Elicitation		Shaping	
	$\Delta\chi^2(df)$	$\chi^2(df)$	SRMR	CFI	$CP_{T_2} - MB_{T_2}$	$CP_{\Delta 23} - MB_{\Delta 23}$	$CP_{\Delta 34} - MB_{\Delta 34}$	$CP_{T_2} \rightarrow MB_{\Delta 23}$	$CP_{T_3} \rightarrow MB_{\Delta 34}$	$MB_{T_2} \rightarrow CP_{\Delta 23}$	$MB_{T_3} \rightarrow CP_{\Delta 34}$
Overreactivity											
EXT	2.29 (7)	48.27 (4)	.04	.953	-.02	-.07	-.01	.08	.10*	-.04	.08
BEN	3.23 (7)	32.38 (4)**	.03	.968	-.26**	-.18**	-.14**	-.13**	.03	-.03	-.08
CONS	4.67 (7)	36.86 (4)**	.03	.965	-.11*	-.14**	-.11*	-.07	.07	-.04	-.10*
ES	11.27 (7)	39.29 (4)**	.03	.962	-.03	-.05	.04	-.07	.03	-.00	.06
IMAG	6.14 (7)	33.18 (4)**	.03	.971	-.09*	-.03	-.06	.00	-.04	-.06	.06
Warmth											
EXT	7.14 (7)	52.94 (4)**	.04	.944	.20**	.06	.05	.08	.10*	.02	.06
BEN	8.25 (7)	48.60 (4)**	.04	.945	.20**	.03	.10*	.11*	.08	-.06	.02
CONS	6.34 (7)	52.90 (4)**	.04	.944	.12**	.10*	.12*	.08	.04	.00	.02
ES	9.40 (7)	50.76 (4)**	.04	.946	.07	-.00	-.07	-.03	.06	-.10*	-.00
IMAG	6.22 (7)	46.56 (4)**	.04	.955	.22**	.10*	.11*	.10*	.05	-.04	.03

Note. LDS = latent difference score; SRMR = standardized root-mean-square residual; CFI = comparative fit index; CP = child personality dimension; MB = maternal parenting behavior; T2 = Time 2; T3 = Time 3; EXT = extraversion; BEN = benevolence; CONS = conscientiousness; ES = emotional stability; IMAG = imagination.

* $p < .05$. ** $p < .01$.

ported the notion that maternal parenting behavior shapes child personality. Higher levels of maternal overreactivity predicted decreases in conscientiousness, for one out of two intervals. Relatedly, parents' punitive behaviors have been shown to predict poorer behavioral regulation in children, controlling for previous levels of behavioral regulation (Eisenberg et al., 1999). Another shaping effect was found such that higher levels of maternal warmth predicted subsequent decreases in emotional stability for one out of two intervals. Although we might expect that when mothers are affectionate and supportive, children would become more rather than less emotionally stable, studies relating fearful temperament to positive, supportive parenting have uncovered similar effects (for a review, see Kiff & Lengua, 2011). It has been suggested that unduly gentle parenting limits exposure to experiences that may boost children's confidence and help them overcome fears (Bayer, Sanson, & Hemphill, 2006; Kiel & Buss, 2011). However, more research is necessary to discern how warm parenting may result in decreases in emotional stability.

Elicitation of maternal parenting by child personality. We found somewhat more support for the elicitation process than for the shaping process: Children who were more benevolent initially had parents who decreased in overreactivity and increased in warmth over time, whereas children who were more extraverted had parents who increased in overreactivity and warmth, and finally, children who were more imaginative initially had parents who increased in warmth. Although it may seem counterintuitive that higher levels of extraversion would predict both increases in overreactivity as well as warmth, extraverted children are optimistic and sociable, which may elicit warmth. At the same time, they are energetic and expressive, which may also lead to more heated arguments with parents. Future research may investigate whether the different facets of extraversion are differentially related to positive versus negative parenting.

Traditionally, theories on parenting have emphasized influence processes from parents on children, because parents are more powerful interaction partners (for an overview, see Belsky &

Jaffee, 2006). In his parenting process model, Belsky (1984) acknowledged the possibility of child effects and placed child personality as a central factor that may influence parenting. Evidence on relations between personality and intimate partner relationship quality have led to the conclusion that personality is more important for determining relationship quality than vice versa (Neyer & Asendorpf, 2001; Neyer & Lehnart, 2007; Robins, Caspi, & Moffitt, 2002). Although the strength of the individual associations in this study do not appear to be very different, there were more elicitation effects (5), than shaping effects (2), indicating that child personality may also be more important in determining parenting behavior than vice versa. Overall, results of the present study indicate that child personality is also more important for determining maternal parenting behavior than vice versa.

Child personality and maternal parenting: Parallel processes. In research on parenting, it is always important to consider the possibility that associations are due to genetic similarity between parents and children. When harsh parenting and externalizing problems are for instance found to be associated concurrently, it is possible that a genetic similarity related to impulsivity and negative affectivity underlies this association, rather than that they are causally related. Although the direction of effects cannot be inferred from associated changes nor can third variables be ruled out, these associations do speak against the idea that parenting behavior and child personality were associated merely because parents and children resembled each other due to genetic similarity. In the present study, changes in several of the personality dimensions were associated with changes in parenting: Increases in benevolence and conscientiousness were associated with decreases in overreactivity and increases in warmth, whereas increases in imagination were associated with increases in warmth. Although we found gender differences in levels of the personality dimensions, no gender differences were found in associations between parenting and child personality. Individual differences in child personality thus appear to equally elicit, be shaped by, and be associated with maternal parenting behavior in boys and girls.

Maternal overreactivity was related to benevolence and conscientiousness, the dimensions that most determine a child's manageability. Benevolence and conscientiousness have been found to cohere as a meta-trait with emotional stability, because they all reflect the outcome of the socialization process (Digman, 1997). However, overreactivity was not related to emotional stability in this study. In a previous study, we did find that overreactivity was related to other-reported emotional stability, in addition to benevolence and conscientiousness (van den Akker et al., 2010). In this study, we showed that mother and child reports diverged most for emotional stability. Thus, there may be a discrepancy between mothers and children's own perceptions of their levels of emotional stability, with maternal parenting more likely to be associated with how emotionally stable she perceives her child to be. These results indicate the importance of focusing on self-reported child personality in addition to other reports.

Overall, there were more relations between child personality and maternal warmth than overreactivity. Interestingly, maternal warmth showed most significant associations to imagination relative to the other dimensions: Initial levels as well as changes were associated, and there was an over-time relation. Change in imagination has previously been associated with change in adolescents' perceived support from mothers (Branje et al., 2004). Imagination thus appears to be a child characteristic that is especially important with regards to positive aspects of the parent child relationship, as it was not related to maternal overreactive parenting, neither concurrently nor prospectively.

Strengths and Limitations

This study has several strengths. First, the longitudinal cohort-sequential design allowed us to investigate the development of personality in children across a considerable age-span: from 6 to 20 years of age. Second, the HiPIC is a comprehensive measure of child personality. Third, including multiple informants allowed us to investigate where mothers' perceptions of their child's personality and children's self-perceptions converged and where they diverged. Relatedly, because we included maternal reports of warmth and overreactivity, and child reports of personality, the associations we found between personality and parenting could not have been due to informant bias. In contrast, most studies only use one informant to investigate associations between constructs (Van Leeuwen, Mervielde, Braet, & Bosmans, 2004). Fourth, LDS models have several advantages over more traditional cross-lagged path models. Whereas in a cross-lagged path model the stability paths may confound several different types of change (e.g., a high stability coefficient may occur either when (a) individuals are not changing, (b) individuals are changing but all to the same degree, or (c) the degree of change is small relative to the differences between individuals), the latent difference score model specifically models changes within individuals, and allows the researcher to use development or change as a predictor, outcome, or correlate of other variables in the model (Selig & Preacher, 2009).

In addition to these strengths, some limitations are also worth mentioning. First, no child reports were available for the first measurement. As the children were only six at this time, they were just learning how to read and write and could not fill out the HiPIC. In contrast, for the final measurement, only child self-reports were available. As a result, because of our multi-informant

approach, we could only investigate relations between parenting and child personality for three out of five waves. It would be interesting to investigate reciprocal relations between parenting and personality at earlier ages. Especially the process of shaping may be more prominent early on in a child's development, when parents have relatively more power in the relationship. As children enter adolescence and become more autonomous, their relative power in the relationship increases and elicitation may start to play a more prominent role. Second, in addition to the processes investigated in the present study, there may be other processes through which parenting and child personality are related. Environmental construal for instance, is a process similar to shaping, in which the environment also influences the child's personality development, but not necessarily due to characteristics of the environment per se (Shiner & Caspi, 2003). Rather, children's personality may lead them to interpret the environment differently. For instance, children who are low on benevolence may interpret a parent's comment on not cleaning their room, as overly hostile because they have a tendency to attribute hostile intent. Relations between child-reported maternal overreactivity and subsequent child personality, which are not corroborated by maternal reports of overreactivity, may provide evidence for a process of environmental construal. As we only had child reports of maternal overreactivity for the T3 and T4 measurements, we did not investigate this possibility in the present study. Third, in longitudinal research it is possible that measurement of a single construct is not invariant across developmental periods. Measurement invariance may influence results such that certain items become less important in determining the construct. When children become less likely to endorse these items over time, the underlying trait appears to decrease, even though this may not necessarily be the case. To investigate this possibility, measurement invariance was investigated for the present sample. We performed a confirmatory factor analysis in which the latent personality dimensions were indicated by the lower order personality facets. A model in which loadings of the lower order facets were constrained to be equal across time was compared to a model in which these loadings were freely estimated. For eight out of 112 constraints, this led to a significant decrease in model fit (results can be obtained from the first author upon request). Differences in factor loadings were not large. Overall, it is thus unlikely that results were heavily influenced by issues with measurement invariance. However, it should be noted that we cannot rule out that (a lack of) measurement invariance played a role. Fourth, although the Latent Growth Curve models were structured by age, rather than measurement time, the LDS models were modeled by measurement time, rather than age to ensure a sufficient sample size in estimating these models. Therefore, differential associations across different measurement times should not be interpreted as providing evidence for differential associations across different developmental periods. Fifth, the associations between child personality and maternal parenting behavior were all small in size. However, small effects can be expected when investigating associations with constructs that are defined as highly stable. Finally it should be noted that, since this research is correlational in nature, associations may be explained by third variables that were not included in the models.

Conclusion

Mean-levels of all Big Five personality dimensions changed across childhood and adolescence. Mean-level personality change across the transition into adolescence appears especially interesting, as the development of benevolence, conscientiousness, and imagination temporarily defies the maturity principle. In addition to mean-level changes, we found individual differences in personality change that were associated with changes in maternal parenting behavior, with more associations for maternal warmth than for maternal overreactivity. Evidence indicated that maternal parenting shapes child personality over time, as well as that child personality elicits changes in maternal parenting behavior, with child personality more important in determining parenting behavior than vice versa.

References

- Arnold, D. S., O'Leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*, 5, 137–144. doi:10.1037/1040-3590.5.2.137
- Asendorpf, J. B., & Van Aken, M. A. G. (2003). Personality–relationship transaction in adolescence: Core versus surface personality characteristics. *Journal of Personality*, 71, 629–666. doi:10.1111/1467-6494.7104005
- Bates, J. E., Schermerhorn, A. C., & Petersen, I. T. (2012). Temperament and parenting in developmental perspective. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 425–441). New York, NY: Guilford Press.
- Bayer, J. K., Sanson, A. V., & Hemphill, S. A. (2006). Parent influences on early childhood internalizing difficulties. *Journal of Applied Developmental Psychology*, 27, 542–559. doi:10.1016/j.appdev.2006.08.002
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development*, 55, 83–96. doi:10.2307/1129836
- Belsky, J., & Jaffee, S. (2006). The multiple determinants of parenting. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology: Risk, disorder, and adaptation* (pp. 38–85). New York, NY: Wiley.
- Berndt, H. (1979). Developmental changes in conformity to peers and parents. *Developmental Psychology*, 15, 608–616. doi:10.1037/0012-1649.15.6.608
- Bleidorn, W. (2012). Hitting the road to adulthood: Short-term personality development during a major life transition. *Personality and Social Psychology Bulletin*, 38, 1594–1608. doi:10.1177/0146167212456707
- Branje, S. J. T., van Lieshout, C. F. M., & Gerris, J. R. M. (2007). Big Five personality development in adolescence and adulthood. *European Journal of Personality*, 21, 45–62. doi:10.1002/per.596
- Branje, S. J. T., van Lieshout, C. F. M., & van Aken, M. A. G. (2004). Relations between Big Five personality characteristics and perceived support in adolescents' families. *Journal of Personality and Social Psychology*, 86, 615–628. doi:10.1037/0022-3514.86.4.615
- Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, 106, 676–713. doi:10.1037/0033-295X.106.4.676
- De Fruyt, F., Bartels, M., Van Leeuwen, K. G., De Clercq, B., Decuyper, M., & Mervielde, I. (2006). Five types of personality continuity in childhood and adolescence. *Journal of Personality and Social Psychology*, 91, 538–552. doi:10.1037/0022-3514.91.3.538
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology*, 73, 1246–1256. doi:10.1037/0022-3514.73.6.1246
- Dunn, J., Brown, J., Slomkowski, C., Tesla, C., & Youngblade, L. (1991). Young children's understanding of other people's feelings and beliefs: Individual differences and their antecedents. *Child Development*, 62, 1352–1366. doi:10.2307/1130811
- Eisenberg, N., Duckworth, A. L., Spinrath, T. L., & Valiente, C. (2012). Conscientiousness: Origins in childhood? *Developmental Psychology*. Advance online publication. doi:10.1037/a0030977
- Eisenberg, N., Fabes, R. A., Shepard, S. A., Guthrie, I. K., Murphy, B. C., & Reiser, M. (1999). Parental reactions to children's negative emotions: Longitudinal relations to quality of children's social functioning. *Child Development*, 70, 513–534. doi:10.1111/1467-8624.00037
- Galambos, N., & Costigan, C. L. (2003). Emotional and personality development in adolescence. In I. B. Weiner (Series Ed.), & R. M. Lerner, M. A. Easterbrooks, & J. Mistry (Vol. Eds.), *Handbook of psychology: Vol. 6. Developmental psychology* (pp. 351–372). New York, NY: Wiley.
- Hu, L., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts, issues and applications* (pp. 76–99). Thousand Oaks, CA: Sage.
- Irvine, A. B., Biglan, B., Smolkowski, K., & Ary, D. V. (1999). The value of the Parenting Scale for measuring the discipline practices of parents of middle school children. *Behaviour Research and Therapy*, 37, 127–142. doi:10.1016/S0005-7967(98)00114-4
- Jackson, J. J., Thoenes, F., Jonkmann, K., Lütke, O., & Trautwein, U. (2012). Military training and personality trait development: Does the military make the man, or does the man make the military? *Psychological Science*, 23, 270–277. doi:10.1177/0956797611423545
- Jacobs, J. E., Lanza, S., Osgood, D. W., Eccles, J. E., & Wigfield, A. (2002). Changes in children's self-competence and values: Gender and domain differences across grades one through twelve. *Child Development*, 73, 509–527. doi:10.1111/1467-8624.00421
- Kiel, E. J., & Buss, K. A. (2011). Prospective relations among fearful temperament, protective parenting, and social withdrawal: The role of maternal accuracy in a moderated mediation framework. *Journal of Abnormal Child Psychology*, 39, 953–966. doi:10.1007/s10802-011-9516-4
- Kiff, C. J., & Lengua, L. (2011). Nature and nurturing: Parenting in the context of child temperament. *Clinical Child and Family Psychology Review*, 14, 251–301. doi:10.1007/s10567-011-0093-4
- Klimstra, T. A., Hale, W. W., III, Raaijmakers, Q. A. W., Branje, S. J. T., & Meeus, W. H. J. (2009). Maturation of personality in adolescence. *Journal of Personality and Social Psychology*, 96, 898–912. doi:10.1037/a0014746
- Kochanska, G., Murray, K. T., & Harlan, E. T. (2000). Effortful control: Continuity, change, antecedents, and implications for social development. *Developmental Psychology*, 36, 220–232. doi:10.1037/0012-1649.36.2.220
- Laursen, B., Coy, K. C., & Collins, W. A. (1998). Reconsidering changes in parent–child conflict across adolescence: A meta-analysis. *Child Development*, 69, 817–832. doi:10.1111/j.1467-8624.1998.00817.x
- Lengua, L. J. (2006). Growth in temperament and parenting as predictors of adjustment during children's transition to adolescence. *Developmental Psychology*, 42, 819–832. doi:10.1037/0012-1649.42.5.819
- Lengua, L. J., & Kovacs, E. A. (2005). Bidirectional associations between temperament and parenting and the prediction of adjustment problems in middle childhood. *Journal of Applied Developmental Psychology*, 26, 21–38. doi:10.1016/j.appdev.2004.10.001
- Loehlin, J. C., Horn, J. M., & Willerman, L. (1990). Heredity, environment, and personality change—Evidence from the Texas Adoption Project. *Journal of Personality*, 58, 221–243. doi:10.1111/j.1467-6494.1990.tb00914.x
- Luyckx, K., Soenens, B., & Goossens, L. (2006). The personality–identity interplay in emerging adult women: Convergent findings from complementary analyses. *European Journal of Personality*, 20, 195–215. doi:10.1002/per.579

- McCrae, R. R., Costa, P. T., Jr., Terracciano, A., Parker, W. D., Mills, C. J., De Fruyt, F., & Mervielde, I. (2002). Personality trait development from age 12 to age 18: Longitudinal, cross-sectional and cross-cultural analyses. *Journal of Personality and Social Psychology*, 83, 1456–1468. doi:10.1037/0022-3514.83.6.1456
- Mervielde, I., & De Fruyt, F. (1999). Construction of the Hierarchical Personality Inventory for Children (HiPIC). In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (pp. 107–127). Tilburg, the Netherlands: Tilburg University Press.
- Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Neyer, F. J., & Asendorpf, J. B. (2001). Personality–relationship transaction in young adulthood. *Journal of Personality and Social Psychology*, 81, 1190–1204. doi:10.1037/0022-3514.81.6.1190
- Neyer, F. J., & Lehnart, J. (2007). Relationships matter in personality development: Evidence from an 8-year longitudinal study across young adulthood. *Journal of Personality*, 75, 535–568. doi:10.1111/j.1467-6494.2007.00448.x
- Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology*, 57, 401–421. doi:10.1146/annurev.psych.57.102904.190127
- Petersen, A. C., Compas, B. E., Brooks-Gunn, J., Stemmler, M., Ey, S., & Grant, K. E. (1993). Depression in adolescence. *American Psychologist*, 48, 155–168. doi:10.1037/0003-066X.48.2.155
- Prinz, P., Deković, M., van den Akker, A. L., de Haan, A. D., Stoltz, S. E. M. J., & Hendriks, A. A. J. (2012). Fathers' personality and its interaction with children's personality as predictors of perceived parenting behavior six years later. *Personality and Individual Differences*, 52, 183–189. doi:10.1016/j.paid.2011.10.012
- Prinz, P., Onghena, P., & Hellinckx, W. (2007). Reexamining the Parenting Scale: Reliability, factor structure, and concurrent validity of a scale for assessing the discipline practices of mothers and fathers of elementary-school-aged children. *European Journal of Psychological Assessment*, 23, 24–31.
- Prinz, P., Onghena, P., Hellinckx, W., Grietens, H., Ghesquière, P., & Colpin, H. (2003). The additive and interactive effects of parenting and children's personality on externalizing behavior. *European Journal of Personality*, 17, 95–117. doi:10.1002/per.467
- Roberts, B. W., Caspi, A., & Moffitt, T. E. (2001). The kids are alright: Growth and stability in personality development from adolescence to adulthood. *Journal of Personality and Social Psychology*, 81, 670–683. doi:10.1037/0022-3514.81.4.670
- Roberts, B. W., Caspi, A., & Moffitt, T. E. (2003). Work experiences and personality development in young adulthood. *Journal of Personality and Social Psychology*, 84, 582–593. doi:10.1037/0022-3514.84.3.582
- Roberts, B. W., Walton, K., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, 132, 1–25. doi:10.1037/0033-2909.132.1.1
- Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluating five factor theory and social investment perspectives on personality and development. *Journal of Research in Personality*, 39, 166–184. doi:10.1016/j.jrp.2004.08.002
- Robins, R. W., Caspi, A., & Moffitt, T. E. (2002). It's not just who you're with, it's who you are: Personality and relationship experiences across multiple relationships. *Journal of Personality*, 70, 925–964. doi:10.1111/1467-6494.05028
- Robinson, C. C., Mandlco, B., Olsen, S. F., & Hart, C. H. (1995). Authoritative, authoritarian, and permissive parenting practices: Development of a new measure. *Psychological Reports*, 77, 819–830. doi:10.2466/pr0.1995.77.3.819
- Scollon, C. N., & Diener, E. (2006). Love, work, and changes in neuroticism and extraversion over time. *Journal of Personality and Social Psychology*, 91, 1152–1165. doi:10.1037/0022-3514.91.6.1152
- Selig, J. P., & Preacher, K. J. (2009). Mediation models for longitudinal data in developmental research. *Research in Human Development*, 6, 144–164. doi:10.1080/15427600902911247
- Shiner, R., & Caspi, A. (2003). Personality differences in childhood and adolescence: Measurement, development, and consequences. *Journal of Child Psychology and Psychiatry*, 44, 2–32. doi:10.1111/1469-7610.00101
- Shiner, R. L., Masten, A. S., & Tellegen, A. (2002). A developmental perspective on personality in emerging adulthood: Childhood antecedents and concurrent adaptation. *Journal of Personality and Social Psychology*, 83, 1165–1177. doi:10.1037/0022-3514.83.5.1165
- Soto, C. J., John, O. P., Gosling, S. D., & Potter, J. (2011). Age differences in personality traits from 10 to 65: Big Five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology*, 100, 330–348. doi:10.1037/a0021717
- Spengler, M., Gottschling, J., & Spinath, F. M. (2012). Personality in childhood—A longitudinal behavior genetic approach. *Personality and Individual Differences*, 53, 411–416. doi:10.1016/j.paid.2012.01.019
- van den Akker, A. L., Deković, M., & Prinz, P. (2010). Transitioning to adolescence: How changes in child personality and overreactive parenting predict adolescent adjustment problems. *Development and Psychopathology*, 22, 151–163. doi:10.1017/S0954579409990320
- Van Leeuwen, K. G., Mervielde, I., Braet, C., & Bosmans, G. (2004). Child personality and parental behavior as moderators of problem behavior: Variable- and person-centered approaches. *Developmental Psychology*, 40, 1028–1046. doi:10.1037/0012-1649.40.6.1028

Received March 4, 2013

Revision received February 14, 2014

Accepted May 28, 2014 ■