1   **The Transition to Grandparenthood: No Consistent Evidence for Change in**

2   **the Big Five Personality Traits and Life Satisfaction**

3   Author1[1,2,3], Author2[4], Author3[5], and & Author4[1,3]

4   [1] Institution1

5   [2] Institution2

6   [3] Institution3

7   [4] Institution4

8   [5] Institution5

Author Note

Authornote1

Authornote2

Authornote3

Authornote4

The authors made the following contributions. Author1: Conceptualization, Data Curation, Formal Analysis, Methodology, Visualization, Writing - Original Draft Preparation, Writing - Review & Editing; Author2: Methodology, Writing - Review & Editing; Author3: Methodology, Writing - Review & Editing; Author4: Supervision, Methodology, Writing - Review & Editing.

Correspondence concerning this article should be addressed to Author1, Address1. E-mail: Email1

Abstract

Intergenerational relations have received close attention in the context of population aging and increased childcare provision by grandparents. However, few studies have investigated the psychological consequences of becoming a grandparent. In a preregistered test of grandparenthood as a developmental task in middle and older adulthood, we used representative panel data from the Netherlands ($N = 563$) and the United States ($N = 2{,}210$) to analyze first-time grandparents' personality and life satisfaction development. We tested gender, employment, and grandchild care as moderators. To address confounding, we employed propensity score matching using two procedures: matching grandparents with parents and nonparents to achieve balance in different sets of carefully selected covariates. Multilevel models demonstrated mean-level stability of the Big Five personality traits and life satisfaction over the transition to grandparenthood, and no consistent moderation effects—contrary to the social investment principle. The few small effects of grandparenthood on personality development did not replicate across samples. We found no evidence of larger interindividual differences in change in grandparents compared to the controls or of lower rank-order stability. Our findings add to recent critical re-examinations of the social investment principle and are discussed in light of characteristics that might moderate grandparents' personality development.

Keywords: grandparenthood, Big Five, life satisfaction, personality development, propensity score matching

The Transition to Grandparenthood: No Consistent Evidence for Change in the Big Five Personality Traits and Life Satisfaction

Becoming a grandparent is an important life event for many people in midlife or old age (Infurna et al., 2020). In an era of population aging, the time that grandparents are alive and in good health is prolonged compared to previous generations (Bengtson, 2001; Leopold & Skopek, 2015; Margolis & Wright, 2017). In addition, grandparents fulfill an increased share of childcare responsibilities (Hayslip et al., 2019; Pilkauskas et al., 2020). In recent years, intergenerational relations have received heightened attention from psychological and sociological research (Bengtson, 2001; Coall & Hertwig, 2011; Fingerman et al., 2020). In research on personality development, the transition to grandparenthood has been proposed as an important developmental task arising in old age (Hutteman et al., 2014). However, empirical research on the psychological consequences of grandparenthood remains sparse. Using data from two nationally representative panel studies, we investigate whether the transition to grandparenthood affects the Big Five personality traits and life satisfaction. We test hypotheses derived from neo-socioanalytic theory (Roberts & Wood, 2006) in a prospective matched control-group design (see Luhmann et al., 2014).

Personality Development in Middle and Older Adulthood

The life span perspective conceptualizes aging as a lifelong process of development and adaptation (Baltes et al., 2006). Research embedded in this perspective has found personality traits to be subject to change across the entire life span (Costa et al., 2019; Graham et al., 2020; Specht, 2017; Specht et al., 2014; for recent reviews, see Bleidorn et al., 2021; Roberts & Yoon, 2021). Although a majority of personality development takes place in adolescence and emerging adulthood (Bleidorn & Schwaba, 2017; Pusch et al., 2019; Schwaba & Bleidorn, 2018), personality traits also change in middle and older adulthood (e.g., Allemand et al., 2008; Damian et al., 2019; Kandler et al., 2015; Lucas & Donnellan, 2011; Mõttus et al., 2012; Mueller et al., 2016; Seifert et al., 2021; Wagner et

al., 2016; for a review, see Specht, 2017).

Here, we examine the Big Five personality traits—agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience—which constitute a broad categorization of universal patterns of thought, affect, and behavior (John et al., 2008; John & Srivastava, 1999). Changes over time in the Big Five occur both in mean trait levels (i.e., mean-level change; Roberts et al., 2006) and in the ordering of people relative to each other on trait dimensions (i.e., rank-order stability; Anusic & Schimmack, 2016; Roberts & DelVecchio, 2000). A lack of observed changes in mean trait levels does not necessarily mean that individual trait levels are stable over time, and perfect rank-order stability does not preclude mean-level changes. Mean-level changes in early to middle adulthood (circa 30–60 years old; Hutteman et al., 2014) are typically characterized by greater maturity, as evidenced by increased agreeableness and conscientiousness and decreased neuroticism (Damian et al., 2019; Roberts et al., 2006). In old age (circa 60 years and older; Hutteman et al., 2014), research is generally more sparse. But there is some evidence of a *reversal* of the maturity effect following retirement (sometimes termed *la dolce vita* effect; Asselmann & Specht, 2021; Marsh et al., 2013; cf. Schwaba & Bleidorn, 2019) and at the end of life when health problems arise (Wagner et al., 2016).

In terms of rank-order stability, most prior studies have shown support for an inverted U-shape trajectory (Ardelt, 2000; Lucas & Donnellan, 2011; Seifert et al., 2021; Specht et al., 2011; Wortman et al., 2012): Rank-order stability rises until it reaches a plateau in midlife, and decreases in old age. However, evidence is mixed on whether rank-order stability decreases again in old age (see Costa et al., 2019; Wagner et al., 2019). We are not aware of any study investigating trait rank-order stability over the transition to grandparenthood. Other life events are associated with rank-order stability of personality and well-being, although only certain events and traits (e.g., Denissen et al., 2019; Hentschel et al., 2017; Specht et al., 2011). Still, the previously held view that personality is stable or "set like plaster" (Specht, 2017, p. 64) after one reaches adulthood (or leaves

emerging adulthood behind; Bleidorn & Schwaba, 2017) has been largely abandoned (Specht et al., 2014).

Theories explaining the mechanisms of personality development in middle and older adulthood emphasize genetic influences and life experiences as interdependent sources of stability and change (Bleidorn et al., 2021; Specht et al., 2014; Wagner et al., 2020). We conceptualize the transition to grandparenthood as adopting a new social role according to the social investment principle of neo-socioanalytic theory (Lodi-Smith & Roberts, 2007; Roberts & Wood, 2006). The social investment principle states that normative life events or transitions such as entering the work force or becoming a parent lead to personality maturation through adopting new social roles (Roberts et al., 2005). These new roles encourage or compel people to act in a more agreeable, conscientious, and emotionally stable (i.e., less neurotic) way. People's experiences in these roles as well as societal expectations towards them are hypothesized to drive long-term personality development (Lodi-Smith & Roberts, 2007; Wrzus & Roberts, 2017).

Empirical research on life events entailing new social roles has focused on young adulthood: A first romantic relationship (Wagner et al., 2015), the transition from high school to university, or a first job (Asselmann & Specht, 2021; Golle et al., 2019; Lüdtke et al., 2011) co-occur with mean-level changes that are (partly) consistent with the social investment principle (for a review, see Bleidorn et al., 2018). However, recent findings on the transition to parenthood fail to support the social investment principle (Asselmann & Specht, 2020b; van Scheppingen et al., 2016). An analysis of trajectories of the Big Five before and after different life events produced limited support for the social investment principle: Small increases in emotional stability occurred following the transition to employment but not in the other traits or following marriage or childbirth (Denissen et al., 2019).

Age-graded, normative role transitions may drive personality development across the entire lifespan but they are understudied in middle and older adulthood. Recent

research indicates that retirement contributes to personality change following a period of relative stability in midlife (Bleidorn & Schwaba, 2018; Schwaba & Bleidorn, 2019). These results are only partly in line with the social investment principle regarding mean-level changes and display substantial interindividual differences in change trajectories. Schwaba and Bleidorn described retirement as a "divestment" of social roles (2019, p. 660; *personality relaxation*, see Asselmann & Specht, 2021) that functions differently than *social investment*, which adds a role. The grandparent role is one of only a few new normative roles available in middle and older adulthood. It is perceived as highly important and represents a psychologically meaningful role investment (Mahne & Motel-Klingebiel, 2012; Thiele & Whelan, 2006)—given that grandparents have regular contact with grandchildren and take part in childcare (Lodi-Smith & Roberts, 2007). Mechanisms of grandparents' personality change remain unexplored. However, grandparental role investment may not be linearly related to changes in well-being and health (see section *Life Satisfaction and Grandparenthood*). Instead, moderate levels of grandchild care and contact appear most beneficial. At the same time, even if grandparents do not provide substantial grandchild care, grandparenthood might alter their everyday lives and activities considerably by changing the social structure imposed by kinship bonds (Mueller & Elder, 2003; Tanskanen, 2017). For example, grandchildren might bring about frequent family gatherings, which eventually contribute to grandparents' personality development in a bottom-up fashion.

Grandparenthood

The transition to grandparenthood is a time-discrete life event—the beginning of one's status as a grandparent (Luhmann et al., 2012). In terms of characteristics of major life events (Luhmann et al., 2020), the transition to grandparenthood stands out in that it is externally caused (by one's children; see also Arpino, Gumà, et al., 2018; Margolis & Verdery, 2019), but also predictable as soon as children reveal their family planning or pregnancy. The transition to grandparenthood has been labeled a countertransition due to

this lack of direct control over its timing (Hagestad & Neugarten, 1985; as cited in Arpino, Gumà, et al., 2018). Grandparenthood is also generally positive in valence and emotionally significant if the grandparent maintains a good relationship with their child. Grandparents' investments in their grandchildren are beneficial in terms of the evolutionary, economic, and sociological advantages they provide (Coall et al., 2018; Coall & Hertwig, 2011).

Grandparenthood is a developmental task (Hutteman et al., 2014) that generally takes place in (early) old age, although this varies considerably both within and between cultures (Leopold & Skopek, 2015; Skopek & Leopold, 2017). Still, the period in which parents experience the birth of their first grandchild coincides with the end of (relative) personality stability in midlife (Specht, 2017), when retirement, shifting social roles, and initial cognitive and health declines can disrupt life circumstances, setting processes of personality development in motion (e.g., Mueller et al., 2016; Stephan et al., 2014). As a developmental task, grandparenthood is considered part of a normative sequence of aging that is subject to societal expectations and values that differ across cultures and historical time (Baltes et al., 2006; Hutteman et al., 2014). Mastering developmental tasks (i.e., fulfilling roles and expectations) is hypothesized to drive positive personality development similarly to propositions of the social investment principle, that is, leading to higher levels of agreeableness and conscientiousness, and lower levels of neuroticism (Roberts et al., 2005; Roberts & Wood, 2006).

In comparison to the transition to parenthood, which is ambivalent in terms of both personality maturation and changes in life satisfaction (Aassve et al., 2021; Johnson & Rodgers, 2006; Krämer & Rodgers, 2020; van Scheppingen et al., 2016), Hutteman et al. (2014) hypothesized that the transition to grandparenthood is positive because it (usually) does not impose the stressful demands of daily childcare on grandparents. However, societal expectations about how grandparents should behave are less clearly defined than expectations around parenthood. There is considerable heterogeneity in how intensely grandparents are involved in their grandchildren's lives and care (Meyer &

175   Kandic, 2017). The degree of possible grandparental investment differs depending on a

176   variety of factors: how close grandparents live to their children, the quality of their

177   relationship, and sociodemographic factors that create conflicting role demands such as

178   paid work or other caregiving responsibilities (Arpino & Bellani, 2022; Arpino &

179   Gómez-León, 2020; Lumsdaine & Vermeer, 2015; Silverstein & Marenco, 2001). In the

180   entire population of first-time grandparents, this diversity of possible and desired role

181   investments could generate role conflicts for some grandparents (according to role strain

182   theory; Goode, 1960). Subsequently, pronounced interindividual differences in

183   intraindividual personality change might then emerge.

Life Satisfaction and Grandparenthood

185   Although few studies on the Big Five and grandparenthood exist, there is some

186   evidence for life satisfaction, which we define as the general, cognitive appraisal of one's

187   well-being in life based on subjective criteria (Eid & Larsen, 2008). Life satisfaction is

188   generally considered less stable than the Big Five and more prone to changes due to

189   environmental influences but still trait-like in its characteristics (Anusic & Schimmack,

190   2016; Kandler et al., 2014; Luhmann et al., 2012), and robustly related to the Big Five

191   (Anglim et al., 2020).

192   Longitudinal studies on grandparents' life satisfaction have produced conflicting

193   conclusions: Studies using data from the Survey of Health, Ageing and Retirement in

194   Europe (SHARE) showed that the birth of a grandchild was followed by improvements in

195   quality of life and life satisfaction, but only among women (Tanskanen et al., 2019) and

196   only in first-time grandmothers via their daughters (Di Gessa et al., 2019). Several studies

197   demonstrated that grandparents who were actively involved in childcare experienced larger

198   increases in life satisfaction (Arpino, Bordone, et al., 2018; Danielsbacka et al., 2019;

199   Danielsbacka & Tanskanen, 2016). On the other hand, fixed effects regression models[1]

---

[1] Fixed effects regression models rely exclusively on within-person variance (see Brüderl & Ludwig, 2015; McNeish & Kelley, 2019).

using SHARE data did not find any effects of first-time grandparenthood on life satisfaction regardless of grandparental investment and only minor decreases in depressive symptoms in grandmothers (Sheppard & Monden, 2019; see also Ates, 2017, who came to a similar conclusion for self-rated health using data from the German Aging Survey).

Studies of grandparents' life satisfaction, and well-being and health more generally, have often contrasted role strain theory and role enhancement theory (e.g., Di Gessa et al., 2016a; Xu et al., 2017; see also Kim et al., 2017). Role strain theory (Goode, 1960) predicts that investing in grandparenthood alongside other existing roles can produce role conflicts and psychological demands exceeding one's resources. Altogether, these factors prevent adaptive development and lower life satisfaction. Role enhancement theory (Sieber, 1974), conversely, anticipates adaptive development and well-being benefits because the added social role provides grandparents with status security, social support, and psychological meaning. Empirically, providing substantial grandchild care is, on the one hand, associated with decreased marital satisfaction (Wang & Mutchler, 2020) and increased depressive symptoms if grandparents perceive caregiving as burdensome (Xu et al., 2017). On the other hand, it is associated with increased social contact (Quirke et al., 2021; Tanskanen, 2017; cf. Arpino & Bordone, 2017) and a higher quantity (but not quality) of leisure activities (Ates et al., 2021), whereby social engagement serves as a buffer for mental health decreases (Notter, 2021).

Research on well-being and health has found evidence for both role strain theory and role enhancement theory depending on the degree of grandparental role investment (Danielsbacka et al., 2022; Kim et al., 2017). Whereas no investment or being a grandchild's primary caregiver are associated with adverse effects in most studies, there is evidence that moderate levels of grandchild care have beneficial life satisfaction and health effects for non-coresiding grandparents. This provides preliminary support for the inverted U-shape between investment and utility proposed by Coall and Hertwig (2011). However, multiple authors have recently emphasized that the literature is still at an early stage and

that prior studies often lack representativeness, longitudinal data, and appropriate control for selection effects (Coall et al., 2018; Danielsbacka et al., 2022; Kim et al., 2017).

In summary, evidence is lacking on the Big Five and inconclusive on life satisfaction (and related measures) which is partly due to different methodological approaches that do not account for confounding (i.e., selection effects).

Methodological Considerations

Effects of life events on psychological traits tend to be small and need to be analyzed using robust, prospective designs and appropriate control groups (Bleidorn et al., 2018; Luhmann et al., 2014). This is necessary because pre-existing differences between prospective grandparents and non-grandparents in variables related to the development of the Big Five or life satisfaction introduce confounding bias when estimating the effects of the transition to grandparenthood (VanderWeele et al., 2020). The impact of adjusting for pre-existing differences was recently emphasized in predicting life outcomes from personality (Beck & Jackson, 2021). Propensity score matching is one technique to account for confounding bias by equating groups in their estimated propensity to experience the event (Thoemmes & Kim, 2011). This propensity is calculated from regressing the so-called treatment variable (whether someone experienced the event) on covariates related to the likelihood of experiencing the event and to the outcomes. This approach addresses confounding bias by creating balance between groups in the covariates used to calculate the propensity score (Stuart, 2010).

We adopt a prospective design that tests the effects of becoming first-time grandparents against two propensity-score-matched control groups separately: first, parents (but not grandparents) with at least one child of reproductive age, and, second, nonparents. This allows us to disentangle potential effects of becoming a grandparent from effects of already being a parent (i.e., parents who eventually become grandparents might share additional similarities with parents who do not). Thus, we can address selection effects into

grandparenthood more comprehensively than previous research. We cover the first two of three causal pathways to not experiencing grandparenthood pointed out in demographic research (Margolis & Verdery, 2019): childlessness, childlessness of one's children, and not living long enough to become a grandparent. Our comparative design controls for average age-related and historical trends in the Big Five traits and life satisfaction (Luhmann et al., 2014). The design also enables us to report effects of the transition to grandparenthood unconfounded by instrumentation effects, which describe the tendency of reporting lower well-being scores with each repeated measurement (Baird et al., 2010).

We match at a specific time point before the transition to grandparenthood (i.e., at least two years beforehand) and not based on individual survey years. This design choice ensures that the covariates involved in the matching procedure are not already influenced by the event or anticipation of it (Greenland, 2003; Rosenbaum, 1984; VanderWeele, 2019; VanderWeele et al., 2020), thereby reducing the risk of introducing confounding through collider bias (Elwert & Winship, 2014). Similar approaches in the study of life events have been adopted recently (Balbo & Arpino, 2016; Krämer & Rodgers, 2020; van Scheppingen & Leopold, 2020).

Current Study

In the current study, we examine the development of the Big Five personality traits across the transition to grandparenthood in a prospective, quasi-experimental design, thereby extending previous research on the effects of this transition on well-being to psychological development in a more general sense. We also revisit life satisfaction development, which allows us to anchor our model results. With the literature on grandparenthood and well-being in mind, the current results for life satisfaction constitute a benchmark for the Big Five outcomes. Three research questions motivate the current study which—to our knowledge—is the first to analyze Big Five personality development over the transition to grandparenthood:

1. What are the effects of the transition to grandparenthood on mean-level trajectories of the Big Five traits and life satisfaction?

2. How large are interindividual differences in intraindividual change for the Big Five traits and life satisfaction over the transition to grandparenthood?

3. How does the transition to grandparenthood affect rank-order stability of the Big Five traits and life satisfaction?

To address these questions, we used two nationally representative panel data sets and compared grandparents' development over the transition to grandparenthood with that of matched respondents who did not become grandparents during the study period (Luhmann et al., 2014). Informed by the social investment principle, previous research on personality development in middle and older adulthood, and the literature on grandparenthood and well-being, we preregistered the following hypotheses (see blinded file *Preregistration.pdf* on

https://osf.io/75a4r/?view_only=ac929a2c41fb4afd9d1a64a3909848d0):

- H1a: Following the birth of their first grandchild, grandparents increase in agreeableness and conscientiousness, and decrease in neuroticism compared to the matched control groups of parents (but not grandparents) and nonparents. We do not expect the groups to differ in their trajectories of extraversion and openness to experience.

- H1b: Grandparents' post-transition increases in agreeableness and conscientiousness, and decreases in neuroticism are more pronounced among those who provide substantial grandchild care.

- H1c: Grandmothers increase in life satisfaction following the transition to grandparenthood compared to the matched control groups but grandfathers do not.

The heterogeneity in the degree of possible and desired grandparental investment in

our samples leads us to expect pronounced interindividual differences in intraindividual change (i.e., deviations from the average trajectories).

- H2: Individual differences in intraindividual change in the Big Five and life satisfaction are larger in the grandparent group than the control groups.

Consequently, assuming that grandparents' personality is rearranged through the experience of the event, we also expect decreases in rank-order stability over the transition to grandparenthood.

- H3: Compared to the matched control groups, grandparents' rank-order stability of the Big Five and life satisfaction over the transition to grandparenthood is smaller.

Finally, commitments to other institutions and roles possibly constrain the amount of possible grandparental investment in line with role strain theory. Alternatively, the added grandparental role could complement existing roles inducing positive psychological development according to role enhancement theory. Thus, exploratorily, we probe the moderator *performing paid work*, which could constitute a role conflict among grandparents. In another exploratory analysis, suggested by an anonymous reviewer, we examine *race/ethnicity* as a moderator, which is associated with differences in the demography of grandparenthood (Hayslip et al., 2019; Margolis & Verdery, 2019) and in grandparents' well-being (Goodman & Silverstein, 2006).

Methods

Samples

We used data from two population-representative panel studies: the Longitudinal Internet Studies for the Social Sciences (LISS) panel from the Netherlands, and the Health and Retirement Study (HRS) from the United States.

327   The LISS panel is a representative sample of the Dutch population initiated in 2008

328 with data collection still ongoing (Scherpenzeel, 2011; van der Laan, 2009). It is

329 administered by Centerdata (Tilburg University). The survey population is a true

330 probability sample of households drawn from the population register (Scherpenzeel & Das,

331 2010). Data collection was carried out online, and respondents were provided technical

332 equipment if needed. We included yearly assessments from 2008 to 2021 as well as basic

333 demographics assessed monthly. For later coding of covariates from these monthly

334 demographic data we used the first available assessment each year.

335   The HRS is an ongoing population-representative study of older adults in the

336 United States (Sonnega et al., 2014) administered by the Survey Research Center

337 (University of Michigan). Initiated in 1992 with a first cohort of individuals aged 51-61 and

338 their spouses, the study has since been expanded through additional cohorts (see

339 https://hrs.isr.umich.edu/documentation/survey-design/). In addition to the biennial

340 in-person or telephone interview, since 2006 the study has included a leave-behind

341 questionnaire covering psychosocial topics including personality traits. These topics,

342 however, were only administered every four years starting in 2006 for one half of the

343 sample and in 2008 for the other half. We included personality data from 2006 to 2018, all

344 available data for the coding of the transition to grandparenthood from 1996 to 2018, as

345 well as covariate data from 2006 to 2018 including variables drawn from the Imputations

346 File and the Family Data (only available up to 2014).

347   These two panel studies provided the advantage that they contained several waves

348 of personality data as well as information on grandparent status and a broad range of

349 covariates. While the HRS provided a large sample with a wider age range, the LISS was

350 smaller and younger but provided more frequent personality assessments spaced every one

351 to two years. Included grandparents from the LISS were younger because grandparenthood

352 questions were part of the Work and Schooling module and—for reasons unknown to

353 us—filtered to respondents performing paid work. Thus, older, retired first-time

354 grandparents from the LISS could not be identified. Even though we have published using

355 the LISS and HRS data before (see preregistration,

356 https://osf.io/75a4r/?view_only=ac929a2c41fb4afd9d1a64a3909848d0), these publications

357 do not overlap with the current study on grandparenthood. The present study used

358 de-identified archival data available in the public domain, which meant that it was not

359 necessary to obtain ethical approval from an IRB.

360 **Measures**

361 *Personality*

362 In the LISS, the Big Five personality traits were assessed using the 50-item version

363 of the IPIP Big Five Inventory scales (Goldberg, 1992). For each trait, respondents

364 answered ten 5-point Likert-scale items (1 = *very inaccurate*, 2 = *moderately inaccurate*, 3

365 = *neither inaccurate nor accurate*, 4 = *moderately accurate*, 5 = *very accurate*). Example

366 items included "like order" (conscientiousness), "sympathize with others' feelings"

367 (agreeableness), "worry about things" (neuroticism), "have a vivid imagination"

368 (openness), and "start conversations" (extraversion). In each wave, we took a respondent's

369 mean of each subscale as their trait score. Internal consistencies at the time of matching,

370 as indicated by ω_h (McNeish, 2018), averaged $\omega_h = 0.70$ over all traits ($\omega_t = 0.89$; $\alpha =$

371 0.83; see Table S1). Other studies have shown measurement invariance for these scales

372 across time and age groups, and convergent validity with the Big Five Inventory (BFI-2;

373 Schwaba & Bleidorn, 2018; Denissen et al., 2020). The Big Five and life satisfaction were

374 administered yearly but with planned missingness in some years for certain cohorts (see

375 Denissen et al., 2019).

376 In the HRS, the Midlife Development Inventory (MIDI) scales measured the Big

377 Five (Lachman & Weaver, 1997) with 26 adjectives (five each for conscientiousness,

378 agreeableness, and extraversion; four for neuroticism; seven for openness). Respondents

379 were asked to rate on a 4-point scale how well each item described them (1 = *a lot*, 2 =

380 *some*, 3 = *a little*, 4 = *not at all*). Example adjectives included "organized"

381 (conscientiousness), "sympathetic" (agreeableness), "worrying" (neuroticism),

382 "imaginative" (openness), and "talkative" (extraversion). For better comparability with

383 the LISS panel, we reverse-scored all items so that higher values corresponded to higher

384 trait levels and, in each wave, took the mean of each subscale as the trait score. Big Five

385 trait scores showed satisfactory internal consistencies at the time of matching that

386 averaged $\omega_h = 0.63$ over all traits ($\omega_t = 0.80$; $\alpha = 0.72$; see Table S1).

Life Satisfaction

388   In both samples, life satisfaction was assessed using the 5-item Satisfaction with Life

389 Scale (SWLS; Diener et al., 1985) which respondents answered on a 7-point Likert scale (1

390 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *slightly disagree*, 4 = *neither agree or*

391 *disagree*, 5 = *slightly agree*, 6 = *somewhat agree*, 7 = *strongly agree*). An example item was

392 "I am satisfied with my life". Internal consistency at the time of matching was between $\alpha =$

393 0.88 and $\alpha = 0.91$ in the four analysis samples (see Table S1).

Transition to Grandparenthood

395   The procedure to obtain information on the transition to grandparenthood generally

396 followed the same steps in both samples. This coding was based on items that differed

397 slightly, however: In the LISS, respondents performing paid work were asked "Do you have

398 children and/or grandchildren?" and were offered the answer categories "children",

399 "grandchildren", and "no children or grandchildren". In the HRS, all respondents were

400 asked to state their total number of grandchildren: "Altogether, how many grandchildren

401 do you (or your husband / wife / partner, or your late husband / wife / partner) have?

402 Include as grandchildren any children of your (or your [late] husband's / wife's / partner's)

403 biological, step- or adopted children".

404   In both samples, we tracked grandparenthood status over time. Due to

405 longitudinally inconsistent data in some cases, we included in the grandparent group only

406 respondents with one transition from 0 (*no grandchildren*) to 1 (*at least one grandchild*) in

407 this status variable, and no transitions backwards (see Figure 1). We marked respondents

408 who consistently indicated that they had no grandchildren as potential members of the

409 control groups.

Participant Flowchart

Grandparents:

Step 1	Respondents who had grandchildren for the first time during study participation. Includes HRS waves 1996-2004.	N_{LISS} = 380	N_{HRS} = 3273
Step 2	Respondents with at least one valid personality assessment (since 2006 in HRS).	N_{LISS} = 378	N_{HRS} = 1703
Step 3	Respondents with a valid personality assessment both before and one after the transition to grandparenthood.	N_{LISS} = 283	N_{HRS} = 860
Step 4	Respondents with non-missing and consistent information regarding their children.	N_{LISS} = 282	N_{HRS} = 847

Matched Samples	LISS	HRS
Parents	282 grandparents (1591 obs.) & 1128 controls (6288 obs.)	847 grandparents (2264 obs.) & 3388 controls (8326 obs.)
Nonparents	282 grandparents (1591 obs.) & 1128 controls (6290 obs.)	847 grandparents (2264 obs.) & 3388 controls (8229 obs.)

Potential Control Respondents:

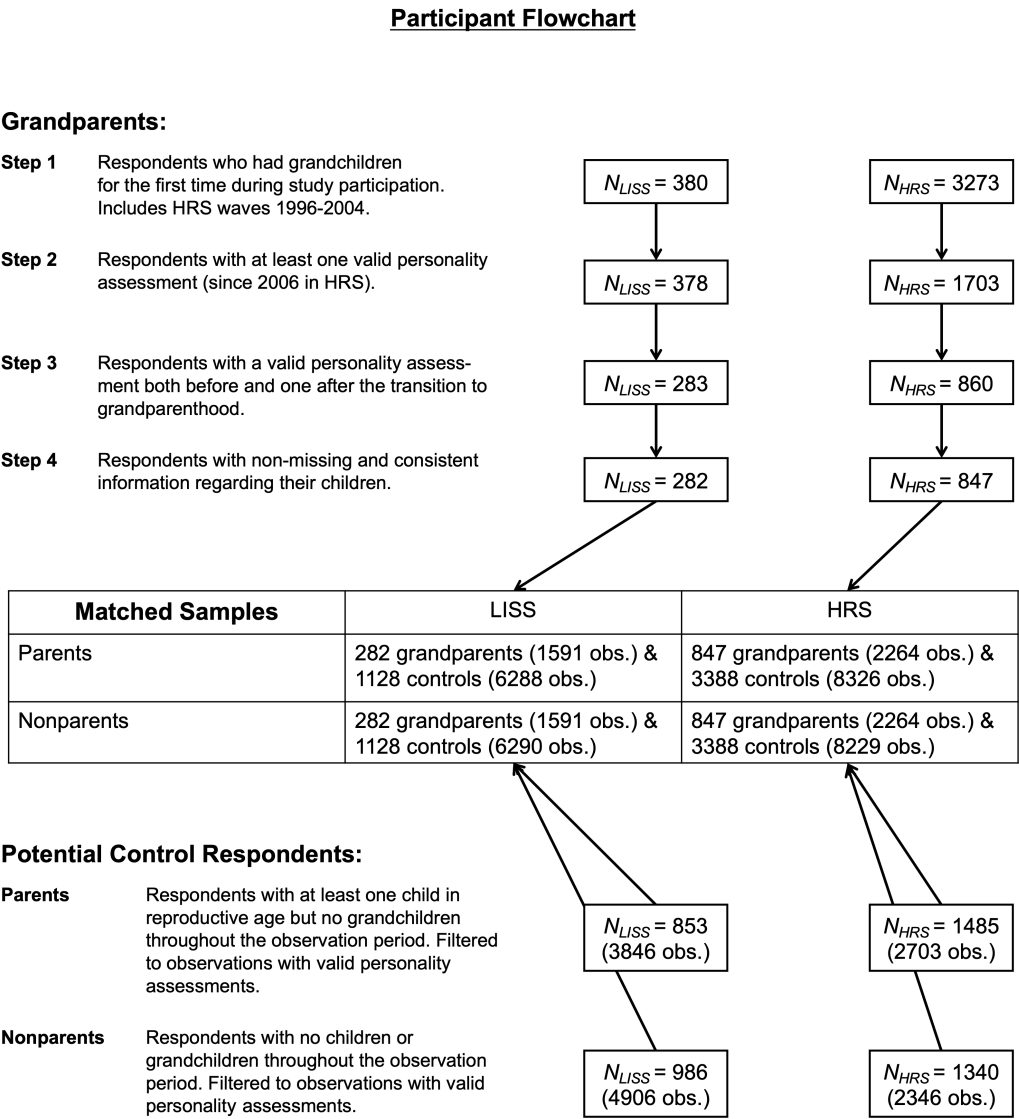| Parents | Respondents with at least one child in reproductive age but no grandchildren throughout the observation period. Filtered to observations with valid personality assessments. | N_{LISS} = 853 (3846 obs.) | N_{HRS} = 1485 (2703 obs.) |
| Nonparents | Respondents with no children or grandchildren throughout the observation period. Filtered to observations with valid personality assessments. | N_{LISS} = 986 (4906 obs.) | N_{HRS} = 1340 (2346 obs.) |

Figure 1

Participant flowchart demonstrating the composition of the four analysis samples via matching (1:4 matching ratio with replacement). obs. = longitudinal observations.

Moderators

We tested four variables as potential moderators of the mean-level trajectories of the Big Five and life satisfaction over the transition to grandparenthood: First, we analyzed whether female gender ($0 = male$, $1 = female$) acted as a moderator as indicated by research on life satisfaction (Di Gessa et al., 2019; Tanskanen et al., 2019).

Second, we tested whether performing paid work ($0 = no$, $1 = yes$) was associated with divergent trajectories of the Big Five and life satisfaction (Schwaba & Bleidorn, 2019). Since the LISS subsample consisted solely of respondents performing paid work, we performed these analyses only in the HRS. This served two purposes. On the one hand, it allowed us to test how respondents in the workforce differed from those not working, which might shed light on role conflict and have implications for social investment mechanisms. On the other hand, these moderation analyses allowed us to assess whether potential differences in results between the LISS and HRS samples could be accounted for by including performing paid work as a moderator in HRS analyses. In other words, perhaps HRS respondents performing paid work were similar to those in the LISS sample—those conditioned on this variable through questionnaire filtering.

Third, we examined how involvement in grandchild care moderated trajectories of the Big Five and life satisfaction (Arpino, Bordone, et al., 2018; Danielsbacka et al., 2019; Danielsbacka & Tanskanen, 2016). We coded a moderator variable ($0 = provided less than$ *100 hours of grandchild care*, $1 = provided 100 or more hours of grandchild care$) based on the question "Did you (or your [late] husband / wife / partner) spend 100 or more hours in total since the last interview / in the last two years taking care of grand- or great grandchildren?".[2] This information was only available for grandparents in the HRS; in the LISS, too few respondents answered respective follow-up questions to be included in analyses.

———

[2] Dichotomization of a continuous construct (hours of care) is not ideal for moderation analysis (MacCallum et al., 2002). However, there were too many missing values in the variable assessing hours of care continuously (variables *E063).

435   Fourth, in the HRS, we compared Black/African American respondents with White

436 respondents.

Procedure

438   Drawing on all available data, three main restrictions defined the analysis samples

439 of grandparents (see Figure 1): First, we identified respondents who indicated having

440 grandchildren for the first time during study participation ($N_{LISS} = 380$; $N_{HRS} = 3273$,

441 including HRS waves 1996-2004 before personality assessments were introduced). Second,

442 we restricted the sample to respondents with at least one valid personality assessment

443 (valid in the sense that at least one of the six outcomes was non-missing; $N_{LISS} = 378$;

444 $N_{HRS} = 1703$).[3] Third, we included only respondents with both one valid personality

445 assessment before and one after the transition to grandparenthood ($N_{LISS} = 283$; $N_{HRS} =$

446 860). Finally, a few respondents were excluded because of inconsistent or missing

447 information regarding their children resulting in the final analysis samples of first-time

448 grandparents, $N_{LISS} = 282$ (54.61% female; age at transition to grandparenthood $M =$

449 58.29, $SD = 4.87$) and $N_{HRS} = 847$ (54.90% female; age at transition to grandparenthood

450 $M = 61.80$, $SD = 6.87$).

451   We defined two mutually exclusive pools of potential control subjects for matching:

452 The first comprised parents who had at least one child of reproductive age (defined as

453 $15 \leq age_{firstborn} \leq 65$) but no grandchildren during the observation period ($N_{LISS} = 853$

454 with 3846 longitudinal observations; $N_{HRS} = 1485$ with 2703 longitudinal observations).

455 The second comprised respondents who reported being childless throughout the

456 observation period ($N_{LISS} = 986$ with 4906 longitudinal observations; $N_{HRS} = 1340$ with

457 2346 longitudinal observations).

─────────

[3] We also excluded $N = 30$ HRS grandparents in a previous step who reported unrealistically high numbers of grandchildren (> 10) in their first assessment following the transition to grandparenthood.

Covariates

We used propensity score matching to match each grandparent with a control respondent from each pool of potential controls who was most similar in terms of the included covariates.

Although critical to the design, covariate selection is seldom explicitly discussed in studies estimating effects of life events (e.g., in matching designs). We see two (in part conflicting) traditions that address covariate selection: First, classic recommendations from psychology are to include all available variables that are associated with both the treatment assignment process (i.e., selection into treatment) and the outcome (e.g., Steiner et al., 2010; Stuart, 2010). Second, recommendations from a structural causal modeling perspective (Elwert & Winship, 2014; Rohrer, 2018) are more cautious, aiming to avoid pitfalls such as conditioning on a pre-treatment collider (collider bias) or a mediator (overcontrol bias). However, structural causal modeling requires advanced knowledge of the causal structures underlying the involved variables (Pearl, 2009).

In selecting covariates, we followed the guidelines of VanderWeele et al. (2019; 2020), which reconcile both views and offer practical guidance when the underlying causal structures are not completely understood and when using large archival datasets. The "modified disjunctive cause criterion" (VanderWeele, 2019, p. 218) recommends selecting all available covariates which are assumed to be causes of the outcomes, treatment exposure (i.e., the transition to grandparenthood), or both, as well as any proxies for an unmeasured common cause of the outcomes and treatment exposure. Variables that are assumed to be instrumental variables (i.e., assumed causes of treatment exposure that are unrelated to the outcomes except through the exposure) and collider variables (Elwert & Winship, 2014) should be excluded from this selection. Because all covariates we used for matching were measured at least two years before the first grandchild's birth, we judge the risk of introducing collider bias or overcontrol bias to be relatively small. In addition, as mentioned above, the transition to grandparenthood is not planned by or under the direct

control of the grandparents, which further reduces the risk of these biases.

Following these guidelines, we selected covariates covering respondents' demographics (e.g., age, education), economic situation (e.g., income), and health (e.g., mobility difficulties). We also included the pre-transition outcome variables as covariates—as recommended in the literature (Cook et al., 2020; Hallberg et al., 2018; Steiner et al., 2010; VanderWeele et al., 2020), as well as wave participation count and assessment year in order to control for instrumentation effects and historical trends (e.g., 2008/2009 financial crisis; Baird et al., 2010; Luhmann et al., 2014). To match grandparents with the parent control group, we additionally selected covariates containing information on fertility and family history (e.g., number of children, age of first three children) which were causally related to the timing of the transition to grandparenthood (Arpino, Gumà, et al., 2018; Margolis & Verdery, 2019).

An overview of all covariates can be found in the supplemental materials (see Tables S2 & S3). Importantly, as part of our preregistration we justified each covariate, explaining whether we assumed it to be related to the treatment assignment, the outcomes, or both (see *gp-covariates-overview.xlsx* on https://osf.io/75a4r/?view_only=ac929a2c41fb4afd9d1a64a3909848d0). We tried to find substantively equivalent covariates in both samples but had to compromise in a few cases.

Estimating propensity scores required complete covariate data. Therefore, we performed multiple imputations to address missingness in the covariates (Greenland & Finkle, 1995). Using five imputed data sets computed by classification and regression trees (CART; Burgette & Reiter, 2010) in the *mice* R package (van Buuren & Groothuis-Oudshoorn, 2011), we predicted treatment assignment (i.e., the transition to grandparenthood) five times per observation in logistic regressions with a logit link function.[4] We averaged these five scores per observation to compute the final propensity

---

[4] In these logistic regressions, we included all covariates listed above as predictors except for *female*, which was later used for exact matching, and health-related covariates in LISS wave 2014, which were not assessed in that wave.

score used for matching (Mitra & Reiter, 2016). We used imputed data only for propensity

score computation and not in later analyses because nonresponse in the outcome variables

was negligible.

Propensity Score Matching

The time of matching preceded the survey year in which the transition to

grandparenthood was first reported by at least two years (aside from that choosing the

smallest available gap between matching and transition). This ensured that the covariates

were not affected by the event itself or anticipation thereof (i.e., matching occurred well

before children would have announced that they were expecting their first child; Greenland,

2003; Rosenbaum, 1984; VanderWeele et al., 2020). Propensity score matching was

performed using the *MatchIt* R package (Ho et al., 2011) with exact matching on gender

combined with Mahalanobis distance matching on the propensity score. Four matchings

were performed; two per sample (LISS; HRS) and two per control group (parents;

nonparents). We matched 1:4 with replacement because of the relatively small pools of

available controls.[5] We did not specify a caliper because our goal was to find matches for

all grandparents, and because we achieved good covariate balance this way.

We evaluated the matching procedure in terms of covariate balance and graphically

(Stuart, 2010). Covariate balance as indicated by the standardized difference in means

between grandparents and controls after matching was good (see Tables S2 & S3), lying

below 0.25 as recommended in the literature (Stuart, 2010), and below 0.10 with few

exceptions (Austin, 2011). Graphically, group differences in the propensity score

distributions were small and indicated no substantial missing overlap (see Figure S1).

---

[5] In the LISS, 282 grandparent observations were matched with 1128 control observations; these control observations corresponded to 561 unique person-year observations stemming from 281 unique respondents for the parent control group, and to 523 unique person-year observations stemming from 194 unique respondents for the nonparent control group. In the HRS, 847 grandparent observations were matched with 3388 control observations; these control observations corresponded to 1363 unique person-year observations stemming from 978 unique respondents for the parent control group, and to 1039 unique person-year observations stemming from 712 unique respondents for the nonparent control group.

532 After matching, each matched control observation was assigned the same value as

533 the matched grandparent in the *time* variable describing the temporal relation to

534 treatment, and the control respondent's other longitudinal observations were centered

535 around this matched observation. We thus coded a counterfactual transition time frame for

536 each control respondent. Due to left- and right-censored longitudinal data (i.e., panel entry

537 or attrition), we restricted the final analysis samples to six years before and six years after

538 the transition, as shown in Table 1.

539 The final LISS analysis samples (see Figure 1) contained 282 grandparents with

540 1591 longitudinal observations, matched with 1128 control respondents with either 6288

541 (parent control group) or 6290 longitudinal observations (nonparent control group). The

542 final HRS analysis samples contained 847 grandparents with 2264 longitudinal

543 observations, matched with 3388 control respondents with either 8326 (parent control

544 group) or 8229 longitudinal observations (nonparent control group). In the HRS, there

545 were a few additional missing values in the outcomes ranging from 19 to 99 longitudinal

546 observations, which were listwise deleted in the respective analyses.

Transparency and Openness

547

548 We used R (Version 4.0.4; R Core Team, 2021) and the R-packages *lme4* (Version

549 1.1.27.1; Bates et al., 2015), and *lmerTest* (Version 3.1.3; Kuznetsova et al., 2017) for

550 multilevel modeling, as well as *tidyverse* (Wickham, Averick, Bryan, Chang, McGowan,

551 François, et al., 2019) for data wrangling, and *papaja* (Aust & Barth, 2020) for

552 reproducible manuscript production (see supplement for complete package information).

553 The preregistration and scripts for data wrangling, analyses, and to reproduce this

554 manuscript[6] can be found on the OSF

555 (https://osf.io/75a4r/?view_only=ac929a2c41fb4afd9d1a64a3909848d0) and GitHub

556 (https://github.com/ [blinded]). LISS and HRS data are available after registering

———

[6] We also provide instructions to aid reproducing the manuscript.

Table 1

Longitudinal Sample Size in the Analysis Samples and Coding Scheme for the Piecewise Regression Coefficients.

	Pre-transition years						Post-transition years						
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
LISS: Analysis samples													
Grandparents: obs.	105	99	122	137	171	155	170	149	130	117	91	74	71
Grandparents: % women	50.48	52.53	54.92	51.09	57.89	60.00	48.82	53.69	53.08	52.99	50.55	62.16	59.15
Parent controls: obs.	337	469	465	675	838	486	483	532	452	446	457	331	317
Parent controls: % women	57.57	52.88	56.99	51.26	56.56	55.56	53.42	55.26	53.54	50.45	52.30	57.40	58.04
Nonparent controls: obs.	313	445	456	699	863	470	495	558	400	522	470	307	292
Nonparent controls: % women	42.81	55.73	55.04	53.36	56.43	54.68	51.72	54.12	52.25	57.09	50.21	46.91	56.51
LISS: Coding scheme													
Before-slope	0	1	2	3	4	5	5	5	5	5	5	5	5
After-slope	0	0	0	0	0	0	1	2	3	4	5	6	7
Shift	0	0	0	0	0	0	1	1	1	1	1	1	1
HRS: Analysis samples													
Grandparents: obs.	162		389		461		381		444		195		232
Grandparents: % women	57.41		54.24		55.53		54.07		55.41		56.41		53.45
Parent controls: obs.	647		1544		1844		1230		1492		703		866
Parent controls: % women	51.62		54.15		55.53		54.55		56.90		52.77		58.08
Nonparent controls: obs.	666		1545		1845		1203		1464		687		819
Nonparent controls: % women	56.61		54.17		55.50		56.36		58.13		57.21		61.66
HRS: Coding scheme													
Before-slope	0		1		2		2		2		2		2
After-slope	0		0		0		1		2		3		4
Shift	0		0		0		1		1		1		1

Note. obs. = observations. $time = 0$ marks the first year where the transition to grandparenthood has been reported. The number of grandparent respondents included in the final samples is $N_{LISS} = 282$ and $N_{HRS} = 847$.

accounts. We deviate from the preregistration in using new waves of data released in the

meantime (2020/2021 LISS) as well as updated datasets (HRS). Following Benjamin et

al. (2018), we set the α-level for confirmatory analyses to .005.

Analytical Strategy

Our design can be referred to as an interrupted time series with a "nonequivalent

no-treatment control group" (Shadish et al., 2002, p. 182) where treatment, that is, the

transition to grandparenthood, is not deliberately manipulated. First, to analyze

mean-level changes (research question 1), we used linear piecewise regression coefficients in

multilevel models with person-year observations nested within respondents and households

(Hoffman, 2015). To model change over time in relation to the transition to

grandparenthood, we coded three piecewise regression coefficients: a *before-slope*

representing linear change in the years leading up to the transition to grandparenthood, an

after-slope representing linear change in the years after the transition, and a *shift*

coefficient, shifting the intercept directly after the transition was first reported, thus

representing sudden changes that go beyond changes already modeled by the *after-slope*

(see Table 1 for the coding scheme of these coefficients).[7] Other studies of personality

development have recently adopted similar piecewise coefficients (e.g., Schwaba & Bleidorn,

2019; Krämer & Rodgers, 2020; van Scheppingen & Leopold, 2020).

All effects of the transition to grandparenthood on the Big Five and life satisfaction

were modeled as deviations from the matched control groups by interacting the three

piecewise coefficients with the treatment variable (0 = *control*, 1 = *grandparent*). In

additional models, we interacted these coefficients with the moderator variables, resulting

in two- and three-way interactions. To test differences in the growth parameters between

---

[7] As a robustness check, we re-estimated the mean-level trajectories after further restricting the time frame by excluding time points earlier than two years before the transition (i.e., before the latest time of matching). This served the purpose of assessing whether including time points from before matching (as preregistered) would distort the trajectories in any way. However, results were highly similar (see *gp_restricted_models.pdf* on https://osf.io/75a4r/?view_only=ac929a2c41fb4afd9d1a64a3909848d0).

two groups in cases where these differences were represented by multiple fixed-effects coefficients, we defined linear contrasts using the *linearHypothesis* command from the *car* package (Fox & Weisberg, 2019). All models of mean-level changes were estimated using maximum likelihood and included random intercepts but no random slopes. Simultaneous random slopes of change parameters frequently lead to convergence issues. Fixed slopes models are appropriate to model average trajectories, which vary systematically with the person-level treatment variable (Hoffman & Walters, 2022). We included the propensity score as a level-2 covariate for a double-robust approach (Austin, 2017). The equation for the basic (i.e., unmoderated) model reads:

$$
\begin{aligned}
y_{ti} =& \beta_{0i} + \beta_{1i} before_{ti} + \beta_{2i} after_{ti} + \beta_{3i} shift_{ti} + e_{ti} \\
& \beta_{0i} = \gamma_{00} + \gamma_{01} grandparent_i + \gamma_{02} pscore_i + v_{0i} \\
& \beta_{1i} = \gamma_{10} + \gamma_{11} grandparent_i \\
& \beta_{2i} = \gamma_{20} + \gamma_{21} grandparent_i \\
& \beta_{3i} = \gamma_{30} + \gamma_{31} grandparent_i \; ,
\end{aligned}
\tag{1}
$$

where at time t for person i $e_{ti} \sim N(0, \sigma_e^2)$ and $v_{0i} \sim N(0, \tau_{00})$ (ignoring the additional nesting in households applied to the majority of models). y_{ti} represented one of the Big Five or life satisfaction. Separate models were computed for each analysis sample. The other model equations can be found in the supplemental materials.

Second, to assess interindividual differences in change (research question 2), we added random slopes. In other words, we allowed for differences between individuals in their trajectories of change to be modeled, that is, differences in the *before-slope*, *after-slope*, and *shift* coefficients. Because simultaneous random slopes are often not computationally feasible, we added random slopes one at a time and used likelihood ratio tests to determine whether the addition of the respective random slope led to a significant improvement in model fit. To test differences in the random slope variance between the grandparent group

601 and each control group, we respecified the models as heterogeneous variance models using

602 the *nlme* R package (Pinheiro et al., 2021). This allowed for separate random slope

603 variances to be estimated in the grandparent group and the control group within the same

604 model. We compared the fit of these heterogeneous variance models to corresponding

605 models with a homogeneous (single) random slope variance using likelihood ratio tests.

606   Third, to examine rank-order stability in the Big Five and life satisfaction over the

607 transition to grandparenthood (research question 3), we computed the test-retest

608 correlation of measurements prior to the transition to grandparenthood (at the time of

609 matching) and the first available measurement afterward. To test differences in test-retest

610 correlations between grandparents and either of the control groups, we entered the

611 pre-treatment measure, the treatment variable (0 = *control*, 1 = *grandparent*), and their

612 interaction into regression models predicting the Big Five and life satisfaction. The

613 interaction tests for significant differences in the rank-order stability between those who

614 experienced the transition to grandparenthood and those who did not (see Denissen et al.,

615 2019; McCrae, 1993).

Results

617   Throughout the results section, we referred to statistical tests with $.005 < p < .05$

618 as *suggestive evidence* as stated in our preregistration.

Descriptive Results

620   Means and standard deviations of the Big Five and life satisfaction over the

621 analyzed time points are presented in Tables S4 and S5. Visually represented (see Figures

622 S2-S7), all six outcomes display marked stability over time in both LISS and HRS.

623 Intra-class correlations (see Table S6) show that large portions of the total variance in the

624 Big Five could be explained by nesting in respondents ($median = 0.75$), while nesting in

625 households only accounted for minor portions of the total variance (ICC_{hid}, $median =$

626 0.03). For outcome-subsample combinations with ICC_{hid} below 0.05 we omitted the

household nesting factor from all models to bypass computational errors—a small deviation from our preregistration. For life satisfaction, the nesting in households accounted for slightly larger portions of the total variance ($median = 0.37$) than nesting in respondents ($median = 0.30$). Across all outcomes, the proportion of variance due to within-person factors was relatively low ($median = 0.23$).

Mean-Level Changes

Figures 2 and 3 summarize the effects of the basic models and those including the gender interaction for all outcomes and across the four analysis samples.

Agreeableness

In the basic models, we found no evidence that grandparents increased in agreeableness as compared to the controls (see Tables S7 & S8 and Figure 4). The models including the gender interaction (see Tables 2 & S9 and Figure 4) indicated that grandfathers increased slightly in agreeableness after the transition to grandparenthood as compared to the parent controls (LISS: $\hat{\gamma}_{21} = 0.02$, 95% CI $[0.01, 0.04]$, $p = .002$; suggestive evidence in the HRS: $\hat{\gamma}_{21} = 0.03$, 95% CI $[0.01, 0.05]$, $p = .008$), whereas grandmothers did not differ from the female controls.

There was no consistent evidence for moderation by paid work (see Tables S10 & S11 and Figure S8), providing substantial grandchild care (see Tables S12 & S13 and Figure S9), or race/ethnicity (see Tables S14 & S15 and Figure S10).
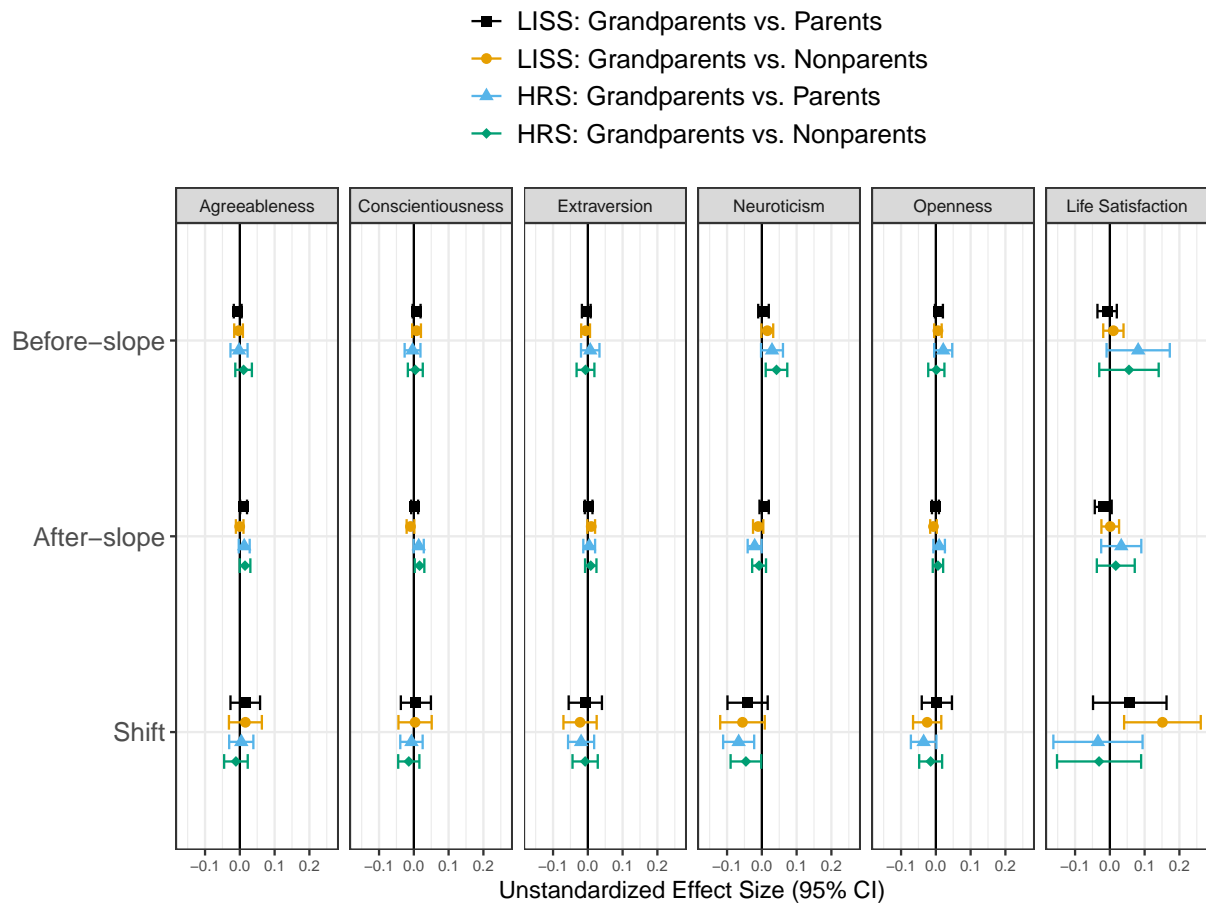
Figure 2

Unstandardized Effect Sizes of the Basic Models Across Analysis Samples (Regression Coefficients $\hat{\gamma}$ or Linear Contrasts $\hat{\gamma}_c$ From Multilevel Models, see Tables S7, S8, S16, S17, S24, S25, S34, S35, S44, S45, S54, S55). Error Bars Represent 95% Confidence Intervals.
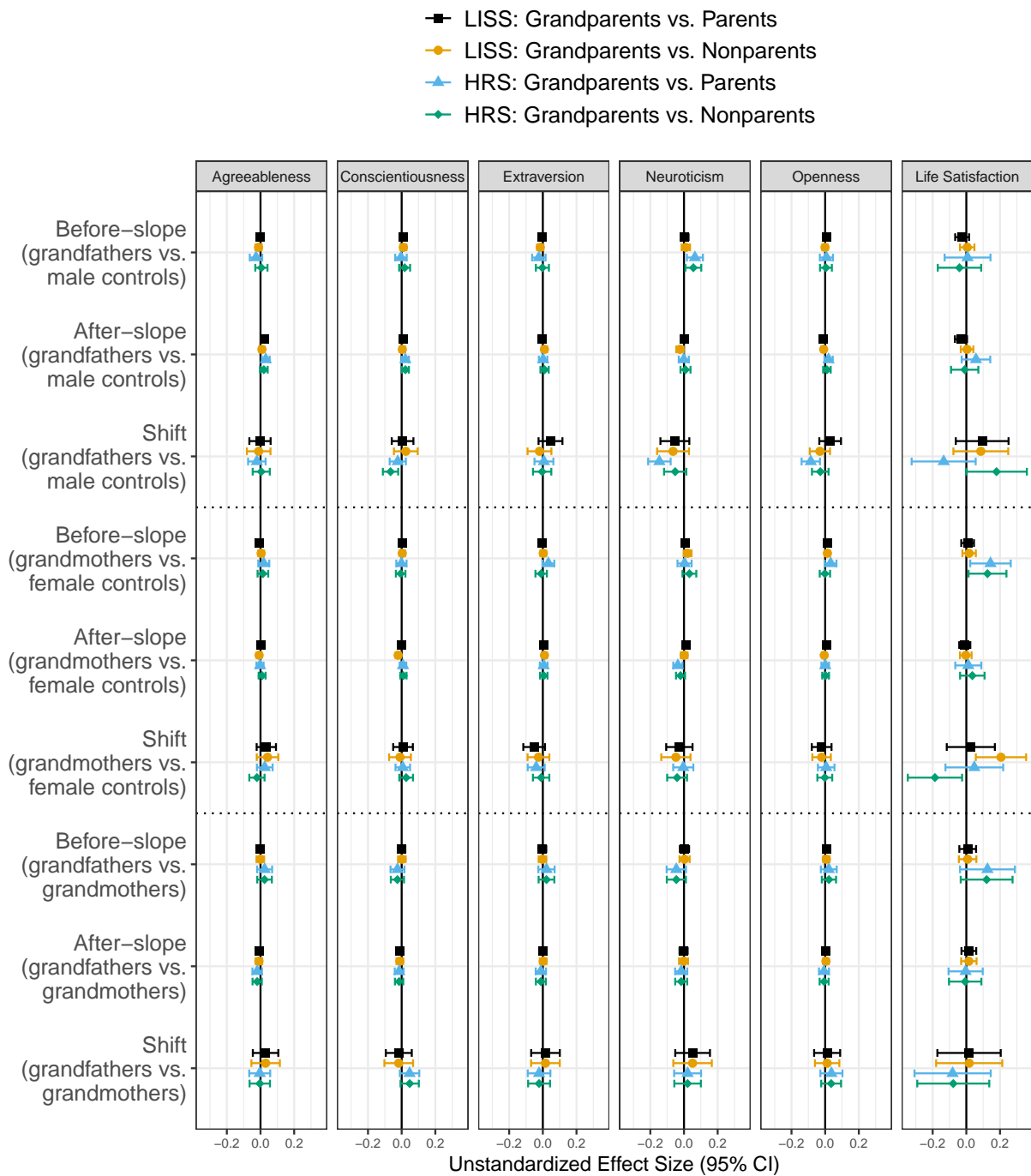
Figure 3

Unstandardized Effect Sizes of the Models Including the Gender Interaction Across Analysis Samples (Regression Coefficients $\hat{\gamma}$ or Linear Contrasts $\hat{\gamma}_c$ From Multilevel Models, see Tables 2, S9, S18, S19, S26, S27, S36, S37, S46, S47, S56, S57). Error Bars Represent 95% Confidence Intervals.
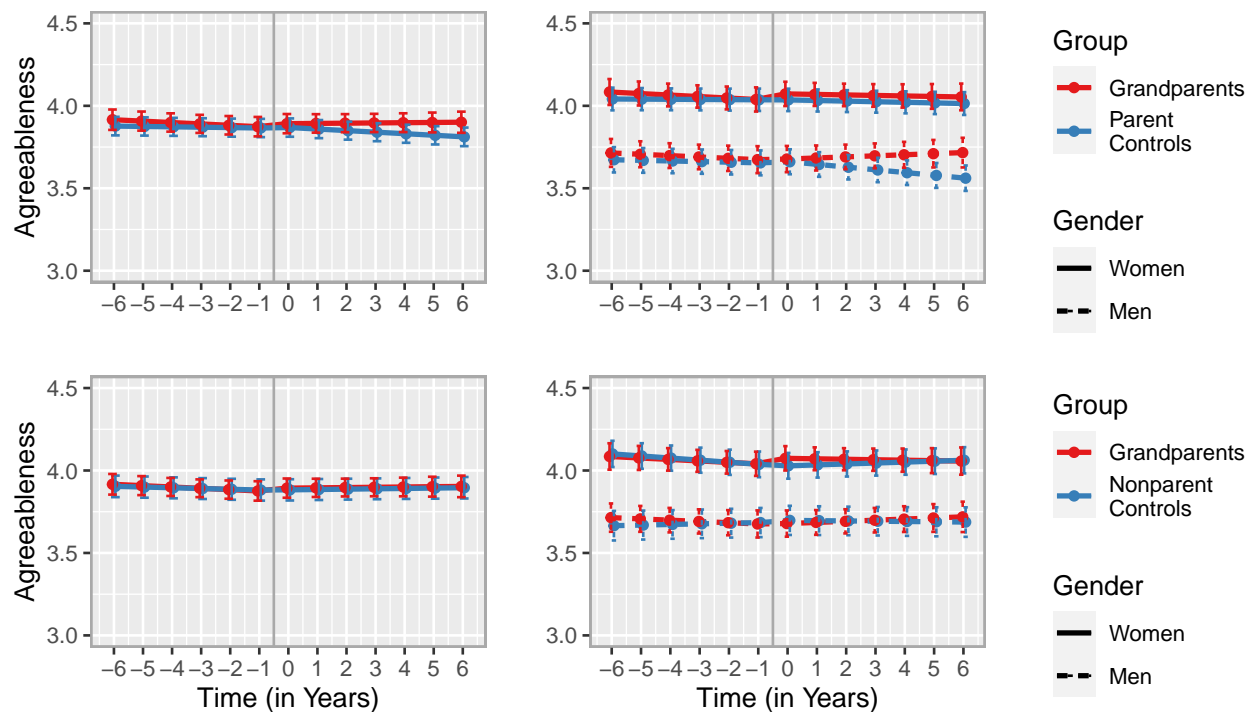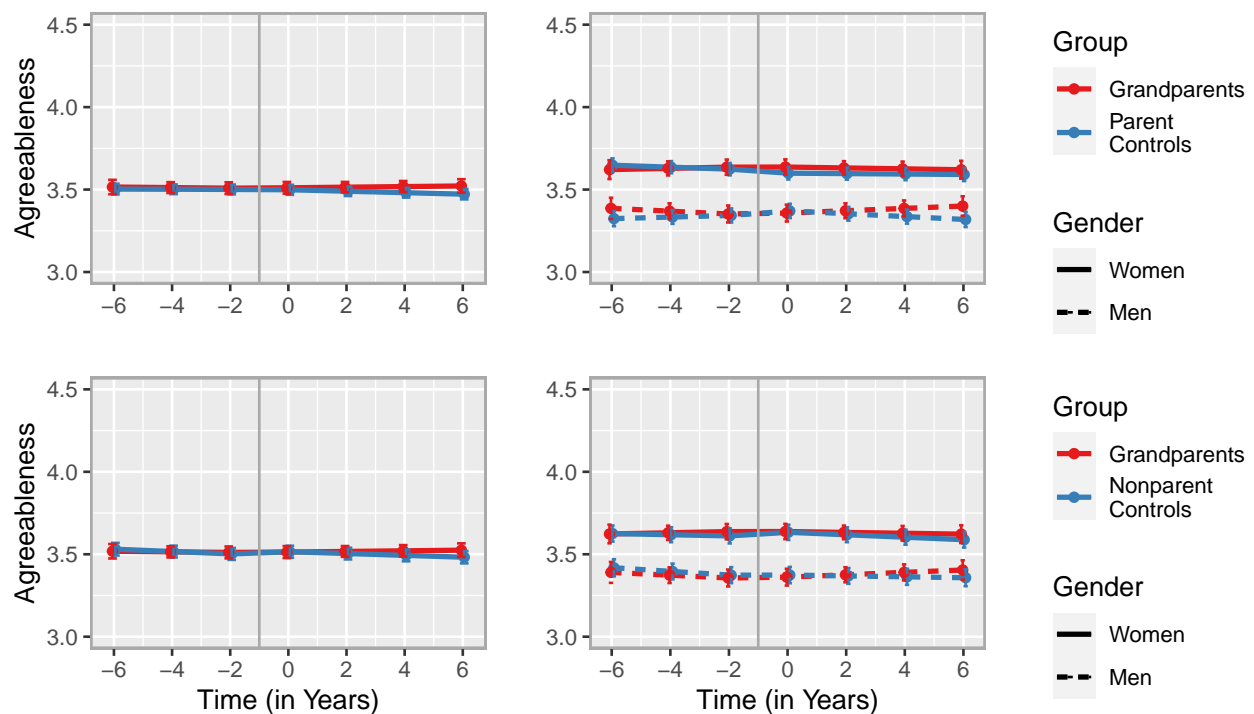
Figure 4

Change trajectories of agreeableness based on the basic models (left column) and the models including the gender interaction (right column). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood.

Table 2

Fixed Effects of Agreeableness Over the Transition to Grandparenthood Moderated by Gender.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.65	[3.58, 3.73]	93.57	< .001	3.65	[3.56, 3.74]	79.53	< .001
Propensity score, $\hat{\gamma}_{04}$	0.07	[0.01, 0.12]	2.37	.018	0.04	[-0.02, 0.10]	1.37	.172
Before-slope, $\hat{\gamma}_{10}$	0.00	[-0.01, 0.00]	-0.97	.333	0.00	[0.00, 0.01]	0.91	.364
After-slope, $\hat{\gamma}_{20}$	-0.02	[-0.02, -0.01]	-5.09	< .001	0.00	[-0.01, 0.01]	-0.49	.625
Shift, $\hat{\gamma}_{30}$	0.02	[-0.01, 0.06]	1.37	.172	0.01	[-0.02, 0.05]	0.81	.417
Grandparent, $\hat{\gamma}_{01}$	0.04	[-0.07, 0.16]	0.72	.473	0.05	[-0.07, 0.17]	0.78	.434
Female, $\hat{\gamma}_{02}$	0.37	[0.27, 0.47]	7.09	< .001	0.44	[0.32, 0.56]	7.24	< .001
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.02, 0.01]	-0.52	.602	-0.01	[-0.03, 0.01]	-1.22	.221
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[0.01, 0.04]	3.11	.002	0.01	[-0.01, 0.02]	1.03	.301
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.03	[-0.10, 0.05]	-0.71	.475	-0.02	[-0.10, 0.06]	-0.48	.635
Before-slope * Female, $\hat{\gamma}_{12}$	0.00	[-0.01, 0.01]	0.54	.592	-0.02	[-0.03, -0.01]	-2.82	.005
After-slope * Female, $\hat{\gamma}_{22}$	0.01	[0.00, 0.02]	2.94	.003	0.01	[0.00, 0.02]	1.51	.132
Shift * Female, $\hat{\gamma}_{32}$	-0.02	[-0.07, 0.02]	-0.88	.377	-0.03	[-0.08, 0.02]	-1.16	.244
Grandparent * Female, $\hat{\gamma}_{03}$	0.00	[-0.15, 0.16]	0.03	.977	-0.07	[-0.23, 0.10]	-0.78	.436
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.00	[-0.03, 0.02]	-0.32	.751	0.02	[-0.01, 0.04]	1.20	.231
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.02	[-0.04, 0.00]	-2.24	.025	-0.02	[-0.04, 0.00]	-1.51	.130
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.06	[-0.04, 0.16]	1.21	.227	0.07	[-0.04, 0.18]	1.26	.209
HRS								
Intercept, $\hat{\gamma}_{00}$	3.29	[3.24, 3.34]	135.53	< .001	3.39	[3.34, 3.44]	124.23	< .001
Propensity score, $\hat{\gamma}_{04}$	0.09	[0.03, 0.15]	2.97	.003	0.06	[-0.01, 0.12]	1.77	.076
Before-slope, $\hat{\gamma}_{10}$	0.01	[-0.01, 0.03]	1.22	.223	-0.02	[-0.04, -0.01]	-2.86	.004
After-slope, $\hat{\gamma}_{20}$	-0.02	[-0.03, -0.01]	-3.20	.001	-0.01	[-0.02, 0.01]	-0.99	.320
Shift, $\hat{\gamma}_{30}$	0.04	[0.01, 0.08]	2.83	.005	0.01	[-0.02, 0.04]	0.39	.700
Grandparent, $\hat{\gamma}_{01}$	0.06	[-0.02, 0.14]	1.57	.116	-0.03	[-0.11, 0.05]	-0.65	.514
Female, $\hat{\gamma}_{02}$	0.32	[0.26, 0.38]	10.44	< .001	0.21	[0.14, 0.27]	6.08	< .001
Before-slope * Grandparent, $\hat{\gamma}_{11}$	-0.03	[-0.06, 0.01]	-1.42	.157	0.01	[-0.03, 0.04]	0.29	.772
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.03	[0.01, 0.05]	2.65	.008	0.02	[0.00, 0.04]	1.71	.087
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.05	[-0.12, 0.01]	-1.53	.126	-0.02	[-0.08, 0.05]	-0.46	.648
Before-slope * Female, $\hat{\gamma}_{12}$	-0.02	[-0.04, 0.00]	-2.01	.044	0.02	[-0.01, 0.04]	1.46	.145
After-slope * Female, $\hat{\gamma}_{22}$	0.01	[0.00, 0.03]	2.05	.040	-0.01	[-0.02, 0.00]	-1.35	.178
Shift * Female, $\hat{\gamma}_{32}$	-0.07	[-0.11, -0.03]	-3.16	.002	0.03	[-0.01, 0.07]	1.50	.135

Table 2 continued

	Parent controls				Nonparent controls			
Parameter	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Grandparent * Female, $\hat{\gamma}_{03}$	-0.09	[-0.19, 0.02]	-1.66	.098	0.03	[-0.08, 0.13]	0.48	.632
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.05	[0.00, 0.10]	1.84	.067	0.01	[-0.04, 0.06]	0.37	.713
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.03	[-0.07, 0.00]	-2.14	.033	-0.01	[-0.04, 0.02]	-0.66	.512
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.08	[-0.01, 0.17]	1.74	.082	-0.02	[-0.10, 0.07]	-0.34	.737

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Conscientiousness

647

648   We found no differences between grandparents and both parent and nonparent

649 controls in their trajectories of conscientiousness (see Tables S16 & S17 and Figure S11).

650 There was only inconsistent evidence for gender moderation (see Tables S18 & S19 and

651 Figure S11): Grandfathers' conscientiousness decreased immediately following the

652 transition to grandparenthood as compared to male nonparents in the HRS, $[\hat{\gamma}_{21} + \hat{\gamma}_{31}] =$

653 -0.07, 95% CI [-0.11, -0.02], $p = .004$, but not in any of the other three analysis samples.

654   There were significant differences in conscientiousness trajectories depending on

655 grandparents' work status (see Tables 3 & S20 and Figure 5): non-working grandparents

656 saw more pronounced increases in conscientiousness in the years before the transition to

657 grandparenthood compared to non-working parents, $\hat{\gamma}_{21} = 0.08$, 95% CI $[0.03, 0.13]$, $p <$

658 .001, and nonparent controls, $\hat{\gamma}_{21} = 0.06$, 95% CI $[0.02, 0.11]$, $p = .004$, and compared to

659 working grandparents (difference in *before* parameter; parents: $[\hat{\gamma}_{30} + \hat{\gamma}_{31}] = $ -0.08, 95% CI

660 [-0.13, -0.03], $p = .002$; nonparents: $[\hat{\gamma}_{30} + \hat{\gamma}_{31}] = $ -0.08, 95% CI [-0.12, -0.03], $p = .001$).

661 Grandparents providing substantial grandchild care increased in conscientiousness to a

662 greater degree than the matched controls (difference in *after* parameter; parents: $[\hat{\gamma}_{21} + $

663 $\hat{\gamma}_{31}] = 0.04$, 95% CI $[0.02, 0.06]$, $p < .001$; nonparents: $[\hat{\gamma}_{21} + \hat{\gamma}_{31}] = 0.04$, 95% CI $[0.02,$

664 0.06], $p < .001$; see Tables 4 & S21 and Figure 6). There was only suggestive evidence that

665 grandparents who provided substantial grandchild care increased more strongly in

666 conscientiousness after the transition than grandparents who did not (difference in *after*

667 parameter; parents: $[\hat{\gamma}_{30} + \hat{\gamma}_{31}] = 0.03$, 95% CI $[0.00, 0.06]$, $p = .029$; nonparents: $[\hat{\gamma}_{30} + $

668 $\hat{\gamma}_{31}] = 0.03$, 95% CI $[0.01, 0.06]$, $p = .020$). Conscientiousness trajectories were not

669 moderated by race/ethnicity (see Tables S22 & S23 and Figure S12).

Extraversion

670

671   The trajectories of grandparents' extraversion closely followed those of the matched

672 controls. There were no significant effects indicating differences between grandparents and

Table 3

Fixed Effects of Conscientiousness Over the Transition to Grandparenthood Moderated by Performing Paid Work.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.40	[3.36, 3.44]	169.21	< .001	3.39	[3.34, 3.43]	151.26	< .001
Propensity score, $\hat{\gamma}_{02}$	0.06	[0.01, 0.12]	2.17	.030	0.13	[0.07, 0.19]	4.35	< .001
Before-slope, $\hat{\gamma}_{20}$	-0.01	[-0.03, 0.01]	-1.24	.215	0.00	[-0.01, 0.02]	0.48	.634
After-slope, $\hat{\gamma}_{40}$	0.00	[-0.01, 0.00]	-1.07	.284	-0.01	[-0.02, 0.00]	-2.59	.009
Shift, $\hat{\gamma}_{60}$	0.00	[-0.03, 0.03]	-0.07	.943	-0.05	[-0.08, -0.02]	-3.41	.001
Grandparent, $\hat{\gamma}_{01}$	-0.09	[-0.17, 0.00]	-2.04	.042	-0.10	[-0.19, -0.02]	-2.49	.013
Working, $\hat{\gamma}_{10}$	-0.01	[-0.05, 0.03]	-0.52	.600	-0.04	[-0.08, -0.01]	-2.41	.016
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.08	[0.03, 0.13]	3.41	.001	0.06	[0.02, 0.11]	2.89	.004
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.02	[0.00, 0.04]	1.54	.124	0.02	[0.00, 0.04]	2.29	.022
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.07	[-0.14, 0.00]	-1.96	.050	-0.02	[-0.08, 0.05]	-0.47	.636
Before-slope * Working, $\hat{\gamma}_{30}$	0.03	[0.01, 0.05]	3.13	.002	0.00	[-0.02, 0.02]	0.02	.982
After-slope * Working, $\hat{\gamma}_{50}$	0.01	[-0.01, 0.02]	0.80	.422	0.01	[0.00, 0.03]	2.34	.019
Shift * Working, $\hat{\gamma}_{70}$	-0.02	[-0.06, 0.02]	-0.80	.422	0.07	[0.03, 0.11]	3.53	< .001
Grandparent * Working, $\hat{\gamma}_{11}$	0.16	[0.07, 0.25]	3.57	< .001	0.19	[0.10, 0.27]	4.41	< .001
Before-slope * Grandparent * Working, $\hat{\gamma}_{31}$	-0.11	[-0.16, -0.06]	-4.04	< .001	-0.08	[-0.13, -0.03]	-2.98	.003
After-slope * Grandparent * Working, $\hat{\gamma}_{51}$	0.00	[-0.03, 0.03]	-0.27	.784	-0.01	[-0.04, 0.02]	-0.91	.363
Shift * Grandparent * Working, $\hat{\gamma}_{71}$	0.07	[-0.02, 0.16]	1.48	.140	-0.02	[-0.10, 0.07]	-0.44	.658

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *working* = 1 indicates being employed in paid work.

HRS
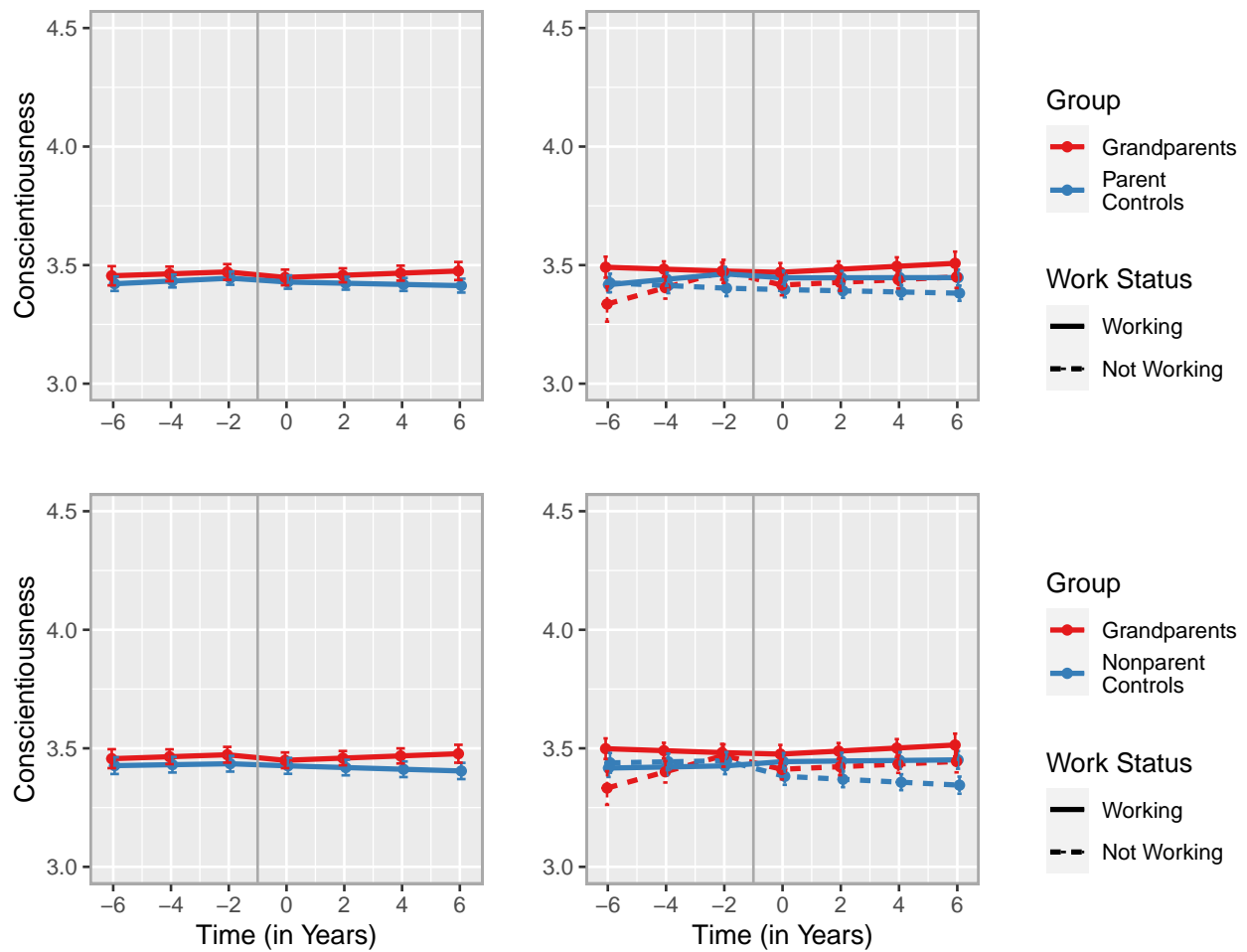
Figure 5

Change trajectories of conscientiousness based on the models of moderation by paid work (see Table 3). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S11 (basic models) and added here for better comparability.
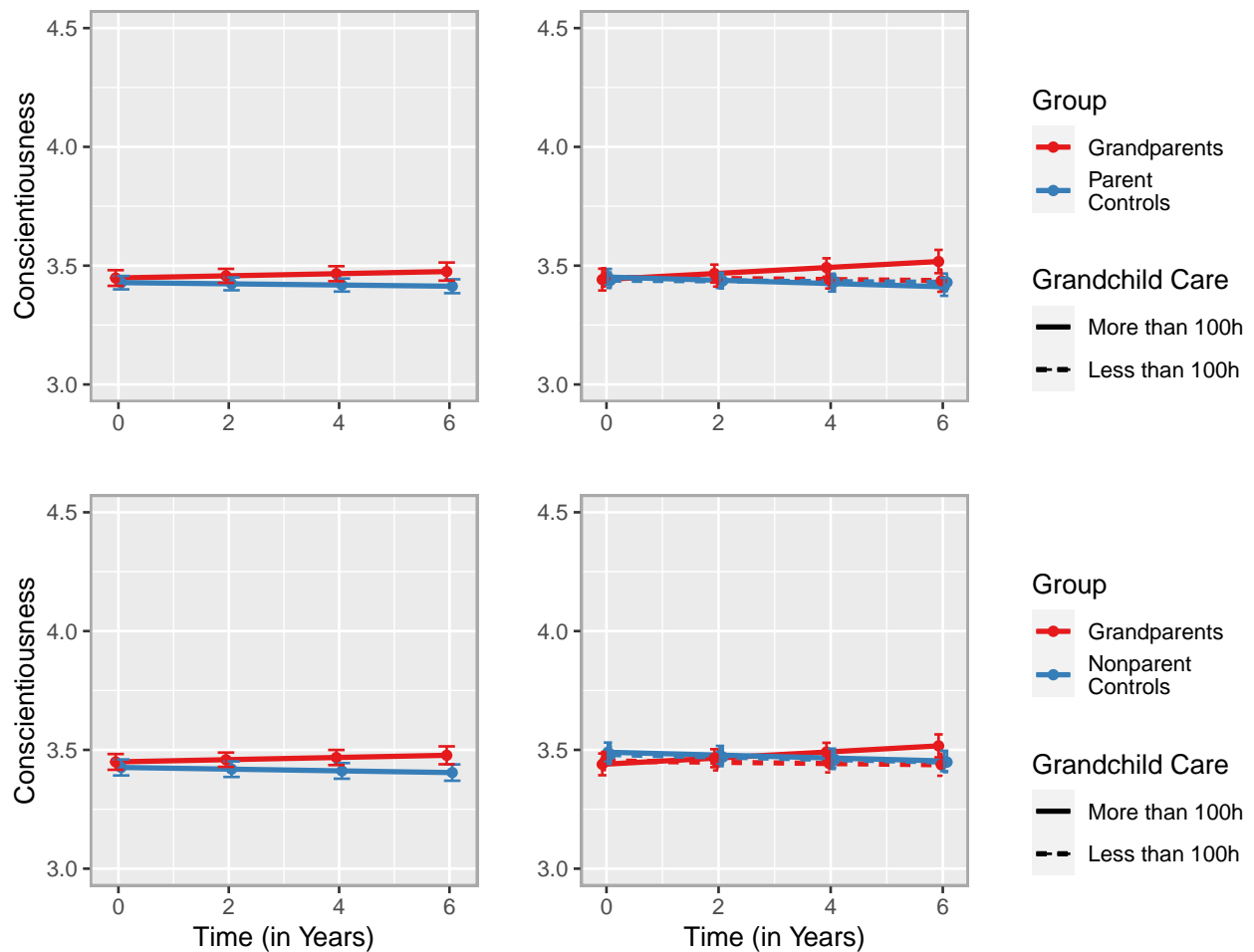
Table 4

Fixed Effects of Conscientiousness Over the Transition to Grandparenthood Moderated by Grandchild Care.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.43	[3.39, 3.47]	169.73	< .001	3.38	[3.33, 3.42]	140.60	< .001
Propensity score, $\hat{\gamma}_{02}$	0.03	[-0.04, 0.10]	0.82	.411	0.24	[0.16, 0.31]	6.16	< .001
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.01]	-0.66	.510	-0.01	[-0.02, 0.00]	-2.38	.017
Grandparent, $\hat{\gamma}_{01}$	0.01	[-0.05, 0.07]	0.44	.659	-0.03	[-0.09, 0.03]	-0.88	.380
Caring, $\hat{\gamma}_{10}$	0.02	[-0.01, 0.06]	1.46	.143	0.01	[-0.02, 0.04]	0.75	.455
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.02, 0.02]	-0.16	.877	0.01	[-0.01, 0.02]	0.56	.573
After-slope * Caring, $\hat{\gamma}_{30}$	-0.01	[-0.02, 0.00]	-1.51	.131	0.00	[-0.01, 0.01]	-0.24	.807
Grandparent * Caring, $\hat{\gamma}_{11}$	-0.06	[-0.14, 0.02]	-1.54	.125	-0.06	[-0.14, 0.02]	-1.49	.136
After-slope * Grandparent * Caring, $\hat{\gamma}_{31}$	0.04	[0.01, 0.07]	2.63	.009	0.03	[0.00, 0.06]	2.20	.028

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *caring* = 1 indicates more than 100 hours of grandchild care since the last assessment.

HRS

Figure 6

Change trajectories of conscientiousness based on the models of moderation by grandchild care (see Table 4). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The plots in the left column are the same as in Figure S11 (basic models) but restricted to the post-transition period for better comparability.

controls in the basic models (see Tables S24 & S25 and Figure S13) or the models including the gender interaction (see Tables S26 & S27 and Figure S13). We also found no evidence for moderation by paid work (see Tables S28 & S29 and Figure S14), grandchild care (see Tables S30 & S31 and Figure S15), or race/ethnicity (see Tables S32 & S33 and Figure

679   S16).

Neuroticism

681   The basic models for neuroticism (see Tables S34 & S35 and Figure S17) showed

682   only minor differences between grandparents and matched controls: Compared to HRS

683   parent controls, HRS grandparents shifted slightly downward in their neuroticism

684   immediately after the transition to grandparenthood (difference in *shift* parameter: $[\hat{\gamma}_{21} +$

685   $\hat{\gamma}_{31}] = $ -0.07, 95% CI [-0.11, -0.02], $p = .003$; suggestive evidence in the nonparent sample:

686   $[\hat{\gamma}_{21} + \hat{\gamma}_{31}] = $ -0.05, 95% CI [-0.09, 0.00], $p = .042$), which was not the case in the LISS

687   samples. The models including the gender interaction (see Tables S36 & S37 and Figure

688   S17) showed one significant effect in the comparison of grandparents and controls: In the

689   HRS, grandfathers, compared to male parent controls, shifted downward in neuroticism

690   directly after the transition to grandparenthood (difference in *shift* parameter: $[\hat{\gamma}_{21} + \hat{\gamma}_{31}]$

691   $= $ -0.15, 95% CI [-0.21, -0.08], $p < .001$). Thus, the effect present in the basic models

692   seemed to be mostly due to differences in the grandfathers (vs. male controls).

693   Grandparents' trajectories of neuroticism as compared to the controls were

694   significantly moderated by paid work in one instance (see Tables S38 & S39 and Figure

695   S18): Compared to working controls, working grandparents increased more strongly in

696   neuroticism in the years before the transition to grandparenthood (difference in *before*

697   parameter; parents: $[\hat{\gamma}_{21} + \hat{\gamma}_{31}] = 0.06$, 95% CI [0.02, 0.10], $p = .001$; nonparents: $[\hat{\gamma}_{21} +$

698   $\hat{\gamma}_{31}] = 0.06$, 95% CI [0.02, 0.09], $p = .002$). There was no evidence that grandparents

699   providing substantial grandchild care differed in neuroticism from grandparents who did

700   not (see Tables S40 & S41 and Figure S19). Neuroticism trajectories were not moderated

701   by race/ethnicity (see Tables S42 & S43 and Figure S20).

Openness

703   For openness, we found a high degree of similarity between grandparents and

704   matched control respondents in their trajectories based on the basic models (see Tables S44

705 & S45 and Figure S21) and models including the gender interaction (see Tables S46 & S47

706 and Figure S21). Grandfathers in the HRS shifted downward in openness in the first

707 assessment after the transition to grandparenthood to a greater extent than the male

708 parent controls (difference in *shift* parameter: $[\hat{\gamma}_{21} + \hat{\gamma}_{31}]$ = -0.09, 95% CI [-0.14, -0.03], *p*

709 = .002). However, this was not the case in the other three analysis samples.

710   The analysis of moderation by performing paid work revealed only one significant

711 effect for openness trajectories (see Tables S48 & S49 and Figure S22): Non-working

712 grandparents increased more strongly in openness post-transition than non-working parent

713 controls ($\hat{\gamma}_{41}$ = 0.04, 95% CI $[0.02, 0.06]$, $p < .001$; suggestive evidence in the nonparent

714 sample: $\hat{\gamma}_{41}$ = 0.03, 95% CI $[0.01, 0.05]$, $p = .015$). We found that grandparents providing

715 substantial grandchild care increased more strongly in openness than matched parent

716 controls (difference in *after* parameter: $[\hat{\gamma}_{21} + \hat{\gamma}_{31}]$ = 0.04, 95% CI [0.01, 0.06], $p = .005$;

717 suggestive evidence in the nonparent sample: $[\hat{\gamma}_{21} + \hat{\gamma}_{31}]$ = 0.03, 95% CI [0.00, 0.05], $p =$

718 .025). However, grandparents who provided substantial grandchild care did not differ

719 significantly from grandparents who did not (see Tables S50 & S51 and Figure S23). We

720 found no evidence for moderation of openness by race/ethnicity (see Tables S52 & S53 and

721 Figure S24).

Life Satisfaction

723   We found no consistent evidence that grandparents' life satisfaction trajectories

724 differed significantly from those of the controls in either the basic models (see Tables S54 &

725 S55 and Figure S25) or the models including the gender interaction (see Tables S56 & S57

726 and Figure S25). There was also no evidence of a moderation of life satisfaction by

727 performing paid work (see Tables S58 & S59 and Figure S26) or grandchild care (see Tables

728 S60 & S61 and Figure S27).

729   Black/African American grandparents increased to a higher degree in life

730 satisfaction after the transition to grandparenthood than Black/African American

731   nonparent controls (difference in *after* parameter: $[\hat{\gamma}_{41} + \hat{\gamma}_{51}] = 0.37$, 95% CI [0.14, 0.59], p

732   $= .001$; suggestive evidence in the parent sample: $[\hat{\gamma}_{41} + \hat{\gamma}_{51}] = 0.28$, 95% CI [0.06, 0.50], p

733   $= .013$; see Tables S62 & S63 and Figure S28). In addition, there was suggestive evidence

734   that Black/African American grandparents' post-transition increases were more pronounced

735   than those of White grandparents (difference in *after* parameter; parents: $[\hat{\gamma}_{50} + \hat{\gamma}_{51}] =$

736   0.28, 95% CI [0.07, 0.49], $p = .009$; nonparents: $[\hat{\gamma}_{50} + \hat{\gamma}_{51}] = 0.29$, 95% CI [0.08, 0.49], $p =$

737   .006). However, the model uncertainty regarding these effects was comparatively high.

Interindividual Differences in Change

739   First, we conducted model fit comparisons between the random intercept models

740   reported previously and models where a random slope variance was estimated, separately

741   for each change parameter because joint random effects modeling frequently led to model

742   nonconvergence. These comparisons showed a substantial amount of interindividual

743   differences in change for all random slopes in all models, as indicated by increases in model

744   fit significant at $p < .001$.

745   Second, we estimated models with heterogeneous random slope variances of the

746   grandparents and each control group to test whether interindividual differences in change

747   were significantly larger in the grandparents. Contrary to hypothesis H2, for agreeableness,

748   conscientiousness, extraversion, and neuroticism, interindividual differences in

749   intraindividual change were greater in the control group for all tested effects (see Tables

750   S64, S65, S66, & S67). In the two HRS samples, assuming group heterogeneity in the

751   random slope variances led to significant improvements in model fit in all model

752   comparisons. In the two LISS samples, this was the case for around half the tests.

753   For openness, interindividual differences in change before the transition to

754   grandparenthood were significantly greater in the HRS grandparents than the nonparent

755   controls (random slope variances of the *before* parameter), *likelihood ratio* $= 57.57$, $p <$

756   .001. This result could not be replicated in the other three samples. The other parameters

of change either did not differ between groups in their random slope variances or had significantly larger random slope variances in the respective control group (see Table S68).

We found larger interindividual differences in grandparents' changes in life satisfaction before the transition to grandparenthood compared to the nonparent controls in the HRS (random slope variances of the *before* parameter), *likelihood ratio* = 115.87, $p <$ .001 (see Table S69). This was not corroborated in the other three analysis samples. Overall, most tests for heterogeneous random slope variances in life satisfaction indicated either non-significant differences or significantly larger random slope variances in the control sample.

Rank-Order Stability

We computed test-retest correlations for the Big Five and life satisfaction for the matched sample and separately for grandparents only and controls only (see Table 5). In 5 out of 24 comparisons, grandparents' test-retest correlation was lower than the respective control group's. However, differences in rank-order stability between grandparents and control respondents did not reach significance in any of these comparisons. Overall, we found no confirmatory evidence in support of hypothesis H3.[8]

---

[8] In addition to the preregistered retest interval, we computed a maximally large interval between the first available assessment before and the last assessment after the transition. Here, 3 out of 24 comparisons indicated that rank-order stability was lower in the grandparents. There was only one significant difference supporting our hypothesis: HRS grandparents' rank-order stability in openness was lower than that of the nonparents, $p <$ .001 (see Table S70). Another analysis also failed to provide convincing evidence that grandparents' rank-order stability was lower: We excluded duplicate control respondents resulting from matching with replacement who might bias results towards greater stability in the controls. Descriptively, 10 out of 24 comparisons showed lower rank-order stability in the grandparents (see Table S71). However, group differences were small and nonsignificant.

Table 5

Rank-Order Stability.

Outcome	Parent controls				Nonparent controls			
	Cor_{all}	Cor_{GP}	Cor_{con}	p	Cor_{all}	Cor_{GP}	Cor_{con}	p
LISS								
Agreeableness	0.78	0.81	0.77	.506	0.73	0.81	0.71	< .001
Conscientiousness	0.79	0.80	0.79	.289	0.79	0.80	0.78	.212
Extraversion	0.80	0.87	0.78	.080	0.85	0.87	0.84	.311
Neuroticism	0.73	0.77	0.71	.038	0.72	0.77	0.70	.164
Openness	0.73	0.80	0.71	.023	0.79	0.80	0.79	.382
Life Satisfaction	0.70	0.66	0.71	.059	0.61	0.66	0.60	.263
HRS								
Agreeableness	0.67	0.70	0.67	.523	0.71	0.70	0.72	.750
Conscientiousness	0.70	0.69	0.70	.196	0.70	0.69	0.70	.362
Extraversion	0.71	0.75	0.70	.011	0.73	0.75	0.73	.001
Neuroticism	0.66	0.71	0.65	.936	0.69	0.71	0.68	.867
Openness	0.70	0.73	0.69	.150	0.76	0.73	0.77	.123
Life Satisfaction	0.49	0.55	0.48	.021	0.54	0.55	0.54	.892

Note. Test-retest correlations as indicators of rank-order stability, and p-values indicating significant group differences therein between grandparents and each control group. The average retest intervals in years are 3.06 ($SD = 0.89$) for the LISS parent sample, 3.05 ($SD = 0.94$) for the LISS nonparent sample, 4.15 ($SD = 0.77$) for the HRS parent sample, and 4.11 ($SD = 0.67$) for the HRS nonparent sample. Cor = correlation; GP = grandparents; con = controls.

⁷⁷⁴   **Discussion**

⁷⁷⁵   In an analysis of first-time grandparents compared to both parent and nonparent

⁷⁷⁶ matched control respondents, we found pronounced stability in the Big Five and life

⁷⁷⁷ satisfaction over the transition to grandparenthood. There were a few isolated effects in

⁷⁷⁸ line with our hypotheses on mean-level increases in agreeableness and conscientiousness,

⁷⁷⁹ and decreases in neuroticism (H1a). However, they were very small in size, only present in

⁷⁸⁰ grandfathers, and not consistent over the two analyzed panel studies (LISS and HRS) or

⁷⁸¹ the two matched control groups (parents and nonparents). We found no robust evidence

⁷⁸² that grandparents providing substantial grandchild care experienced more pronounced

⁷⁸³ positive personality development than those who did not (H1b). Evidence for moderation

⁷⁸⁴ of mean-level trajectories by performing paid work was inconsistent. There was no evidence

⁷⁸⁵ that grandmothers (or grandfathers) reached higher levels of life satisfaction following the

⁷⁸⁶ transition to grandparenthood (H1c). Although interindividual differences in change were

⁷⁸⁷ present for all change parameters, they were only greater in the grandparents than the

⁷⁸⁸ controls in a small minority of model comparisons (H2). Finally, rank-order stability did

⁷⁸⁹ not differ between grandparents and either control group, or it was lower in the control

⁷⁹⁰ group—contrary to expectations (H3).

⁷⁹¹ **Social Investment Principle**

⁷⁹²   We conducted a preregistered, cross-study, and multi-comparison test of the social

⁷⁹³ investment principle (Lodi-Smith & Roberts, 2007; Roberts & Wood, 2006) with

⁷⁹⁴ grandparenthood as a candidate catalyst of personality change (Hutteman et al., 2014).

⁷⁹⁵ We found more evidence of trait stability than of change.

⁷⁹⁶   Still, the direction of the few effects we found generally supported the social

⁷⁹⁷ investment principle—in contrast to development following parenthood (Asselmann &

⁷⁹⁸ Specht, 2020b; van Scheppingen et al., 2016). Below, we summarize our findings supporting

⁷⁹⁹ the social investment principle because even small psychological effects may be meaningful

and involve real-world consequences (Götz et al., 2021). For agreeableness and conscientiousness, we found slight post-transition increases in grandfathers compared to matched male controls that were in line with the social investment principle. However, the effects were not only small but also inconsistent across samples. Agreeableness only increased in the LISS (compared to parents) and conscientiousness only in the HRS (compared to nonparents). In the HRS, neuroticism decreased in grandparents directly following the transition to grandparenthood compared to matched parent respondents. This was not the case in the LISS and only at a lower significance level compared to HRS nonparents.

In contrast, past research—mostly in the domains of well-being and health—found more pronounced effects of the transition to grandparenthood for grandmothers (Di Gessa et al., 2016b, 2019; Sheppard & Monden, 2019; Tanskanen et al., 2019). This has been discussed in the context of grandmothers spending more time with their grandchildren than grandfathers and providing more hours of care (Condon et al., 2013; Di Gessa et al., 2020), thus making a higher social investment.[9] Our results for the Big Five were not in agreement with this line of thought. One possible explanation is that (future) grandfathers were previously more invested in their work lives than in child rearing, and at the end of their career or after retirement, found investments in grandchild care to be a more novel and meaningful transition than grandmothers (StGeorge & Fletcher, 2014; Tanskanen et al., 2021). Currently, however, empirical research specifically on the grandfather role is sparse (for a qualitative approach, see Mann & Leeson, 2010), while the demography of grandparenthood is undergoing sweeping changes, with rising proportions of grandfathers actively involved in grandchild care (see Coall et al., 2016; Mann, 2007). Thus, more research into grandfathers' experience of the transition to grandparenthood is needed to substantiate our tentative findings.

---

[9] In the HRS, a higher proportion of first-time grandmothers ($M = 0.45$, $SD = 0.50$) than grandfathers ($M = 0.41$, $SD = 0.49$) reported that they provided at least 100 hours of grandchild care since the last assessment.

825   We tested paid work and grandchild care as moderators to gain more insight into

826 social investment mechanisms. For conscientiousness, we found that grandparents who

827 were not employed increased in anticipation of the transition to grandparenthood

828 compared to working grandparents (and matched nonworking controls). This could imply

829 that working grandparents did not find as much time for social investment because of the

830 role conflict with the employee/worker role (Goode, 1960; see also, Arpino & Bellani, 2022;

831 Tanskanen et al., 2021). Worth noting, we expected these moderation effects after the

832 transition, when grandparents were able to spend time with their grandchild. However,

833 such post-transition differences did not surface. Results for neuroticism were even less in

834 line with the social investment principle: Working grandparents increased in neuroticism in

835 anticipation of the transition to grandparenthood compared to the matched controls.

836 Regarding moderation by grandchild care, our results suggested that grandparents who

837 provided substantial grandchild care increased slightly more in conscientiousness than

838 grandparents who did not. However, the strength of the evidence was weak and indicates a

839 need for temporally more fine-grained assessments with more extensive instruments of

840 grandchild care (e.g., Vermote et al., 2021; see also Fingerman et al., 2020).

841   In total, evidence in favor of the social investment principle was very thin, and our

842 analyses do not support the view that becoming a grandparent, in and of itself, changes

843 personality in any meaningful way. This adds to other recent empirical tests in the context

844 of parenthood and romantic relationships (Asselmann & Specht, 2020a, 2020b; Spikic et

845 al., 2021; van Scheppingen et al., 2016) that have challenged the original core assumption

846 of personality maturation through age-graded social role transitions. It now seems likely

847 that distinct (or additional) theoretical assumptions and mechanisms are required to

848 explain empirical findings of personality development in middle and older adulthood. First

849 steps in that direction include the recent distinction between social investment and

850 divestment (Schwaba & Bleidorn, 2019) in the context of retirement (for the related

851 distinction between personality maturation and relaxation, see Asselmann & Specht, 2021).

852 Further, personality development may be more closely tied to subjective perceptions of role

853 competency and mastery than to transitions per se (Roberts & Davis, 2016; Roberts &

854 Nickel, 2017).

855   Nonetheless, the possibility remains that preconditions we have not considered have

856 to be met for grandparents to undergo personality development. For example,

857 grandparents might need to live near their grandchild, see them regularly, and provide care

858 above a certain quantity and quality. To our knowledge, however, there are presently no

859 datasets with such detailed information regarding the grandparent role in conjunction with

860 multiple waves of Big Five personality data. Studies on well-being have provided initial

861 evidence that more frequent contact with grandchildren is associated with higher

862 grandparental well-being (Arpino, Bordone, et al., 2018; Danielsbacka et al., 2019;

863 Danielsbacka & Tanskanen, 2016; Dunifon et al., 2020). However, Danielsbacka et

864 al. (2019) noted that this effect is due to between-person differences in grandparents, thus

865 limiting a causal interpretation of frequency of grandchild care as a mechanism of

866 development in psychological characteristics like life satisfaction and personality.

867 **Life Satisfaction**

868   Similar to our findings on the Big Five personality traits, we did not find convincing

869 evidence that life satisfaction changed due to grandparenthood. As mentioned in the

870 introduction, a study of the effects of the transition on first-time grandparents' life

871 satisfaction that used fixed effects regressions also did not discover any positive

872 within-person effects of the transition (Sheppard & Monden, 2019; see also Ates, 2019).

873 Further, in line with this study, we did not find evidence that grandparents who provided

874 substantial grandchild care increased more strongly in life satisfaction than those who did

875 not, and grandparents' life satisfaction trajectories were also not moderated by

876 employment status (Sheppard & Monden, 2019).

877   Overall, evidence has accumulated that there is an association between having

grandchildren and higher life satisfaction on the between-person level—especially for (maternal) non-coresiding grandmothers who provide grandchild care (Danielsbacka et al., 2011, 2022; Danielsbacka & Tanskanen, 2016)—but no within-person effect of the transition. The main reason for this divergence is the presence of *selection* effects. Specifically, through propensity score matching we controlled for confounding (Luhmann et al., 2014; Thoemmes & Kim, 2011; VanderWeele et al., 2020), but its influence was present in previous studies.

In an exploratory analysis, Black/African American grandparents—usually lower in life satisfaction compared to White HRS respondents (e.g., Zhang et al., 2017)—increased in life satisfaction following the transition to grandparenthood bringing them up on par with White respondents. This is in line with cross-sectional data indicating no ethnic differences in life satisfaction between African American and White grandmothers (Goodman & Silverstein, 2006). Corroboration of this tentative finding in other samples should be awaited, though.

Interindividual Differences in Change

Analyzing how grandparents differed interindividually in their trajectories of change provided additional insight beyond the analysis of mean-level change. All parameters of change exhibited considerable interindividual differences. Similar to Denissen et al. (2019), who found model fit improvements with random slopes in most models (see also Doré & Bolger, 2018), respondents—both grandparents and matched controls—deviated to a considerable extent from average trajectories.

We expected larger interindividual differences in grandparents because life events differ in their impact on daily life and in the degree to which they are perceived as meaningful or emotionally significant (Doré & Bolger, 2018; Luhmann et al., 2020). Another reason for expecting heterogeneity in the individual trajectories were the considerable differences between grandparents in the amount of grandparental investment

(e.g., Danielsbacka et al., 2022) and competing role demands (e.g., Arpino & Bellani, 2022) present in our samples. Our results, however, indicated that interindividual differences were larger in the controls than the grandparents for many models, or not significantly different between groups. Only in a small minority of tests were interindividual differences significantly larger in grandparents (concerning the linear slope in anticipation of grandparenthood for openness and life satisfaction). Overall, we did not find evidence supporting the hypothesis that interindividual differences in change would be larger in the grandparents than the controls (H2).

It is important to keep in mind that most previous studies do not compare interindividual differences in personality change between an event group and a comparison group (even if they use comparison groups for the main analyses; Denissen et al., 2019; Schwaba & Bleidorn, 2019; cf. Jackson & Beck, 2021). Interindividual differences in personality change are substantial up until around 70 years of age (Schwaba & Bleidorn, 2018). Regarding the substantive question of how the transition to grandparenthood affects interindividual differences in change, we propose that it is more informative to test grandparents' variability in change against well-matched control groups than against no groups.

Recently, Jackson and Beck (2021) presented evidence that the experience of sixteen commonly analyzed life events was mostly associated with decreases in interindividual variation in the Big Five compared to those not experiencing the respective event. They used a comparable approach to ours but in a SEM latent growth curve framework and without accounting for pre-existing group differences (i.e., without matching). Their results based on the German SOEP data suggested—contrary to their expectations—that most life events made people *more* similar to each other (Jackson & Beck, 2021). Thus, taken together with our results, it seems that the assumption that life events and transitions ostensibly produce increased heterogeneity between people needs to be scrutinized in future studies.

Rank-Order Stability

We also investigated grandparents' rank-order stability in the Big Five personality traits and life satisfaction. We expected lower stability over the transition to grandparenthood in grandparents compared to the matched controls based on the assumption that grandparents' personality is reorganized through the experience of the event and the addition of the new social role. Conceptually, rank-order stability represents to which extent individual differences endure over time and it can be low even in the absence of mean-level changes if traits change nonsystematically. Empirically, though, we did not find evidence supporting our hypothesis (H3): Descriptively, rank-order stability was highly similar in most comparisons of grandparents and controls, and it was not significantly lower in these comparisons. In a recent study of the effects of eight different life events on the development of the Big Five personality traits and life satisfaction (Denissen et al., 2019), comparably high rank-order stability was reported in the event groups. Only particularly adverse events such as widowhood and disability significantly lowered respondents' rank-order stability (Chopik, 2018; Denissen et al., 2019).

Regarding the Big Five's general age trajectories of rank-order stability, support for inverted U-shape trajectories was recently strengthened in a study of two panel data sets (Seifert et al., 2021). This study also explored that health deterioration accounted for parts of the decline of personality stability in old age. Therefore, it is possible that in later developmental phases (see also Hutteman et al., 2014) rank-order stability of personality is largely influenced by health status and less by normative life events. In the context of grandparenthood, this relates to research into health benefits (Chung & Park, 2018; Condon et al., 2018; Di Gessa et al., 2016a, 2016b; cf. Ates, 2017) and decreases to mortality risk associated with grandparenthood or grandchild care (Choi, 2020; Christiansen, 2014; Hilbrand et al., 2017; cf. Ellwardt et al., 2021). Grandparenthood might therefore have a time-lagged effect on personality stability through protective effects on health. However, with the currently available data, such a mediating effect cannot be

reliably recovered (under realistic assumptions; Rohrer et al., 2021).

Limitations and Future Directions

A number of limitations need to be addressed: First, there remains some doubt whether we were able to follow truly socially invested grandparents over time. More detailed information regarding a grandparent's relationship with their first and later grandchildren and the level of care a grandparent provides would be a valuable source of information on social investment, as would information on constraining factors such as length and cost of travel between grandparent and grandchild. One way to obtain comprehensive information on mechanisms of grandparental development would be a measurement burst design in a sample of grandparents with diverse social backgrounds (see Crawford et al., 2022; Springstein et al., 2022). This would allow differentiating contexts of social investment while also providing insight into daily-life social activities (e.g., Dunifon et al., 2020) and their medium- to long-term influence on personality development (Wrzus & Roberts, 2017). On a similar note, we did not examine grandparents' subjective perception of the transition to grandparenthood in terms of the emotional significance, meaningfulness, and impact on daily lives, which might be responsible for differential individual change trajectories (Haehner et al., 2021; Kritzler et al., 2021; Luhmann et al., 2020). Grandparents' perception of potential role conflicts (Goode, 1960), and whether they perceive caregiving as a burden or obligation (Xu et al., 2017), could also uncover mechanisms of personality development.

Second, a causal interpretation of our results rests on a number of assumptions that are not directly testable with the data (Li, 2013; Stuart, 2010): We assumed that we picked the right sets of covariates, that our model to estimate the propensity score was correctly specified, and that there was no substantial remaining bias due to unmeasured confounding. Importantly, we selected covariates following state-of-the-art recommendations and substantiated each covariate's selection explicitly within our

preregistration. Regarding the propensity score estimation, we computed grandparents' propensity scores at a specific time point at least two years before the transition to grandparenthood, which had the advantages that (*1*) the covariates were uncontaminated by anticipation of the transition, and (*2*) the matched controls had a clear counterfactual timeline of transition (for similar approaches, see Balbo & Arpino, 2016; Krämer & Rodgers, 2020; van Scheppingen & Leopold, 2020). It also has to be emphasized that the timing of measurements might have missed more short-term effects of grandparenthood playing out over months instead of years.

Third, our results only pertain to the countries for which our data are representative on a population level: the Netherlands and the United States. Personality development has been examined cross-culturally (e.g., Bleidorn et al., 2013; Chopik & Kitayama, 2018): On the one hand, these studies showed universal average patterns of positive personality development over the life span. On the other hand, they emphasized cultural differences regarding norms and values and the temporal onset of social roles (see Arshad & Chung, 2022). For grandparenthood, there are substantial demographic differences between countries (Leopold & Skopek, 2015), as well as differences in public child care systems that may demand different levels of grandparental involvement (Bordone et al., 2017; Hank & Buber, 2009). In the Netherlands, people become grandparents six years later on average than in the United States (Leopold & Skopek, 2015). Furthermore, although both countries have largely market-based systems for early child care, parents in the Netherlands on average have access to more extensive childcare services through (capped) governmental benefits (OECD, 2020). Despite these differences, our results from the Dutch and US samples did not indicate systematic discrepancies.

Conclusion

Do personality traits change over the transition to grandparenthood? In two nationally representative panel studies in a preregistered propensity score matching design,

Big Five personality traits and life satisfaction remained predominantly stable in first-time grandparents over this transition compared to matched parents and nonparents. We found slight post-transition increases to grandparents' agreeableness and conscientiousness in line with the social investment principle. However, these effects were minuscule and inconsistent across analysis samples. In addition, our analyses revealed (*1*) a lack of consistent moderators of personality development, (*2*) interindividual differences in change that were mostly smaller in grandparents than in matched respondents, and (*3*) comparable rank-order stability in grandparents and matched respondents. Thus, we conclude that the transition to grandparenthood did not act as a straightforwardly important developmental task driving personality development (as previously proposed, see Hutteman et al., 2014). With more detailed assessment of the grandparent role, future research can investigate whether personality development occurs in grandparents with specific degrees of role investment.

Acknowledgements

References

Aassve, A., Luppi, F., & Mencarini, L. (2021). A first glance into the black box of life satisfaction surrounding childbearing. *Journal of Population Research.* https://doi.org/10.1007/s12546-021-09267-z

Allemand, M., Zimprich, D., & Martin, M. (2008). Long-term correlated change in personality traits in old age. *Psychology and Aging, 23*(3), 545–557. https://doi.org/10.1037/a0013239

Anglim, J., Horwood, S., Smillie, L. D., Marrero, R. J., & Wood, J. K. (2020). Predicting psychological and subjective well-being from personality: A meta-analysis. *Psychological Bulletin, 146*(4), 279–323. https://doi.org/10.1037/bul0000226

Anusic, I., & Schimmack, U. (2016). Stability and change of personality traits, self-esteem, and well-being: Introducing the meta-analytic stability and change model of retest correlations. *Journal of Personality and Social Psychology, 110*(5), 766–781. https://doi.org/10.1037/pspp0000066

Ardelt, M. (2000). Still stable after all these years? Personality stability theory revisited. *Social Psychology Quarterly, 63*(4), 392–405. https://doi.org/10.2307/2695848

Arpino, B., & Bellani, D. (2022). Juggling Grandchild Care and Labor Force Participation: The Effect on Psychological Wellbeing of Older Women. *Frontiers in Sociology, 6.*

Arpino, B., & Bordone, V. (2017). Regular provision of grandchild care and participation in social activities. *Review of Economics of the Household, 15*(1), 135–174. https://doi.org/10.1007/s11150-016-9322-4

Arpino, B., Bordone, V., & Balbo, N. (2018). Grandparenting, education and subjective well-being of older Europeans. *European Journal of Ageing, 15*(3), 251–263. https://doi.org/10.1007/s10433-018-0467-2

Arpino, B., & Gómez-León, M. (2020). Consequences on depression of combining

grandparental childcare with other caregiving roles. *Aging & Mental Health*, *24*(8), 1263–1270. https://doi.org/10.1080/13607863.2019.1584788

Arpino, B., Gumà, J., & Julià, A. (2018). Family histories and the demography of grandparenthood. *Demographic Research*, *39*(42), 1105–1150. https://doi.org/10.4054/DemRes.2018.39.42

Arshad, M., & Chung, J. (2022). Practical recommendations for considering culture, race, and ethnicity in personality psychology. *Social and Personality Psychology Compass*, *16.* https://doi.org/10.1111/spc3.12656

Asselmann, E., & Specht, J. (2020a). Taking the ups and downs at the rollercoaster of love: Associations between major life events in the domain of romantic relationships and the Big Five personality traits. *Developmental Psychology*, *56*(9), 1803–1816. https://doi.org/10.1037/dev0001047

Asselmann, E., & Specht, J. (2021). Personality maturation and personality relaxation: Differences of the Big Five personality traits in the years around the beginning and ending of working life. *Journal of Personality*, Advance Online Publication. https://doi.org/10.1111/jopy.12640

Asselmann, E., & Specht, J. (2020b). Testing the Social Investment Principle Around Childbirth: Little Evidence for Personality Maturation Before and After Becoming a Parent. *European Journal of Personality*, Advance Online Publication. https://doi.org/10.1002/per.2269

Ates, M. (2017). Does grandchild care influence grandparents' self-rated health? Evidence from a fixed effects approach. *Social Science & Medicine*, *190*, 67–74. https://doi.org/10.1016/j.socscimed.2017.08.021

Ates, M. (2019). *Well-Being of Grandparents in Germany* [PhD thesis]. Universität zu Köln.

Ates, M., Bordone, V., & Arpino, B. (2021). Does grandparental child-care provision affect number, satisfaction and with whom leisure activities are done? *Ageing and Society*, 1–23. https://doi.org/10.1017/S0144686X2100009X

Aust, F. (2019). *Citr: 'RStudio' add-in to insert markdown citations.* https://github.com/crsh/citr

Aust, F., & Barth, M. (2020). *papaja: Prepare reproducible APA journal articles with R Markdown.* https://github.com/crsh/papaja

Austin, P. C. (2011). An introduction to propensity score methods for reducing the effects of confounding in observational studies. *Multivariate Behavioral Research*, *46*(3), 399–424. https://doi.org/10.1080/00273171.2011.568786

Austin, P. C. (2017). Double propensity-score adjustment: A solution to design bias or bias due to incomplete matching. *Statistical Methods in Medical Research*, *26*(1), 201–222. https://doi.org/10.1177/0962280214543508

Baird, B. M., Lucas, R. E., & Donnellan, M. B. (2010). Life satisfaction across the lifespan: Findings from two nationally representative panel studies. *Social Indicators Research*, *99*(2), 183–203. https://doi.org/10.1007/s11205-010-9584-9

Balbo, N., & Arpino, B. (2016). The role of family orientations in shaping the effect of fertility on subjective well-being: A propensity score matching approach. *Demography*, *53*(4), 955–978. https://doi.org/10.1007/s13524-016-0480-z

Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (2006). Life Span Theory in Developmental Psychology. In R. M. Lerner & W. Damon (Eds.), *Handbook of child psychology: Theoretical models of human development* (pp. 569–664). John Wiley & Sons Inc.

Barth, M. (2021). *tinylabels: Lightweight variable labels.* https://cran.r-project.org/package=tinylabels

Bates, D., & Maechler, M. (2021). *Matrix: Sparse and dense matrix classes and methods.* https://CRAN.R-project.org/package=Matrix

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software, 67*(1), 1–48. https://doi.org/10.18637/jss.v067.i01

Beck, E. D., & Jackson, J. J. (2021). A Mega-Analysis of Personality Prediction: Robustness and Boundary Conditions. *Journal of Personality and Social Psychology, In Press.* https://doi.org/10.31234/osf.io/7pg9b

Bengtson, V. L. (2001). Beyond the Nuclear Family: The Increasing Importance of Multigenerational Bonds. *Journal of Marriage and Family, 63*(1), 1–16. https://doi.org/10.1111/j.1741-3737.2001.00001.x

Benjamin, D. J., Berger, J. O., Clyde, M., Wolpert, R. L., Johnson, V. E., Johannesson, M., Dreber, A., Nosek, B. A., Wagenmakers, E. J., Berk, R., & Brembs, B. (2018). Redefine statistical significance. *Nature Human Behavior, 2*, 6–10. https://doi.org/10.1038/s41562-017-0189-z

Bernaards, C. A., & I.Jennrich, R. (2005). Gradient projection algorithms and software for arbitrary rotation criteria in factor analysis. *Educational and Psychological Measurement, 65*, 676–696.

Bleidorn, W., Hopwood, C. J., Back, M. D., Denissen, J. J. A., Hennecke, M., Hill, P. L., Jokela, M., Kandler, C., Lucas, R. E., Luhmann, M., Orth, U., Roberts, B. W., Wagner, J., Wrzus, C., & Zimmermann, J. (2021). Personality Trait Stability and Change. *Personality Science, 2*(1), 1–20. https://doi.org/10.5964/ps.6009

Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (2018). Life events and personality trait change. *Journal of Personality, 86*(1), 83–96. https://doi.org/10.1111/jopy.12286

Bleidorn, W., Klimstra, T. A., Denissen, J. J. A., Rentfrow, P. J., Potter, J., & Gosling, S.

D. (2013). Personality Maturation Around the World: A Cross-Cultural Examination of Social-Investment Theory. *Psychological Science*, *24*(12), 2530–2540. https://doi.org/10.1177/0956797613498396

Bleidorn, W., & Schwaba, T. (2018). Retirement is associated with change in self-esteem. *Psychology and Aging*, *33*(4), 586–594. https://doi.org/10.1037/pag0000253

Bleidorn, W., & Schwaba, T. (2017). Personality development in emerging adulthood. In J. Specht (Ed.), *Personality Development Across the Lifespan* (pp. 39–51). Academic Press. https://doi.org/10.1016/B978-0-12-804674-6.00004-1

Bordone, V., Arpino, B., & Aassve, A. (2017). Patterns of grandparental child care across Europe: The role of the policy context and working mothers' need. *Ageing and Society*, *37*(4), 845–873. https://doi.org/10.1017/S0144686X1600009X

Brüderl, J., & Ludwig, V. (2015). *Fixed-Effects Panel Regression* (H. Best & C. Wolf, Eds.). SAGE.

Burgette, L. F., & Reiter, J. P. (2010). Multiple Imputation for Missing Data via Sequential Regression Trees. *American Journal of Epidemiology*, *172*(9), 1070–1076. https://doi.org/10.1093/aje/kwq260

Chang, W., Cheng, J., Allaire, J., Sievert, C., Schloerke, B., Xie, Y., Allen, J., McPherson, J., Dipert, A., & Borges, B. (2021). *Shiny: Web application framework for r.* https://CRAN.R-project.org/package=shiny

Choi, S.-w. E. (2020). Grandparenting and Mortality: How Does Race-Ethnicity Matter? *Journal of Health and Social Behavior*, *61*(1), 96–112. https://doi.org/10.1177/0022146520903282

Chopik, W. J. (2018). Does personality change following spousal bereavement? *Journal of Research in Personality*, *72*, 10–21. https://doi.org/10.1016/j.jrp.2016.08.010

Chopik, W. J., & Kitayama, S. (2018). Personality change across the life span: Insights

from a cross-cultural, longitudinal study. *Journal of Personality, 86*(3), 508–521. https://doi.org/10.1111/jopy.12332

Christiansen, S. G. (2014). The association between grandparenthood and mortality. *Social Science & Medicine, 118*, 89–96. https://doi.org/10.1016/j.socscimed.2014.07.061

Chung, S., & Park, A. (2018). The longitudinal effects of grandchild care on depressive symptoms and physical health of grandmothers in South Korea: A latent growth approach. *Aging & Mental Health, 22*(12), 1556–1563. https://doi.org/10.1080/13607863.2017.1376312

Coall, D. A., & Hertwig, R. (2011). Grandparental Investment: A Relic of the Past or a Resource for the Future? *Current Directions in Psychological Science, 20*(2), 93–98. https://doi.org/10.1177/0963721411403269

Coall, D. A., Hilbrand, S., Sear, R., & Hertwig, R. (2016). A New Niche? The Theory of Grandfather Involvement. In A. Buchanan & A. Rotkirch (Eds.), *Grandfathers: Global Perspectives* (pp. 21–44). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-56338-5_2

Coall, D. A., Hilbrand, S., Sear, R., & Hertwig, R. (2018). Interdisciplinary perspectives on grandparental investment: A journey towards causality. *Contemporary Social Science, 13*(2), 159–174. https://doi.org/10.1080/21582041.2018.1433317

Condon, J., Corkindale, C., Luszcz, M., & Gamble, E. (2013). The Australian First-time Grandparents Study: Time spent with the grandchild and its predictors. *Australasian Journal on Ageing, 32*(1), 21–27. https://doi.org/10.1111/j.1741-6612.2011.00588.x

Condon, J., Luszcz, M., & McKee, I. (2018). The transition to grandparenthood: A prospective study of mental health implications. *Aging & Mental Health, 22*(3), 336–343. https://doi.org/10.1080/13607863.2016.1248897

Cook, T. D., Zhu, N., Klein, A., Starkey, P., & Thomas, J. (2020). How much bias results if a quasi-experimental design combines local comparison groups, a pretest outcome measure and other covariates?: A within study comparison of preschool effects. *Psychological Methods*, Advance Online Publication. https://doi.org/10.1037/met0000260

Costa, P. T., McCrae, R. R., & Löckenhoff, C. E. (2019). Personality Across the Life Span. *Annual Review of Psychology*, *70*(1), 423–448. https://doi.org/10.1146/annurev-psych-010418-103244

Crawford, J. L., English, T., & Braver, T. S. (2022). Incorporating ecological momentary assessment into multimethod investigations of cognitive aging: Promise and practical considerations. *Psychology and Aging*, *37*(1), 84–96. https://doi.org/10.1037/pag0000646

Damian, R. I., Spengler, M., Sutu, A., & Roberts, B. W. (2019). Sixteen going on sixty-six: A longitudinal study of personality stability and change across 50 years. *Journal of Personality and Social Psychology*, *117*(3), 674–695. https://doi.org/10.1037/pspp0000210

Danielsbacka, M., Křenková, L., & Tanskanen, A. O. (2022). Grandparenting, health, and well-being: A systematic literature review. *European Journal of Ageing*. https://doi.org/10.1007/s10433-021-00674-y

Danielsbacka, M., & Tanskanen, A. O. (2016). The association between grandparental investment and grandparents' happiness in Finland. *Personal Relationships*, *23*(4), 787–800. https://doi.org/10.1111/pere.12160

Danielsbacka, M., Tanskanen, A. O., Coall, D. A., & Jokela, M. (2019). Grandparental childcare, health and well-being in Europe: A within-individual investigation of longitudinal data. *Social Science & Medicine*, *230*, 194–203. https://doi.org/10.1016/j.socscimed.2019.03.031

Danielsbacka, M., Tanskanen, A. O., Jokela, M., & Rotkirch, A. (2011). Grandparental Child Care in Europe: Evidence for Preferential Investment in More Certain Kin. *Evolutionary Psychology*, *9*(1), 147470491100900102. https://doi.org/10.1177/147470491100900102

Denissen, J. J. A., Geenen, R., Soto, C. J., John, O. P., & van Aken, M. A. G. (2020). The Big Five Inventory2: Replication of Psychometric Properties in a Dutch Adaptation and First Evidence for the Discriminant Predictive Validity of the Facet Scales. *Journal of Personality Assessment*, *102*(3), 309–324. https://doi.org/10.1080/00223891.2018.1539004

Denissen, J. J. A., Luhmann, M., Chung, J. M., & Bleidorn, W. (2019). Transactions between life events and personality traits across the adult lifespan. *Journal of Personality and Social Psychology*, *116*(4), 612–633. https://doi.org/10.1037/pspp0000196

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Di Gessa, G., Bordone, V., & Arpino, B. (2019). Becoming a Grandparent and Its Effect on Well-Being: The Role of Order of Transitions, Time, and Gender. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, Advance Online Publication. https://doi.org/10.1093/geronb/gbz135

Di Gessa, G., Glaser, K., & Tinker, A. (2016a). The Health Impact of Intensive and Nonintensive Grandchild Care in Europe: New Evidence From SHARE. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *71*(5), 867–879. https://doi.org/10.1093/geronb/gbv055

Di Gessa, G., Glaser, K., & Tinker, A. (2016b). The impact of caring for grandchildren on the health of grandparents in Europe: A lifecourse approach. *Social Science &*

Medicine, *152*, 166–175. https://doi.org/10.1016/j.socscimed.2016.01.041

Di Gessa, G., Zaninotto, P., & Glaser, K. (2020). Looking after grandchildren: Gender differences in "when," "what," and "why": Evidence from the English Longitudinal Study of Ageing. *Demographic Research*, *43*(53), 1545–1562. https://doi.org/10.4054/DemRes.2020.43.53

Doré, B., & Bolger, N. (2018). Population- and individual-level changes in life satisfaction surrounding major life stressors. *Social Psychological and Personality Science*, *9*(7), 875–884. https://doi.org/10.1177/1948550617727589

Dunifon, R. E., Musick, K. A., & Near, C. E. (2020). Time with Grandchildren: Subjective Well-Being Among Grandparents Living with Their Grandchildren. *Social Indicators Research*, *148*(2), 681–702. https://doi.org/10.1007/s11205-019-02206-9

Eid, M., & Larsen, R. J. (2008). *The science of subjective well-being.* Guilford Press.

Ellwardt, L., Hank, K., & Mendes de Leon, C. F. (2021). Grandparenthood and risk of mortality: Findings from the Health and Retirement Study. *Social Science & Medicine*, *268*, 113371. https://doi.org/10.1016/j.socscimed.2020.113371

Elwert, F., & Winship, C. (2014). Endogenous Selection Bias: The Problem of Conditioning on a Collider Variable. *Annual Review of Sociology*, *40*(1), 31–53. https://doi.org/10.1146/annurev-soc-071913-043455

Fingerman, K. L., Huo, M., & Birditt, K. S. (2020). A Decade of Research on Intergenerational Ties: Technological, Economic, Political, and Demographic Changes. *Journal of Marriage and Family*, *82*(1), 383–403. https://doi.org/10.1111/jomf.12604

Fox, J., & Weisberg, S. (2019). *An R companion to applied regression* (Third). Sage.

Fox, J., Weisberg, S., & Price, B. (2020a). *Car: Companion to applied regression* [Manual].

Fox, J., Weisberg, S., & Price, B. (2020b). *CarData: Companion to applied regression data*

sets. https://CRAN.R-project.org/package=carData

Genz, A., & Bretz, F. (2009). *Computation of multivariate normal and t probabilities*. Springer-Verlag.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, *4*(1), 26–42. https://doi.org/10.1037/1040-3590.4.1.26

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. *Personality Psychology in Europe*, *7*(1), 7–28.

Golle, J., Rose, N., Göllner, R., Spengler, M., Stoll, G., Hübner, N., Rieger, S., Trautwein, U., Lüdtke, O., Roberts, B. W., & Nagengast, B. (2019). School or Work? The Choice May Change Your Personality. *Psychological Science*, *30*(1), 32–42. https://doi.org/10.1177/0956797618806298

Goode, W. J. (1960). A theory of role strain. *American Sociological Review*, *25*, 483–496. https://doi.org/10.2307/2092933

Goodman, C. C., & Silverstein, M. (2006). Grandmothers Raising Grandchildren: Ethnic and Racial Differences in Well-Being Among Custodial and Coparenting Families. *Journal of Family Issues*, *27*(11), 1605–1626. https://doi.org/10.1177/0192513X06291435

Götz, F. M., Gosling, S. D., & Rentfrow, P. J. (2021). Small Effects: The Indispensable Foundation for a Cumulative Psychological Science. *Perspectives on Psychological Science*, Advance Online Publication. https://doi.org/10.1177/1745691620984483

Graham, E. K., Weston, S. J., Gerstorf, D., Yoneda, T. B., Booth, T., Beam, C. R., Petkus, A. J., Drewelies, J., Hall, A. N., Bastarache, E. D., Estabrook, R., Katz, M. J., Turiano, N. A., Lindenberger, U., Smith, J., Wagner, G. G., Pedersen, N. L., Allemand, M., Spiro Iii, A., . . . Mroczek, D. K. (2020). Trajectories of Big Five

Personality Traits: A Coordinated Analysis of 16 Longitudinal Samples. *European Journal of Personality*, Advance Online Publication. https://doi.org/10.1002/per.2259

Greenland, S. (2003). Quantifying biases in causal models: Classical confounding vs collider-stratification bias. *Epidemiology, 14*(3), 300–306. https://doi.org/10.1097/01.EDE.0000042804.12056.6C

Greenland, S., & Finkle, W. D. (1995). A Critical Look at Methods for Handling Missing Covariates in Epidemiologic Regression Analyses. *American Journal of Epidemiology, 142*(12), 1255–1264. https://doi.org/10.1093/oxfordjournals.aje.a117592

Haehner, P., Rakhshani, A., Fassbender, I., Lucas, R. E., Donnellan, M. B., & Luhmann, M. (2021). Perception of Major Life Events and Personality Trait Change. *PsyArXiv.* https://doi.org/10.31234/osf.io/kxz2u

Hagestad, G. O., & Neugarten, B. L. (1985). Age and the life course. In E. Shanas & R. Binstock (Eds.), *Handbook of aging and the social sciences.* Van Nostrand and Reinhold.

Hallberg, K., Cook, T. D., Steiner, P. M., & Clark, M. H. (2018). Pretest Measures of the Study Outcome and the Elimination of Selection Bias: Evidence from Three Within Study Comparisons. *Prevention Science, 19*(3), 274–283. https://doi.org/10.1007/s11121-016-0732-6

Hank, K., & Buber, I. (2009). Grandparents Caring for their Grandchildren: Findings From the 2004 Survey of Health, Ageing, and Retirement in Europe. *Journal of Family Issues, 30*(1), 53–73. https://doi.org/10.1177/0192513X08322627

Harrell Jr, F. E. (2021). *Hmisc: Harrell miscellaneous.* https://CRAN.R-project.org/package=Hmisc

Hayslip, B., Fruhauf, C. A., & Dolbin-MacNab, M. L. (2019). Grandparents Raising
Grandchildren: What Have We Learned Over the Past Decade? *The Gerontologist*,
59(3), e152–e163. https://doi.org/10.1093/geront/gnx106

Henry, L., & Wickham, H. (2020). *Purrr: Functional programming tools.*
https://CRAN.R-project.org/package=purrr

Hentschel, S., Eid, M., & Kutscher, T. (2017). The Influence of Major Life Events and
Personality Traits on the Stability of Affective Well-Being. *Journal of Happiness
Studies*, *18*(3), 719–741. https://doi.org/10.1007/s10902-016-9744-y

Hilbrand, S., Coall, D. A., Gerstorf, D., & Hertwig, R. (2017). Caregiving within and
beyond the family is associated with lower mortality for the caregiver: A
prospective study. *Evolution and Human Behavior*, *38*(3), 397–403.
https://doi.org/10.1016/j.evolhumbehav.2016.11.010

Ho, D. E., Imai, K., King, G., & Stuart, E. A. (2011). MatchIt: Nonparametric
preprocessing for parametric causal inference. *Journal of Statistical Software*, *42*(8),
1–28.

Hoffman, L. (2015). *Longitudinal analysis: Modeling within-person fluctuation and change.*
Routledge/Taylor & Francis Group.

Hoffman, L., & Walters, R. W. (2022). Catching Up on Multilevel Modeling. *Annual
Review of Psychology*, *73*. https://doi.org/10.31234/osf.io/j8x9k

Hothorn, T. (2019). *TH.data: TH's data archive.*
https://CRAN.R-project.org/package=TH.data

Hothorn, T., Bretz, F., & Westfall, P. (2008). Simultaneous inference in general parametric
models. *Biometrical Journal*, *50*(3), 346–363.

Hutteman, R., Hennecke, M., Orth, U., Reitz, A. K., & Specht, J. (2014). Developmental
Tasks as a Framework to Study Personality Development in Adulthood and Old

Age. *European Journal of Personality*, *28*(3), 267–278.

https://doi.org/10.1002/per.1959

Infurna, F. J., Gerstorf, D., & Lachman, M. E. (2020). Midlife in the 2020s: Opportunities
and challenges. *American Psychologist*, *75*(4), 470–485.
https://doi.org/10.1037/amp0000591

Jackson, J. J., & Beck, E. D. (2021). Personality Development Beyond the Mean: Do Life
Events Shape Personality Variability, Structure, and Ipsative Continuity? *The
Journals of Gerontology: Series B*, *76*(1), 20–30.
https://doi.org/10.1093/geronb/gbaa093

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big
Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John,
R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research*
(pp. 114–158). The Guilford Press.

John, O. P., & Srivastava, S. (1999). The Big Five Trait taxonomy: History, measurement,
and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of
personality: Theory and research, 2nd ed.* (pp. 102–138). Guilford Press.

Johnson, A. B., & Rodgers, J. L. (2006). The impact of having children on the lives of
women: The Effects of Children Questionnaire. *Journal of Applied Social
Psychology*, *36*(11), 2685–2714. https://doi.org/10.1111/j.0021-9029.2006.00123.x

Kandler, C., Kornadt, A. E., Hagemeyer, B., & Neyer, F. J. (2015). Patterns and sources
of personality development in old age. *Journal of Personality and Social Psychology*,
109(1), 175–191. https://doi.org/10.1037/pspp0000028

Kandler, C., Zimmermann, J., & Mcadams, D. (2014). Core and Surface Characteristics
for the Description and Theory of Personality Differences and Development.
European Journal of Personality, *28*(3), 231–243. https://doi.org/10.1002/per.1952

1353 Kim, H.-J., Kang, H., & Johnson-Motoyama, M. (2017). The psychological well-being of

1354   grandparents who provide supplementary grandchild care: A systematic review.

1355   *Journal of Family Studies*, *23*(1), 118–141.

1356   https://doi.org/10.1080/13229400.2016.1194306

1357 Krämer, M. D., & Rodgers, J. L. (2020). The impact of having children on domain-specific

1358   life satisfaction: A quasi-experimental longitudinal investigation using the

1359   Socio-Economic Panel (SOEP) data. *Journal of Personality and Social Psychology*,

1360   *119*(6), 1497–1514. https://doi.org/10.1037/pspp0000279

1361 Kritzler, S., Rakhshani, A., Terwiel, S., Fassbender, I., Donnellan, B., Lucas, R. E., &

1362   Luhmann, M. (2021). How Are Common Major Life Events Perceived? Exploring

1363   Differences Between and Variability of Different Typical Event Profiles and Raters.

1364   *PsyArXiv*. https://doi.org/10.31234/osf.io/fncz3

1365 Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest package: Tests

1366   in linear mixed effects models. *Journal of Statistical Software*, *82*(13), 1–26.

1367   https://doi.org/10.18637/jss.v082.i13

1368 Lachman, M. E., & Weaver, S. L. (1997). *The Midlife Development Inventory (MIDI)*

1369   *personality scales: Scale construction and scoring.* Brandeis University.

1370 Leopold, T., & Skopek, J. (2015). The Demography of Grandparenthood: An International

1371   Profile. *Social Forces*, *94*(2), 801–832. https://doi.org/10.1093/sf/sov066

1372 Li, M. (2013). Using the Propensity Score Method to Estimate Causal Effects: A Review

1373   and Practical Guide. *Organizational Research Methods*, *16*(2), 188–226.

1374   https://doi.org/10.1177/1094428112447816

1375 Lodi-Smith, J., & Roberts, B. W. (2007). Social Investment and Personality: A

1376   Meta-Analysis of the Relationship of Personality Traits to Investment in Work,

1377   Family, Religion, and Volunteerism. *Personality and Social Psychology Review*,

1378   *11*(1), 68–86. https://doi.org/10.1177/1088868306294590

Lucas, R. E., & Donnellan, M. B. (2011). Personality development across the life span: Longitudinal analyses with a national sample from Germany. *Journal of Personality and Social Psychology, 101*(4), 847–861. https://doi.org/10.1037/a0024298

Luhmann, M., Fassbender, I., Alcock, M., & Haehner, P. (2020). A dimensional taxonomy of perceived characteristics of major life events. *Journal of Personality and Social Psychology*, Advance Online Publication. https://doi.org/10.1037/pspp0000291

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology, 102*(3), 592–615. https://doi.org/10.1037/a0025948

Luhmann, M., Orth, U., Specht, J., Kandler, C., & Lucas, R. E. (2014). Studying changes in life circumstances and personality: It's about time. *European Journal of Personality, 28*(3), 256–266. https://doi.org/10.1002/per.1951

Lumsdaine, R. L., & Vermeer, S. J. C. (2015). Retirement timing of women and the role of care responsibilities for grandchildren. *Demography, 52*(2), 433–454. https://doi.org/10.1007/s13524-015-0382-5

Lüdtke, O., Roberts, B. W., Trautwein, U., & Nagy, G. (2011). A random walk down university avenue: Life paths, life events, and personality trait change at the transition to university life. *Journal of Personality and Social Psychology, 101*(3), 620–637. https://doi.org/10.1037/a0023743

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods, 7*(1), 19–40. https://doi.org/10.1037/1082-989X.7.1.19

Mahne, K., & Motel-Klingebiel, A. (2012). The importance of the grandparent roleA class specific phenomenon? Evidence from Germany. *Advances in Life Course Research, 17*(3), 145–155. https://doi.org/10.1016/j.alcr.2012.06.001

Mann, R. (2007). Out of the shadows?: Grandfatherhood, age and masculinities. *Masculinity and Aging, 21*(4), 281–291. https://doi.org/10.1016/j.jaging.2007.05.008

Mann, R., & Leeson, G. (2010). Grandfathers in Contemporary Families in Britain: Evidence from Qualitative Research. *Journal of Intergenerational Relationships, 8*(3), 234–248. https://doi.org/10.1080/15350770.2010.498774

Margolis, R., & Verdery, A. M. (2019). A Cohort Perspective on the Demography of Grandparenthood: Past, Present, and Future Changes in Race and Sex Disparities in the United States. *Demography, 56*(4), 1495–1518. https://doi.org/10.1007/s13524-019-00795-1

Margolis, R., & Wright, L. (2017). Healthy Grandparenthood: How Long Is It, and How Has It Changed? *Demography, 54*(6), 2073–2099. https://doi.org/10.1007/s13524-017-0620-0

Marsh, H. W., Nagengast, B., & Morin, A. J. S. (2013). Measurement invariance of big-five factors over the life span: ESEM tests of gender, age, plasticity, maturity, and la dolce vita effects. *Developmental Psychology, 49*(6), 1194–1218. https://doi.org/10.1037/a0026913

McCrae, R. R. (1993). Moderated analyses of longitudinal personality stability. *Journal of Personality and Social Psychology, 65*(3), 577–585. https://doi.org/10.1037/0022-3514.65.3.577

McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods, 23*(3), 412–433. https://doi.org/10.1037/met0000144

McNeish, D., & Kelley, K. (2019). Fixed effects models versus mixed effects models for clustered data: Reviewing the approaches, disentangling the differences, and making recommendations. *Psychological Methods, 24*(1), 20–35. https://doi.org/10.1037/met0000182

Meyer, M. H., & Kandic, A. (2017). Grandparenting in the United States. *Innovation in Aging*, *1*(2), 1–10. https://doi.org/10.1093/geroni/igx023

Mitra, R., & Reiter, J. P. (2016). A comparison of two methods of estimating propensity scores after multiple imputation. *Statistical Methods in Medical Research*, *25*(1), 188–204. https://doi.org/10.1177/0962280212445945

Mõttus, R., Johnson, W., & Deary, I. J. (2012). Personality traits in old age: Measurement and rank-order stability and some mean-level change. *Psychology and Aging*, *27*(1), 243–249. https://doi.org/10.1037/a0023690

Mueller, M., & Elder, G. (2003). Family Contingencies Across the Generations: Grandparent-Grandchild Relationships in Holistic Perspective. *Journal of Marriage and Family*, *65*, 404–417. https://doi.org/10.1111/j.1741-3737.2003.00404.x

Mueller, S., Wagner, J., Drewelies, J., Duezel, S., Eibich, P., Specht, J., Demuth, I., Steinhagen-Thiessen, E., Wagner, G. G., & Gerstorf, D. (2016). Personality development in old age relates to physical health and cognitive performance: Evidence from the Berlin Aging Study II. *Journal of Research in Personality*, *65*, 94–108. https://doi.org/10.1016/j.jrp.2016.08.007

Müller, K., & Wickham, H. (2021). *Tibble: Simple data frames.* https://CRAN.R-project.org/package=tibble

Notter, I. R. (2021). Grandchild Care and Well-Being: Gender Differences in Mental Health Effects of Caregiving Grandparents. *The Journals of Gerontology: Series B*, gbab164. https://doi.org/10.1093/geronb/gbab164

OECD. (2020). *Is Childcare Affordable? Policy Brief On Employment, Labour And Social Affairs.*

Ooms, J. (2021). *Magick: Advanced graphics and image-processing in r.* https://CRAN.R-project.org/package=magick

Pearl, J. (2009). Causal inference in statistics: An overview. *Statistics Surveys*, *3*, 96–146. https://doi.org/10.1214/09-SS057

Pilkauskas, N. V., Amorim, M., & Dunifon, R. E. (2020). Historical Trends in Children Living in Multigenerational Households in the United States: 18702018. *Demography*, *57*(6), 2269–2296. https://doi.org/10.1007/s13524-020-00920-5

Pinheiro, J., Bates, D., & R-core. (2021). *Nlme: Linear and nonlinear mixed effects models* [Manual].

Pusch, S., Mund, M., Hagemeyer, B., & Finn, C. (2019). Personality Development in Emerging and Young Adulthood: A Study of Age Differences. *European Journal of Personality*, *33*(3), 245–263. https://doi.org/10.1002/per.2181

Quirke, E., König, H.-H., & Hajek, A. (2021). What are the social consequences of beginning or ceasing to care for grandchildren? Evidence from an asymmetric fixed effects analysis of community dwelling adults in Germany. *Aging & Mental Health*, *25*(5), 969–975. https://doi.org/10.1080/13607863.2020.1727846

R Core Team. (2021). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org/

Revelle, W. (2021). *Psych: Procedures for psychological, psychometric, and personality research* [R Package Version 2.1.9].

Roberts, B. W., & Davis, J. P. (2016). Young Adulthood Is the Crucible of Personality Development. *Emerging Adulthood*, *4*(5), 318–326. https://doi.org/10.1177/2167696816653052

Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin*, *126*(1), 3–25. https://doi.org/10.1037/0033-2909.126.1.3

Roberts, B. W., & Nickel, L. B. (2017). A critical evaluation of the Neo-Socioanalytic

Model of personality. In J. Specht (Ed.), *Personality Development Across the Lifespan* (pp. 157–177). Academic Press. https://doi.org/10.1016/B978-0-12-804674-6.00011-9

Roberts, B. W., Walton, K. E., & 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. https://doi.org/10.1037/0033-2909.132.1.1

Roberts, B. W., & Wood, D. (2006). Personality Development in the Context of the Neo-Socioanalytic Model of Personality. In D. K. Mroczek & T. D. Little (Eds.), *Handbook of Personality Development.* Routledge.

Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluating Five Factor Theory and social investment perspectives on personality trait development. *Journal of Research in Personality, 39*(1), 166–184. https://doi.org/10.1016/j.jrp.2004.08.002

Roberts, B. W., & Yoon, H. J. (2021). Personality Psychology. *Annual Review of Psychology*, Advance Online Publication. https://doi.org/10.1146/annurev-psych-020821-114927

Rohrer, J. M. (2018). Thinking Clearly About Correlations and Causation: Graphical Causal Models for Observational Data. *Advances in Methods and Practices in Psychological Science, 1*(1), 27–42. https://doi.org/10.1177/2515245917745629

Rohrer, J. M., Hünermund, P., Arslan, R. C., & Elson, M. (2021). That's a lot to PROCESS! Pitfalls of Popular Path Models. *PsyArXiv.* https://doi.org/10.31234/osf.io/paeb7

Rosenbaum, P. (1984). The consquences of adjustment for a concomitant variable that has been affected by the treatment. *Journal of the Royal Statistical Society. Series A (General), 147*(5), 656–666. https://doi.org/10.2307/2981697

Sarkar, D. (2008). *Lattice: Multivariate data visualization with r.* Springer.

http://lmdvr.r-forge.r-project.org

Scherpenzeel, A. (2011). Data Collection in a Probability-Based Internet Panel: How the LISS Panel Was Built and How It Can Be Used. *Bulletin of Sociological Methodology/Bulletin de Méthodologie Sociologique*, *109*(1), 56–61. https://doi.org/10.1177/0759106310387713

Scherpenzeel, A. C., & Das, M. (2010). True" longitudinal and probability-based internet panels: Evidence from the Netherlands. In M. Das, P. Ester, & L. Kaczmirek (Eds.), *Social and behavioral research and the internet: Advances in applied methods and research strategies* (pp. 77–104). Taylor & Francis.

Schwaba, T., & Bleidorn, W. (2019). Personality trait development across the transition to retirement. *Journal of Personality and Social Psychology*, *116*(4), 651–665. https://doi.org/10.1037/pspp0000179

Schwaba, T., & Bleidorn, W. (2018). Individual differences in personality change across the adult life span. *Journal of Personality*, *86*(3), 450–464. https://doi.org/10.1111/jopy.12327

Seifert, I. S., Rohrer, J. M., Egloff, B., & Schmukle, S. C. (2021). The Development of the Rank-Order Stability of the Big Five Across the Life Span. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/pspp0000398

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Houghton, Mifflin and Company.

Sheppard, P., & Monden, C. (2019). Becoming a First-Time Grandparent and Subjective Well-Being: A Fixed Effects Approach. *Journal of Marriage and Family*, *81*(4), 1016–1026. https://doi.org/10.1111/jomf.12584

Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review*,

39(4), 567–578. https://doi.org/10.2307/2094422

Silverstein, M., & Marenco, A. (2001). How Americans Enact the Grandparent Role Across the Family Life Course. *Journal of Family Issues*, *22*(4), 493–522. https://doi.org/10.1177/019251301022004006

Skopek, J., & Leopold, T. (2017). Who becomes a grandparent and when? Educational differences in the chances and timing of grandparenthood. *Demographic Research*, *37*(29), 917–928. https://doi.org/10.4054/DemRes.2017.37.29

Sonnega, A., Faul, J. D., Ofstedal, M. B., Langa, K. M., Phillips, J. W., & Weir, D. R. (2014). Cohort Profile: The Health and Retirement Study (HRS). *International Journal of Epidemiology*, *43*(2), 576–585. https://doi.org/10.1093/ije/dyu067

Specht, J. (2017). Personality development in adulthood and old age. In J. Specht (Ed.), *Personality Development Across the Lifespan* (pp. 53–67). Academic Press. https://doi.org/10.1016/B978-0-12-804674-6.00005-3

Specht, J., Bleidorn, W., Denissen, J. J. A., Hennecke, M., Hutteman, R., Kandler, C., Luhmann, M., Orth, U., Reitz, A. K., & Zimmermann, J. (2014). What Drives Adult Personality Development? A Comparison of Theoretical Perspectives and Empirical Evidence. *European Journal of Personality*, *28*(3), 216–230. https://doi.org/10.1002/per.1966

Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the Big Five. *Journal of Personality and Social Psychology*, *101*(4), 862–882. https://doi.org/10.1037/a0024950

Spikic, S., Mortelmans, D., & Pasteels, I. (2021). Does divorce change your personality? Examining the effect of divorce occurrence on the Big Five personality traits using panel surveys from three countries. *Personality and Individual Differences*, *171*, 110428. https://doi.org/10.1016/j.paid.2020.110428

Springstein, T., Growney, C. M., & English, T. (2022). Supporting robust research on adult emotional development by considering context. *Psychology and Aging*, *37*(1), 97–110. https://doi.org/10.1037/pag0000669

Steiner, P., Cook, T., Shadish, W., & Clark, M. (2010). The Importance of Covariate Selection in Controlling for Selection Bias in Observational Studies. *Psychological Methods*, *15*, 250–267. https://doi.org/10.1037/a0018719

Stephan, Y., Sutin, A. R., & Terracciano, A. (2014). Physical activity and personality development across adulthood and old age: Evidence from two longitudinal studies. *Journal of Research in Personality*, *49*, 1–7. https://doi.org/10.1016/j.jrp.2013.12.003

StGeorge, J. M., & Fletcher, R. J. (2014). Men's experiences of grandfatherhood: A welcome surprise. *The International Journal of Aging & Human Development*, *78*(4), 351–378. https://doi.org/10.2190/AG.78.4.c

Stuart, E. A. (2010). Matching methods for causal inference: A review and a look forward. *Statistical Science: A Review Journal of the Institute of Mathematical Statistics*, *25*(1), 1–21. https://doi.org/10.1214/09-STS313

Tanskanen, A. O. (2017). Intergenerational relations before and after offspring arrive: A within-person investigation. *Social Science Research*, *67*, 138–146. https://doi.org/10.1016/j.ssresearch.2017.08.001

Tanskanen, A. O., Danielsbacka, M., Coall, D. A., & Jokela, M. (2019). Transition to Grandparenthood and Subjective Well-Being in Older Europeans: A Within-Person Investigation Using Longitudinal Data. *Evolutionary Psychology*, *17*(3), 1474704919875948. https://doi.org/10.1177/1474704919875948

Tanskanen, A. O., Danielsbacka, M., Hämäläinen, H., & Solé-Auró, A. (2021). Does Transition to Retirement Promote Grandchild Care? Evidence From Europe. *Frontiers in Psychology, 12*.

Terry M. Therneau, & Patricia M. Grambsch. (2000). *Modeling survival data: Extending the Cox model*. Springer.

Thiele, D. M., & Whelan, T. A. (2006). The Nature and Dimensions of the Grandparent Role. *Marriage & Family Review*, *40*(1), 93–108. https://doi.org/10.1300/J002v40n01_06

Thoemmes, F. J., & Kim, E. S. (2011). A Systematic Review of Propensity Score Methods in the Social Sciences. *Multivariate Behavioral Research*, *46*(1), 90–118. https://doi.org/10.1080/00273171.2011.540475

Urbanek, S. (2013). *Png: Read and write png images.* https://CRAN.R-project.org/package=png

Ushey, K. (2022). *Renv: Project environments* [R Package Version 0.15.2].

van Buuren, S., & Groothuis-Oudshoorn, K. (2011). mice: Multivariate imputation by chained equations in r. *Journal of Statistical Software*, *45*(3), 1–67.

van der Laan, J. (2009). *Representativity of the LISS panel (Discussion Paper 09041).* Statistics Netherlands.

VanderWeele, T. J. (2019). Principles of confounder selection. *European Journal of Epidemiology*, *34*(3), 211–219. https://doi.org/10.1007/s10654-019-00494-6

VanderWeele, T. J., Mathur, M. B., & Chen, Y. (2020). Outcome-Wide Longitudinal Designs for Causal Inference: A New Template for Empirical Studies. *Statistical Science*, *35*(3), 437–466. https://doi.org/10.1214/19-STS728

van Scheppingen, M. A., Jackson, J. J., Specht, J., Hutteman, R., Denissen, J. J. A., & Bleidorn, W. (2016). Personality Trait Development During the Transition to Parenthood: A Test of Social Investment Theory. *Social Psychological and Personality Science*, *7*(5), 452–462. https://doi.org/10.1177/1948550616630032

van Scheppingen, M. A., & Leopold, T. (2020). Trajectories of life satisfaction before, upon,

and after divorce: Evidence from a new matching approach. *Journal of Personality and Social Psychology*, *119*(6), 1444–1458. https://doi.org/10.1037/pspp0000270

Venables, W. N., & Ripley, B. D. (2002). *Modern applied statistics with s* (Fourth). Springer. http://www.stats.ox.ac.uk/pub/MASS4/

Vermote, M., Deliens, T., Deforche, B., & D'Hondt, E. (2021). The impact of non-residential grandchild care on physical activity and sedentary behavior in people aged 50 years and over: Study protocol of the Healthy Grandparenting Project. *BMC Public Health*, *21.* https://doi.org/10.1186/s12889-020-10024-9

Wagner, J., Becker, M., Lüdtke, O., & Trautwein, U. (2015). The First Partnership Experience and Personality Development: A Propensity Score Matching Study in Young Adulthood. *Social Psychological and Personality Science*, *6*(4), 455–463. https://doi.org/10.1177/1948550614566092

Wagner, J., Lüdtke, O., & Robitzsch, A. (2019). Does personality become more stable with age? Disentangling state and trait effects for the big five across the life span using local structural equation modeling. *Journal of Personality and Social Psychology*, *116*(4), 666–680. https://doi.org/10.1037/pspp0000203

Wagner, J., Orth, U., Bleidorn, W., Hopwood, C. J., & Kandler, C. (2020). Toward an Integrative Model of Sources of Personality Stability and Change. *Current Directions in Psychological Science*, *29*(5), 438–444. https://doi.org/10.1177/0963721420924751

Wagner, J., Ram, N., Smith, J., & Gerstorf, D. (2016). Personality trait development at the end of life: Antecedents and correlates of mean-level trajectories. *Journal of Personality and Social Psychology*, *111*(3), 411–429. https://doi.org/10.1037/pspp0000071

Wang, S., & Mutchler, J. E. (2020). The Implications of Providing Grandchild Care for Grandparents' Marital Quality. *Journal of Family Issues*, *41*(12), 2476–2501.

https://doi.org/10.1177/0192513X20934845

Wickham, H. (2016). *Ggplot2: Elegant graphics for data analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org

Wickham, H. (2019). *Stringr: Simple, consistent wrappers for common string operations.* https://CRAN.R-project.org/package=stringr

Wickham, H. (2021a). *Forcats: Tools for working with categorical variables (factors).* https://CRAN.R-project.org/package=forcats

Wickham, H. (2021b). *Tidyr: Tidy messy data.* https://CRAN.R-project.org/package=tidyr

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., . . . Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software,* *4*(43), 1686. https://doi.org/10.21105/joss.01686

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., . . . Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software,* *4*(43), 1686. https://doi.org/10.21105/joss.01686

Wickham, H., François, R., Henry, L., & Müller, K. (2021). *Dplyr: A grammar of data manipulation.* https://CRAN.R-project.org/package=dplyr

Wickham, H., Hester, J., & Bryan, J. (2021). *Readr: Read rectangular text data.* https://CRAN.R-project.org/package=readr

Wickham, H., & Seidel, D. (2020). *Scales: Scale functions for visualization.* https://CRAN.R-project.org/package=scales

Wilke, C. O. (2020). *Cowplot: Streamlined plot theme and plot annotations for 'ggplot2'.* https://CRAN.R-project.org/package=cowplot

Wortman, J., Lucas, R. E., & Donnellan, M. B. (2012). Stability and change in the Big Five personality domains: Evidence from a longitudinal study of Australians. *Psychology and Aging, 27*(4), 867–874. https://doi.org/10.1037/a0029322

Wrzus, C., & Roberts, B. W. (2017). Processes of personality development in adulthood: The TESSERA framework. *Personality and Social Psychology Review, 21*(3), 253–277. https://doi.org/10.1177/1088868316652279

Xu, L., Tang, F., Li, L. W., & Dong, X. Q. (2017). Grandparent Caregiving and Psychological Well-Being Among Chinese American Older AdultsThe Roles of Caregiving Burden and Pressure. *The Journals of Gerontology: Series A, 72*(suppl_1), S56–S62. https://doi.org/10.1093/gerona/glw186

Zeileis, A., & Croissant, Y. (2010). Extended model formulas in R: Multiple parts and multiple responses. *Journal of Statistical Software, 34*(1), 1–13. https://doi.org/10.18637/jss.v034.i01

Zhang, W., Braun, K. L., & Wu, Y. Y. (2017). The educational, racial and gender crossovers in life satisfaction: Findings from the longitudinal Health and Retirement Study. *Archives of Gerontology and Geriatrics, 73*, 60–68. https://doi.org/10.1016/j.archger.2017.07.014

Supplemental Material

Model Equations

Mean-Level Changes (RQ1)

Model equation for the basic (i.e., unmoderated) models (ignoring the additional

nesting in households applied to the majority of models):

$$y_{ti} = \beta_{0i} + \beta_{1i} before_{ti} + \beta_{2i} after_{ti} + \beta_{3i} shift_{ti} + e_{ti}$$

$$\beta_{0i} = \gamma_{00} + \gamma_{01} grandparent_i + \gamma_{02} pscore_i + \upsilon_{0i}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11} grandparent_i \tag{A1}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21} grandparent_i$$

$$\beta_{3i} = \gamma_{30} + \gamma_{31} grandparent_i \ ,$$

where at time t for person i $e_{ti} \sim N(0, \sigma_e^2)$ and $\upsilon_{0i} \sim N(0, \tau_{00})$. y_{ti} represented one of the

Big Five or life satisfaction. Separate models were computed for LISS and HRS samples,

and for parent and nonparent matched controls.

Model equation for the models including the gender interaction (moderator variable

$female_i$):

$$y_{ti} = \beta_{0i} + \beta_{1i} before_{ti} + \beta_{2i} after_{ti} + \beta_{3i} shift_{ti} + e_{ti}$$

$$\beta_{0i} = \gamma_{00} + \gamma_{01} grandparent_i + \gamma_{02} female_i + \gamma_{03} grandparent_i female_i$$

$$+ \gamma_{04} pscore_i + \upsilon_{0i}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11} grandparent_i + \gamma_{12} female_i + \gamma_{13} grandparent_i female_i \tag{A2}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21} grandparent_i + \gamma_{22} female_i + \gamma_{23} grandparent_i female_i$$

$$\beta_{3i} = \gamma_{30} + \gamma_{31} grandparent_i + \gamma_{32} female_i + \gamma_{33} grandparent_i female_i \ ,$$

where $e_{ti} \sim N(0, \sigma_e^2)$ and $\upsilon_{0i} \sim N(0, \tau_{00})$. Again, we estimated separate models for each

1687 sample (LISS, HRS) and each comparison group (parents, nonparents).

1688   Model equation for the models including the interaction by paid work (moderator

1689 variable $working_{ti}$):

$$
\begin{aligned}
y_{ti} =& \beta_{0i} + \beta_{1i}working_{ti} + \beta_{2i}before_{ti} + \beta_{3i}before_{ti}working_{ti} + \beta_{4i}after_{ti} \\
& + \beta_{5i}after_{ti}working_{ti} + \beta_{6i}shift_{ti} + \beta_{7i}shift_{ti}working_{ti} + e_{ti} \\
\beta_{0i} =& \gamma_{00} + \gamma_{01}grandparent_i + \gamma_{02}pscore_i + \upsilon_{0i} \\
\beta_{1i} =& \gamma_{10} + \gamma_{11}grandparent_i \\
\beta_{2i} =& \gamma_{20} + \gamma_{21}grandparent_i \\
\beta_{3i} =& \gamma_{30} + \gamma_{31}grandparent_i \\
\beta_{4i} =& \gamma_{40} + \gamma_{41}grandparent_i \\
\beta_{5i} =& \gamma_{50} + \gamma_{51}grandparent_i \\
\beta_{6i} =& \gamma_{60} + \gamma_{61}grandparent_i \\
\beta_{7i} =& \gamma_{70} + \gamma_{71}grandparent_i \ ,
\end{aligned}
\tag{A3}
$$

1690 where $e_{ti} \sim N(0, \sigma_e^2)$ and $\upsilon_{0i} \sim N(0, \tau_{00})$. We estimated separate models for each

1691 comparison group (parents, nonparents) in the HRS.

1692   Model equation for the models including the interaction by grandchild care

1693 (moderator variable $caring_{ti}$):

$$
\begin{aligned}
y_{ti} =& \beta_{0i} + \beta_{1i}caring_{ti} + \beta_{2i}after_{ti} + \beta_{3i}after_{ti}caring_{ti} + e_{ti} \\
\beta_{0i} =& \gamma_{00} + \gamma_{01}grandparent_i + \gamma_{02}pscore_i + \upsilon_{0i} \\
\beta_{1i} =& \gamma_{10} + \gamma_{11}grandparent_i \\
\beta_{2i} =& \gamma_{20} + \gamma_{21}grandparent_i \\
\beta_{3i} =& \gamma_{30} + \gamma_{31}grandparent_i \ ,
\end{aligned}
\tag{A4}
$$

1694 where $e_{ti} \sim N(0, \sigma_e^2)$ and $\upsilon_{0i} \sim N(0, \tau_{00})$. Restricted to the HRS post-transition period, we

estimated separate models for each comparison group (parents, nonparents).

Interindividual Differences in Change (RQ2)

The equations for the models testing interindividual differences in change differ only in the random effects from those in (A1). For models with a homogeneous (single) random slope (but heterogeneous random intercept variances for the grandparent and the control group, respectively), the random effects are now represented by $e_{ti} \sim N(0, \sigma_e^2)$ and

$$\begin{bmatrix} \upsilon_{0i} \\ \upsilon_{1i} \end{bmatrix} \sim MVN \left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} T_{00g} & \\ 0 & \tau_{11} \end{bmatrix} \right), \text{ with } T_{00g} = \begin{bmatrix} \tau_{00g=0} & 0 \\ 0 & \tau_{00g=1} \end{bmatrix},$$

where g represents the grouping variable. $\tau_{00g=0}$ refers to the random intercept variance of the control group and $\tau_{00g=1}$ to that of the grandparents. This type of baseline model is compared via likelihood ratio test with one that features both heterogeneous random intercept variances and heterogeneous random slope variances. For models with heterogeneous random slopes for the grandparent and control groups, the random effects are represented by $e_{ti} \sim N(0, \sigma_e^2)$ and $\begin{bmatrix} \upsilon_{0i} \\ \upsilon_{1i} \end{bmatrix} \sim MVN \left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} T_{00g} & \\ T_{10g} & T_{11g} \end{bmatrix} \right)$, with

$$T_{00g} = \begin{bmatrix} \tau_{00g=0} & 0 \\ 0 & \tau_{00g=1} \end{bmatrix}, T_{11g} = \begin{bmatrix} \tau_{11g=0} & 0 \\ 0 & \tau_{11g=1} \end{bmatrix}, \text{ and } T_{10g} = \begin{bmatrix} \tau_{10g=0} & 0 \\ 0 & \tau_{10g=1} \end{bmatrix}, \text{ where } g$$

represents the grouping variable. $\tau_{00g=0}$, $\tau_{11g=0}$ and $\tau_{10g=0}$ refer to the random intercept variance, random slope variance, and random intercept/slope covariance of the control group, respectively, and $\tau_{00g=1}$, $\tau_{11g=1}$, and $\tau_{10g=1}$ to those of the grandparents. In addition to the two random slope variances (instead of one, τ_{11}), the heterogeneous variance models estimate two random intercept/slope covariances. In Tables S64-S69 we report τ_{11}, $\tau_{11g=0}$, and $\tau_{11g=0}$ for each change parameter as well as the results of the likelihood ratio tests. Please note that the notation for heterogeneous models used here is not found in standard multilevel modeling textbooks and is partly based on *this tutorial* by Nilam Ram. See also *this blogpost* by Jonas Lang for syntax examples in *nlme* and *lme4* syntax.

Supplemental Tables

Table S1

Internal Consistency Measures in the Four Analysis Samples at the Time of Matching.

	A	C	E	N	O	LS
LISS: Parent controls						
ω_t	0.88	0.83	0.88	0.91	0.88	0.93
ω_h	0.75	0.57	0.71	0.72	0.63	0.78
α	0.83	0.78	0.84	0.87	0.78	0.91
LISS: Nonparent controls						
ω_t	0.89	0.88	0.93	0.92	0.88	0.89
ω_h	0.73	0.68	0.79	0.79	0.66	0.75
α	0.81	0.79	0.90	0.90	0.79	0.88
HRS: Parent controls						
ω_t	0.78	0.82	0.80	0.76	0.86	0.93
ω_h	0.67	0.48	0.68	0.59	0.61	0.88
α	0.78	0.59	0.75	0.71	0.77	0.90
HRS: Nonparent controls						
ω_t	0.84	0.77	0.81	0.76	0.85	0.92
ω_h	0.64	0.63	0.71	0.62	0.65	0.82
α	0.80	0.57	0.77	0.72	0.79	0.90

Note. A = agreeableness, C = conscientiousness, E = extraversion, N = neuroticism, O = openness, LS = life satisfaction. Omega total, ω_t, is based on "omega.tot" from the *psych::omega()* function, and omega hierarchical, ω_h, on "omega_h" (Revelle, 2021). For the LISS, we based the number of lower-order factors specified in "nfactors" on information supplied in Goldberg (1999). For the HRS, we could not find comparable information and used the default value. α is based on "raw_alpha" from the *psych::alpha()* function (Revelle, 2021).

Table S2

Standardized Difference in Means for Covariates Used in Propensity Score Matching and the Propensity Score in the LISS.

Covariate	Description	Raw variables	Parent control group		Nonparent control group	
			Before PSM	After PSM	Before PSM	After PSM
pscore	Propensity score	/	1.13	0.02	1.32	0.03
female	Gender (f.=1, m.=0)	geslacht	0.08	0.00	0.07	0.00
age	Age	gebjaar	0.76	0.03	3.86	-0.11
degreehighersec	Higher secondary/preparatory university education	oplmet	0.04	-0.08	-0.08	0.10
degreevocational	Intermediate vocational education	oplmet	-0.20	0.01	0.01	0.06
degreecollege	Higher vocational education	oplmet	0.03	0.05	0.02	-0.02
degreeuniversity	University degree	oplmet	-0.06	0.06	-0.15	-0.03
religion	Member of religion/church	cr*012	0.19	0.01	0.38	0.11
speakdutch	Dutch spoken at home (primarily)	cr*089	-0.01	0.11	-0.01	0.05
divorced	Divorced (marital status)	burgstat	0.01	-0.01	0.29	0.06
widowed	Widowed (marital status)	burgstat	0.09	-0.13	0.14	-0.13
livetogether	Live together with partner	cf*025	-0.03	0.00	1.04	0.05
rooms	Rooms in dwelling	cd*034	0.05	-0.03	0.68	-0.04
logincome	Personal net monthly income in Euros (logarithm)	nettoink	-0.07	-0.03	0.46	-0.09
rental	Live for rent (vs. self-owned dwelling)	woning	-0.10	0.01	-0.48	-0.03
financialsit	Financial situation of household (scale from 1-5)	ci*252	0.01	0.08	-0.05	0.03
jobhours	Average work hours per week	cw*127	0.03	0.08	0.10	0.03
mobility	Mobility problems (walking, staircase, shopping)	ch*023/027/041	0.05	-0.03	0.06	-0.06
dep	Depression items from Mental Health Inventory	ch*011 - ch*015	0.01	0.02	-0.21	-0.09
betterhealth	Poor/moderate health status (ref.: good)	ch*004	-0.03	0.07	-0.28	0.08
worsehealth	Very good/excellent health status (ref.: good)	ch*004	-0.01	0.00	0.05	-0.12
totalchildren	Number living children	cf*455 / cf*036	0.29	0.06	NA	NA
totalresidentkids	Number of living-at-home children in household	aantalki	-0.63	0.01	NA	NA
secondkid	Has two or more children	cf*455 / cf*036	0.23	0.05	NA	NA
thirdkid	Has three or more children	cf*455 / cf*036	0.27	0.06	NA	NA
kid1female	Gender of first child (f.=1, m.=0)	cf*068	0.04	0.02	NA	NA
kid2female	Gender of second child (f.=1, m.=0)	cf*069	0.08	-0.03	NA	NA
kid3female	Gender of third child (f.=1, m.=0)	cf*070	0.14	0.06	NA	NA
kid1age	Age of first child	cf*456 / cf*037	1.58	-0.09	NA	NA
kid2age	Age of second child	cf*457 / cf*038	0.84	0.03	NA	NA
kid3age	Age of third child	cf*458 / cf*039	0.41	0.06	NA	NA
kid1home	First child living at home	cf*083	-1.46	0.00	NA	NA

Table S2 continued

Covariate	Description	Raw variables	Parent control group		Nonparent control group	
			Before PSM	After PSM	Before PSM	After PSM
kid2home	Second child living at home	cf*084	-0.94	0.01	NA	NA
kid3home	Third child living at home	cf*085	-0.03	-0.01	NA	NA
swls	Satisfaction with Life Scale	cp*014 - cp*018	0.06	0.03	0.22	0.02
agree	Agreeableness	cp*021 - cp*066	0.05	0.05	0.12	-0.12
con	Conscientiousness	cp*022 - cp*067	-0.04	0.08	0.14	0.06
extra	Extraversion	cp*020 - cp*065	0.05	0.08	0.04	-0.01
neur	Neuroticism	cp*023 - cp*068	0.05	-0.04	-0.22	-0.06
open	Openness	cp*024 - cp*069	0.03	0.13	-0.16	0.00
participation	Waves participated	/	-0.71	-0.07	-0.18	-0.04
year	Year of assessment	wave	-0.63	-0.02	-0.16	-0.02

Note. PSM = propensity score matching, ref. = reference category, f. = female, m. = male, NA = covariate not used in this sample. The standardized difference in means between the grandparent and the two control groups (parent and nonparent) was computed by $(\bar{x}_{gp} - \bar{x}_c)/(\hat{\sigma}_{gp})$. Rules of thumb say that this measure should ideally be below .25 (Stuart, 2010) or below .10 (Austin, 2011).

Table S3

Standardized Difference in Means for Covariates Used in Propensity Score Matching and the Propensity Score in the HRS.

Covariate	Description	Raw variables	Parent control group		Nonparent control group	
			Before PSM	After PSM	Before PSM	After PSM
pscore	Propensity score	/	0.92	0.01	1.45	0.00
female	Gender (f.=1, m.=0)	RAGENDER	-0.06	0.00	0.01	0.00
age	Age	RABYEAR	-0.46	-0.03	-1.02	0.10
schlyrs	Years of education	RAEDYRS	0.11	0.05	0.24	-0.01
religyear	Religious attendance: yearly	*B082	0.04	0.01	0.13	0.02
religmonth	Religious attendance: monthly	*B082	0.01	-0.03	0.10	0.05
religweek	Religious attendance: weekly	*B082	0.06	0.04	0.04	0.03
religmore	Religious attendance: more	*B082	0.09	-0.04	0.06	-0.06
notusaborn	Not born in the US	*Z230	-0.05	0.02	0.13	0.01
black	Race: black/african american (ref.: white)	RARACEM	-0.12	-0.03	-0.20	0.00
raceother	Race: other (ref.: white)	RARACEM	-0.09	-0.01	0.01	-0.01
divorced	Divorced (marital status)	R*MSTAT	-0.06	-0.02	0.01	0.00
widowed	Widowed (marital status)	R*MSTAT	-0.31	0.01	-0.41	0.04
livetogether	Live together with partner	*A030 / *XF065_R	0.25	0.00	1.05	-0.01
roomslessthree	Number of rooms (in housing unit)	*H147 / *066	-0.15	-0.01	-0.59	-0.06
roomsfourfive	Number of rooms (in housing unit)	*H147 / *066	0.00	0.01	-0.23	-0.02
roomsmoreeight	Number of rooms (in housing unit)	*H147 / *066	0.07	-0.03	0.25	0.03
loghhincome	Household income (logarithm)	*ITOT	0.03	0.00	0.41	0.04
loghhwealth	Household wealth (logarithm)	*ATOTB	0.07	0.00	0.34	0.03
renter	Live for rent (vs. self-owned dwelling)	*H004	-0.09	-0.02	-0.50	-0.08
jobhours	Hours worked/week main job	R*JHOURS	0.25	0.06	0.59	-0.03
paidwork	Working for pay	*J020	0.28	0.08	0.62	-0.04
mobilitydiff	Difficulty in mobility rated from 0-5	R*MOBILA	-0.16	-0.02	-0.52	-0.01
cesd	CESD score (depression)	R*CESD	-0.13	-0.01	-0.26	-0.04
conde	Sum of health conditions	R*CONDE	-0.23	-0.01	-0.51	0.03
healthexcellent	Self-report of health - excellent (ref: good)	R*SHLT	0.06	0.01	0.15	0.00
healthverygood	Self-report of health - very good (ref: good)	R*SHLT	0.23	-0.01	0.31	-0.02
healthfair	Self-report of health - fair (ref: good)	R*SHLT	-0.16	0.00	-0.29	-0.01
healthpoor	Self-report of health - poor (ref: good)	R*SHLT	-0.07	-0.03	-0.24	0.02
totalnonresidentkids	Number of nonresident kids	*A100	0.66	-0.06	NA	NA
totalresidentkids	Number of resident children	*A099	-0.22	0.03	NA	NA
secondkid	Has two or more children	KIDID	0.52	0.01	NA	NA

Table S3 continued

Covariate	Description	Raw variables	Parent control group		Nonparent control group	
			Before PSM	After PSM	Before PSM	After PSM
thirdkid	Has three or more children	KIDID	0.38	-0.02	NA	NA
kid1female	Gender of first child (f.=1, m.=0)	KAGENDERBG	0.11	0.04	NA	NA
kid2female	Gender of second child (f.=1, m.=0)	KAGENDERBG	0.17	0.02	NA	NA
kid3female	Gender of third child (f.=1, m.=0)	KAGENDERBG	0.23	0.05	NA	NA
kid1age	Age of first child	KABYEARBG	-0.35	-0.06	NA	NA
kid2age	Age of second child	KABYEARBG	0.36	-0.01	NA	NA
kid3age	Age of third child	KABYEARBG	0.35	-0.02	NA	NA
kid1educ	Education of first child (years)	KAEDUC	0.30	0.03	NA	NA
kid2educ	Education of second child (years)	KAEDUC	0.57	0.03	NA	NA
kid3educ	Education of third child (years)	KAEDUC	0.40	-0.01	NA	NA
childrenclose	Children live within 10 miles	*E012	0.13	0.00	NA	NA
siblings	Number of living siblings	R*LIVSIB	0.05	-0.02	0.22	0.03
swls	Satisfaction with Life Scale	*LB003*	0.17	0.05	0.30	0.00
agree	Agreeableness	*LB033*	0.06	0.01	0.11	0.02
con	Conscientiousness	*LB033*	0.14	0.03	0.26	-0.03
extra	Extraversion	*LB033*	0.04	0.03	0.18	-0.04
neur	Neuroticism	*LB033*	-0.07	0.01	-0.04	-0.01
open	Openness	*LB033*	0.04	0.07	0.05	-0.05
participation	Waves participated (2006-2018)	/	-0.36	-0.02	-0.26	-0.04
interviewyear	Date of interview - year	*A501	-0.33	-0.04	-0.18	-0.07

Note. PSM = propensity score matching, ref. = reference category, f. = female, m. = male, NA = covariate not used in this sample. The standardized difference in means between the grandparent and the two control groups (parent and nonparent) was computed by $(\bar{x}_{gp} - \bar{x}_c)/(\hat{\sigma}_{gp})$. Rules of thumb say that this measure should ideally be below .25 (Stuart, 2010) or below .10 (Austin, 2011).

Table S4

Means and Standard Deviations of the Big Five and Life Satisfaction over Time in the LISS Panel.

	Pre-transition years						Post-transition years						
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Agreeableness													
Grandparents	3.84	3.88	3.94	3.84	3.91	3.91	3.85	3.90	3.89	3.96	3.89	3.96	3.98
	(0.50)	(0.50)	(0.45)	(0.50)	(0.53)	(0.48)	(0.51)	(0.55)	(0.52)	(0.49)	(0.51)	(0.51)	(0.40)
Parent controls	3.90	3.87	3.89	3.87	3.85	3.90	3.84	3.86	3.89	3.82	3.84	3.87	3.81
	(0.51)	(0.50)	(0.45)	(0.51)	(0.49)	(0.46)	(0.45)	(0.50)	(0.52)	(0.48)	(0.49)	(0.48)	(0.48)
Nonparent controls	3.89	3.95	3.96	3.97	3.95	3.93	3.90	3.95	3.94	3.94	3.95	3.92	3.90
	(0.53)	(0.53)	(0.49)	(0.49)	(0.49)	(0.48)	(0.46)	(0.44)	(0.46)	(0.48)	(0.44)	(0.43)	(0.42)
Conscientiousness													
Grandparents	3.79	3.85	3.75	3.76	3.77	3.78	3.80	3.80	3.79	3.81	3.81	3.77	3.75
	(0.52)	(0.45)	(0.48)	(0.47)	(0.52)	(0.49)	(0.51)	(0.51)	(0.49)	(0.50)	(0.45)	(0.47)	(0.44)
Parent controls	3.75	3.75	3.73	3.73	3.72	3.76	3.73	3.76	3.74	3.74	3.71	3.76	3.65
	(0.56)	(0.47)	(0.53)	(0.48)	(0.47)	(0.49)	(0.47)	(0.46)	(0.49)	(0.49)	(0.50)	(0.51)	(0.48)
Nonparent controls	3.72	3.76	3.77	3.73	3.76	3.75	3.73	3.74	3.72	3.77	3.74	3.71	3.76
	(0.54)	(0.55)	(0.54)	(0.50)	(0.52)	(0.50)	(0.52)	(0.51)	(0.53)	(0.49)	(0.51)	(0.53)	(0.53)
Extraversion													
Grandparents	3.21	3.18	3.31	3.31	3.29	3.29	3.21	3.21	3.16	3.22	3.26	3.32	3.20
	(0.65)	(0.73)	(0.56)	(0.58)	(0.66)	(0.60)	(0.63)	(0.68)	(0.68)	(0.62)	(0.59)	(0.62)	(0.54)
Parent controls	3.30	3.22	3.22	3.23	3.25	3.23	3.19	3.20	3.24	3.18	3.20	3.17	3.19
	(0.59)	(0.61)	(0.57)	(0.58)	(0.55)	(0.55)	(0.57)	(0.58)	(0.57)	(0.57)	(0.57)	(0.55)	(0.50)
Nonparent controls	3.29	3.28	3.24	3.28	3.29	3.31	3.27	3.24	3.30	3.22	3.27	3.25	3.26
	(0.72)	(0.70)	(0.78)	(0.74)	(0.68)	(0.66)	(0.70)	(0.68)	(0.71)	(0.73)	(0.72)	(0.66)	(0.71)
Neuroticism													
Grandparents	2.39	2.33	2.32	2.41	2.48	2.42	2.32	2.38	2.28	2.35	2.29	2.45	2.41
	(0.70)	(0.64)	(0.59)	(0.63)	(0.64)	(0.70)	(0.67)	(0.78)	(0.68)	(0.65)	(0.64)	(0.79)	(0.68)
Parent controls	2.50	2.44	2.47	2.42	2.46	2.43	2.40	2.41	2.34	2.36	2.37	2.33	2.40
	(0.58)	(0.60)	(0.62)	(0.55)	(0.58)	(0.60)	(0.60)	(0.60)	(0.62)	(0.60)	(0.61)	(0.64)	(0.59)
Nonparent controls	2.51	2.47	2.51	2.45	2.46	2.41	2.44	2.42	2.49	2.50	2.48	2.52	2.49
	(0.58)	(0.61)	(0.68)	(0.64)	(0.66)	(0.65)	(0.69)	(0.71)	(0.76)	(0.74)	(0.77)	(0.80)	(0.83)

Table S4 continued

	Pre-transition years						Post-transition years						
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Openness													
Grandparents	3.48	3.48	3.48	3.51	3.47	3.47	3.46	3.49	3.50	3.48	3.47	3.46	3.39
	(0.52)	(0.51)	(0.51)	(0.45)	(0.53)	(0.52)	(0.50)	(0.54)	(0.44)	(0.46)	(0.47)	(0.53)	(0.53)
Parent controls	3.47	3.41	3.42	3.44	3.41	3.38	3.41	3.40	3.37	3.37	3.38	3.36	3.36
	(0.58)	(0.50)	(0.51)	(0.52)	(0.49)	(0.49)	(0.52)	(0.50)	(0.49)	(0.48)	(0.48)	(0.45)	(0.48)
Nonparent controls	3.54	3.52	3.50	3.50	3.51	3.46	3.49	3.48	3.52	3.52	3.51	3.48	3.49
	(0.48)	(0.53)	(0.51)	(0.53)	(0.53)	(0.53)	(0.52)	(0.52)	(0.52)	(0.53)	(0.51)	(0.49)	(0.52)
Life satisfaction													
Grandparents	5.17	5.24	5.21	5.14	5.29	5.28	5.34	5.23	5.36	5.44	5.39	5.27	5.32
	(1.07)	(0.91)	(1.11)	(0.98)	(0.92)	(1.08)	(0.91)	(0.99)	(1.06)	(0.88)	(1.10)	(1.10)	(1.08)
Parent controls	5.10	5.14	5.17	5.21	5.20	5.31	5.27	5.26	5.26	5.30	5.21	5.30	5.18
	(1.29)	(1.11)	(1.17)	(1.01)	(1.06)	(1.12)	(1.10)	(1.12)	(1.10)	(1.09)	(1.12)	(1.17)	(1.12)
Nonparent controls	5.06	5.17	5.07	5.10	5.21	5.22	5.12	5.00	5.02	4.96	5.04	5.05	5.02
	(0.92)	(0.85)	(0.92)	(0.92)	(0.88)	(0.88)	(0.96)	(1.00)	(1.15)	(1.21)	(1.13)	(1.16)	(1.14)

Note. Standard deviations shown in parentheses; *time* = 0 marks the first year where the transition to grandparenthood was reported.

Table S5

Means and Standard Deviations of the Big Five and Life Satisfaction over Time in the HRS.

	Pre-transition years						Post-transition years						
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Agreeableness													
Grandparents	3.46		3.51		3.51		3.51		3.52		3.50		3.56
	(0.47)		(0.48)		(0.49)		(0.49)		(0.48)		(0.53)		(0.44)
Parent controls	3.47		3.51		3.51		3.51		3.50		3.50		3.48
	(0.50)		(0.46)		(0.47)		(0.48)		(0.49)		(0.50)		(0.52)
Nonparent controls	3.53		3.48		3.51		3.48		3.52		3.44		3.47
	(0.48)		(0.51)		(0.49)		(0.51)		(0.49)		(0.54)		(0.54)
Conscientiousness													
Grandparents	3.47		3.47		3.47		3.46		3.45		3.44		3.49
	(0.46)		(0.45)		(0.44)		(0.45)		(0.44)		(0.43)		(0.44)
Parent controls	3.45		3.44		3.46		3.46		3.46		3.44		3.46
	(0.44)		(0.45)		(0.45)		(0.45)		(0.47)		(0.48)		(0.50)
Nonparent controls	3.50		3.47		3.49		3.49		3.50		3.47		3.49
	(0.43)		(0.45)		(0.43)		(0.44)		(0.44)		(0.45)		(0.44)
Extraversion													
Grandparents	3.15		3.22		3.20		3.21		3.19		3.22		3.22
	(0.56)		(0.56)		(0.54)		(0.56)		(0.58)		(0.59)		(0.58)
Parent controls	3.18		3.19		3.19		3.22		3.21		3.22		3.22
	(0.54)		(0.54)		(0.55)		(0.54)		(0.56)		(0.52)		(0.54)
Nonparent controls	3.23		3.21		3.24		3.22		3.25		3.24		3.27
	(0.54)		(0.54)		(0.55)		(0.53)		(0.52)		(0.56)		(0.55)
Neuroticism													
Grandparents	2.00		1.98		2.06		1.91		1.96		1.91		1.91
	(0.56)		(0.63)		(0.62)		(0.60)		(0.58)		(0.59)		(0.61)
Parent controls	2.07		2.02		2.02		1.98		1.99		1.96		1.95
	(0.59)		(0.59)		(0.60)		(0.61)		(0.62)		(0.59)		(0.59)
Nonparent controls	2.08		2.04		2.03		1.96		1.97		1.88		1.93
	(0.59)		(0.61)		(0.60)		(0.60)		(0.60)		(0.56)		(0.58)

Table S5 continued

	Pre-transition years						Post-transition years						
	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
Openness													
Grandparents	3.00		3.02		3.04		3.01		3.00		2.96		3.04
	(0.51)		(0.53)		(0.51)		(0.52)		(0.52)		(0.59)		(0.51)
Parent controls	3.01		2.99		2.99		3.00		2.99		2.97		2.96
	(0.51)		(0.54)		(0.54)		(0.53)		(0.53)		(0.56)		(0.56)
Nonparent controls	3.08		3.04		3.07		3.04		3.06		3.02		3.04
	(0.56)		(0.53)		(0.54)		(0.53)		(0.55)		(0.55)		(0.57)
Life satisfaction													
Grandparents	5.14		5.08		5.15		5.17		5.16		5.29		5.28
	(1.44)		(1.45)		(1.46)		(1.40)		(1.44)		(1.38)		(1.50)
Parent controls	5.08		5.03		5.05		5.16		5.13		5.17		5.18
	(1.60)		(1.56)		(1.58)		(1.50)		(1.52)		(1.46)		(1.49)
Nonparent controls	5.16		5.07		5.15		5.21		5.26		5.34		5.46
	(1.45)		(1.54)		(1.47)		(1.44)		(1.43)		(1.37)		(1.31)

Note. Standard deviations shown in parentheses; *time* = 0 marks the first year where the transition to grandparenthood was reported. To aid comparability with the LISS panel measures, we reverse scored all Big Five items so that higher values corresponded to higher trait levels.

Table S6

Intra-Class Correlations of Grandparents and Matched Controls in the Four Analysis Samples.

	A	C	E	N	O	LS
LISS: Parent controls						
ICC_{pid}	0.76	0.76	0.83	0.67	0.76	0.28
ICC_{hid}	0.04	0.02	0.01	0.10	0.03	0.40
$ICC_{pid/hid}$	0.80	0.78	0.84	0.78	0.79	0.68
LISS: Nonparent controls						
ICC_{pid}	0.75	0.74	0.85	0.65	0.80	0.31
ICC_{hid}	0.00	0.01	0.00	0.10	0.01	0.34
$ICC_{pid/hid}$	0.75	0.75	0.85	0.74	0.81	0.65
HRS: Parent controls						
ICC_{pid}	0.75	0.73	0.76	0.71	0.58	0.28
ICC_{hid}	0.01	0.03	0.02	0.03	0.20	0.38
$ICC_{pid/hid}$	0.76	0.76	0.79	0.74	0.78	0.66
HRS: Nonparent controls						
ICC_{pid}	0.69	0.74	0.75	0.74	0.60	0.33
ICC_{hid}	0.08	0.05	0.04	0.01	0.22	0.37
$ICC_{pid/hid}$	0.77	0.79	0.80	0.75	0.83	0.70

Note. A = agreeableness, C = conscientiousness, E = extraversion, N = neuroticism, O = openness, LS = life satisfaction. Intra-class correlations are the proportion of total variation that is explained by the respective nesting factor. ICC_{pid} is the proportion of total variance explained by nesting in respondents which corresponds to the correlation between two randomly selected observations from the same respondent. ICC_{hid} is the proportion of total variance explained by nesting in households which corresponds to the correlation between two randomly selected observations from the same household. $ICC_{pid/hid}$ is the proportion of total variance explained by nesting in respondents and in households which corresponds to the correlation between two randomly selected observations from the same respondent and the same household.

Table S7

Fixed Effects of Agreeableness Over the Transition to Grandparenthood.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.86	[3.80, 3.91]	135.36	< .001	3.90	[3.83, 3.96]	116.54	< .001
Propensity score, $\hat{\gamma}_{02}$	0.06	[0.01, 0.12]	2.18	.029	0.02	[-0.04, 0.08]	0.71	.478
Before-slope, $\hat{\gamma}_{10}$	0.00	[-0.01, 0.00]	-0.90	.368	0.00	[-0.01, 0.00]	-1.52	.130
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.01, -0.01]	-4.30	< .001	0.00	[0.00, 0.01]	0.88	.377
Shift, $\hat{\gamma}_{30}$	0.01	[-0.01, 0.03]	1.05	.292	0.00	[-0.03, 0.02]	-0.10	.924
Grandparent, $\hat{\gamma}_{01}$	0.04	[-0.04, 0.12]	0.93	.351	0.01	[-0.08, 0.10]	0.27	.788
Before-slope * Grandparent, $\hat{\gamma}_{11}$	-0.01	[-0.02, 0.01]	-1.07	.283	0.00	[-0.02, 0.01]	-0.57	.568
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[0.00, 0.02]	2.17	.030	0.00	[-0.01, 0.01]	-0.07	.943
Shift * Grandparent, $\hat{\gamma}_{31}$	0.00	[-0.04, 0.05]	0.19	.847	0.02	[-0.04, 0.07]	0.60	.551
HRS								
Intercept, $\hat{\gamma}_{00}$	3.47	[3.44, 3.51]	198.85	< .001	3.49	[3.45, 3.54]	167.64	< .001
Propensity score, $\hat{\gamma}_{02}$	0.08	[0.02, 0.14]	2.51	.012	0.07	[0.01, 0.14]	2.23	.026
Before-slope, $\hat{\gamma}_{10}$	0.00	[-0.01, 0.01]	-0.21	.833	-0.01	[-0.02, 0.00]	-2.77	.006
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.02, 0.00]	-2.50	.012	-0.01	[-0.02, 0.00]	-3.16	.002
Shift, $\hat{\gamma}_{30}$	0.01	[-0.01, 0.03]	0.67	.506	0.02	[0.00, 0.04]	2.39	.017
Grandparent, $\hat{\gamma}_{01}$	0.01	[-0.04, 0.07]	0.49	.627	-0.01	[-0.07, 0.05]	-0.38	.706
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.03, 0.02]	-0.19	.852	0.01	[-0.01, 0.03]	0.89	.375
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[0.00, 0.03]	1.57	.116	0.01	[0.00, 0.03]	1.91	.057
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.01	[-0.05, 0.04]	-0.36	.717	-0.03	[-0.07, 0.02]	-1.15	.251

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S8

Linear Contrasts for Agreeableness.

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.00	0.07	.792	0.00	0.01	.932
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.02	0.90	.343	0.02	0.63	.428
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.02	0.52	.471	0.02	0.44	.506
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	-0.01	2.75	.097	-0.01	2.02	.155
After-slope of grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.00	0.10	.748	0.00	0.12	.726
HRS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.00	0.06	.806	0.01	2.86	.091
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.00	0.02	.890	0.00	0.02	.896
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.00	0.05	.815	-0.01	0.42	.517
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.00	0.09	.759	0.00	0.10	.746
After-slope of grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.00	0.27	.607	0.00	0.30	.581

Note. The linear contrasts are needed in cases where estimates of interest are represented by multiple fixed-effects coefficients and are computed using the *linearHypothesis* function from the *car* R package (Fox & Weisberg, 2019) based on the models from Table S7. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S9

Linear Contrasts for Agreeableness (Moderated by Gender).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of male controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30})$	0.01	0.20	.657	0.01	0.67	.413
Shift of female controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32})$	0.00	0.00	.959	-0.01	0.34	.559
Shift of grandfathers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31})$	0.00	0.02	.901	0.00	0.01	.939
Shift of grandmothers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.03	1.69	.194	0.03	1.30	.255
Shift of male controls vs. grandfathers $(\hat{\gamma}_{21} + \hat{\gamma}_{31})$	0.00	0.01	.924	-0.01	0.09	.762
Before-slope of female controls vs. grandmothers $(\hat{\gamma}_{11} + \hat{\gamma}_{13})$	-0.01	1.10	.295	0.00	0.19	.659
After-slope of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{23})$	0.00	0.01	.927	-0.01	1.23	.267
Shift of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.03	1.38	.239	0.04	1.64	.201
Shift of male vs. female controls $(\hat{\gamma}_{22} + \hat{\gamma}_{32})$	-0.01	0.13	.716	-0.02	0.99	.319
Before-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{12} + \hat{\gamma}_{13})$	0.00	0.01	.932	0.00	0.01	.921
After-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{23})$	-0.01	1.13	.288	-0.01	0.90	.342
Shift of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.03	0.61	.434	0.03	0.50	.478
HRS						
Shift of male controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30})$	0.03	5.09	.024	0.00	0.00	.959
Shift of female controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32})$	-0.02	5.24	.022	0.02	4.44	.035
Shift of grandfathers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31})$	0.01	0.05	.819	0.01	0.05	.828
Shift of grandmothers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.00	0.00	.971	0.00	0.00	.976
Shift of male controls vs. grandfathers $(\hat{\gamma}_{21} + \hat{\gamma}_{31})$	-0.02	0.67	.413	0.00	0.03	.865
Before-slope of female controls vs. grandmothers $(\hat{\gamma}_{11} + \hat{\gamma}_{13})$	0.02	1.37	.242	0.01	0.79	.374
After-slope of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{23})$	0.00	0.07	.791	0.01	0.84	.358
Shift of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.03	1.13	.288	-0.02	0.84	.359
Shift of male vs. female controls $(\hat{\gamma}_{22} + \hat{\gamma}_{32})$	-0.05	10.29	.001	0.02	1.80	.180
Before-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{12} + \hat{\gamma}_{13})$	0.02	1.17	.280	0.02	1.19	.276
After-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{23})$	-0.02	1.87	.171	-0.02	2.01	.157
Shift of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.00	0.02	.884	0.00	0.02	.887

Note. The linear contrasts are based on the models from Table 2. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S10

Fixed Effects of Agreeableness Over the Transition to Grandparenthood Moderated by Performing Paid Work.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.51	[3.47, 3.56]	161.90	< .001	3.51	[3.46, 3.55]	142.65	< .001
Propensity score, $\hat{\gamma}_{02}$	0.09	[0.03, 0.15]	2.82	.005	0.06	[-0.01, 0.12]	1.69	.090
Before-slope, $\hat{\gamma}_{20}$	-0.01	[-0.02, 0.01]	-0.57	.567	-0.02	[-0.04, 0.00]	-1.95	.051
After-slope, $\hat{\gamma}_{40}$	-0.02	[-0.03, -0.01]	-3.42	.001	-0.02	[-0.03, -0.01]	-2.94	.003
Shift, $\hat{\gamma}_{60}$	-0.01	[-0.04, 0.02]	-0.56	.578	0.03	[-0.01, 0.06]	1.58	.114
Grandparent, $\hat{\gamma}_{01}$	-0.12	[-0.21, -0.03]	-2.65	.008	-0.11	[-0.20, -0.02]	-2.31	.021
Working, $\hat{\gamma}_{10}$	-0.06	[-0.10, -0.02]	-3.06	.002	-0.01	[-0.05, 0.03]	-0.37	.710
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.05	[0.00, 0.10]	2.14	.033	0.07	[0.02, 0.12]	2.76	.006
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.02	[0.00, 0.04]	1.63	.103	0.02	[0.00, 0.04]	1.54	.124
Shift * Grandparent, $\hat{\gamma}_{61}$	0.00	[-0.08, 0.07]	-0.06	.949	-0.04	[-0.11, 0.03]	-1.06	.288
Before-slope * Working, $\hat{\gamma}_{30}$	0.01	[-0.02, 0.03]	0.52	.604	0.01	[-0.01, 0.03]	0.70	.482
After-slope * Working, $\hat{\gamma}_{50}$	0.02	[0.00, 0.03]	2.46	.014	0.01	[0.00, 0.03]	1.66	.096
Shift * Working, $\hat{\gamma}_{70}$	0.02	[-0.03, 0.06]	0.71	.480	-0.01	[-0.05, 0.03]	-0.37	.712
Grandparent * Working, $\hat{\gamma}_{11}$	0.18	[0.09, 0.28]	3.79	< .001	0.13	[0.04, 0.22]	2.76	.006
Before-slope * Grandparent * Working, $\hat{\gamma}_{31}$	-0.07	[-0.13, -0.02]	-2.49	.013	-0.08	[-0.13, -0.02]	-2.63	.009
After-slope * Grandparent * Working, $\hat{\gamma}_{51}$	-0.01	[-0.04, 0.02]	-0.75	.453	-0.01	[-0.04, 0.03]	-0.40	.692
Shift * Grandparent * Working, $\hat{\gamma}_{71}$	-0.01	[-0.10, 0.09]	-0.11	.914	0.02	[-0.08, 0.11]	0.36	.719

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *working* = 1 indicates being employed in paid work.

Table S11

Linear Contrasts for Agreeableness (Moderated by Paid Work; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of not-working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	-0.03	4.00	.045	0.01	0.68	.411
Shift of working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.01	0.40	.528	0.02	2.65	.103
Shift of not-working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.01	0.14	.712	-0.01	0.15	.700
Shift of working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.01	0.07	.795	0.00	0.06	.812
Shift of not-working controls vs. not-working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	0.02	0.29	.589	-0.02	0.53	.466
Before-slope of working controls vs. working grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	1.75	.186	-0.01	0.28	.597
After-slope of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.01	0.32	.571	0.01	1.05	.305
Shift of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.00	0.00	.958	-0.01	0.24	.621
Shift of not-working controls vs. working controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.03	3.81	.051	0.00	0.05	.825
Before-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.07	6.16	.013	-0.07	6.59	.010
After-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.01	0.14	.710	0.01	0.15	.694
Shift of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.02	0.20	.658	0.01	0.20	.659

Note. The linear contrasts are based on the models from Table S10. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S12

Fixed Effects of Agreeableness Over the Transition to Grandparenthood Moderated by Grandchild Care.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.47	[3.43, 3.52]	158.38	< .001	3.44	[3.39, 3.49]	128.70	< .001
Propensity score, $\hat{\gamma}_{02}$	0.17	[0.09, 0.24]	4.36	< .001	0.22	[0.14, 0.30]	5.14	< .001
After-slope, $\hat{\gamma}_{20}$	-0.02	[-0.03, -0.01]	-3.73	< .001	-0.02	[-0.03, -0.01]	-3.02	.003
Grandparent, $\hat{\gamma}_{01}$	-0.04	[-0.11, 0.02]	-1.29	.197	-0.04	[-0.12, 0.03]	-1.25	.212
Caring, $\hat{\gamma}_{10}$	-0.01	[-0.04, 0.03]	-0.42	.672	0.00	[-0.04, 0.03]	-0.18	.854
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[0.00, 0.04]	2.01	.044	0.02	[0.00, 0.04]	1.71	.088
After-slope * Caring, $\hat{\gamma}_{30}$	0.01	[-0.01, 0.02]	0.76	.446	0.00	[-0.01, 0.02]	0.34	.732
Grandparent * Caring, $\hat{\gamma}_{11}$	0.02	[-0.06, 0.11]	0.55	.584	0.01	[-0.08, 0.10]	0.29	.773
After-slope * Grandparent * Caring, $\hat{\gamma}_{31}$	0.01	[-0.03, 0.04]	0.35	.726	0.01	[-0.02, 0.04]	0.59	.556

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *caring* = 1 indicates more than 100 hours of grandchild care since the last assessment.

Table S13

Linear Contrasts for Agreeableness (Moderated by Grandchild Care; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
After-slope of caring controls vs. caring grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.03	4.66	.031	0.03	4.93	.026
After-slope of not-caring grandparents vs. caring grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.01	0.61	.434	0.01	0.70	.404

Note. The linear contrasts are based on the models from Table S12. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S14

Fixed Effects of Agreeableness Over the Transition to Grandparenthood Moderated by Race/Ethnicity.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.49	[3.46, 3.53]	185.58	< .001	3.48	[3.44, 3.53]	152.86	< .001
Propensity score, $\hat{\gamma}_{02}$	0.08	[0.02, 0.14]	2.62	.009	0.06	[0.00, 0.13]	1.87	.061
Before-slope, $\hat{\gamma}_{20}$	-0.01	[-0.02, 0.00]	-2.08	.037	-0.01	[-0.02, 0.00]	-1.87	.062
After-slope, $\hat{\gamma}_{40}$	0.00	[-0.01, 0.01]	-0.56	.574	-0.01	[-0.02, 0.00]	-2.44	.015
Shift, $\hat{\gamma}_{60}$	0.01	[-0.01, 0.03]	0.90	.368	0.03	[0.01, 0.05]	2.65	.008
Grandparent, $\hat{\gamma}_{01}$	-0.01	[-0.07, 0.05]	-0.27	.790	0.00	[-0.06, 0.07]	0.15	.884
Black, $\hat{\gamma}_{10}$	-0.07	[-0.18, 0.04]	-1.27	.203	0.13	[0.01, 0.24]	2.16	.031
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[-0.02, 0.03]	0.42	.674	0.00	[-0.02, 0.03]	0.31	.755
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.00	[-0.01, 0.02]	0.39	.695	0.01	[-0.01, 0.03]	1.25	.211
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.01	[-0.05, 0.04]	-0.27	.788	-0.03	[-0.07, 0.02]	-1.07	.286
Before-slope * Black, $\hat{\gamma}_{30}$	0.05	[0.01, 0.10]	2.55	.011	-0.04	[-0.08, 0.00]	-1.98	.047
After-slope * Black, $\hat{\gamma}_{50}$	-0.06	[-0.08, -0.03]	-4.67	< .001	-0.04	[-0.08, -0.01]	-2.88	.004
Shift * Black, $\hat{\gamma}_{70}$	-0.02	[-0.09, 0.06]	-0.41	.679	0.01	[-0.07, 0.09]	0.18	.856
Grandparent * Black, $\hat{\gamma}_{11}$	0.07	[-0.14, 0.27]	0.63	.532	-0.13	[-0.35, 0.08]	-1.24	.214
Before-slope * Grandparent * Black, $\hat{\gamma}_{31}$	-0.02	[-0.12, 0.09]	-0.28	.781	0.08	[-0.02, 0.18]	1.51	.130
After-slope * Grandparent * Black, $\hat{\gamma}_{51}$	0.07	[0.01, 0.13]	2.12	.034	0.06	[-0.01, 0.12]	1.67	.095
Shift * Grandparent * Black, $\hat{\gamma}_{71}$	0.01	[-0.16, 0.19]	0.14	.891	-0.01	[-0.19, 0.17]	-0.13	.893

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *black* = 0 indicates White/Caucasian race/ethnicity, *black* = 1 indicates Black/African American race/ethnicity.

Table S15

Linear Contrasts for Agreeableness (Moderated by Race/Ethnicity; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of White controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	0.01	0.85	.358	0.02	5.58	.018
Shift of Black controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.07	5.38	.020	-0.02	0.34	.559
Shift of White grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	0.00	0.07	.791	0.00	0.06	.806
Shift of Black grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.01	0.04	.840	0.01	0.03	.854
Shift of White controls vs. White grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	0.00	0.03	.858	-0.02	0.71	.400
Before-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.01	0.03	.854	0.08	2.68	.102
After-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.07	5.26	.022	0.07	4.17	.041
Shift of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.08	1.43	.232	0.03	0.19	.665
Shift of White controls vs. Black controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.07	6.18	.013	-0.04	1.41	.235
Before-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.04	0.64	.424	0.04	0.69	.406
After-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.01	0.14	.713	0.01	0.14	.705
Shift of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.01	0.02	.903	0.01	0.01	.912

Note. The linear contrasts are based on the models from Table S14. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S16

Fixed Effects of Conscientiousness Over the Transition to Grandparenthood.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.77	[3.71, 3.82]	134.94	< .001	3.83	[3.76, 3.90]	114.22	< .001
Propensity score, $\hat{\gamma}_{02}$	0.08	[0.02, 0.13]	2.59	.009	-0.01	[-0.07, 0.05]	-0.45	.652
Before-slope, $\hat{\gamma}_{10}$	-0.01	[-0.01, 0.00]	-2.43	.015	-0.01	[-0.01, 0.00]	-2.09	.037
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.01, 0.00]	-2.96	.003	0.01	[0.00, 0.01]	2.22	.026
Shift, $\hat{\gamma}_{30}$	0.01	[-0.01, 0.04]	1.21	.225	0.00	[-0.02, 0.03]	0.35	.724
Grandparent, $\hat{\gamma}_{01}$	-0.02	[-0.10, 0.06]	-0.46	.644	-0.05	[-0.14, 0.04]	-1.14	.255
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[0.00, 0.02]	1.38	.168	0.01	[0.00, 0.02]	1.21	.226
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.01, 0.01]	0.46	.646	-0.01	[-0.02, 0.00]	-1.72	.085
Shift * Grandparent, $\hat{\gamma}_{31}$	0.00	[-0.05, 0.05]	0.14	.887	0.01	[-0.04, 0.07]	0.48	.634
HRS								
Intercept, $\hat{\gamma}_{00}$	3.39	[3.36, 3.42]	208.49	< .001	3.35	[3.32, 3.39]	174.84	< .001
Propensity score, $\hat{\gamma}_{02}$	0.08	[0.02, 0.13]	2.75	.006	0.15	[0.09, 0.21]	5.01	< .001
Before-slope, $\hat{\gamma}_{10}$	0.01	[0.00, 0.02]	2.35	.019	0.00	[-0.01, 0.01]	0.86	.388
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.01, 0.00]	-1.53	.125	-0.01	[-0.01, 0.00]	-2.31	.021
Shift, $\hat{\gamma}_{30}$	-0.01	[-0.03, 0.01]	-1.17	.242	0.00	[-0.02, 0.02]	-0.19	.846
Grandparent, $\hat{\gamma}_{01}$	0.03	[-0.02, 0.09]	1.34	.181	0.03	[-0.02, 0.08]	1.17	.241
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.03, 0.02]	-0.32	.752	0.00	[-0.02, 0.03]	0.39	.696
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[0.00, 0.03]	1.90	.058	0.02	[0.00, 0.03]	2.34	.019
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.02	[-0.06, 0.02]	-0.97	.333	-0.03	[-0.07, 0.01]	-1.51	.130

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S17

Linear Contrasts for Conscientiousness.

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.01	0.54	.461	0.01	0.80	.371
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.01	0.47	.493	0.01	0.39	.532
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.01	0.07	.789	0.00	0.02	.884
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.00	0.10	.751	0.00	0.08	.773
After-slope of grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.00	0.86	.353	0.00	0.69	.406
HRS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.02	4.85	.028	-0.01	1.62	.202
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	2.50	.114	-0.02	2.87	.091
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.01	0.17	.678	-0.01	0.87	.351
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.01	0.59	.441	0.01	0.70	.403
After-slope of grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.01	1.85	.174	0.01	2.16	.142

Note. The linear contrasts are needed in cases where estimates of interest are represented by multiple fixed-effects coefficients and are computed using the *linearHypothesis* function from the *car* R package (Fox & Weisberg, 2019) based on the models from Table S16. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S18

Fixed Effects of Conscientiousness Over the Transition to Grandparenthood Moderated by Gender.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.72	[3.64, 3.80]	89.52	< .001	3.77	[3.67, 3.87]	75.55	< .001
Propensity score, $\hat{\gamma}_{04}$	0.08	[0.02, 0.13]	2.61	.009	-0.01	[-0.07, 0.05]	-0.33	.745
Before-slope, $\hat{\gamma}_{10}$	-0.01	[-0.02, 0.00]	-2.08	.037	-0.01	[-0.02, 0.00]	-2.26	.024
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.01, 0.00]	-1.96	.050	0.00	[-0.01, 0.00]	-0.56	.577
Shift, $\hat{\gamma}_{30}$	0.02	[-0.01, 0.06]	1.44	.150	0.00	[-0.03, 0.04]	0.08	.936
Grandparent, $\hat{\gamma}_{01}$	-0.01	[-0.14, 0.11]	-0.23	.820	-0.04	[-0.17, 0.10]	-0.56	.575
Female, $\hat{\gamma}_{02}$	0.09	[-0.02, 0.20]	1.60	.110	0.10	[-0.03, 0.23]	1.48	.139
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[-0.01, 0.03]	1.00	.318	0.01	[-0.01, 0.03]	1.06	.291
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[-0.01, 0.02]	1.12	.261	0.00	[-0.01, 0.02]	0.48	.634
Shift * Grandparent, $\hat{\gamma}_{31}$	0.00	[-0.08, 0.07]	-0.08	.936	0.02	[-0.06, 0.10]	0.51	.613
Before-slope * Female, $\hat{\gamma}_{12}$	0.00	[-0.01, 0.01]	0.62	.537	0.01	[0.00, 0.02]	1.29	.198
After-slope * Female, $\hat{\gamma}_{22}$	0.00	[-0.01, 0.01]	-0.02	.986	0.01	[0.00, 0.02]	2.90	.004
Shift * Female, $\hat{\gamma}_{32}$	-0.02	[-0.07, 0.03]	-0.84	.401	0.00	[-0.05, 0.05]	0.11	.912
Grandparent * Female, $\hat{\gamma}_{03}$	-0.01	[-0.17, 0.16]	-0.08	.939	-0.02	[-0.20, 0.16]	-0.20	.841
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.00	[-0.02, 0.02]	-0.17	.867	-0.01	[-0.03, 0.02]	-0.49	.623
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.01	[-0.03, 0.01]	-1.06	.290	-0.03	[-0.05, 0.00]	-2.22	.026
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.01	[-0.09, 0.11]	0.26	.792	-0.01	[-0.12, 0.10]	-0.17	.866
HRS								
Intercept, $\hat{\gamma}_{00}$	3.31	[3.27, 3.36]	142.75	< .001	3.27	[3.22, 3.32]	126.71	< .001
Propensity score, $\hat{\gamma}_{04}$	0.08	[0.03, 0.14]	2.97	.003	0.14	[0.09, 0.20]	4.83	< .001
Before-slope, $\hat{\gamma}_{10}$	0.03	[0.01, 0.04]	3.61	< .001	0.00	[-0.01, 0.02]	0.71	.477
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.01]	-0.92	.360	0.00	[-0.01, 0.00]	-0.98	.328
Shift, $\hat{\gamma}_{30}$	-0.02	[-0.05, 0.01]	-1.46	.143	0.02	[-0.01, 0.05]	1.51	.131
Grandparent, $\hat{\gamma}_{01}$	0.01	[-0.07, 0.08]	0.15	.879	0.01	[-0.06, 0.09]	0.38	.707
Female, $\hat{\gamma}_{02}$	0.14	[0.08, 0.20]	4.73	< .001	0.16	[0.10, 0.22]	4.88	<
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.04, 0.03]	-0.24	.807	0.02	[-0.01, 0.05]	1.06	.287
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[0.00, 0.04]	1.96	.050	0.02	[0.00, 0.04]	2.13	.033
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.04	[-0.11, 0.02]	-1.39	.164	-0.09	[-0.15, -0.03]	-2.90	.004
Before-slope * Female, $\hat{\gamma}_{12}$	-0.03	[-0.05, -0.01]	-2.78	.006	0.00	[-0.02, 0.02]	-0.17	.861
After-slope * Female, $\hat{\gamma}_{22}$	0.00	[-0.01, 0.01]	-0.16	.874	0.00	[-0.02, 0.01]	-0.53	.593
Shift * Female, $\hat{\gamma}_{32}$	0.02	[-0.02, 0.06]	0.94	.346	-0.04	[-0.08, -0.01]	-2.27	.023

Table S18 continued

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Grandparent * Female, $\hat{\gamma}_{03}$	0.05	[-0.05, 0.15]	1.00	.318	0.03	[-0.07, 0.13]	0.53	.595
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.00	[-0.04, 0.05]	0.12	.903	-0.02	[-0.07, 0.02]	-1.07	.283
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.01	[-0.04, 0.02]	-0.92	.356	-0.01	[-0.04, 0.02]	-0.84	.401
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.04	[-0.04, 0.13]	1.00	.315	0.10	[0.02, 0.18]	2.55	.011

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S19

Linear Contrasts for Conscientiousness (Moderated by Gender).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of male controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30})$	0.02	1.46	.226	0.00	0.00	.976
Shift of female controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32})$	0.00	0.01	.923	0.02	1.18	.277
Shift of grandfathers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31})$	0.02	0.67	.413	0.02	0.57	.452
Shift of grandmothers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.01	0.06	.800	0.01	0.05	.816
Shift of male controls vs. grandfathers $(\hat{\gamma}_{21} + \hat{\gamma}_{31})$	0.01	0.03	.867	0.02	0.47	.494
Before-slope of female controls vs. grandmothers $(\hat{\gamma}_{11} + \hat{\gamma}_{13})$	0.01	0.72	.395	0.00	0.17	.677
After-slope of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{23})$	0.00	0.11	.737	-0.02	7.66	.006
Shift of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.01	0.07	.787	-0.01	0.09	.766
Shift of male vs. female controls $(\hat{\gamma}_{22} + \hat{\gamma}_{32})$	-0.02	0.93	.335	0.02	0.59	.444
Before-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{12} + \hat{\gamma}_{13})$	0.00	0.02	.901	0.00	0.01	.915
After-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{23})$	-0.01	1.40	.236	-0.01	1.13	.287
Shift of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	-0.02	0.19	.664	-0.02	0.16	.689
HRS						
Shift of male controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30})$	-0.03	5.34	.021	0.02	2.33	.127
Shift of female controls vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32})$	-0.01	0.74	.388	-0.03	9.62	.002
Shift of grandfathers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31})$	-0.05	5.02	.025	-0.05	5.82	.016
Shift of grandmothers vs. 0 $(\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.00	0.01	.923	0.00	0.01	.912
Shift of male controls vs. grandfathers $(\hat{\gamma}_{21} + \hat{\gamma}_{31})$	-0.02	0.89	.345	-0.07	8.09	.004
Before-slope of female controls vs. grandmothers $(\hat{\gamma}_{11} + \hat{\gamma}_{13})$	0.00	0.01	.926	-0.01	0.17	.680
After-slope of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{23})$	0.01	0.61	.436	0.01	1.23	.266
Shift of female controls vs. grandmothers $(\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.01	0.09	.764	0.03	1.65	.199
Shift of male vs. female controls $(\hat{\gamma}_{22} + \hat{\gamma}_{32})$	0.02	1.33	.248	-0.05	10.13	.001
Before-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{12} + \hat{\gamma}_{13})$	-0.02	1.38	.240	-0.03	1.60	.205
After-slope of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{23})$	-0.01	1.23	.268	-0.02	1.46	.227
Shift of grandfathers vs. grandmothers $(\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33})$	0.05	2.55	.110	0.05	2.95	.086

Note. The linear contrasts are based on the models from Table S18. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S20

Linear Contrasts for Conscientiousness (Moderated by Paid Work; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of not-working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	-0.01	0.25	.620	-0.07	26.57	< .001
Shift of working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.02	3.07	.080	0.02	4.47	.035
Shift of not-working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.06	5.21	.022	-0.06	6.00	.014
Shift of working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.01	0.08	.778	-0.01	0.13	.718
Shift of not-working controls vs. not-working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.05	3.38	.066	0.01	0.08	.778
Before-slope of working controls vs. working grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.03	5.06	.024	-0.01	1.02	.313
After-slope of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.01	1.32	.250	0.01	1.11	.293
Shift of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.01	0.29	.590	-0.02	1.55	.213
Shift of not-working controls vs. working controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.01	0.47	.495	0.08	29.16	< .001
Before-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.08	9.33	.002	-0.08	10.57	.001
After-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.00	0.01	.930	0.00	0.02	.885
Shift of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.05	2.65	.103	0.05	2.93	.087

Note. The linear contrasts are based on the models from Table 3. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S21

Linear Contrasts for Conscientiousness (Moderated by Grandchild Care; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
After-slope of caring controls vs. caring grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.04	11.65	.001	0.04	11.81	.001
After-slope of not-caring grandparents vs. caring grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.03	4.75	.029	0.03	5.45	.020

Note. The linear contrasts are based on the models from Table 4. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S22

Fixed Effects of Conscientiousness Over the Transition to Grandparenthood Moderated by Race/Ethnicity.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.42	[3.38, 3.45]	194.05	< .001	3.36	[3.32, 3.40]	160.53	< .001
Propensity score, $\hat{\gamma}_{02}$	0.07	[0.01, 0.13]	2.38	.017	0.15	[0.09, 0.21]	4.83	< .001
Before-slope, $\hat{\gamma}_{20}$	0.01	[0.00, 0.02]	1.42	.155	0.01	[0.00, 0.02]	1.59	.111
After-slope, $\hat{\gamma}_{40}$	0.00	[-0.01, 0.01]	-0.35	.727	-0.01	[-0.01, 0.00]	-1.77	.076
Shift, $\hat{\gamma}_{60}$	0.00	[-0.02, 0.02]	-0.37	.714	0.00	[-0.02, 0.01]	-0.43	.664
Grandparent, $\hat{\gamma}_{01}$	0.01	[-0.05, 0.06]	0.24	.812	0.02	[-0.04, 0.08]	0.70	.483
Black, $\hat{\gamma}_{10}$	-0.21	[-0.31, -0.11]	-4.05	< .001	0.00	[-0.10, 0.11]	0.02	.983
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[-0.02, 0.03]	0.47	.639	0.01	[-0.02, 0.03]	0.50	.619
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.01	[0.00, 0.03]	1.53	.126	0.02	[0.00, 0.03]	2.27	.023
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.03	[-0.08, 0.01]	-1.52	.128	-0.04	[-0.08, 0.01]	-1.62	.105
Before-slope * Black, $\hat{\gamma}_{30}$	0.09	[0.05, 0.13]	4.31	< .001	-0.04	[-0.07, 0.00]	-2.15	.032
After-slope * Black, $\hat{\gamma}_{50}$	-0.02	[-0.04, 0.00]	-1.78	.076	-0.02	[-0.05, 0.00]	-1.78	.076
Shift * Black, $\hat{\gamma}_{70}$	-0.13	[-0.20, -0.06]	-3.50	< .001	0.04	[-0.04, 0.11]	0.99	.322
Grandparent * Black, $\hat{\gamma}_{11}$	0.29	[0.10, 0.49]	2.96	.003	0.09	[-0.10, 0.28]	0.94	.349
Before-slope * Grandparent * Black, $\hat{\gamma}_{31}$	-0.12	[-0.22, -0.02]	-2.29	.022	0.01	[-0.09, 0.10]	0.15	.883
After-slope * Grandparent * Black, $\hat{\gamma}_{51}$	0.04	[-0.02, 0.10]	1.38	.169	0.05	[-0.01, 0.10]	1.51	.132
Shift * Grandparent * Black, $\hat{\gamma}_{71}$	0.08	[-0.09, 0.24]	0.91	.360	-0.08	[-0.24, 0.08]	-1.02	.310

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *black* = 0 indicates White/Caucasian race/ethnicity, *black* = 1 indicates Black/African American race/ethnicity.

Table S23

Linear Contrasts for Conscientiousness (Moderated by Race/Ethnicity; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of White controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	0.00	0.40	.529	-0.01	1.78	.182
Shift of Black controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.15	32.53	< .001	0.00	0.01	.923
Shift of White grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.03	3.20	.074	-0.03	3.69	.055
Shift of Black grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.05	0.98	.321	-0.05	1.06	.304
Shift of White controls vs. White grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.02	1.72	.189	-0.02	1.25	.264
Before-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.11	5.04	.025	0.01	0.08	.783
After-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.05	3.35	.067	0.06	4.52	.033
Shift of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.10	2.51	.113	-0.06	0.91	.339
Shift of White controls vs. Black controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.15	27.97	< .001	0.01	0.20	.656
Before-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.03	0.40	.527	-0.03	0.48	.489
After-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.02	0.58	.445	0.02	0.60	.439
Shift of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.03	0.22	.641	-0.03	0.22	.642

Note. The linear contrasts are based on the models from Table S22. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S24

Fixed Effects of Extraversion Over the Transition to Grandparenthood.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.25	[3.17, 3.32]	89.33	< .001	3.29	[3.20, 3.38]	73.28	< .001
Propensity score, $\hat{\gamma}_{02}$	0.08	[0.01, 0.14]	2.32	.021	0.03	[-0.03, 0.09]	0.89	.375
Before-slope, $\hat{\gamma}_{10}$	0.00	[-0.01, 0.00]	-1.59	.113	0.00	[-0.01, 0.00]	-0.91	.365
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.00]	-1.75	.080	-0.01	[-0.02, -0.01]	-4.79	< .001
Shift, $\hat{\gamma}_{30}$	-0.02	[-0.04, 0.01]	-1.41	.160	0.00	[-0.02, 0.03]	0.37	.712
Grandparent, $\hat{\gamma}_{01}$	0.04	[-0.07, 0.14]	0.66	.508	0.00	[-0.12, 0.12]	0.04	.971
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.02, 0.01]	-0.70	.483	-0.01	[-0.02, 0.01]	-1.00	.318
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.01, 0.01]	0.41	.682	0.01	[0.00, 0.02]	1.74	.083
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.01	[-0.06, 0.05]	-0.34	.731	-0.03	[-0.09, 0.02]	-1.15	.248
HRS								
Intercept, $\hat{\gamma}_{00}$	3.19	[3.15, 3.22]	160.27	< .001	3.14	[3.10, 3.19]	136.03	< .001
Propensity score, $\hat{\gamma}_{02}$	0.05	[-0.01, 0.12]	1.53	.126	0.05	[-0.02, 0.12]	1.50	.134
Before-slope, $\hat{\gamma}_{10}$	-0.01	[-0.02, 0.01]	-1.03	.303	0.01	[0.00, 0.02]	1.40	.162
After-slope, $\hat{\gamma}_{20}$	0.01	[0.00, 0.01]	1.57	.117	0.00	[-0.01, 0.01]	0.45	.654
Shift, $\hat{\gamma}_{30}$	0.00	[-0.02, 0.03]	0.34	.738	0.00	[-0.02, 0.02]	-0.34	.736
Grandparent, $\hat{\gamma}_{01}$	0.00	[-0.06, 0.06]	0.07	.944	0.04	[-0.03, 0.10]	1.17	.243
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[-0.02, 0.03]	0.51	.609	-0.01	[-0.03, 0.02]	-0.51	.607
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.01, 0.02]	0.45	.651	0.01	[-0.01, 0.02]	1.00	.316
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.02	[-0.07, 0.03]	-0.92	.357	-0.02	[-0.06, 0.03]	-0.66	.508

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S25

Linear Contrasts for Extraversion.

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.02	3.95	.047	-0.01	0.40	.527
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.03	1.87	.172	-0.03	1.85	.174
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.01	0.09	.765	-0.02	0.84	.358
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	-0.01	2.51	.113	-0.01	2.52	.112
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.00	0.16	.692	0.00	0.16	.693
HRS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.01	1.28	.259	0.00	0.06	.812
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.01	0.31	.576	-0.01	0.35	.556
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	1.02	.313	-0.01	0.17	.676
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.00	0.01	.939	0.00	0.01	.931
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.01	1.63	.202	0.01	1.80	.180

Note. The linear contrasts are needed in cases where estimates of interest are represented by multiple fixed-effects coefficients and are computed using the *linearHypothesis* function from the *car* R package (Fox & Weisberg, 2019) based on the models from Table S24. $\hat{\gamma}_c =$ combined fixed-effects estimate.

Table S26

Fixed Effects of Extraversion Over the Transition to Grandparenthood Moderated by Gender.

Parameter		Parent controls				Nonparent controls		
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.21	[3.11, 3.32]	59.28	< .001	3.23	[3.09, 3.36]	47.76	< .001
Propensity score, $\hat{\gamma}_{04}$	0.08	[0.01, 0.14]	2.35	.019	0.03	[-0.03, 0.09]	0.99	.322
Before-slope, $\hat{\gamma}_{10}$	0.00	[-0.01, 0.00]	-0.91	.363	0.01	[0.00, 0.02]	1.77	.077
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.01]	-0.05	.964	-0.01	[-0.02, -0.01]	-3.61	< .001
Shift, $\hat{\gamma}_{30}$	-0.08	[-0.12, -0.05]	-4.40	< .001	-0.01	[-0.04, 0.03]	-0.29	.773
Grandparent, $\hat{\gamma}_{01}$	0.06	[-0.10, 0.22]	0.76	.449	0.06	[-0.12, 0.23]	0.65	.517
Female, $\hat{\gamma}_{02}$	0.06	[-0.08, 0.20]	0.80	.426	0.12	[-0.05, 0.30]	1.36	.174
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.02, 0.01]	-0.40	.690	-0.02	[-0.03, 0.00]	-1.61	.108
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.02, 0.01]	-0.38	.700	0.01	[-0.01, 0.03]	1.15	.252
Shift * Grandparent, $\hat{\gamma}_{31}$	0.05	[-0.03, 0.13]	1.18	.236	-0.03	[-0.11, 0.05]	-0.72	.474
Before-slope * Female, $\hat{\gamma}_{12}$	0.00	[-0.01, 0.01]	-0.14	.889	-0.02	[-0.03, -0.01]	-3.39	.001
After-slope * Female, $\hat{\gamma}_{22}$	-0.01	[-0.02, 0.00]	-1.59	.112	0.00	[-0.01, 0.01]	0.42	.673
Shift * Female, $\hat{\gamma}_{32}$	0.12	[0.07, 0.17]	4.70	< .001	0.02	[-0.03, 0.07]	0.77	.441
Grandparent * Female, $\hat{\gamma}_{03}$	-0.04	[-0.25, 0.17]	-0.40	.687	-0.11	[-0.34, 0.13]	-0.89	.376
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.00	[-0.03, 0.02]	-0.10	.917	0.02	[-0.01, 0.04]	1.38	.167
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	0.01	[-0.01, 0.03]	0.89	.371	0.00	[-0.02, 0.02]	0.01	.989
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	-0.11	[-0.22, 0.00]	-1.92	.055	-0.01	[-0.12, 0.10]	-0.11	.909
HRS								
Intercept, $\hat{\gamma}_{00}$	3.13	[3.08, 3.19]	109.26	< .001	3.12	[3.06, 3.19]	98.59	< .001
Propensity score, $\hat{\gamma}_{04}$	0.06	[-0.01, 0.12]	1.69	.091	0.05	[-0.02, 0.12]	1.32	.188
Before-slope, $\hat{\gamma}_{10}$	0.01	[0.00, 0.03]	1.43	.152	-0.01	[-0.02, 0.01]	-1.01	.314
After-slope, $\hat{\gamma}_{20}$	0.01	[0.00, 0.03]	2.51	.012	0.01	[-0.01, 0.02]	1.04	.299
Shift, $\hat{\gamma}_{30}$	-0.02	[-0.05, 0.02]	-1.05	.293	0.00	[-0.03, 0.03]	0.06	.953
Grandparent, $\hat{\gamma}_{01}$	-0.01	[-0.10, 0.08]	-0.15	.879	0.00	[-0.09, 0.09]	0.02	.980
Female, $\hat{\gamma}_{02}$	0.10	[0.02, 0.17]	2.64	.008	0.05	[-0.04, 0.13]	1.10	.270
Before-slope * Grandparent, $\hat{\gamma}_{11}$	-0.02	[-0.06, 0.02]	-1.15	.249	0.00	[-0.04, 0.04]	-0.14	.891
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.02, 0.03]	0.12	.901	0.01	[-0.01, 0.03]	0.83	.409
Shift * Grandparent, $\hat{\gamma}_{31}$	0.00	[-0.07, 0.08]	0.13	.895	-0.01	[-0.09, 0.06]	-0.39	.694
Before-slope * Female, $\hat{\gamma}_{12}$	-0.03	[-0.06, -0.01]	-2.98	.003	0.03	[0.01, 0.05]	2.60	.009
After-slope * Female, $\hat{\gamma}_{22}$	-0.02	[-0.03, 0.00]	-1.97	.049	-0.01	[-0.02, 0.01]	-0.95	.340
Shift * Female, $\hat{\gamma}_{32}$	0.04	[-0.01, 0.08]	1.72	.086	-0.01	[-0.05, 0.03]	-0.41	.681

Table S26 continued

	Parent controls				Nonparent controls			
Parameter	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Grandparent * Female, $\hat{\gamma}_{03}$	0.02	[-0.11, 0.14]	0.24	.808	0.07	[-0.06, 0.19]	1.02	.307
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.06	[0.00, 0.11]	2.07	.039	-0.01	[-0.06, 0.04]	-0.27	.785
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	0.00	[-0.03, 0.04]	0.20	.844	0.00	[-0.04, 0.03]	-0.27	.784
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	-0.05	[-0.15, 0.05]	-0.98	.328	0.00	[-0.10, 0.09]	-0.03	.976

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S27

Linear Contrasts for Extraversion (Moderated by Gender).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.08	25.26	< .001	-0.02	1.25	.264
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.03	3.67	.055	0.00	0.05	.819
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.04	1.43	.231	-0.04	1.40	.236
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.02	0.60	.438	-0.02	0.60	.440
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.05	1.58	.209	-0.02	0.30	.582
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	-0.01	0.35	.552	0.00	0.09	.767
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	0.01	0.82	.365	0.01	1.60	.206
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.05	2.46	.117	-0.03	0.62	.429
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.11	25.15	< .001	0.02	0.95	.331
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.00	0.04	.851	0.00	0.03	.857
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	0.00	0.05	.825	0.00	0.05	.826
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.02	0.13	.716	0.02	0.13	.721
HRS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.00	0.06	.802	0.01	0.30	.584
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.02	3.12	.077	-0.01	0.69	.406
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.00	0.02	.897	0.00	0.01	.904
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.02	0.69	.405	-0.02	0.76	.384
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.01	0.05	.819	0.00	0.02	.884
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.03	3.30	.069	-0.01	0.33	.568
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	0.01	0.18	.668	0.01	0.26	.613
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.04	2.36	.124	-0.01	0.17	.683
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.02	1.85	.173	-0.02	0.92	.338
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.02	0.78	.377	0.02	0.83	.363
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	-0.01	0.57	.452	-0.01	0.62	.432
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.02	0.43	.513	-0.02	0.45	.502

Note. The linear contrasts are based on the models from Table S26. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S28

Fixed Effects of Extraversion Over the Transition to Grandparenthood Moderated by Performing Paid Work.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.19	[3.14, 3.24]	131.67	$< .001$	3.16	[3.11, 3.21]	117.06	$< .001$
Propensity score, $\hat{\gamma}_{02}$	0.04	[-0.02, 0.11]	1.28	.201	0.02	[-0.05, 0.09]	0.46	.645
Before-slope, $\hat{\gamma}_{20}$	0.00	[-0.02, 0.02]	-0.34	.734	0.00	[-0.02, 0.02]	-0.22	.825
After-slope, $\hat{\gamma}_{40}$	0.01	[0.00, 0.02]	1.45	.148	0.00	[-0.01, 0.01]	-0.55	.583
Shift, $\hat{\gamma}_{60}$	-0.03	[-0.07, 0.00]	-1.89	.059	-0.01	[-0.04, 0.03]	-0.43	.668
Grandparent, $\hat{\gamma}_{01}$	-0.08	[-0.18, 0.02]	-1.62	.105	-0.04	[-0.14, 0.05]	-0.88	.379
Working, $\hat{\gamma}_{10}$	0.00	[-0.05, 0.04]	-0.21	.836	0.00	[-0.04, 0.04]	-0.10	.922
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.04	[-0.01, 0.09]	1.50	.134	0.04	[-0.01, 0.09]	1.51	.132
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.01	[-0.01, 0.04]	1.05	.292	0.02	[0.00, 0.05]	1.99	.047
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.03	[-0.11, 0.05]	-0.73	.467	-0.06	[-0.13, 0.02]	-1.38	.168
Before-slope * Working, $\hat{\gamma}_{30}$	0.00	[-0.03, 0.02]	-0.27	.785	0.02	[-0.01, 0.04]	1.18	.238
After-slope * Working, $\hat{\gamma}_{50}$	0.00	[-0.01, 0.02]	0.10	.923	0.02	[0.00, 0.03]	1.98	.047
Shift * Working, $\hat{\gamma}_{70}$	0.06	[0.01, 0.10]	2.43	.015	0.00	[-0.04, 0.05]	0.13	.900
Grandparent * Working, $\hat{\gamma}_{11}$	0.11	[0.01, 0.21]	2.10	.036	0.11	[0.01, 0.21]	2.13	.033
Before-slope * Grandparent * Working, $\hat{\gamma}_{31}$	-0.04	[-0.10, 0.02]	-1.28	.200	-0.06	[-0.12, 0.00]	-1.92	.055
After-slope * Grandparent * Working, $\hat{\gamma}_{51}$	-0.02	[-0.05, 0.02]	-0.92	.355	-0.03	[-0.06, 0.00]	-1.79	.074
Shift * Grandparent * Working, $\hat{\gamma}_{71}$	0.02	[-0.09, 0.12]	0.29	.774	0.07	[-0.03, 0.17]	1.32	.186

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *working* = 1 indicates being employed in paid work.

Table S29

Linear Contrasts for Extraversion (Moderated by Paid Work; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of not-working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	-0.03	3.19	.074	-0.01	0.53	.465
Shift of working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.03	8.11	.004	0.01	0.44	.505
Shift of not-working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.04	2.00	.157	-0.04	2.17	.141
Shift of working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.01	0.42	.518	0.01	0.43	.514
Shift of not-working controls vs. not-working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.02	0.25	.618	-0.03	0.91	.341
Before-slope of working controls vs. working grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.00	0.00	.998	-0.02	1.62	.204
After-slope of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.00	0.07	.793	-0.01	0.29	.592
Shift of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.02	0.50	.479	0.01	0.09	.766
Shift of not-working controls vs. working controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.06	9.85	.002	0.02	0.94	.333
Before-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.04	2.27	.131	-0.04	2.47	.116
After-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	-0.02	0.96	.326	-0.02	1.03	.311
Shift of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.06	2.22	.136	0.06	2.37	.124

Note. The linear contrasts are based on the models from Table S28. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S30

Fixed Effects of Extraversion Over the Transition to Grandparenthood Moderated by Grandchild Care.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.18	[3.13, 3.23]	127.99	$< .001$	3.16	[3.10, 3.22]	107.75	$< .001$
Propensity score, $\hat{\gamma}_{02}$	0.07	[-0.01, 0.16]	1.72	.086	0.07	[-0.02, 0.16]	1.45	.148
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.01]	0.54	.590	0.00	[-0.01, 0.01]	0.61	.539
Grandparent, $\hat{\gamma}_{01}$	-0.01	[-0.08, 0.06]	-0.26	.795	0.01	[-0.07, 0.09]	0.27	.790
Caring, $\hat{\gamma}_{10}$	0.03	[-0.01, 0.07]	1.63	.104	0.00	[-0.04, 0.03]	-0.09	.932
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.03, 0.02]	-0.20	.840	0.00	[-0.02, 0.02]	-0.25	.802
After-slope * Caring, $\hat{\gamma}_{30}$	-0.01	[-0.03, 0.01]	-1.04	.300	0.00	[-0.02, 0.01]	-0.23	.818
Grandparent * Caring, $\hat{\gamma}_{11}$	-0.06	[-0.16, 0.03]	-1.30	.194	-0.04	[-0.13, 0.06]	-0.81	.421
After-slope * Grandparent * Caring, $\hat{\gamma}_{31}$	0.04	[0.00, 0.07]	1.99	.047	0.03	[0.00, 0.07]	1.79	.074

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *caring* = 1 indicates more than 100 hours of grandchild care since the last assessment.

Table S31

Linear Contrasts for Extraversion (Moderated by Grandchild Care; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
After-slope of caring controls vs. caring grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.03	6.30	.012	0.03	4.85	.028
After-slope of not-caring grandparents vs. caring grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.03	2.91	.088	0.03	3.56	.059

Note. The linear contrasts are based on the models from Table S30. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S32

Fixed Effects of Extraversion Over the Transition to Grandparenthood Moderated by Race/Ethnicity.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.20	[3.16, 3.24]	148.85	< .001	3.13	[3.08, 3.18]	123.56	< .001
Propensity score, $\hat{\gamma}_{02}$	0.03	[-0.03, 0.10]	1.00	.320	0.05	[-0.03, 0.12]	1.28	.201
Before-slope, $\hat{\gamma}_{20}$	-0.01	[-0.03, 0.00]	-2.24	.025	0.01	[0.00, 0.02]	1.97	.049
After-slope, $\hat{\gamma}_{40}$	0.01	[0.00, 0.01]	1.77	.077	0.00	[0.00, 0.01]	1.13	.258
Shift, $\hat{\gamma}_{60}$	0.01	[-0.01, 0.04]	1.25	.212	0.00	[-0.03, 0.02]	-0.23	.818
Grandparent, $\hat{\gamma}_{01}$	-0.03	[-0.09, 0.04]	-0.78	.437	0.04	[-0.03, 0.11]	1.03	.304
Black, $\hat{\gamma}_{10}$	-0.07	[-0.19, 0.06]	-1.04	.299	0.15	[0.02, 0.28]	2.32	.020
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[-0.01, 0.04]	1.20	.232	-0.01	[-0.04, 0.02]	-0.62	.538
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.00	[-0.02, 0.02]	0.27	.790	0.01	[-0.01, 0.02]	0.58	.563
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.03	[-0.08, 0.02]	-1.12	.264	-0.01	[-0.06, 0.04]	-0.47	.635
Before-slope * Black, $\hat{\gamma}_{30}$	0.08	[0.03, 0.12]	3.35	.001	-0.04	[-0.09, 0.00]	-2.12	.034
After-slope * Black, $\hat{\gamma}_{50}$	-0.01	[-0.04, 0.01]	-1.03	.304	-0.06	[-0.09, -0.02]	-3.32	.001
Shift * Black, $\hat{\gamma}_{70}$	-0.05	[-0.13, 0.03]	-1.19	.233	0.06	[-0.03, 0.15]	1.30	.193
Grandparent * Black, $\hat{\gamma}_{11}$	0.28	[0.05, 0.52]	2.38	.017	0.07	[-0.16, 0.30]	0.58	.565
Before-slope * Grandparent * Black, $\hat{\gamma}_{31}$	-0.10	[-0.22, 0.01]	-1.73	.084	0.02	[-0.09, 0.13]	0.37	.710
After-slope * Grandparent * Black, $\hat{\gamma}_{51}$	0.02	[-0.05, 0.09]	0.50	.618	0.06	[-0.01, 0.13]	1.64	.101
Shift * Grandparent * Black, $\hat{\gamma}_{71}$	0.02	[-0.17, 0.21]	0.19	.852	-0.09	[-0.28, 0.10]	-0.91	.362

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. $black = 0$ indicates White/Caucasian race/ethnicity.

$black = 1$ indicates Black/African American race/ethnicity.

Table S33

Linear Contrasts for Extraversion (Moderated by Race/Ethnicity; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of White controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	0.02	5.77	.016	0.00	0.04	.843
Shift of Black controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.04	1.83	.176	0.00	0.02	.879
Shift of White grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.01	0.09	.765	-0.01	0.10	.758
Shift of Black grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.03	0.26	.608	-0.03	0.27	.603
Shift of White controls vs. White grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.03	1.82	.177	-0.01	0.13	.716
Before-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.08	2.20	.138	0.01	0.05	.818
After-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.02	0.34	.557	0.06	3.38	.066
Shift of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.01	0.02	.902	-0.04	0.28	.595
Shift of White controls vs. Black controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.06	3.93	.047	0.00	0.01	.925
Before-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.02	0.19	.664	-0.02	0.19	.662
After-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.00	0.01	.905	0.00	0.01	.904
Shift of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.03	0.17	.680	-0.03	0.17	.677

Note. The linear contrasts are based on the models from Table S32. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S34

Fixed Effects of Neuroticism Over the Transition to Grandparenthood.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	2.48	[2.41, 2.56]	67.36	< .001	2.43	[2.34, 2.52]	53.46	< .001
Propensity score, $\hat{\gamma}_{02}$	0.06	[-0.01, 0.14]	1.66	.096	0.17	[0.09, 0.25]	4.15	< .001
Before-slope, $\hat{\gamma}_{10}$	-0.01	[-0.01, 0.00]	-1.73	.084	-0.02	[-0.02, -0.01]	-4.27	< .001
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.01, 0.00]	-2.66	.008	0.01	[0.00, 0.02]	2.79	.005
Shift, $\hat{\gamma}_{30}$	0.00	[-0.03, 0.03]	-0.21	.831	-0.01	[-0.04, 0.03]	-0.38	.703
Grandparent, $\hat{\gamma}_{01}$	-0.09	[-0.20, 0.02]	-1.63	.103	-0.08	[-0.20, 0.05]	-1.24	.217
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.00	[-0.01, 0.02]	0.61	.541	0.02	[0.00, 0.03]	1.82	.069
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[-0.01, 0.02]	0.97	.334	-0.01	[-0.03, 0.00]	-1.40	.163
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.05	[-0.11, 0.02]	-1.41	.158	-0.05	[-0.12, 0.03]	-1.21	.227
HRS								
Intercept, $\hat{\gamma}_{00}$	2.07	[2.03, 2.12]	94.88	< .001	2.07	[2.02, 2.12]	79.40	< .001
Propensity score, $\hat{\gamma}_{02}$	-0.02	[-0.09, 0.06]	-0.46	.649	0.13	[0.05, 0.21]	3.07	.002
Before-slope, $\hat{\gamma}_{10}$	-0.02	[-0.04, -0.01]	-3.16	.002	-0.04	[-0.05, -0.02]	-5.33	< .001
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.01]	-0.07	.947	-0.01	[-0.02, 0.00]	-3.02	.003
Shift, $\hat{\gamma}_{30}$	-0.01	[-0.04, 0.01]	-0.96	.337	-0.02	[-0.05, 0.01]	-1.45	.146
Grandparent, $\hat{\gamma}_{01}$	-0.05	[-0.12, 0.02]	-1.47	.141	-0.11	[-0.18, -0.04]	-2.99	.003
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.03	[0.00, 0.06]	1.82	.069	0.04	[0.01, 0.07]	2.67	.008
After-slope * Grandparent, $\hat{\gamma}_{21}$	-0.02	[-0.04, 0.00]	-2.00	.045	-0.01	[-0.03, 0.01]	-0.78	.437
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.05	[-0.10, 0.01]	-1.54	.125	-0.04	[-0.10, 0.02]	-1.28	.200

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S35

Linear Contrasts for Neuroticism.

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.01	0.68	.410	0.00	0.03	.859
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.05	3.97	.046	-0.05	3.33	.068
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.04	1.93	.165	-0.06	2.90	.088
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.00	0.03	.853	0.00	0.02	.885
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.00	0.05	.828	0.00	0.04	.843
HRS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.01	1.64	.201	-0.03	10.46	.001
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.08	15.39	< .001	-0.08	15.42	< .001
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.07	8.55	.003	-0.05	4.15	.042
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.01	0.25	.615	0.01	0.19	.661
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	-0.02	5.12	.024	-0.02	5.64	.018

Note. The linear contrasts are needed in cases where estimates of interest are represented by multiple fixed-effects coefficients and are computed using the *linearHypothesis* function from the *car* R package (Fox & Weisberg, 2019) based on the models from Table S34. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S36

Fixed Effects of Neuroticism Over the Transition to Grandparenthood Moderated by Gender.

Parameter	Parent controls				Nonparent controls			
	$\hat\gamma$	95% CI	t	p	$\hat\gamma$	95% CI	t	p
LISS								
Intercept, $\hat\gamma_{00}$	2.41	[2.31, 2.52]	45.01	< .001	2.29	[2.16, 2.42]	34.73	< .001
Propensity score, $\hat\gamma_{04}$	0.07	[-0.01, 0.14]	1.74	.082	0.18	[0.10, 0.26]	4.42	< .001
Before-slope, $\hat\gamma_{10}$	-0.01	[-0.02, 0.00]	-1.31	.190	-0.01	[-0.02, 0.00]	-2.42	.016
After-slope, $\hat\gamma_{20}$	0.00	[-0.01, 0.01]	-0.29	.770	0.02	[0.01, 0.03]	4.98	< .001
Shift, $\hat\gamma_{30}$	-0.02	[-0.07, 0.02]	-1.01	.315	-0.04	[-0.09, 0.01]	-1.52	.129
Grandparent, $\hat\gamma_{01}$	-0.15	[-0.30, 0.01]	-1.85	.065	-0.08	[-0.25, 0.10]	-0.85	.394
Female, $\hat\gamma_{02}$	0.12	[-0.02, 0.26]	1.72	.086	0.24	[0.07, 0.41]	2.80	.005
Before-slope * Grandparent, $\hat\gamma_{11}$	0.00	[-0.02, 0.03]	0.38	.703	0.01	[-0.01, 0.04]	0.87	.382
After-slope * Grandparent, $\hat\gamma_{21}$	0.00	[-0.02, 0.02]	0.08	.939	-0.02	[-0.05, 0.00]	-2.17	.030
Shift * Grandparent, $\hat\gamma_{31}$	-0.05	[-0.15, 0.04]	-1.10	.271	-0.04	[-0.15, 0.07]	-0.74	.456
Before-slope * Female, $\hat\gamma_{12}$	0.00	[-0.01, 0.02]	0.21	.836	-0.01	[-0.02, 0.01]	-0.89	.376
After-slope * Female, $\hat\gamma_{22}$	-0.01	[-0.02, 0.00]	-2.01	.045	-0.03	[-0.04, -0.01]	-4.22	< .001
Shift * Female, $\hat\gamma_{32}$	0.04	[-0.02, 0.10]	1.17	.241	0.06	[-0.01, 0.13]	1.81	.070
Grandparent * Female, $\hat\gamma_{03}$	0.10	[-0.11, 0.31]	0.96	.337	0.00	[-0.24, 0.23]	-0.03	.972
Before-slope * Grandparent * Female, $\hat\gamma_{13}$	0.00	[-0.03, 0.03]	0.09	.925	0.01	[-0.02, 0.04]	0.60	.548
After-slope * Grandparent * Female, $\hat\gamma_{23}$	0.01	[-0.02, 0.04]	0.70	.487	0.03	[0.00, 0.05]	1.66	.097
Shift * Grandparent * Female, $\hat\gamma_{33}$	0.02	[-0.12, 0.15]	0.25	.800	-0.01	[-0.15, 0.14]	-0.11	.913
HRS								
Intercept, $\hat\gamma_{00}$	1.98	[1.92, 2.04]	63.31	< .001	2.02	[1.95, 2.09]	56.79	< .001
Propensity score, $\hat\gamma_{04}$	-0.01	[-0.09, 0.06]	-0.31	.759	0.13	[0.04, 0.21]	2.96	.003
Before-slope, $\hat\gamma_{10}$	-0.03	[-0.05, -0.01]	-3.13	.002	-0.02	[-0.04, 0.00]	-2.29	.022
After-slope, $\hat\gamma_{20}$	-0.01	[-0.02, 0.00]	-1.54	.124	-0.02	[-0.04, -0.01]	-3.03	.002
Shift, $\hat\gamma_{30}$	0.06	[0.03, 0.10]	3.23	.001	-0.02	[-0.06, 0.02]	-0.85	.396
Grandparent, $\hat\gamma_{01}$	-0.05	[-0.15, 0.05]	-1.01	.311	-0.15	[-0.26, -0.04]	-2.77	.006
Female, $\hat\gamma_{02}$	0.17	[0.09, 0.25]	4.20	< .001	0.09	[0.00, 0.18]	2.05	.041
Before-slope * Grandparent, $\hat\gamma_{11}$	0.06	[0.02, 0.11]	2.68	.007	0.06	[0.01, 0.10]	2.31	.021
After-slope * Grandparent, $\hat\gamma_{21}$	0.00	[-0.03, 0.03]	-0.08	.939	0.01	[-0.02, 0.04]	0.59	.557
Shift * Grandparent, $\hat\gamma_{31}$	-0.15	[-0.23, -0.06]	-3.25	.001	-0.06	[-0.15, 0.03]	-1.38	.167
Before-slope * Female, $\hat\gamma_{12}$	0.02	[-0.01, 0.04]	1.15	.250	-0.02	[-0.05, 0.00]	-1.64	.102
After-slope * Female, $\hat\gamma_{22}$	0.02	[0.00, 0.04]	2.04	.041	0.01	[-0.01, 0.03]	1.41	.157
Shift * Female, $\hat\gamma_{32}$	-0.14	[-0.19, -0.09]	-5.18	< .001	0.00	[-0.06, 0.05]	-0.11	.909

Table S36 continued

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Grandparent * Female, $\hat{\gamma}_{03}$	0.00	[-0.13, 0.14]	0.01	.996	0.07	[-0.07, 0.21]	0.97	.331
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	-0.06	[-0.12, 0.00]	-1.90	.057	-0.02	[-0.09, 0.04]	-0.74	.461
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.04	[-0.08, 0.01]	-1.71	.087	-0.03	[-0.07, 0.01]	-1.45	.148
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.18	[0.06, 0.29]	2.95	.003	0.04	[-0.08, 0.16]	0.69	.491

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S37

Linear Contrasts for Neuroticism (Moderated by Gender).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.02	1.47	.226	-0.01	0.41	.520
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.00	0.00	.998	0.02	0.95	.328
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.08	4.09	.043	-0.08	3.37	.066
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.03	0.60	.439	-0.03	0.51	.474
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.05	1.53	.217	-0.07	1.81	.178
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.01	0.31	.577	0.02	3.32	.068
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	0.01	1.24	.265	0.00	0.01	.927
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.03	0.47	.491	-0.05	1.18	.278
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.02	0.81	.368	0.03	1.29	.255
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.00	0.04	.833	0.00	0.05	.825
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	0.00	0.04	.840	0.00	0.04	.840
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.05	0.95	.331	0.05	0.76	.382
HRS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.05	12.37	< .001	-0.04	6.17	.013
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	-0.07	23.28	< .001	-0.03	4.52	.033
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.09	9.16	.002	-0.09	9.17	.002
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.07	6.71	.010	-0.07	6.70	.010
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.15	18.41	< .001	-0.05	2.40	.122
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.00	0.03	.873	0.03	2.33	.127
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	-0.04	6.89	.009	-0.02	2.28	.131
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.00	0.02	.888	-0.04	1.86	.173
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	-0.12	34.07	< .001	0.01	0.23	.629
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	-0.05	2.44	.118	-0.05	2.49	.115
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	-0.02	0.81	.369	-0.02	0.83	.364
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.02	0.28	.599	0.02	0.28	.597

Note. The linear contrasts are based on the models from Table S36. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S38

Fixed Effects of Neuroticism Over the Transition to Grandparenthood Moderated by Performing Paid Work.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	2.02	[1.96, 2.07]	73.54	< .001	2.09	[2.03, 2.15]	67.21	< .001
Propensity score, $\hat{\gamma}_{02}$	-0.02	[-0.10, 0.06]	-0.47	.636	0.15	[0.07, 0.24]	3.52	< .001
Before-slope, $\hat{\gamma}_{20}$	0.01	[-0.02, 0.03]	0.62	.535	-0.05	[-0.08, -0.02]	-3.81	< .001
After-slope, $\hat{\gamma}_{40}$	-0.01	[-0.02, 0.00]	-1.48	.140	0.00	[-0.02, 0.01]	-0.15	.877
Shift, $\hat{\gamma}_{60}$	0.02	[-0.02, 0.06]	0.95	.343	-0.03	[-0.08, 0.01]	-1.34	.179
Grandparent, $\hat{\gamma}_{01}$	0.15	[0.03, 0.26]	2.48	.013	0.00	[-0.11, 0.12]	0.07	.948
Working, $\hat{\gamma}_{10}$	0.09	[0.04, 0.14]	3.45	.001	-0.04	[-0.09, 0.01]	-1.65	.098
Before-slope * Grandparent, $\hat{\gamma}_{21}$	-0.07	[-0.14, -0.01]	-2.20	.028	-0.02	[-0.08, 0.05]	-0.48	.634
After-slope * Grandparent, $\hat{\gamma}_{41}$	-0.02	[-0.05, 0.01]	-1.26	.209	-0.03	[-0.06, 0.00]	-1.91	.056
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.03	[-0.12, 0.07]	-0.60	.548	0.02	[-0.07, 0.12]	0.47	.636
Before-slope * Working, $\hat{\gamma}_{30}$	-0.04	[-0.07, -0.01]	-2.86	.004	0.02	[-0.01, 0.05]	1.25	.210
After-slope * Working, $\hat{\gamma}_{50}$	0.02	[0.00, 0.04]	1.87	.062	-0.02	[-0.04, -0.01]	-2.66	.008
Shift * Working, $\hat{\gamma}_{70}$	-0.06	[-0.11, 0.00]	-2.13	.033	0.03	[-0.03, 0.08]	0.98	.325
Grandparent * Working, $\hat{\gamma}_{11}$	-0.26	[-0.39, -0.14]	-4.25	< .001	-0.14	[-0.26, -0.02]	-2.33	.020
Before-slope * Grandparent * Working, $\hat{\gamma}_{31}$	0.13	[0.06, 0.21]	3.50	< .001	0.07	[0.00, 0.15]	1.90	.057
After-slope * Grandparent * Working, $\hat{\gamma}_{51}$	-0.01	[-0.05, 0.03]	-0.40	.688	0.03	[-0.01, 0.08]	1.64	.101
Shift * Grandparent * Working, $\hat{\gamma}_{71}$	-0.02	[-0.14, 0.11]	-0.26	.794	-0.10	[-0.23, 0.02]	-1.63	.103

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *working* = 1 indicates being employed in paid work.

Table S39

Linear Contrasts for Neuroticism (Moderated by Paid Work; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat\gamma_c$	χ^2	p	$\hat\gamma_c$	χ^2	p
Shift of not-working controls vs. 0 ($\hat\gamma_{40}+\hat\gamma_{60}$)	0.01	0.37	.543	-0.03	2.93	.087
Shift of working controls vs. 0 ($\hat\gamma_{40}+\hat\gamma_{60}+\hat\gamma_{50}+\hat\gamma_{70}$)	-0.03	5.61	.018	-0.03	5.27	.022
Shift of not-working grandparents vs. 0 ($\hat\gamma_{40}+\hat\gamma_{60}+\hat\gamma_{41}+\hat\gamma_{61}$)	-0.04	1.12	.290	-0.04	1.17	.280
Shift of working grandparents vs. 0 ($\hat\gamma_{40}+\hat\gamma_{60}+\hat\gamma_{41}+\hat\gamma_{61}+\hat\gamma_{50}+\hat\gamma_{70}+\hat\gamma_{51}+\hat\gamma_{71}$)	-0.10	15.73	< .001	-0.10	15.86	< .001
Shift of not-working controls vs. not-working grandparents ($\hat\gamma_{41}+\hat\gamma_{61}$)	-0.05	1.48	.223	-0.01	0.02	.888
Before-slope of working controls vs. working grandparents ($\hat\gamma_{21}+\hat\gamma_{31}$)	0.06	10.60	.001	0.06	9.30	.002
After-slope of working controls vs. working grandparents ($\hat\gamma_{41}+\hat\gamma_{51}$)	-0.03	3.38	.066	0.01	0.16	.694
Shift of working controls vs. working grandparents ($\hat\gamma_{41}+\hat\gamma_{61}+\hat\gamma_{51}+\hat\gamma_{71}$)	-0.07	6.11	.013	-0.07	6.69	.010
Shift of not-working controls vs. working controls ($\hat\gamma_{50}+\hat\gamma_{70}$)	-0.04	3.70	.054	0.00	0.02	.886
Before-slope of not-working grandparents vs. working grandparents ($\hat\gamma_{30}+\hat\gamma_{31}$)	0.09	6.67	.010	0.09	7.01	.008
After-slope of not-working grandparents vs. working grandparents ($\hat\gamma_{50}+\hat\gamma_{51}$)	0.01	0.22	.639	0.01	0.25	.618
Shift of not-working grandparents vs. working grandparents ($\hat\gamma_{50}+\hat\gamma_{70}+\hat\gamma_{51}+\hat\gamma_{71}$)	-0.07	2.21	.137	-0.07	2.19	.139

Note. The linear contrasts are based on the models from Table S38. $\hat\gamma_c$ = combined fixed-effects estimate.

Table S40

Fixed Effects of Neuroticism Over the Transition to Grandparenthood Moderated by Grandchild Care.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	2.00	[1.95, 2.05]	73.94	< .001	1.97	[1.90, 2.03]	59.60	< .001
Propensity score, $\hat{\gamma}_{02}$	0.03	[-0.06, 0.13]	0.70	.486	0.02	[-0.09, 0.12]	0.29	.775
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.02, 0.01]	-1.03	.304	-0.01	[-0.02, 0.00]	-1.49	.136
Grandparent, $\hat{\gamma}_{01}$	-0.08	[-0.16, 0.00]	-2.01	.045	-0.05	[-0.13, 0.04]	-1.05	.293
Caring, $\hat{\gamma}_{10}$	0.02	[-0.02, 0.06]	0.86	.392	0.05	[0.00, 0.09]	2.12	.034
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.02, 0.03]	0.27	.784	0.01	[-0.02, 0.03]	0.54	.591
After-slope * Caring, $\hat{\gamma}_{30}$	-0.01	[-0.03, 0.01]	-1.21	.224	-0.02	[-0.04, 0.00]	-2.05	.040
Grandparent * Caring, $\hat{\gamma}_{11}$	0.08	[-0.03, 0.18]	1.36	.175	0.04	[-0.07, 0.16]	0.73	.463
After-slope * Grandparent * Caring, $\hat{\gamma}_{31}$	-0.03	[-0.07, 0.01]	-1.25	.213	-0.02	[-0.06, 0.03]	-0.73	.464

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *caring* = 1 indicates more than 100 hours of grandchild care since the last assessment.

Table S41

Linear Contrasts for Neuroticism (Moderated by Grandchild Care; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
After-slope of caring controls vs. caring grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	2.09	.148	-0.01	0.28	.595
After-slope of not-caring grandparents vs. caring grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.04	4.06	.044	-0.04	3.52	.061

Note. The linear contrasts are based on the models from Table S40. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S42

Fixed Effects of Neuroticism Over the Transition to Grandparenthood Moderated by Race/Ethnicity.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	2.08	[2.04, 2.13]	88.55	< .001	2.07	[2.01, 2.13]	72.73	< .001
Propensity score, $\hat{\gamma}_{02}$	-0.02	[-0.09, 0.06]	-0.40	.686	0.13	[0.04, 0.21]	2.96	.003
Before-slope, $\hat{\gamma}_{20}$	-0.02	[-0.03, -0.01]	-2.79	.005	-0.03	[-0.05, -0.02]	-4.44	< .001
After-slope, $\hat{\gamma}_{40}$	0.00	[-0.01, 0.01]	-0.24	.808	-0.02	[-0.03, -0.01]	-3.53	< .001
Shift, $\hat{\gamma}_{60}$	-0.03	[-0.06, 0.00]	-2.21	.027	-0.01	[-0.04, 0.01]	-1.03	.305
Grandparent, $\hat{\gamma}_{01}$	-0.02	[-0.09, 0.06]	-0.45	.650	-0.07	[-0.15, 0.01]	-1.81	.070
Black, $\hat{\gamma}_{10}$	-0.01	[-0.15, 0.13]	-0.15	.881	-0.09	[-0.23, 0.05]	-1.24	.213
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[-0.02, 0.05]	0.99	.322	0.03	[0.00, 0.06]	1.67	.094
After-slope * Grandparent, $\hat{\gamma}_{41}$	-0.02	[-0.04, 0.00]	-2.23	.026	-0.01	[-0.03, 0.01]	-0.73	.464
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.02	[-0.08, 0.04]	-0.78	.436	-0.04	[-0.10, 0.02]	-1.24	.215
Before-slope * Black, $\hat{\gamma}_{30}$	-0.09	[-0.15, -0.04]	-3.41	.001	-0.04	[-0.09, 0.01]	-1.56	.118
After-slope * Black, $\hat{\gamma}_{50}$	0.04	[0.01, 0.07]	2.55	.011	0.05	[0.01, 0.09]	2.65	.008
Shift * Black, $\hat{\gamma}_{70}$	0.12	[0.02, 0.21]	2.42	.015	-0.02	[-0.12, 0.09]	-0.28	.778
Grandparent * Black, $\hat{\gamma}_{11}$	-0.29	[-0.55, -0.03]	-2.21	.027	-0.20	[-0.47, 0.07]	-1.44	.151
Before-slope * Grandparent * Black, $\hat{\gamma}_{31}$	0.11	[-0.02, 0.24]	1.62	.106	0.06	[-0.08, 0.19]	0.83	.405
After-slope * Grandparent * Black, $\hat{\gamma}_{51}$	-0.01	[-0.09, 0.07]	-0.32	.750	-0.03	[-0.11, 0.06]	-0.63	.530
Shift * Grandparent * Black, $\hat{\gamma}_{71}$	-0.08	[-0.30, 0.14]	-0.72	.469	0.05	[-0.18, 0.28]	0.43	.670

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *black* = 0 indicates White/Caucasian race/ethnicity,

black = 1 indicates Black/African American race/ethnicity.

Table S43

Linear Contrasts for Neuroticism (Moderated by Race/Ethnicity; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of White controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	-0.03	8.87	.003	-0.03	8.31	.004
Shift of Black controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.12	12.30	< .001	0.01	0.03	.858
Shift of White grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.08	14.19	< .001	-0.08	13.24	< .001
Shift of Black grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.02	0.06	.812	-0.02	0.05	.824
Shift of White controls vs. White grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.05	4.10	.043	-0.05	3.82	.051
Before-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.13	3.64	.056	0.09	1.62	.203
After-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	-0.04	0.85	.355	-0.04	0.70	.404
Shift of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.14	3.04	.081	-0.02	0.08	.780
Shift of White controls vs. Black controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.16	17.71	< .001	0.04	0.87	.350
Before-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.02	0.08	.774	0.02	0.07	.789
After-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.03	0.49	.485	0.03	0.46	.499
Shift of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.06	0.64	.423	0.06	0.61	.435

Note. The linear contrasts are based on the models from Table S42. $\hat{\gamma}_c$ = combined fixed-effects estimate.

1759

Table S44

Fixed Effects of Openness Over the Transition to Grandparenthood.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.48	[3.42, 3.53]	121.02	< .001	3.52	[3.46, 3.59]	104.78	< .001
Propensity score, $\hat{\gamma}_{02}$	0.04	[-0.02, 0.10]	1.40	.161	0.01	[-0.04, 0.06]	0.47	.637
Before-slope, $\hat{\gamma}_{10}$	-0.01	[-0.01, 0.00]	-3.00	.003	0.00	[-0.01, 0.00]	-1.98	.048
After-slope, $\hat{\gamma}_{20}$	0.00	[-0.01, 0.00]	-1.82	.070	0.00	[0.00, 0.01]	0.78	.433
Shift, $\hat{\gamma}_{30}$	-0.01	[-0.03, 0.01]	-0.72	.469	0.01	[-0.01, 0.03]	1.25	.212
Grandparent, $\hat{\gamma}_{01}$	-0.01	[-0.10, 0.07]	-0.31	.753	-0.05	[-0.14, 0.04]	-1.10	.271
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[0.00, 0.02]	1.53	.127	0.01	[0.00, 0.02]	1.11	.269
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.00	[-0.01, 0.01]	-0.23	.822	-0.01	[-0.02, 0.00]	-1.42	.154
Shift * Grandparent, $\hat{\gamma}_{31}$	0.00	[-0.05, 0.05]	0.16	.872	-0.02	[-0.06, 0.03]	-0.77	.444
HRS								
Intercept, $\hat{\gamma}_{00}$	3.05	[3.01, 3.09]	152.61	< .001	3.04	[2.99, 3.09]	131.12	< .001
Propensity score, $\hat{\gamma}_{02}$	0.04	[-0.02, 0.11]	1.28	.199	-0.01	[-0.08, 0.06]	-0.31	.759
Before-slope, $\hat{\gamma}_{10}$	-0.02	[-0.03, -0.01]	-3.90	< .001	0.00	[-0.01, 0.01]	-0.54	.591
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.02, -0.01]	-3.38	.001	-0.01	[-0.02, 0.00]	-2.76	.006
Shift, $\hat{\gamma}_{30}$	0.03	[0.01, 0.05]	2.62	.009	0.01	[-0.01, 0.02]	0.56	.574
Grandparent, $\hat{\gamma}_{01}$	-0.03	[-0.09, 0.03]	-1.01	.312	0.00	[-0.06, 0.07]	0.08	.936
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.02	[0.00, 0.05]	1.60	.109	0.00	[-0.02, 0.02]	0.12	.906
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[-0.01, 0.03]	1.12	.262	0.01	[-0.01, 0.02]	0.80	.424
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.04	[-0.09, 0.00]	-1.81	.070	-0.02	[-0.06, 0.02]	-0.95	.343

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S45

Linear Contrasts for Openness.

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.01	1.50	.221	0.02	2.55	.110
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.01	0.24	.627	-0.01	0.28	.595
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.00	0.02	.895	-0.02	1.45	.229
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.00	0.04	.842	0.00	0.05	.820
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	-0.01	1.28	.257	-0.01	1.45	.229
HRS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.02	3.66	.056	0.00	0.25	.621
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	1.29	.256	-0.02	1.55	.214
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.04	3.52	.061	-0.01	0.78	.376
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.00	0.01	.935	0.00	0.01	.903
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.00	0.17	.679	0.00	0.22	.638

Note. The linear contrasts are needed in cases where estimates of interest are represented by multiple fixed-effects coefficients and are computed using the *linearHypothesis* function from the *car* R package (Fox & Weisberg, 2019) based on the models from Table S44. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S46

Fixed Effects of Openness Over the Transition to Grandparenthood Moderated by Gender.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	3.55	[3.46, 3.63]	83.49	< .001	3.58	[3.48, 3.67]	71.70	< .001
Propensity score, $\hat{\gamma}_{04}$	0.04	[-0.02, 0.10]	1.37	.170	0.01	[-0.04, 0.06]	0.32	.751
Before-slope, $\hat{\gamma}_{10}$	-0.01	[-0.02, 0.00]	-2.26	.024	0.00	[-0.01, 0.01]	-0.38	.706
After-slope, $\hat{\gamma}_{20}$	0.00	[0.00, 0.01]	1.28	.200	0.00	[-0.01, 0.01]	0.30	.763
Shift, $\hat{\gamma}_{30}$	-0.05	[-0.08, -0.02]	-2.92	.004	0.01	[-0.02, 0.04]	0.86	.392
Grandparent, $\hat{\gamma}_{01}$	0.03	[-0.09, 0.15]	0.48	.634	0.01	[-0.12, 0.14]	0.13	.893
Female, $\hat{\gamma}_{02}$	-0.12	[-0.23, -0.01]	-2.16	.031	-0.09	[-0.22, 0.04]	-1.38	.168
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[-0.01, 0.02]	0.77	.441	0.00	[-0.02, 0.01]	-0.10	.918
After-slope * Grandparent, $\hat{\gamma}_{21}$	-0.01	[-0.03, 0.00]	-1.62	.105	-0.01	[-0.02, 0.00]	-1.26	.208
Shift * Grandparent, $\hat{\gamma}_{31}$	0.04	[-0.03, 0.12]	1.12	.263	-0.02	[-0.09, 0.05]	-0.64	.522
Before-slope * Female, $\hat{\gamma}_{12}$	0.00	[-0.01, 0.01]	0.36	.720	-0.01	[-0.02, 0.00]	-1.43	.153
After-slope * Female, $\hat{\gamma}_{22}$	-0.02	[-0.02, -0.01]	-3.38	.001	0.00	[-0.01, 0.01]	0.33	.744
Shift * Female, $\hat{\gamma}_{32}$	0.08	[0.03, 0.12]	3.31	.001	0.00	[-0.04, 0.04]	0.02	.987
Grandparent * Female, $\hat{\gamma}_{03}$	-0.08	[-0.25, 0.08]	-1.00	.318	-0.12	[-0.29, 0.06]	-1.29	.199
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.01	[-0.02, 0.03]	0.44	.659	0.01	[-0.01, 0.04]	1.29	.195
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	0.02	[0.00, 0.04]	1.94	.052	0.00	[-0.02, 0.02]	0.35	.725
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	-0.07	[-0.17, 0.03]	-1.39	.166	0.01	[-0.09, 0.10]	0.14	.889
HRS								
Intercept, $\hat{\gamma}_{00}$	3.07	[3.01, 3.12]	110.76	< .001	3.05	[2.99, 3.11]	98.96	< .001
Propensity score, $\hat{\gamma}_{04}$	0.04	[-0.02, 0.11]	1.33	.183	-0.02	[-0.08, 0.05]	-0.45	.653
Before-slope, $\hat{\gamma}_{10}$	-0.02	[-0.04, 0.00]	-2.49	.013	-0.02	[-0.03, 0.00]	-2.46	.014
After-slope, $\hat{\gamma}_{20}$	-0.02	[-0.03, -0.01]	-3.51	< .001	-0.01	[-0.02, 0.00]	-1.99	.046
Shift, $\hat{\gamma}_{30}$	0.07	[0.03, 0.10]	4.03	< .001	0.00	[-0.03, 0.03]	0.12	.903
Grandparent, $\hat{\gamma}_{01}$	-0.04	[-0.13, 0.05]	-0.92	.358	0.00	[-0.09, 0.09]	0.02	.981
Female, $\hat{\gamma}_{02}$	-0.02	[-0.09, 0.04]	-0.68	.498	-0.01	[-0.09, 0.06]	-0.32	.752
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[-0.03, 0.05]	0.37	.708	0.00	[-0.03, 0.04]	0.26	.798
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[0.00, 0.04]	1.62	.106	0.01	[-0.01, 0.03]	0.92	.357
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.11	[-0.18, -0.03]	-2.89	.004	-0.04	[-0.10, 0.03]	-1.19	.233
Before-slope * Female, $\hat{\gamma}_{12}$	0.00	[-0.03, 0.02]	-0.33	.740	0.03	[0.01, 0.05]	2.83	.005
After-slope * Female, $\hat{\gamma}_{22}$	0.01	[0.00, 0.03]	1.72	.085	0.00	[-0.01, 0.02]	0.25	.801
Shift * Female, $\hat{\gamma}_{32}$	-0.07	[-0.11, -0.02]	-3.05	.002	0.01	[-0.03, 0.05]	0.35	.726

Table S46 continued

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Grandparent * Female, $\hat{\gamma}_{03}$	0.01	[-0.10, 0.13]	0.25	.804	0.00	[-0.11, 0.12]	0.05	.961
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.03	[-0.03, 0.08]	0.95	.341	-0.01	[-0.05, 0.04]	-0.26	.798
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.02	[-0.05, 0.01]	-1.17	.240	-0.01	[-0.04, 0.02]	-0.51	.608
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.11	[0.01, 0.21]	2.26	.024	0.03	[-0.05, 0.12]	0.78	.435

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with

parent controls and with nonparent controls. CI = confidence interval.

Table S47

Linear Contrasts for Openness (Moderated by Gender).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.05	9.28	.002	0.01	1.08	.298
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.02	1.34	.247	0.02	1.55	.213
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	0.32	.569	-0.02	0.38	.539
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.00	0.03	.853	-0.01	0.04	.839
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.03	0.81	.368	-0.03	1.04	.308
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.01	2.27	.132	0.01	3.22	.073
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	0.01	1.23	.268	-0.01	0.72	.396
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.02	0.48	.487	-0.02	0.57	.450
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.06	9.22	.002	0.00	0.01	.928
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.01	0.46	.499	0.01	0.52	.469
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	0.00	0.27	.605	0.00	0.30	.583
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.01	0.09	.766	0.01	0.10	.751
HRS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.05	13.53	< .001	-0.01	0.56	.455
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	-0.01	0.48	.489	0.00	0.00	.998
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.04	2.45	.118	-0.04	2.84	.092
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.00	0.01	.939	0.00	0.01	.915
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.09	9.39	.002	-0.03	1.33	.249
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.03	3.45	.063	0.00	0.01	.923
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	0.00	0.00	.973	0.00	0.07	.796
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.01	0.06	.808	0.00	0.01	.923
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	-0.05	10.30	.001	0.01	0.32	.571
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.02	0.80	.370	0.02	1.08	.299
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	-0.01	0.21	.646	-0.01	0.20	.654
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.04	1.23	.266	0.04	1.40	.237

Note. The linear contrasts are based on the models from Table S46. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S48

Fixed Effects of Openness Over the Transition to Grandparenthood Moderated by Performing Paid Work.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.04	[2.99, 3.09]	126.17	< .001	3.07	[3.02, 3.12]	116.43	< .001
Propensity score, $\hat{\gamma}_{02}$	0.03	[-0.03, 0.10]	0.92	.357	-0.03	[-0.09, 0.04]	-0.81	.420
Before-slope, $\hat{\gamma}_{20}$	-0.02	[-0.04, 0.00]	-1.85	.064	-0.01	[-0.03, 0.01]	-1.18	.238
After-slope, $\hat{\gamma}_{40}$	-0.02	[-0.03, -0.01]	-4.08	< .001	-0.01	[-0.02, 0.00]	-1.67	.095
Shift, $\hat{\gamma}_{60}$	0.04	[0.00, 0.07]	2.12	.034	-0.02	[-0.06, 0.01]	-1.45	.148
Grandparent, $\hat{\gamma}_{01}$	-0.09	[-0.19, 0.01]	-1.73	.084	-0.09	[-0.19, 0.00]	-1.94	.053
Working, $\hat{\gamma}_{10}$	0.02	[-0.02, 0.06]	1.05	.292	-0.04	[-0.07, 0.00]	-1.91	.056
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.04	[-0.01, 0.10]	1.61	.107	0.04	[-0.01, 0.08]	1.48	.139
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.04	[0.02, 0.06]	3.31	.001	0.03	[0.01, 0.05]	2.44	.015
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.12	[-0.19, -0.04]	-2.91	.004	-0.05	[-0.12, 0.02]	-1.44	.149
Before-slope * Working, $\hat{\gamma}_{30}$	0.00	[-0.03, 0.02]	-0.36	.720	0.01	[-0.01, 0.04]	1.11	.269
After-slope * Working, $\hat{\gamma}_{50}$	0.02	[0.01, 0.04]	3.01	.003	0.00	[-0.01, 0.02]	0.38	.702
Shift * Working, $\hat{\gamma}_{70}$	-0.02	[-0.07, 0.02]	-0.99	.324	0.04	[0.00, 0.08]	2.01	.044
Grandparent * Working, $\hat{\gamma}_{11}$	0.07	[-0.03, 0.17]	1.34	.180	0.13	[0.04, 0.22]	2.79	.005
Before-slope * Grandparent * Working, $\hat{\gamma}_{31}$	-0.02	[-0.09, 0.04]	-0.77	.439	-0.04	[-0.10, 0.01]	-1.47	.141
After-slope * Grandparent * Working, $\hat{\gamma}_{51}$	-0.06	[-0.10, -0.03]	-3.53	< .001	-0.04	[-0.07, -0.01]	-2.61	.009
Shift * Grandparent * Working, $\hat{\gamma}_{71}$	0.14	[0.04, 0.24]	2.66	.008	0.07	[-0.02, 0.16]	1.51	.130

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *working* = 1 indicates being employed in paid work.

Table S49

Linear Contrasts for Openness (Moderated by Paid Work; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of not-working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	0.01	1.13	.288	-0.03	5.76	.016
Shift of working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.02	1.97	.160	0.01	1.68	.194
Shift of not-working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.06	4.32	.038	-0.06	5.11	.024
Shift of working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.02	0.68	.408	0.02	0.81	.367
Shift of not-working controls vs. not-working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.07	5.45	.020	-0.03	0.73	.392
Before-slope of working controls vs. working grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.02	1.47	.226	-0.01	0.17	.684
After-slope of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	-0.02	2.93	.087	-0.01	1.57	.210
Shift of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.00	0.01	.916	0.01	0.06	.804
Shift of not-working controls vs. working controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.00	0.00	.980	0.05	7.22	.007
Before-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.03	0.99	.320	-0.03	1.25	.263
After-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	-0.04	6.04	.014	-0.04	7.42	.006
Shift of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.08	4.49	.034	0.08	5.31	.021

Note. The linear contrasts are based on the models from Table S48. $\hat{\gamma}_c$ = combined fixed-effects estimate.

1765

Table S50

Fixed Effects of Openness Over the Transition to Grandparenthood Moderated by Grandchild Care.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.04	[2.99, 3.09]	122.72	$<$ .001	2.97	[2.91, 3.03]	101.44	$<$ .001
Propensity score, $\hat{\gamma}_{02}$	0.05	[-0.03, 0.14]	1.26	.207	0.23	[0.14, 0.32]	5.21	$<$ .001
After-slope, $\hat{\gamma}_{20}$	-0.02	[-0.03, -0.01]	-4.38	$<$ .001	-0.02	[-0.03, -0.01]	-3.16	.002
Grandparent, $\hat{\gamma}_{01}$	-0.03	[-0.11, 0.04]	-0.92	.358	-0.05	[-0.12, 0.03]	-1.15	.248
Caring, $\hat{\gamma}_{10}$	0.01	[-0.03, 0.05]	0.62	.536	0.00	[-0.04, 0.03]	-0.26	.794
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.01	[-0.01, 0.03]	0.87	.385	0.00	[-0.02, 0.02]	0.05	.960
After-slope * Caring, $\hat{\gamma}_{30}$	0.00	[-0.02, 0.02]	-0.09	.929	0.00	[-0.01, 0.02]	0.30	.762
Grandparent * Caring, $\hat{\gamma}_{11}$	-0.04	[-0.13, 0.06]	-0.75	.454	-0.03	[-0.12, 0.06]	-0.67	.505
After-slope * Grandparent * Caring, $\hat{\gamma}_{31}$	0.03	[-0.01, 0.06]	1.55	.122	0.03	[-0.01, 0.06]	1.63	.103

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *caring* = 1 indicates more than 100 hours of grandchild care since the last assessment.

Table S51

Linear Contrasts for Openness (Moderated by Grandchild Care; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
After-slope of caring controls vs. caring grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.04	7.93	.005	0.03	5.03	.025
After-slope of not-caring grandparents vs. caring grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.03	2.84	.092	0.03	3.87	.049

Note. The linear contrasts are based on the models from Table S50. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S52

Fixed Effects of Openness Over the Transition to Grandparenthood Moderated by Race/Ethnicity.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	3.06	[3.02, 3.10]	142.11	< .001	3.04	[2.99, 3.08]	120.08	< .001
Propensity score, $\hat{\gamma}_{02}$	0.05	[-0.01, 0.12]	1.57	.116	-0.03	[-0.09, 0.04]	-0.80	.426
Before-slope, $\hat{\gamma}_{20}$	-0.02	[-0.03, -0.01]	-3.53	< .001	0.00	[-0.01, 0.01]	0.35	.729
After-slope, $\hat{\gamma}_{40}$	-0.01	[-0.02, -0.01]	-3.55	< .001	-0.01	[-0.02, 0.00]	-3.06	.002
Shift, $\hat{\gamma}_{60}$	0.02	[0.00, 0.04]	1.82	.069	0.01	[-0.01, 0.03]	1.28	.200
Grandparent, $\hat{\gamma}_{01}$	-0.04	[-0.11, 0.02]	-1.31	.190	0.01	[-0.06, 0.08]	0.39	.697
Black, $\hat{\gamma}_{10}$	-0.04	[-0.16, 0.08]	-0.65	.517	0.06	[-0.06, 0.19]	0.96	.336
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.02	[0.00, 0.05]	1.65	.099	0.00	[-0.02, 0.02]	-0.03	.978
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.01	[-0.01, 0.03]	1.14	.253	0.01	[-0.01, 0.02]	0.86	.387
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.04	[-0.09, 0.01]	-1.55	.121	-0.03	[-0.08, 0.01]	-1.39	.166
Before-slope * Black, $\hat{\gamma}_{30}$	0.02	[-0.03, 0.06]	0.69	.490	-0.03	[-0.06, 0.01]	-1.46	.144
After-slope * Black, $\hat{\gamma}_{50}$	0.01	[-0.02, 0.04]	0.79	.429	0.03	[0.00, 0.06]	1.93	.054
Shift * Black, $\hat{\gamma}_{70}$	0.09	[0.01, 0.17]	2.19	.028	-0.07	[-0.15, 0.01]	-1.64	.102
Grandparent * Black, $\hat{\gamma}_{11}$	0.12	[-0.11, 0.35]	1.01	.311	0.01	[-0.22, 0.23]	0.05	.960
Before-slope * Grandparent * Black, $\hat{\gamma}_{31}$	-0.05	[-0.16, 0.07]	-0.80	.425	0.00	[-0.10, 0.10]	-0.01	.993
After-slope * Grandparent * Black, $\hat{\gamma}_{51}$	0.02	[-0.05, 0.09]	0.55	.582	0.00	[-0.06, 0.06]	0.04	.970
Shift * Grandparent * Black, $\hat{\gamma}_{71}$	-0.08	[-0.26, 0.11]	-0.80	.422	0.08	[-0.10, 0.25]	0.85	.393

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *black* = 0 indicates White/Caucasian race/ethnicity.

black = 1 indicates Black/African American race/ethnicity.

Table S53

Linear Contrasts for Openness (Moderated by Race/Ethnicity; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of White controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	0.01	0.62	.431	0.00	0.10	.750
Shift of Black controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.11	12.63	< .001	-0.03	1.43	.231
Shift of White grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.02	1.72	.190	-0.02	2.09	.148
Shift of Black grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.02	0.08	.773	0.02	0.09	.770
Shift of White controls vs. White grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.03	2.33	.127	-0.03	2.06	.151
Before-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.02	0.17	.678	0.00	0.00	.987
After-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.03	0.76	.383	0.01	0.07	.797
Shift of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.09	1.63	.201	0.05	0.66	.418
Shift of White controls vs. Black controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.10	10.12	.001	-0.04	1.53	.216
Before-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.03	0.33	.568	-0.03	0.34	.558
After-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.03	0.84	.360	0.03	1.09	.297
Shift of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	0.04	0.40	.526	0.04	0.46	.500

Note. The linear contrasts are based on the models from Table S52. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S54

Fixed Effects of Life Satisfaction Over the Transition to Grandparenthood.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	5.04	[4.93, 5.15]	90.40	< .001	5.15	[5.02, 5.28]	78.22	< .001
Propensity score, $\hat{\gamma}_{02}$	-0.08	[-0.22, 0.05]	-1.18	.239	0.01	[-0.12, 0.15]	0.20	.843
Before-slope, $\hat{\gamma}_{10}$	0.03	[0.02, 0.04]	5.02	< .001	0.01	[0.00, 0.03]	2.03	.042
After-slope, $\hat{\gamma}_{20}$	0.01	[0.00, 0.02]	2.10	.036	-0.01	[-0.02, 0.00]	-1.53	.126
Shift, $\hat{\gamma}_{30}$	-0.03	[-0.09, 0.02]	-1.20	.230	-0.11	[-0.16, -0.05]	-3.64	< .001
Grandparent, $\hat{\gamma}_{01}$	0.14	[-0.03, 0.30]	1.58	.115	0.00	[-0.18, 0.18]	0.01	.995
Before-slope * Grandparent, $\hat{\gamma}_{11}$	-0.01	[-0.04, 0.02]	-0.55	.583	0.01	[-0.02, 0.04]	0.68	.494
After-slope * Grandparent, $\hat{\gamma}_{21}$	-0.02	[-0.04, 0.01]	-1.53	.125	0.00	[-0.02, 0.03]	0.09	.928
Shift * Grandparent, $\hat{\gamma}_{31}$	0.08	[-0.04, 0.20]	1.24	.215	0.15	[0.02, 0.28]	2.34	.019
HRS								
Intercept, $\hat{\gamma}_{00}$	4.79	[4.67, 4.90]	81.69	< .001	4.58	[4.45, 4.72]	67.28	< .001
Propensity score, $\hat{\gamma}_{02}$	0.42	[0.21, 0.63]	3.87	< .001	0.43	[0.21, 0.65]	3.87	< .001
Before-slope, $\hat{\gamma}_{10}$	0.01	[-0.03, 0.04]	0.27	.790	0.04	[0.00, 0.07]	1.95	.051
After-slope, $\hat{\gamma}_{20}$	0.01	[-0.01, 0.04]	0.91	.361	0.03	[0.01, 0.05]	2.37	.018
Shift, $\hat{\gamma}_{30}$	0.01	[-0.06, 0.09]	0.28	.783	-0.01	[-0.09, 0.06]	-0.40	.690
Grandparent, $\hat{\gamma}_{01}$	-0.01	[-0.20, 0.18]	-0.11	.911	0.15	[-0.04, 0.35]	1.51	.130
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.08	[-0.01, 0.17]	1.76	.079	0.06	[-0.03, 0.14]	1.26	.207
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.03	[-0.02, 0.09]	1.11	.266	0.02	[-0.04, 0.07]	0.61	.539
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.07	[-0.24, 0.10]	-0.78	.436	-0.05	[-0.21, 0.11]	-0.59	.553

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S55

Linear Contrasts for Life Satisfaction.

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.02	0.83	.363	-0.12	20.17	< .001
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.03	0.53	.468	0.04	0.51	.476
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.06	1.13	.288	0.15	7.24	.007
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.02	3.68	.055	0.02	3.28	.070
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	-0.01	0.46	.496	-0.01	0.42	.519
HRS						
Shift of the controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.02	0.58	.445	0.01	0.28	.595
Shift of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.01	0.04	.844	-0.02	0.09	.771
Shift of the controls vs. shift of the grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.03	0.27	.602	-0.03	0.25	.616
Before-slope of the grandparents vs. 0 ($\hat{\gamma}_{10} + \hat{\gamma}_{11}$)	0.09	4.29	.038	0.09	5.35	.021
After-slope of the grandparents vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{21}$)	0.04	2.88	.090	0.05	3.50	.061

Note. The linear contrasts are needed in cases where estimates of interest are represented by multiple fixed-effects coefficients and are computed using the *linearHypothesis* function from the *car* R package (Fox & Weisberg, 2019) based on the models from Table S54. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S56

Fixed Effects of Life Satisfaction Over the Transition to Grandparenthood Moderated by Gender.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
LISS								
Intercept, $\hat{\gamma}_{00}$	4.96	[4.81, 5.11]	63.49	< .001	5.12	[4.94, 5.30]	55.20	< .001
Propensity score, $\hat{\gamma}_{04}$	-0.08	[-0.21, 0.05]	-1.17	.241	0.01	[-0.12, 0.14]	0.15	.878
Before-slope, $\hat{\gamma}_{10}$	0.05	[0.03, 0.06]	4.76	< .001	0.02	[0.00, 0.03]	1.57	.116
After-slope, $\hat{\gamma}_{20}$	0.02	[0.00, 0.03]	1.91	.056	-0.02	[-0.04, 0.00]	-2.50	.012
Shift, $\hat{\gamma}_{30}$	-0.08	[-0.17, 0.00]	-2.00	.045	-0.04	[-0.12, 0.04]	-0.93	.352
Grandparent, $\hat{\gamma}_{01}$	0.27	[0.04, 0.51]	2.29	.022	0.09	[-0.17, 0.34]	0.67	.505
Female, $\hat{\gamma}_{02}$	0.14	[-0.05, 0.33]	1.43	.152	0.05	[-0.17, 0.28]	0.47	.637
Before-slope * Grandparent, $\hat{\gamma}_{11}$	-0.02	[-0.07, 0.02]	-1.19	.235	0.01	[-0.04, 0.05]	0.24	.808
After-slope * Grandparent, $\hat{\gamma}_{21}$	-0.03	[-0.07, 0.00]	-1.73	.084	0.00	[-0.03, 0.04]	0.23	.817
Shift * Grandparent, $\hat{\gamma}_{31}$	0.13	[-0.05, 0.30]	1.38	.166	0.08	[-0.10, 0.27]	0.86	.387
Before-slope * Female, $\hat{\gamma}_{12}$	-0.02	[-0.05, 0.00]	-1.90	.058	0.00	[-0.03, 0.02]	-0.26	.791
After-slope * Female, $\hat{\gamma}_{22}$	-0.01	[-0.03, 0.01]	-0.69	.491	0.02	[0.00, 0.04]	2.00	.046
Shift * Female, $\hat{\gamma}_{32}$	0.09	[-0.02, 0.20]	1.60	.110	-0.13	[-0.24, -0.01]	-2.13	.033
Grandparent * Female, $\hat{\gamma}_{03}$	-0.26	[-0.56, 0.04]	-1.67	.095	-0.16	[-0.49, 0.17]	-0.97	.331
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.03	[-0.02, 0.09]	1.15	.251	0.01	[-0.05, 0.07]	0.38	.704
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	0.02	[-0.03, 0.07]	0.91	.365	-0.01	[-0.06, 0.04]	-0.30	.768
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	-0.09	[-0.33, 0.15]	-0.73	.467	0.13	[-0.12, 0.38]	0.99	.322
HRS								
Intercept, $\hat{\gamma}_{00}$	4.68	[4.53, 4.82]	61.35	< .001	4.49	[4.32, 4.66]	51.99	< .001
Propensity score, $\hat{\gamma}_{04}$	0.43	[0.22, 0.64]	3.95	< .001	0.40	[0.18, 0.62]	3.61	< .001
Before-slope, $\hat{\gamma}_{10}$	0.01	[-0.05, 0.07]	0.28	.777	0.06	[0.01, 0.12]	2.27	.023
After-slope, $\hat{\gamma}_{20}$	-0.01	[-0.05, 0.03]	-0.55	.584	0.06	[0.02, 0.10]	3.05	.002
Shift, $\hat{\gamma}_{30}$	0.18	[0.07, 0.29]	3.13	.002	-0.21	[-0.32, -0.10]	-3.75	< .001
Grandparent, $\hat{\gamma}_{01}$	0.09	[-0.17, 0.35]	0.71	.480	0.25	[-0.01, 0.52]	1.85	.064
Female, $\hat{\gamma}_{02}$	0.20	[0.03, 0.37]	2.36	.019	0.18	[-0.01, 0.38]	1.88	.060
Before-slope * Grandparent, $\hat{\gamma}_{11}$	0.01	[-0.13, 0.14]	0.10	.917	-0.04	[-0.17, 0.09]	-0.62	.536
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.06	[-0.03, 0.14]	1.32	.186	-0.01	[-0.09, 0.07]	-0.23	.816
Shift * Grandparent, $\hat{\gamma}_{31}$	-0.19	[-0.44, 0.06]	-1.51	.131	0.19	[-0.05, 0.43]	1.57	.117
Before-slope * Female, $\hat{\gamma}_{12}$	-0.01	[-0.09, 0.07]	-0.27	.788	-0.05	[-0.12, 0.03]	-1.23	.218
After-slope * Female, $\hat{\gamma}_{22}$	0.04	[-0.01, 0.09]	1.58	.114	-0.05	[-0.10, 0.00]	-2.07	.039
Shift * Female, $\hat{\gamma}_{32}$	-0.31	[-0.46, -0.15]	-3.95	< .001	0.34	[0.20, 0.48]	4.63	< .001

Table S56 continued

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Grandparent * Female, $\hat{\gamma}_{03}$	-0.19	[-0.51, 0.13]	-1.19	.234	-0.17	[-0.50, 0.15]	-1.04	.298
Before-slope * Grandparent * Female, $\hat{\gamma}_{13}$	0.14	[-0.04, 0.32]	1.48	.139	0.17	[0.00, 0.34]	1.91	.056
After-slope * Grandparent * Female, $\hat{\gamma}_{23}$	-0.05	[-0.16, 0.07]	-0.79	.432	0.05	[-0.06, 0.15]	0.82	.412
Shift * Grandparent * Female, $\hat{\gamma}_{33}$	0.23	[-0.11, 0.56]	1.34	.180	-0.41	[-0.73, -0.10]	-2.55	.011

Note. Two models were computed for each of the two samples (LISS, HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval.

Table S57

Linear Contrasts for Life Satisfaction (Moderated by Gender).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
LISS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	-0.07	3.48	.062	-0.06	2.59	.108
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.01	0.19	.663	-0.16	21.48	< .001
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.03	0.13	.723	0.03	0.12	.730
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.04	0.41	.524	0.04	0.40	.529
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.09	1.38	.239	0.09	1.07	.300
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.01	0.16	.690	0.02	0.67	.413
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	-0.01	0.30	.583	0.00	0.03	.853
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.03	0.13	.714	0.21	7.28	.007
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	0.08	2.81	.094	-0.10	3.97	.046
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.01	0.11	.746	0.01	0.09	.770
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	0.02	0.45	.502	0.02	0.41	.520
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.02	0.03	.866	0.02	0.03	.865
HRS						
Shift of male controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30}$)	0.17	14.63	< .001	-0.15	12.35	< .001
Shift of female controls vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{22} + \hat{\gamma}_{32}$)	-0.09	5.59	.018	0.14	13.77	< .001
Shift of grandfathers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.04	0.17	.682	0.03	0.12	.727
Shift of grandmothers vs. 0 ($\hat{\gamma}_{20} + \hat{\gamma}_{30} + \hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.05	0.35	.553	-0.05	0.45	.504
Shift of male controls vs. grandfathers ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.13	1.92	.166	0.18	3.79	.052
Before-slope of female controls vs. grandmothers ($\hat{\gamma}_{11} + \hat{\gamma}_{13}$)	0.14	5.47	.019	0.13	4.79	.029
After-slope of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{23}$)	0.01	0.09	.769	0.04	0.92	.337
Shift of female controls vs. grandmothers ($\hat{\gamma}_{21} + \hat{\gamma}_{31} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	0.05	0.29	.587	-0.19	5.13	.024
Shift of male vs. female controls ($\hat{\gamma}_{22} + \hat{\gamma}_{32}$)	-0.26	19.63	< .001	0.29	25.88	< .001
Before-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{12} + \hat{\gamma}_{13}$)	0.13	2.28	.131	0.12	2.36	.125
After-slope of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{23}$)	0.00	0.01	.937	-0.01	0.02	.889
Shift of grandfathers vs. grandmothers ($\hat{\gamma}_{22} + \hat{\gamma}_{32} + \hat{\gamma}_{23} + \hat{\gamma}_{33}$)	-0.08	0.50	.480	-0.08	0.50	.477

Note. The linear contrasts are based on the models from Table S56. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S58

Fixed Effects of Life Satisfaction Over the Transition to Grandparenthood Moderated by Performing Paid Work.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	4.78	[4.63, 4.93]	63.55	$<.001$	4.62	[4.46, 4.78]	56.07	$<.001$
Propensity score, $\hat{\gamma}_{02}$	0.40	[0.18, 0.61]	3.64	$<.001$	0.37	[0.15, 0.59]	3.26	.001
Before-slope, $\hat{\gamma}_{20}$	0.00	[-0.07, 0.07]	0.11	.912	-0.08	[-0.16, -0.01]	-2.31	.021
After-slope, $\hat{\gamma}_{40}$	0.00	[-0.04, 0.03]	-0.25	.800	0.05	[0.01, 0.09]	2.74	.006
Shift, $\hat{\gamma}_{60}$	-0.02	[-0.14, 0.10]	-0.30	.761	0.18	[0.06, 0.30]	2.90	.004
Grandparent, $\hat{\gamma}_{01}$	-0.04	[-0.36, 0.29]	-0.22	.826	0.11	[-0.20, 0.43]	0.70	.484
Working, $\hat{\gamma}_{10}$	0.02	[-0.12, 0.16]	0.27	.787	0.02	[-0.12, 0.15]	0.25	.799
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.07	[-0.11, 0.25]	0.74	.458	0.16	[-0.01, 0.33]	1.83	.067
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.04	[-0.05, 0.12]	0.87	.385	-0.02	[-0.10, 0.06]	-0.49	.622
Shift * Grandparent, $\hat{\gamma}_{61}$	0.11	[-0.16, 0.38]	0.77	.440	-0.10	[-0.36, 0.16]	-0.74	.459
Before-slope * Working, $\hat{\gamma}_{30}$	0.00	[-0.08, 0.09]	0.06	.950	0.16	[0.08, 0.25]	3.86	$<.001$
After-slope * Working, $\hat{\gamma}_{50}$	0.05	[0.00, 0.10]	1.88	.060	-0.04	[-0.09, 0.01]	-1.59	.112
Shift * Working, $\hat{\gamma}_{70}$	0.02	[-0.13, 0.18]	0.28	.778	-0.26	[-0.41, -0.11]	-3.35	.001
Grandparent * Working, $\hat{\gamma}_{11}$	0.03	[-0.31, 0.38]	0.19	.848	0.03	[-0.30, 0.35]	0.15	.880
Before-slope * Grandparent * Working, $\hat{\gamma}_{31}$	0.02	[-0.19, 0.23]	0.19	.853	-0.14	[-0.34, 0.06]	-1.38	.167
After-slope * Grandparent * Working, $\hat{\gamma}_{51}$	-0.03	[-0.15, 0.09]	-0.51	.611	0.06	[-0.05, 0.17]	1.07	.286
Shift * Grandparent * Working, $\hat{\gamma}_{71}$	-0.25	[-0.61, 0.10]	-1.41	.160	0.03	[-0.31, 0.36]	0.15	.881

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *working* = 1 indicates being employed in paid work.

Table S59

Linear Contrasts for Life Satisfaction (Moderated by Paid Work; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of not-working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	-0.02	0.22	.636	0.23	21.09	< .001
Shift of working controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.05	1.67	.197	-0.07	3.91	.048
Shift of not-working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	0.12	1.43	.232	0.12	1.55	.213
Shift of working grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.09	1.49	.223	-0.10	1.99	.159
Shift of not-working controls vs. not-working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	0.14	1.65	.200	-0.12	1.21	.272
Before-slope of working controls vs. working grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.09	2.65	.104	0.02	0.15	.697
After-slope of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.01	0.02	.886	0.04	1.06	.303
Shift of working controls vs. working grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.14	2.80	.094	-0.03	0.16	.689
Shift of not-working controls vs. working controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.07	1.35	.246	-0.30	23.66	< .001
Before-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	0.02	0.05	.819	0.02	0.05	.823
After-slope of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.02	0.13	.716	0.02	0.16	.693
Shift of not-working grandparents vs. working grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.21	2.77	.096	-0.22	3.28	.070

Note. The linear contrasts are based on the models from Table S58. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S60

Fixed Effects of Life Satisfaction Over the Transition to Grandparenthood Moderated by Grandchild Care.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	4.99	[4.85, 5.13]	69.26	< .001	4.82	[4.66, 4.99]	57.30	< .001
Propensity score, $\hat{\gamma}_{02}$	-0.05	[-0.30, 0.21]	-0.37	.712	0.24	[-0.02, 0.51]	1.79	.074
After-slope, $\hat{\gamma}_{20}$	0.02	[-0.01, 0.06]	1.43	.153	0.02	[-0.02, 0.05]	1.05	.293
Grandparent, $\hat{\gamma}_{01}$	-0.02	[-0.24, 0.20]	-0.17	.863	0.02	[-0.21, 0.25]	0.15	.879
Caring, $\hat{\gamma}_{10}$	-0.02	[-0.14, 0.10]	-0.33	.739	-0.12	[-0.24, 0.00]	-2.01	.045
After-slope * Grandparent, $\hat{\gamma}_{21}$	0.04	[-0.03, 0.12]	1.25	.212	0.05	[-0.02, 0.12]	1.42	.155
After-slope * Caring, $\hat{\gamma}_{30}$	-0.01	[-0.06, 0.04]	-0.30	.762	0.05	[0.00, 0.10]	1.78	.075
Grandparent * Caring, $\hat{\gamma}_{11}$	0.23	[-0.06, 0.53]	1.54	.124	0.34	[0.05, 0.64]	2.29	.022
After-slope * Grandparent * Caring, $\hat{\gamma}_{31}$	-0.03	[-0.14, 0.08]	-0.50	.620	-0.08	[-0.19, 0.03]	-1.48	.140

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *caring* = 1 indicates more than 100 hours of grandchild care since the last assessment.

Table S61

Linear Contrasts for Life Satisfaction (Moderated by Grandchild Care; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
After-slope of caring controls vs. caring grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	0.02	0.15	.702	-0.03	0.63	.429
After-slope of not-caring grandparents vs. caring grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.04	0.51	.476	-0.04	0.56	.454

Note. The linear contrasts are based on the models from Table S60. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S62

Fixed Effects of Life Satisfaction Over the Transition to Grandparenthood Moderated by Race/Ethnicity.

Parameter	Parent controls				Nonparent controls			
	$\hat{\gamma}$	95% CI	t	p	$\hat{\gamma}$	95% CI	t	p
Intercept, $\hat{\gamma}_{00}$	4.91	[4.79, 5.04]	78.04	< .001	4.62	[4.48, 4.77]	62.14	< .001
Propensity score, $\hat{\gamma}_{02}$	0.40	[0.19, 0.62]	3.65	< .001	0.35	[0.13, 0.58]	3.06	.002
Before-slope, $\hat{\gamma}_{20}$	-0.01	[-0.05, 0.04]	-0.24	.809	0.05	[0.01, 0.09]	2.34	.020
After-slope, $\hat{\gamma}_{40}$	0.01	[-0.01, 0.04]	1.00	.319	0.03	[0.01, 0.06]	2.41	.016
Shift, $\hat{\gamma}_{60}$	-0.02	[-0.10, 0.06]	-0.47	.637	0.00	[-0.08, 0.08]	0.00	.997
Grandparent, $\hat{\gamma}_{01}$	-0.06	[-0.26, 0.14]	-0.59	.556	0.22	[0.01, 0.43]	2.01	.045
Black, $\hat{\gamma}_{10}$	-0.89	[-1.25, -0.53]	-4.86	< .001	0.10	[-0.26, 0.47]	0.56	.577
Before-slope * Grandparent, $\hat{\gamma}_{21}$	0.10	[0.00, 0.19]	2.04	.042	0.05	[-0.04, 0.14]	1.11	.269
After-slope * Grandparent, $\hat{\gamma}_{41}$	0.02	[-0.04, 0.08]	0.69	.488	0.01	[-0.05, 0.06]	0.19	.849
Shift * Grandparent, $\hat{\gamma}_{61}$	-0.04	[-0.22, 0.14]	-0.43	.667	-0.06	[-0.23, 0.11]	-0.74	.460
Before-slope * Black, $\hat{\gamma}_{30}$	0.09	[-0.06, 0.25]	1.15	.249	-0.18	[-0.31, -0.04]	-2.52	.012
After-slope * Black, $\hat{\gamma}_{50}$	0.02	[-0.06, 0.11]	0.55	.584	-0.08	[-0.19, 0.03]	-1.37	.170
Shift * Black, $\hat{\gamma}_{70}$	-0.03	[-0.31, 0.25]	-0.20	.840	0.06	[-0.24, 0.35]	0.37	.709
Grandparent * Black, $\hat{\gamma}_{11}$	0.42	[-0.30, 1.13]	1.15	.251	-0.57	[-1.28, 0.14]	-1.57	.116
Before-slope * Grandparent * Black, $\hat{\gamma}_{31}$	-0.23	[-0.62, 0.16]	-1.17	.241	0.03	[-0.34, 0.40]	0.17	.862
After-slope * Grandparent * Black, $\hat{\gamma}_{51}$	0.26	[0.03, 0.49]	2.20	.027	0.36	[0.13, 0.59]	3.07	.002
Shift * Grandparent * Black, $\hat{\gamma}_{71}$	-0.34	[-0.98, 0.31]	-1.02	.308	-0.43	[-1.06, 0.21]	-1.32	.187

Note. Two models were computed (only HRS): grandparents matched with parent controls and with nonparent controls. CI = confidence interval. *black* = 0 indicates White/Caucasian race/ethnicity,

black = 1 indicates Black/African American race/ethnicity.

Table S63

Linear Contrasts for Life Satisfaction (Moderated by Race/Ethnicity; only HRS).

Linear Contrast	Parent controls			Nonparent controls		
	$\hat{\gamma}_c$	χ^2	p	$\hat{\gamma}_c$	χ^2	p
Shift of White controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60}$)	-0.01	0.03	.864	0.03	1.09	.296
Shift of Black controls vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{50} + \hat{\gamma}_{70}$)	-0.01	0.01	.930	0.01	0.01	.923
Shift of White grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.02	0.14	.709	-0.03	0.21	.644
Shift of Black grandparents vs. 0 ($\hat{\gamma}_{40} + \hat{\gamma}_{60} + \hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.10	0.24	.625	-0.11	0.30	.583
Shift of White controls vs. White grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61}$)	-0.02	0.06	.799	-0.06	0.78	.376
Before-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{21} + \hat{\gamma}_{31}$)	-0.14	0.49	.482	0.08	0.21	.648
After-slope of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{51}$)	0.28	6.12	.013	0.37	10.37	.001
Shift of Black controls vs. Black grandparents ($\hat{\gamma}_{41} + \hat{\gamma}_{61} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.10	0.16	.689	-0.12	0.28	.596
Shift of White controls vs. Black controls ($\hat{\gamma}_{50} + \hat{\gamma}_{70}$)	0.00	0.00	.971	-0.02	0.03	.854
Before-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{30} + \hat{\gamma}_{31}$)	-0.14	0.60	.437	-0.14	0.66	.418
After-slope of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{51}$)	0.28	6.90	.009	0.29	7.56	.006
Shift of White grandparents vs. Black grandparents ($\hat{\gamma}_{50} + \hat{\gamma}_{70} + \hat{\gamma}_{51} + \hat{\gamma}_{71}$)	-0.08	0.14	.713	-0.09	0.16	.689

Note. The linear contrasts are based on the models from Table S62. $\hat{\gamma}_c$ = combined fixed-effects estimate.

Table S64

Tests of Heterogeneous Random Slope Variance Models for Agreeableness Against Comparison Models With a Uniform Random Slope Variance.

	Parent controls					Nonparent controls				
	Var.	SD	LR	p	GP greater	Var.	SD	LR	p	GP greater
LISS										
Before-slope: uniform	0.00	0.04				0.00	0.04			
Before-slope: heterogeneous (controls)	0.00	0.05				0.00	0.05			
Before-slope: heterogeneous (grandparents)	0.00	0.04	15.22	.002	no	0.00	0.03	37.53	< .001	no
After-slope: uniform	0.00	0.03				0.00	0.03			
After-slope: heterogeneous (controls)	0.00	0.04				0.00	0.04			
After-slope: heterogeneous (grandparents)	0.00	0.03	4.88	.181	no	0.00	0.02	14.49	.002	no
Shift: uniform	0.02	0.15				0.02	0.15			
Shift: heterogeneous (controls)	0.02	0.15				0.03	0.16			
Shift: heterogeneous (grandparents)	0.02	0.13	1.57	.666	no	0.01	0.10	15.97	.001	no
HRS										
Before-slope: uniform	0.01	0.11				0.01	0.12			
Before-slope: heterogeneous (controls)	0.02	0.14				0.02	0.15			
Before-slope: heterogeneous (grandparents)	0.01	0.12	57.65	< .001	no	0.02	0.13	81.45	< .001	no
After-slope: uniform	0.01	0.09				0.01	0.11			
After-slope: heterogeneous (controls)	0.01	0.10				0.01	0.12			
After-slope: heterogeneous (grandparents)	0.01	0.08	35.76	< .001	no	0.01	0.09	68.22	< .001	no
Shift: uniform	0.06	0.25				0.07	0.26			
Shift: heterogeneous (controls)	0.08	0.28				0.09	0.30			
Shift: heterogeneous (grandparents)	0.05	0.22	68.90	< .001	no	0.06	0.24	92.11	< .001	no

Note. The heterogeneous variance models ($df = 16$) differ only in the random effects from the comparison models ($df = 13$). In addition to two random slope variances (instead of one), the heterogeneous variance models estimate two additional random intercept/slope covariances. Both models estimate heterogeneous random intercept variances for the grandparent and control groups. *Var.* = random slope variance; *SD* = standard deviation; *LR* = likelihood ratio; $p = p$-value (of the LR test); *GP greater* = indicating if the random slope variance of the grandparents is larger than that of either control group.

Table S65

Tests of Heterogeneous Random Slope Variance Models for Conscientiousness Against Comparison Models With a Uniform Random Slope Variance.

	Parent controls					Nonparent controls				
	Var.	SD	LR	p	GP greater	Var.	SD	LR	p	GP greater
LISS										
Before-slope: uniform	0.00	0.04				0.00	0.04			
Before-slope: heterogeneous (controls)	0.00	0.05				0.00	0.04			
Before-slope: heterogeneous (grandparents)	0.00	0.03	16.78	< .001	no	0.00	0.01	31.44	< .001	no
After-slope: uniform	0.00	0.04				0.00	0.04			
After-slope: heterogeneous (controls)	0.00	0.04				0.00	0.04			
After-slope: heterogeneous (grandparents)	0.00	0.03	8.02	.046	no	0.00	0.03	17.47	< .001	no
Shift: uniform	0.02	0.14				0.02	0.14			
Shift: heterogeneous (controls)	0.02	0.15				0.02	0.16			
Shift: heterogeneous (grandparents)	0.01	0.12	2.58	.461	no	0.01	0.08	14.58	.002	no
HRS										
Before-slope: uniform	0.01	0.11				0.01	0.11			
Before-slope: heterogeneous (controls)	0.02	0.14				0.02	0.14			
Before-slope: heterogeneous (grandparents)	0.01	0.11	79.31	< .001	no	0.02	0.13	105.76	< .001	no
After-slope: uniform	0.01	0.09				0.01	0.10			
After-slope: heterogeneous (controls)	0.01	0.11				0.01	0.11			
After-slope: heterogeneous (grandparents)	0.01	0.08	57.77	< .001	no	0.01	0.09	59.64	< .001	no
Shift: uniform	0.06	0.24				0.06	0.25			
Shift: heterogeneous (controls)	0.07	0.27				0.08	0.27			
Shift: heterogeneous (grandparents)	0.05	0.23	83.80	< .001	no	0.06	0.25	91.50	< .001	no

Note. The heterogeneous variance models ($df = 16$) differ only in the random effects from the comparison models ($df = 13$). In addition to two random slope variances (instead of one), the heterogeneous variance models estimate two additional random intercept/slope covariances. Both models estimate heterogeneous random intercept variances for the grandparent and control groups. *Var.* = random slope variance; *SD* = standard deviation; *LR* = likelihood ratio; p = p-value (of the LR test); *GP greater* = indicating if the random slope variance of the grandparents is larger than that of either control group.

Table S66

Tests of Heterogeneous Random Slope Variance Models for Extraversion Against Comparison Models With a Uniform Random Slope Variance.

	Parent controls					Nonparent controls				
	Var.	SD	LR	p	GP greater	Var.	SD	LR	p	GP greater
LISS										
Before-slope: uniform	0.00	0.05				0.00	0.05			
Before-slope: heterogeneous (controls)	0.00	0.06				0.00	0.06			
Before-slope: heterogeneous (grandparents)	0.00	0.05	25.93	< .001	no	0.00	0.05	16.88	< .001	no
After-slope: uniform	0.00	0.04				0.00	0.04			
After-slope: heterogeneous (controls)	0.00	0.04				0.00	0.05			
After-slope: heterogeneous (grandparents)	0.00	0.03	4.61	.203	no	0.00	0.03	8.97	.030	no
Shift: uniform	0.03	0.17				0.03	0.18			
Shift: heterogeneous (controls)	0.03	0.18				0.04	0.20			
Shift: heterogeneous (grandparents)	0.02	0.13	6.66	.084	no	0.02	0.13	8.05	.045	no
HRS										
Before-slope: uniform	0.01	0.12				0.02	0.13			
Before-slope: heterogeneous (controls)	0.02	0.14				0.03	0.16			
Before-slope: heterogeneous (grandparents)	0.01	0.11	50.21	< .001	no	0.02	0.13	88.69	< .001	no
After-slope: uniform	0.01	0.10				0.01	0.11			
After-slope: heterogeneous (controls)	0.01	0.11				0.02	0.12			
After-slope: heterogeneous (grandparents)	0.01	0.09	40.23	< .001	no	0.01	0.10	48.76	< .001	no
Shift: uniform	0.07	0.27				0.08	0.28			
Shift: heterogeneous (controls)	0.09	0.29				0.09	0.31			
Shift: heterogeneous (grandparents)	0.06	0.25	60.29	< .001	no	0.07	0.26	67.55	< .001	no

Note. The heterogeneous variance models ($df = 16$) differ only in the random effects from the comparison models ($df = 13$). In addition to two random slope variances (instead of one), the heterogeneous variance models estimate two additional random intercept/slope covariances. Both models estimate heterogeneous random intercept variances for the grandparent and control groups. *Var.* = random slope variance; *SD* = standard deviation; *LR* = likelihood ratio; $p = p$-value (of the LR test); *GP greater* = indicating if the random slope variance of the grandparents is larger than that of either control group.

Table S67

Tests of Heterogeneous Random Slope Variance Models for Neuroticism Against Comparison Models With a Uniform Random Slope Variance.

	Parent controls					Nonparent controls				
	Var.	SD	LR	p	GP greater	Var.	SD	LR	p	GP greater
LISS										
Before-slope: uniform	0.00	0.06				0.01	0.07			
Before-slope: heterogeneous (controls)	0.00	0.07				0.01	0.09			
Before-slope: heterogeneous (grandparents)	0.00	0.06	13.44	.004	no	0.00	0.06	27.16	< .001	no
After-slope: uniform	0.00	0.05				0.00	0.06			
After-slope: heterogeneous (controls)	0.00	0.05				0.00	0.06			
After-slope: heterogeneous (grandparents)	0.00	0.04	4.07	.254	no	0.00	0.04	12.76	.005	no
Shift: uniform	0.04	0.21				0.06	0.25			
Shift: heterogeneous (controls)	0.04	0.21				0.08	0.29			
Shift: heterogeneous (grandparents)	0.04	0.20	1.74	.628	no	0.03	0.18	13.84	.003	no
HRS										
Before-slope: uniform	0.02	0.15				0.02	0.15			
Before-slope: heterogeneous (controls)	0.04	0.19				0.04	0.20			
Before-slope: heterogeneous (grandparents)	0.03	0.17	83.87	< .001	no	0.03	0.18	96.92	< .001	no
After-slope: uniform	0.01	0.12				0.01	0.12			
After-slope: heterogeneous (controls)	0.02	0.14				0.02	0.14			
After-slope: heterogeneous (grandparents)	0.01	0.10	73.89	< .001	no	0.01	0.10	87.94	< .001	no
Shift: uniform	0.10	0.32				0.09	0.30			
Shift: heterogeneous (controls)	0.13	0.36				0.12	0.34			
Shift: heterogeneous (grandparents)	0.09	0.30	103.35	< .001	no	0.08	0.29	99.32	< .001	no

Note. The heterogeneous variance models ($df = 16$) differ only in the random effects from the comparison models ($df = 13$). In addition to two random slope variances (instead of one), the heterogeneous variance models estimate two additional random intercept/slope covariances. Both models estimate heterogeneous random intercept variances for the grandparent and control groups. *Var.* = random slope variance; *SD* = standard deviation; *LR* = likelihood ratio; p = p-value (of the LR test); *GP greater* = indicating if the random slope variance of the grandparents is larger than that of either control group.

Table S68

Tests of Heterogeneous Random Slope Variance Models for Openness Against Comparison Models With a Uniform Random Slope Variance.

	Parent controls					Nonparent controls				
	Var.	SD	LR	p	GP greater	Var.	SD	LR	p	GP greater
LISS										
Before-slope: uniform	0.00	0.04				0.00	0.04			
Before-slope: heterogeneous (controls)	0.00	0.05				0.00	0.04			
Before-slope: heterogeneous (grandparents)	0.00	0.04	32.73	< .001	no	0.00	0.04	20.42	< .001	no
After-slope: uniform	0.00	0.03				0.00	0.03			
After-slope: heterogeneous (controls)	0.00	0.04				0.00	0.03			
After-slope: heterogeneous (grandparents)	0.00	0.02	20.08	< .001	no	0.00	0.02	9.55	.023	no
Shift: uniform	0.02	0.14				0.02	0.13			
Shift: heterogeneous (controls)	0.02	0.16				0.02	0.13			
Shift: heterogeneous (grandparents)	0.01	0.10	16.70	< .001	no	0.01	0.12	8.33	.040	no
HRS										
Before-slope: uniform	0.01	0.12				0.01	0.12			
Before-slope: heterogeneous (controls)	0.02	0.15				0.02	0.14			
Before-slope: heterogeneous (grandparents)	0.01	0.10	66.09	< .001	no	0.02	0.14	57.57	< .001	yes
After-slope: uniform	0.01	0.10				0.01	0.10			
After-slope: heterogeneous (controls)	0.01	0.11				0.01	0.11			
After-slope: heterogeneous (grandparents)	0.01	0.09	31.95	< .001	no	0.01	0.10	31.36	< .001	no
Shift: uniform	0.07	0.26				0.07	0.26			
Shift: heterogeneous (controls)	0.08	0.28				0.08	0.28			
Shift: heterogeneous (grandparents)	0.06	0.24	61.83	< .001	no	0.07	0.26	52.06	< .001	no

Note. The heterogeneous variance models ($df = 16$) differ only in the random effects from the comparison models ($df = 13$). In addition to two random slope variances (instead of one), the heterogeneous variance models estimate two additional random intercept/slope covariances. Both models estimate heterogeneous random intercept variances for the grandparent and control groups. *Var.* = random slope variance; *SD* = standard deviation; *LR* = likelihood ratio; p = *p*-value (of the LR test); *GP greater* = indicating if the random slope variance of the grandparents is larger than that of either control group.

Table S69

Tests of Heterogeneous Random Slope Variance Models for Life Satisfaction Against Comparison Models With a Uniform Random Slope Variance.

	Parent controls					Nonparent controls				
	Var.	SD	LR	p	GP greater	Var.	SD	LR	p	GP greater
LISS										
Before-slope: uniform	0.01	0.11				0.01	0.11			
Before-slope: heterogeneous (controls)	0.02	0.14				0.02	0.14			
Before-slope: heterogeneous (grandparents)	0.02	0.13	56.24	< .001	no	0.01	0.12	34.59	< .001	no
After-slope: uniform	0.01	0.10				0.01	0.10			
After-slope: heterogeneous (controls)	0.01	0.09				0.01	0.10			
After-slope: heterogeneous (grandparents)	0.02	0.12	11.91	.008	yes	0.01	0.12	10.88	.012	yes
Shift: uniform	0.20	0.45				0.19	0.44			
Shift: heterogeneous (controls)	0.21	0.45				0.19	0.44			
Shift: heterogeneous (grandparents)	0.23	0.48	8.96	.030	yes	0.21	0.46	8.43	.038	yes
HRS										
Before-slope: uniform	0.12	0.34				0.14	0.38			
Before-slope: heterogeneous (controls)	0.22	0.47				0.22	0.47			
Before-slope: heterogeneous (grandparents)	0.22	0.47	116.02	< .001	no	0.32	0.57	115.87	< .001	yes
After-slope: uniform	0.10	0.32				0.11	0.33			
After-slope: heterogeneous (controls)	0.14	0.38				0.15	0.39			
After-slope: heterogeneous (grandparents)	0.07	0.27	96.08	< .001	no	0.09	0.30	80.01	< .001	no
Shift: uniform	0.84	0.91				0.78	0.88			
Shift: heterogeneous (controls)	1.11	1.05				1.00	1.00			
Shift: heterogeneous (grandparents)	0.76	0.87	171.58	< .001	no	0.85	0.92	125.52	< .001	no

Note. The heterogeneous variance models ($df = 16$) differ only in the random effects from the comparison models ($df = 13$). In addition to two random slope variances (instead of one), the heterogeneous variance models estimate two additional random intercept/slope covariances. Both models estimate heterogeneous random intercept variances for the grandparent and control groups. *Var.* = random slope variance; *SD* = standard deviation; *LR* = likelihood ratio; p = *p*-value (of the LR test); *GP greater* = indicating if the random slope variance of the grandparents is larger than that of either control group.

Table S70

Rank-Order Stability With Maximal Retest Interval.

Outcome	Parent controls				Nonparent controls			
	Cor_{all}	Cor_{GP}	Cor_{con}	p	Cor_{all}	Cor_{GP}	Cor_{con}	p
LISS								
Agreeableness	0.74	0.77	0.74	.236	0.67	0.77	0.64	< .001
Conscientiousness	0.68	0.77	0.66	.028	0.69	0.77	0.67	.002
Extraversion	0.74	0.82	0.71	.001	0.80	0.82	0.80	.903
Neuroticism	0.70	0.76	0.68	.089	0.68	0.76	0.65	.684
Openness	0.74	0.79	0.73	.162	0.78	0.79	0.78	.887
Life Satisfaction	0.67	0.54	0.70	.087	0.51	0.54	0.51	.247
HRS								
Agreeableness	0.67	0.68	0.67	.361	0.69	0.68	0.69	.913
Conscientiousness	0.66	0.68	0.66	.041	0.65	0.68	0.64	.765
Extraversion	0.70	0.73	0.69	.050	0.69	0.73	0.68	.003
Neuroticism	0.64	0.67	0.64	.281	0.63	0.67	0.62	.187
Openness	0.70	0.71	0.70	.464	0.76	0.71	0.77	.001
Life Satisfaction	0.51	0.54	0.50	.396	0.48	0.54	0.46	.072

Note. Test-retest correlations as indicators of rank-order stability, and p-values indicating significant group differences therein between grandparents and each control group. The average retest intervals in years are 8.45 ($SD = 2.24$) for the LISS parent sample, 8.31 ($SD = 2.28$) for the LISS nonparent sample, 6.91 ($SD = 2.21$) for the HRS parent sample, and 6.96 ($SD = 2.27$) for the HRS nonparent sample. Cor = correlation; GP = grandparents; con = controls.

Table S71

Rank-Order Stability Excluding Duplicate Control Observations.

Outcome	Parent controls				Nonparent controls			
	Cor_{all}	Cor_{GP}	Cor_{con}	p	Cor_{all}	Cor_{GP}	Cor_{con}	p
LISS								
Agreeableness	0.79	0.81	0.77	.410	0.77	0.81	0.71	.007
Conscientiousness	0.80	0.80	0.79	.428	0.78	0.80	0.75	.395
Extraversion	0.86	0.87	0.85	.751	0.86	0.87	0.86	.709
Neuroticism	0.77	0.77	0.78	.925	0.76	0.77	0.75	.545
Openness	0.76	0.80	0.72	.111	0.81	0.80	0.82	.826
Life Satisfaction	0.65	0.66	0.63	.853	0.64	0.66	0.63	.252
HRS								
Agreeableness	0.69	0.70	0.68	.990	0.70	0.70	0.70	.943
Conscientiousness	0.70	0.69	0.70	.219	0.69	0.69	0.70	.513
Extraversion	0.74	0.75	0.73	.228	0.75	0.75	0.74	.159
Neuroticism	0.68	0.71	0.66	.599	0.72	0.71	0.74	.028
Openness	0.73	0.73	0.74	.887	0.74	0.73	0.76	.639
Life Satisfaction	0.56	0.55	0.57	.515	0.58	0.55	0.62	.031

Note. Test-retest correlations as indicators of rank-order stability, and p-values indicating significant group differences therein between grandparents and each control group. The average retest intervals in years are 2.90 ($SD = 0.90$) for the LISS parent sample, 2.90 ($SD = 0.92$) for the LISS nonparent sample, 3.91 ($SD = 0.96$) for the HRS parent sample, and 3.89 ($SD = 0.94$) for the HRS nonparent sample. Cor = correlation; GP = grandparents; con = controls.

Supplemental Figures
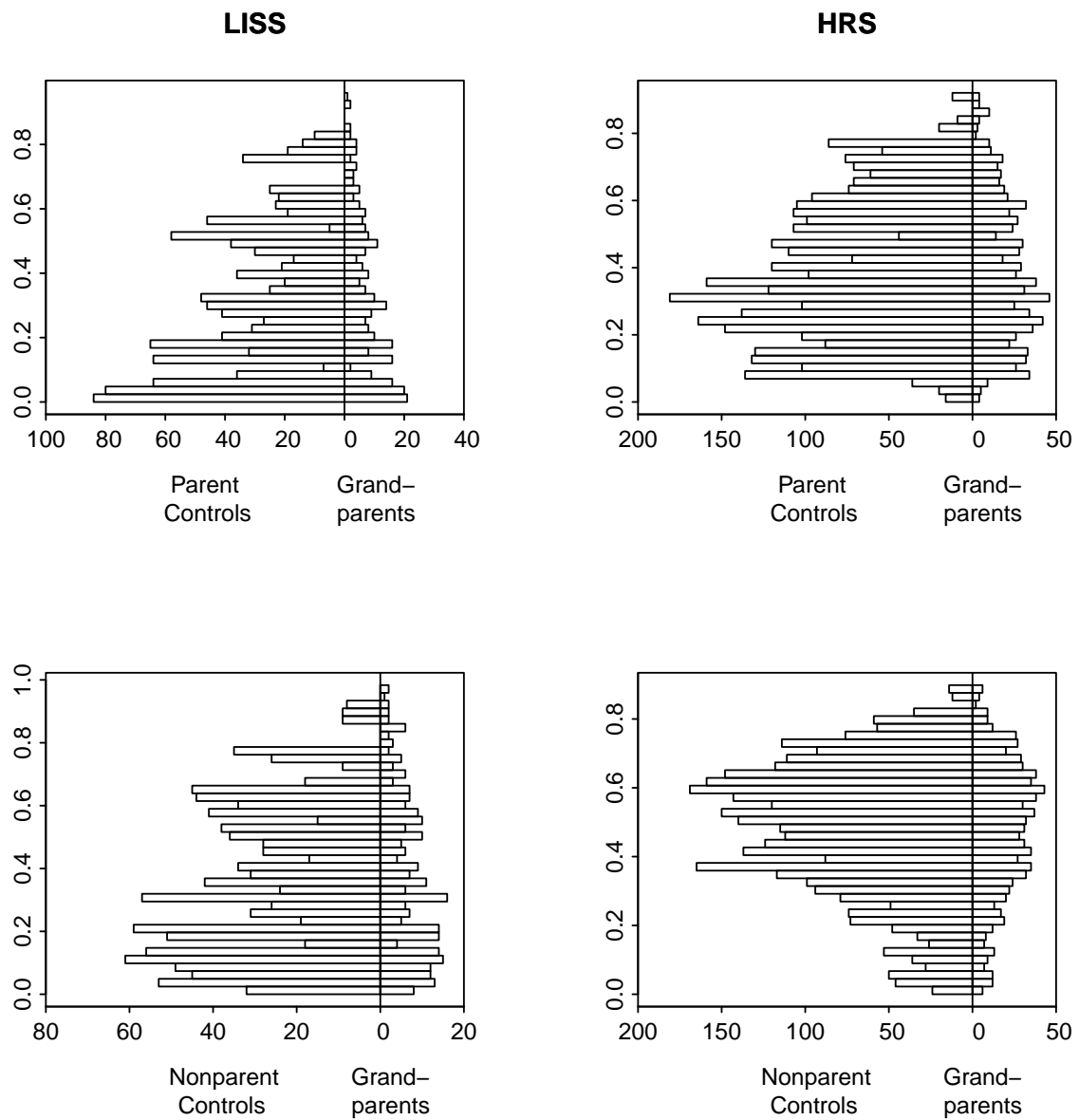
Figure S1

Distributional Overlap of the Propensity Score in the Four Analysis Samples at the Time of Matching.

LISS
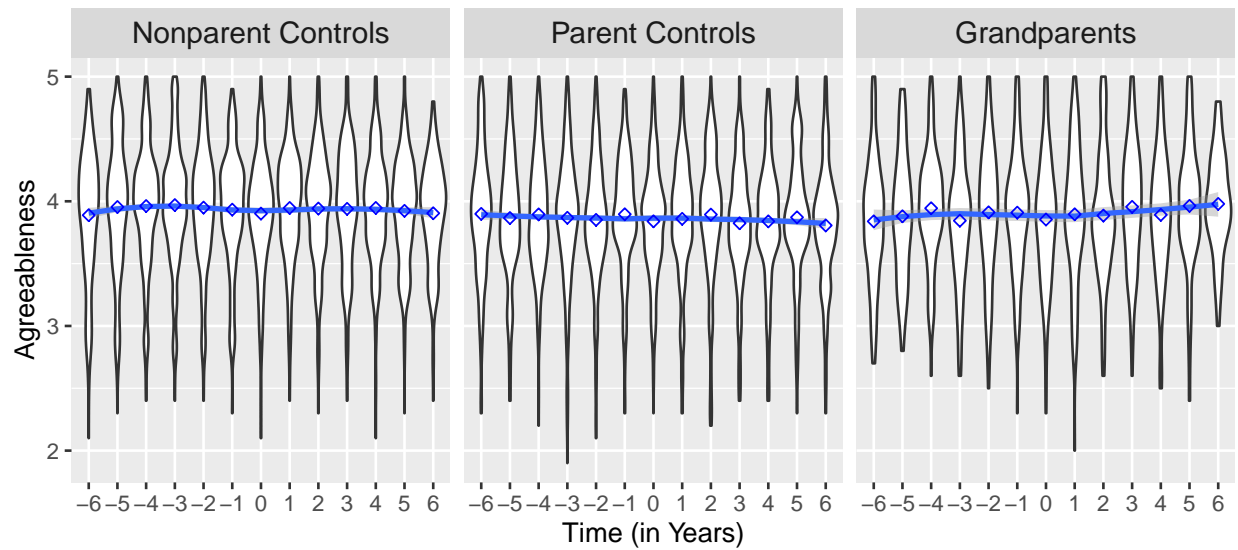
HRS
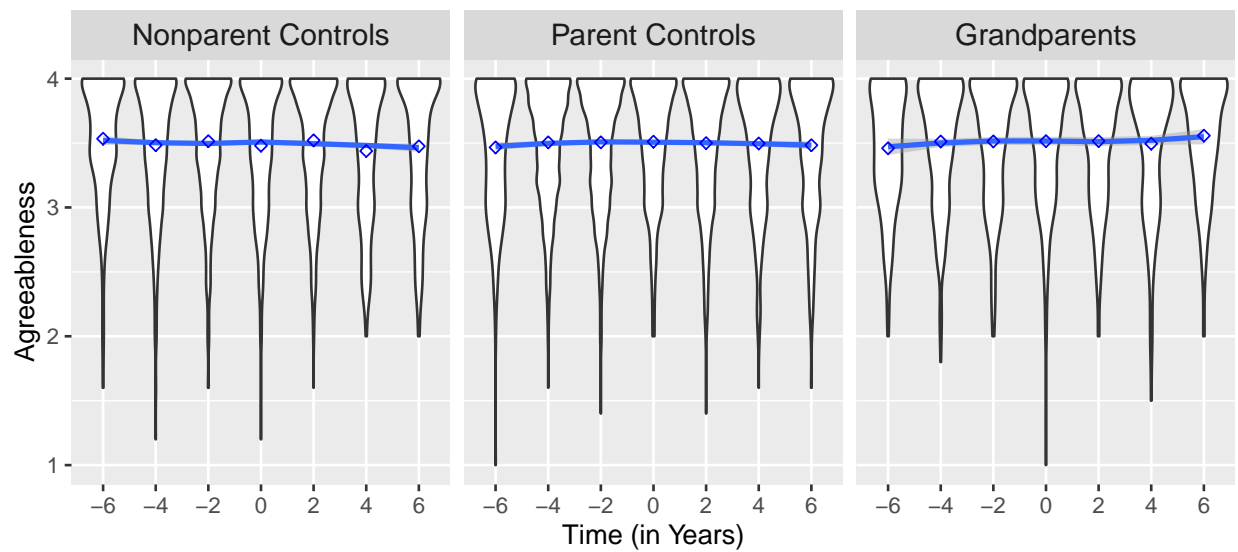
Figure S2

Violin Plots for Agreeableness Including Means Over Time and LOESS Line.
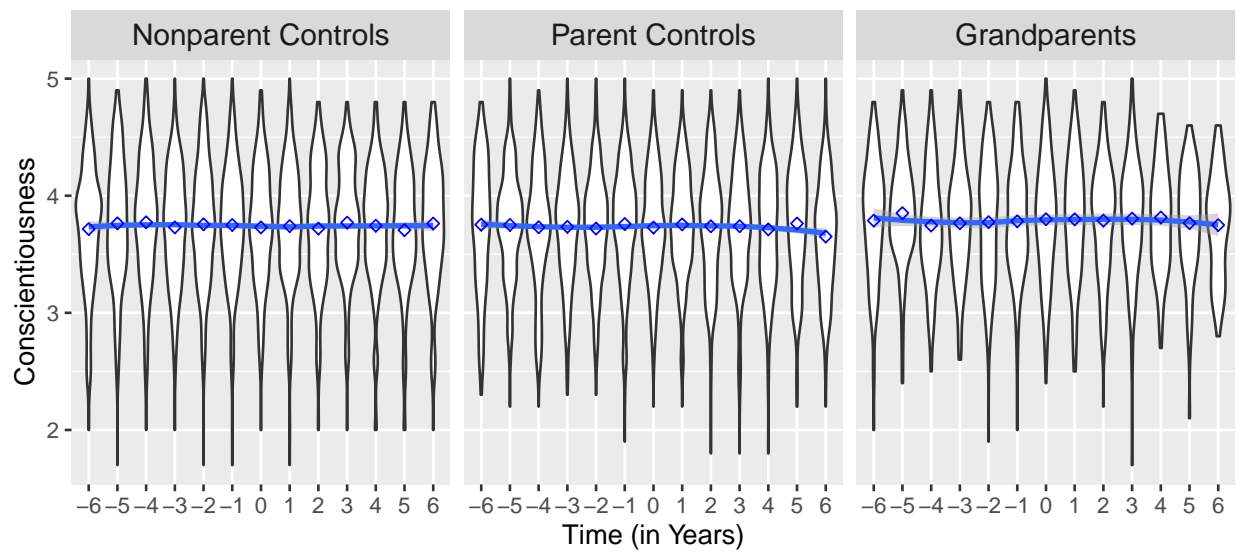
LISS

HRS
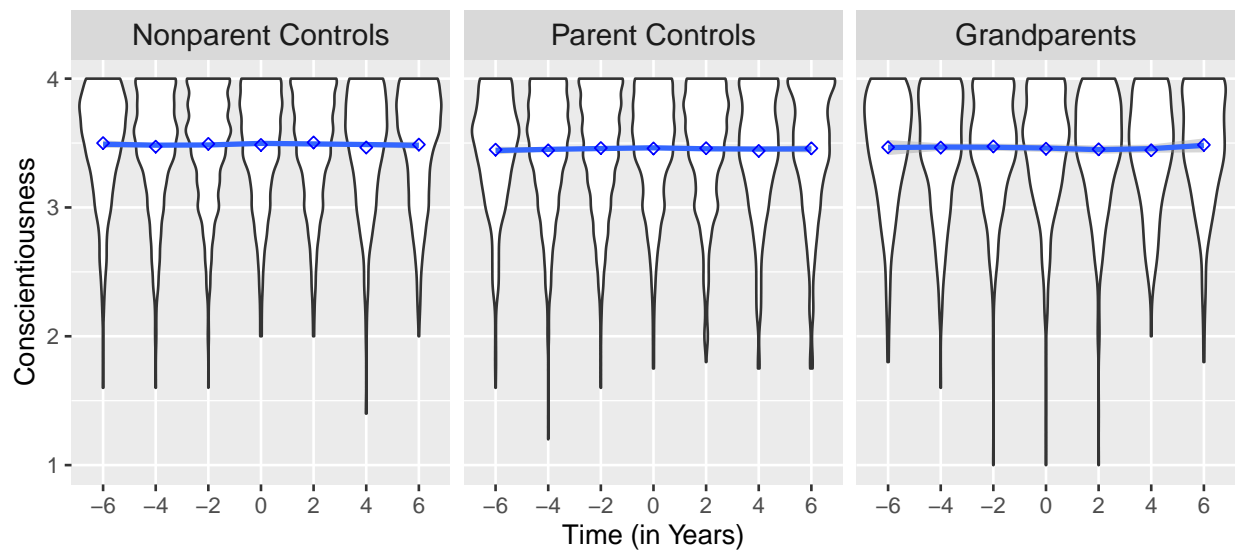
Figure S3

Violin Plots for Conscientiousness Including Means Over Time and LOESS Line.
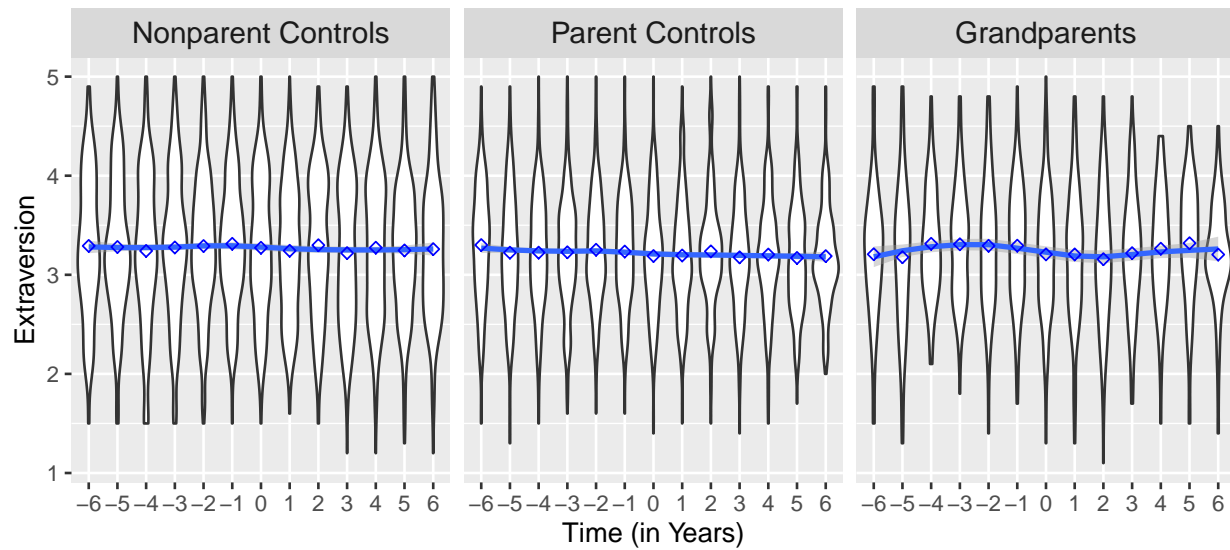
LISS

HRS
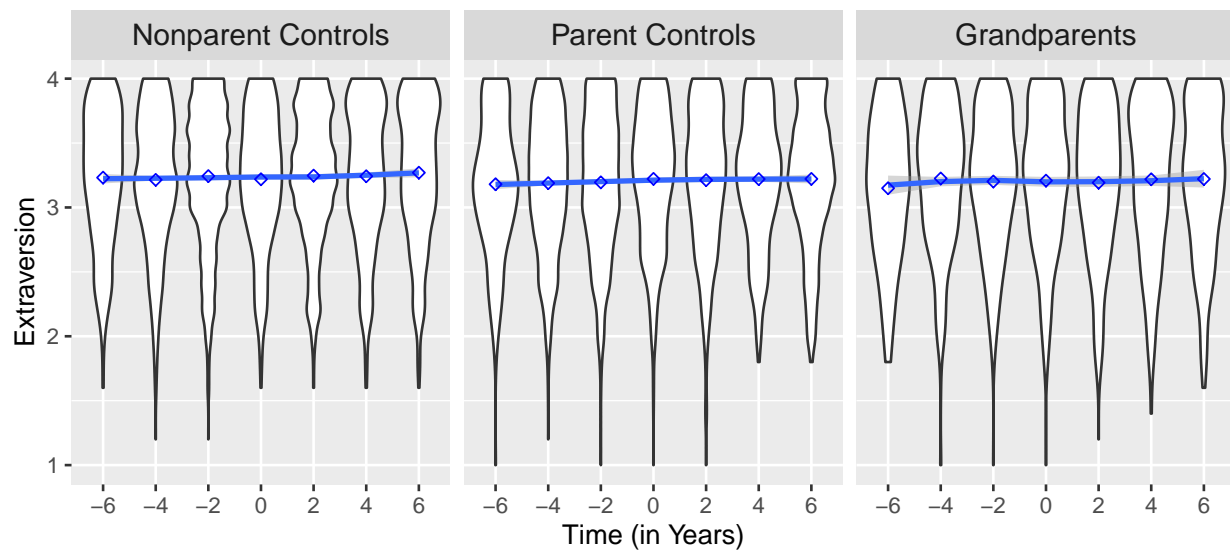
Figure S4

Violin Plots for Extraversion Including Means Over Time and LOESS Line.
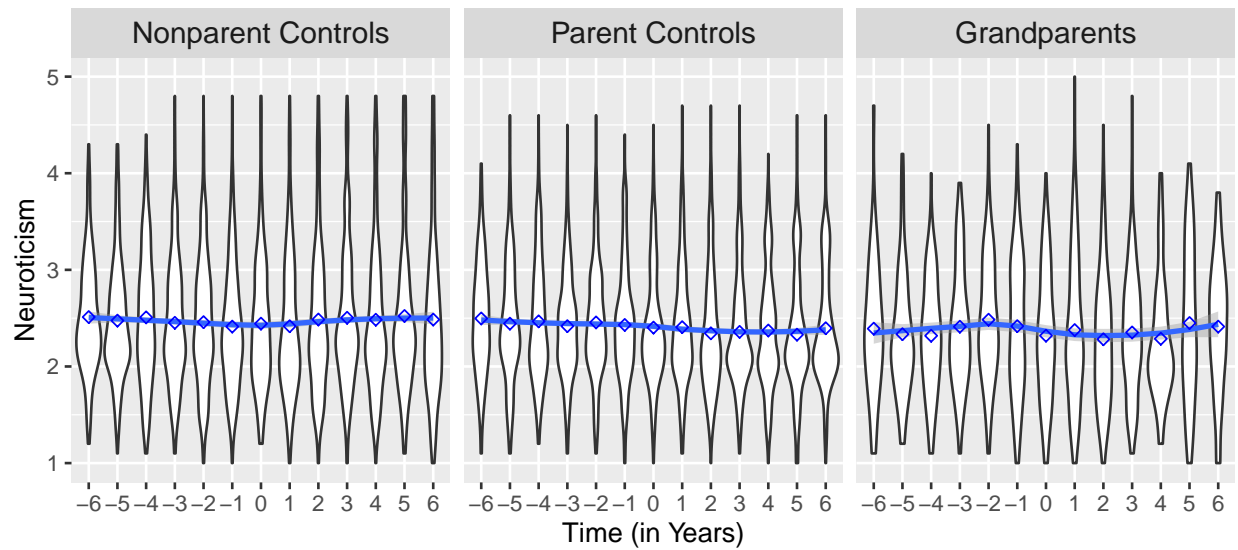
LISS

HRS
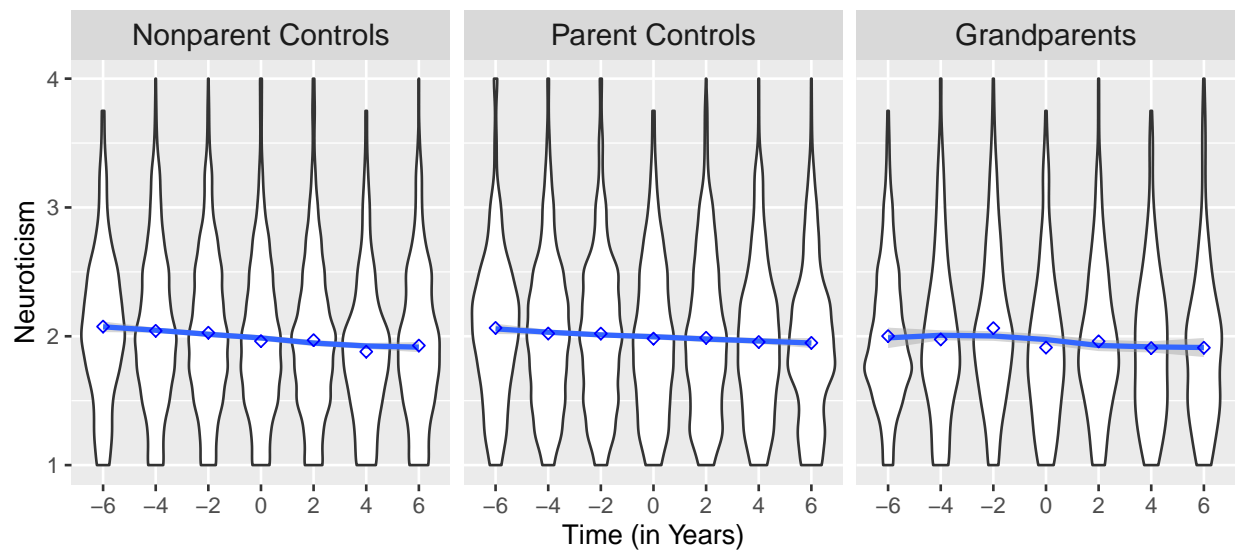
Figure S5

Violin Plots for Neuroticism Including Means Over Time and LOESS Line.
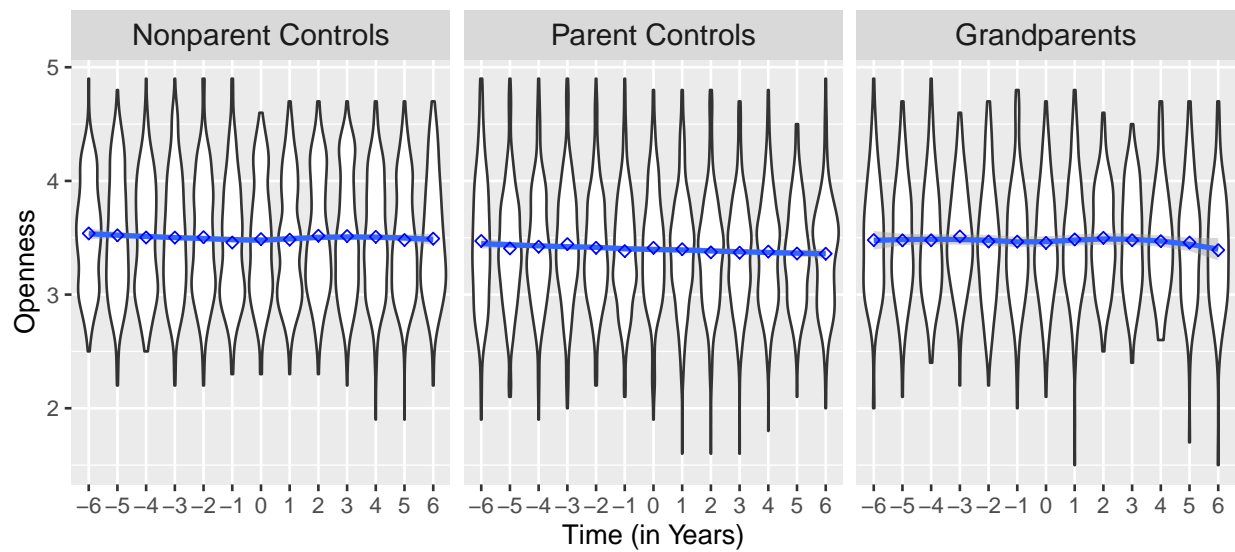
LISS

HRS
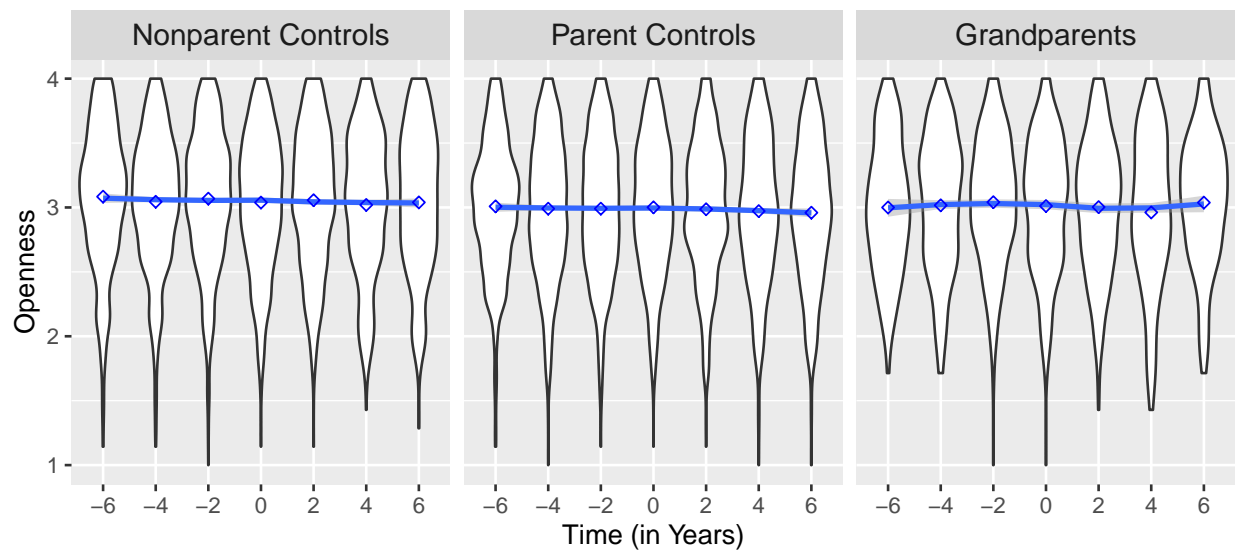
Figure S6

Violin Plots for Openness Including Means Over Time and LOESS Line.

LISS
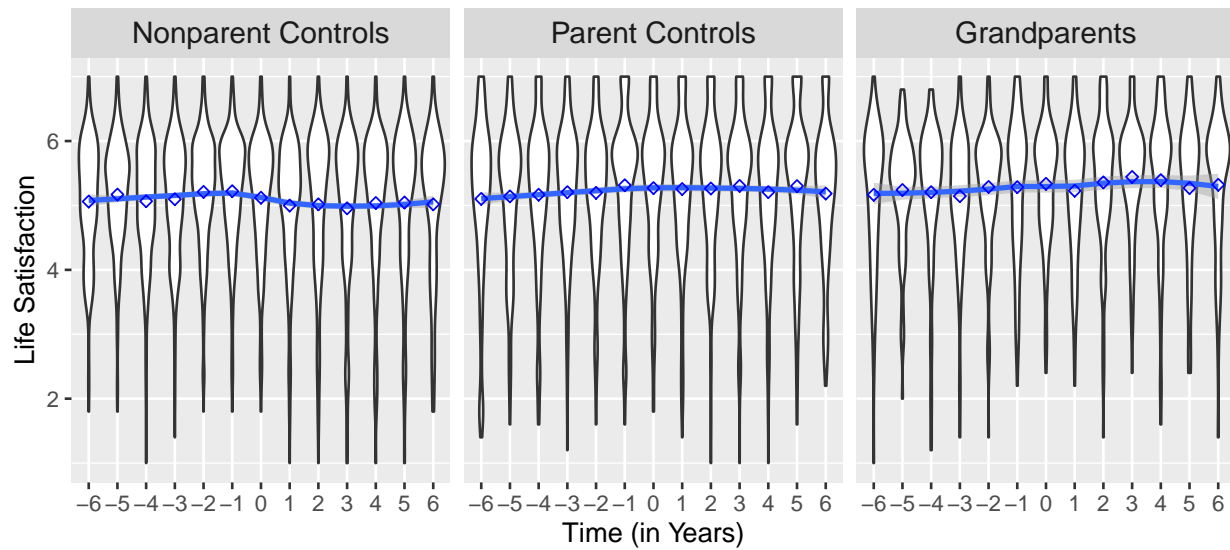
HRS
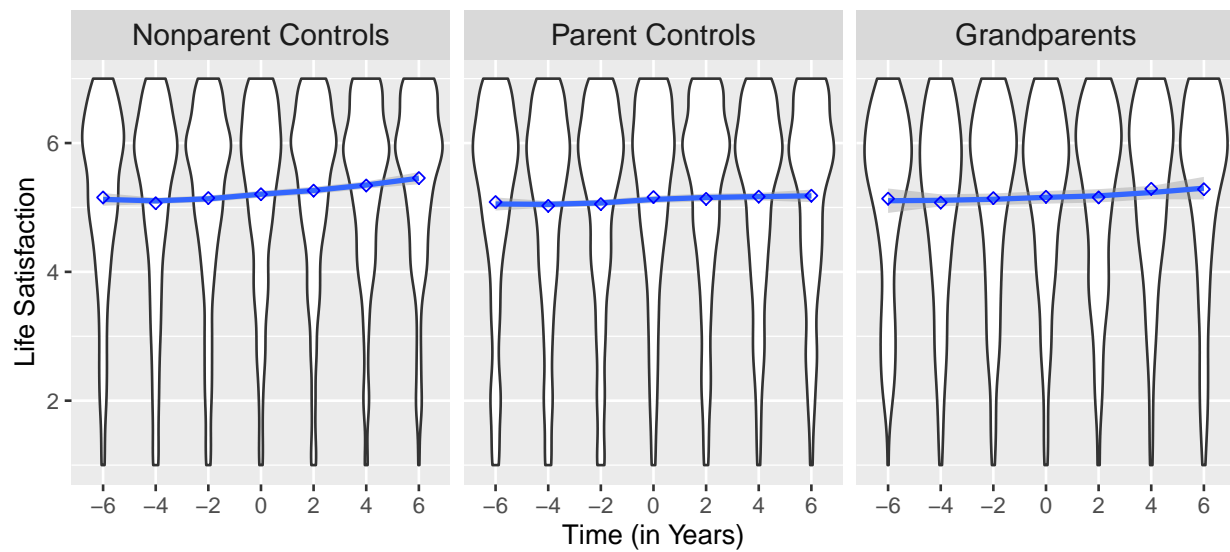
Figure S7

Violin Plots for Life Satisfaction Including Means Over Time and LOESS Line.

HRS
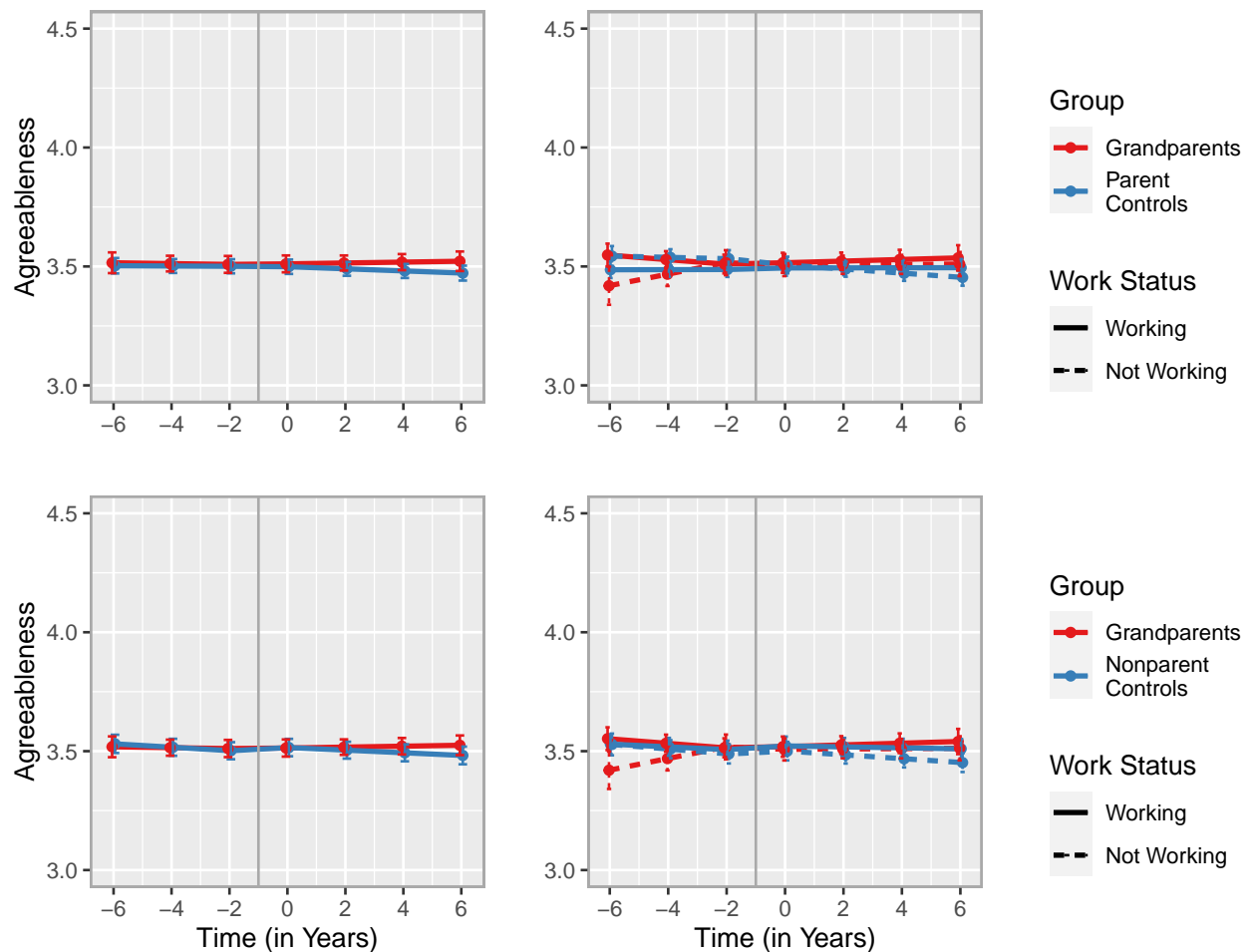
Figure S8

Change trajectories of agreeableness based on the models of moderation by paid work (see Table S10). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure 4 (basic models) and added here for better comparability.
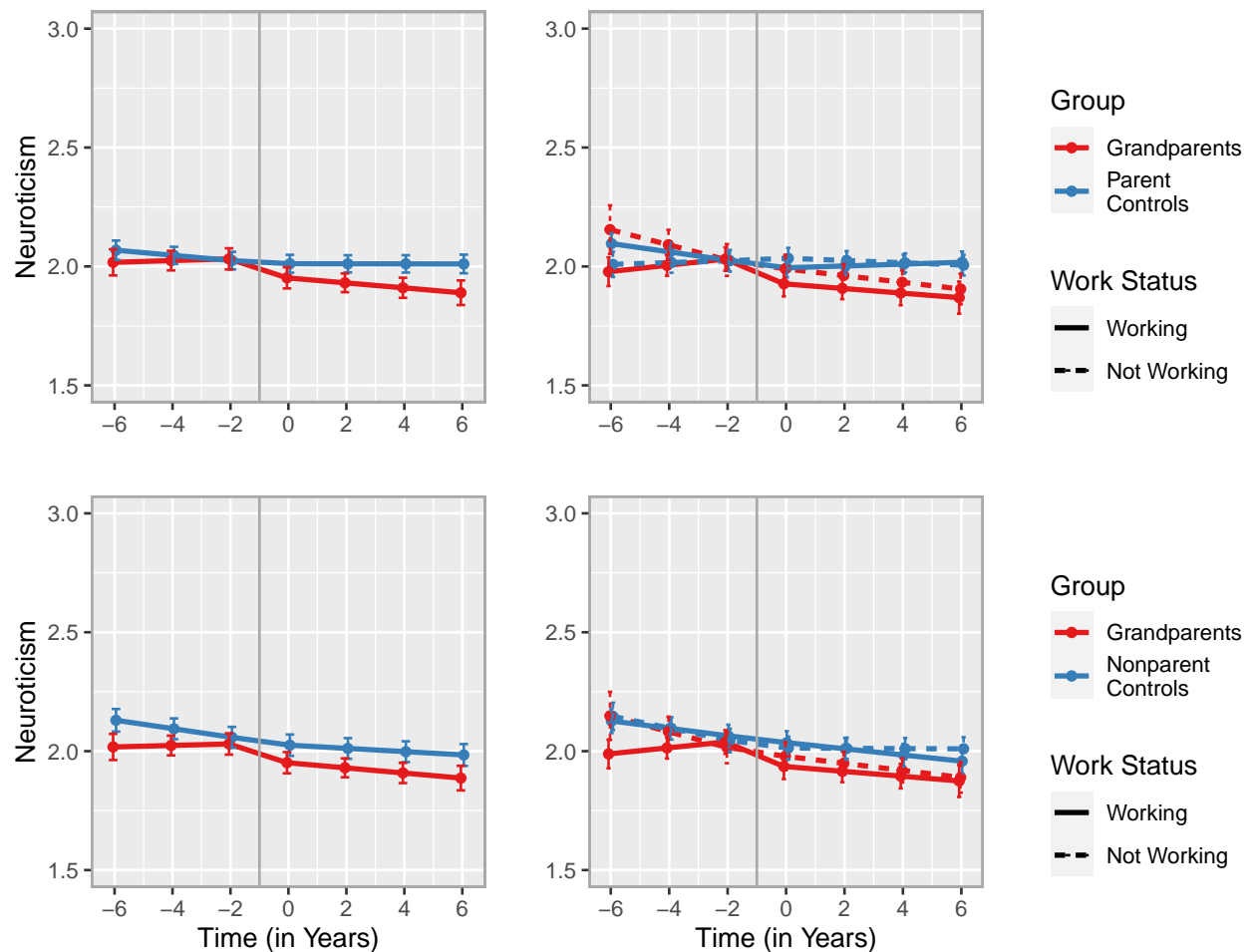
HRS
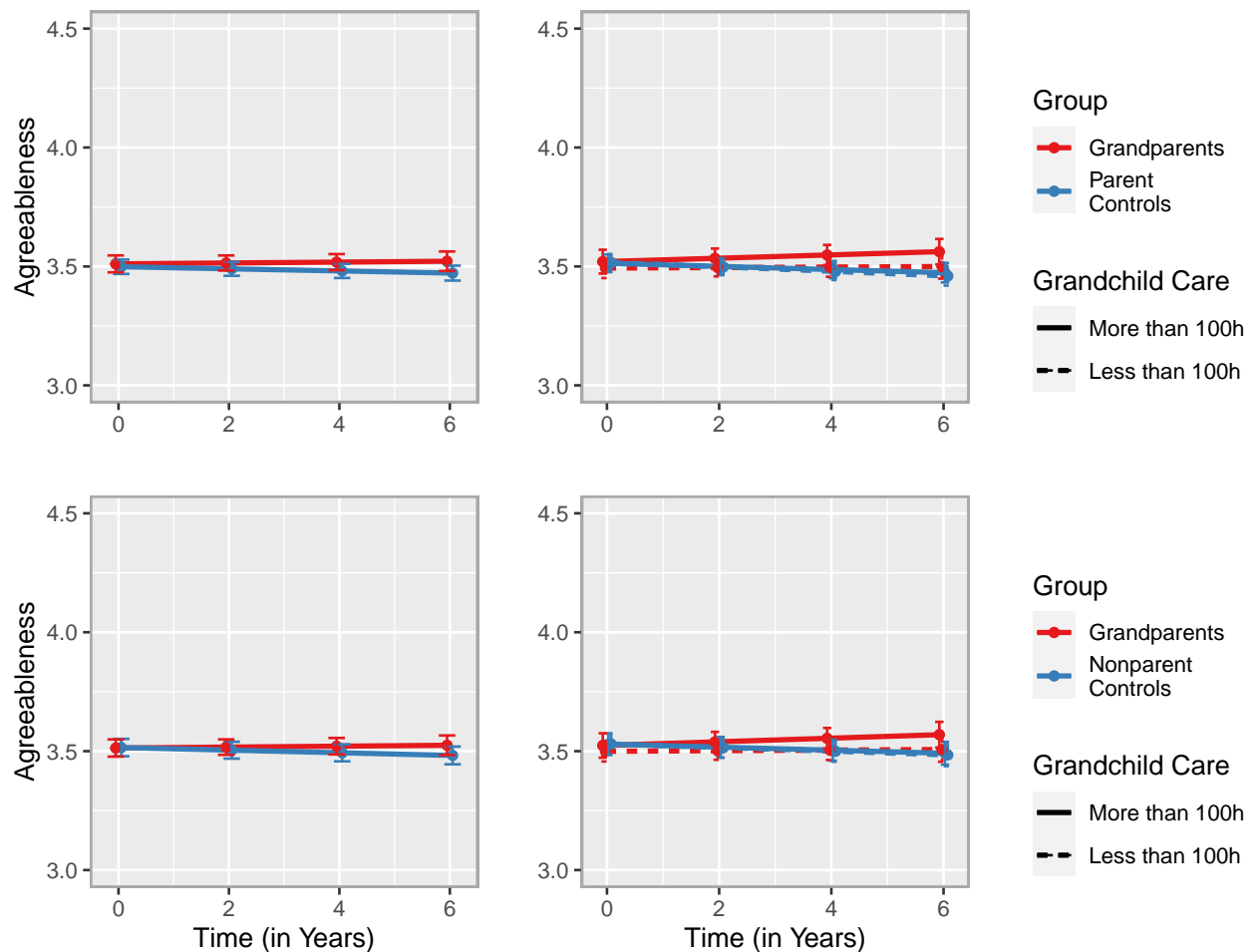
Figure S9

Change trajectories of agreeableness based on the models of moderation by grandchild care (see Table S12). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The plots in the left column are the same as in Figure 4 (basic models) but restricted to the post-transition period for better comparability.
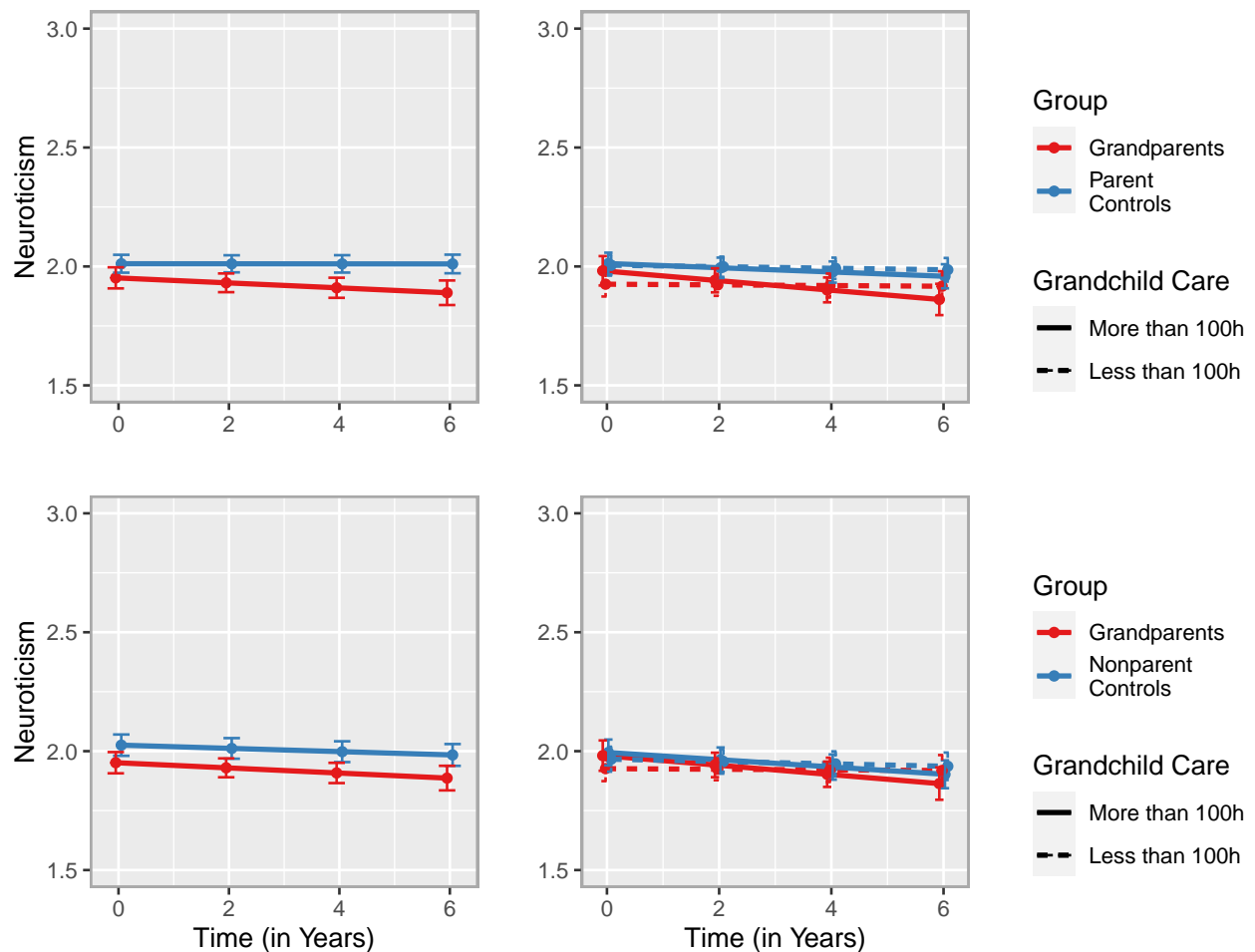
HRS
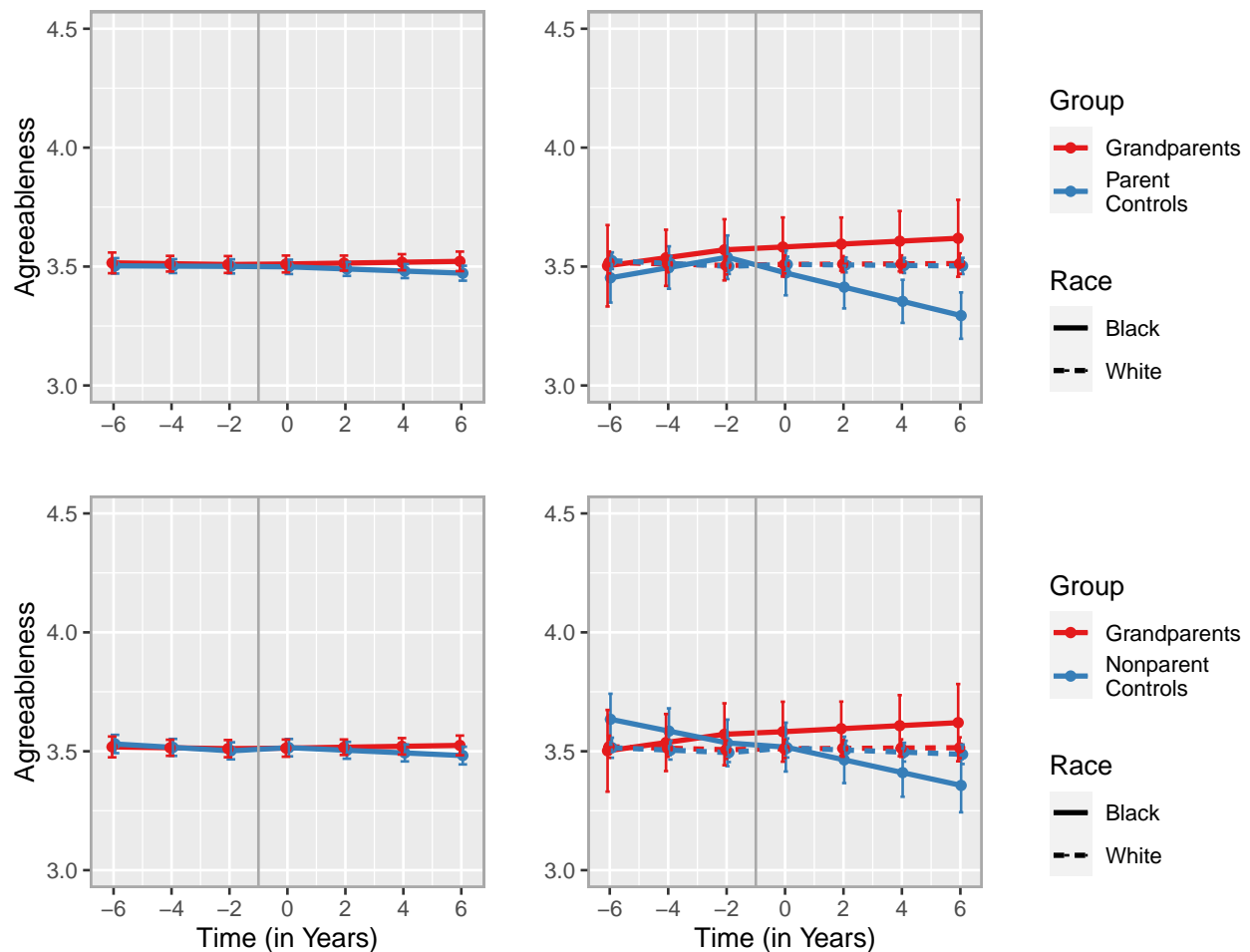
Figure S10

Change trajectories of agreeableness based on the models of moderation by race/ethnicity (see Table S14). black = 0 indicates White/Caucasian race/ethnicity, black = 1 indicates Black/African American race/ethnicity. The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure 4 (basic models) and added here for better comparability.
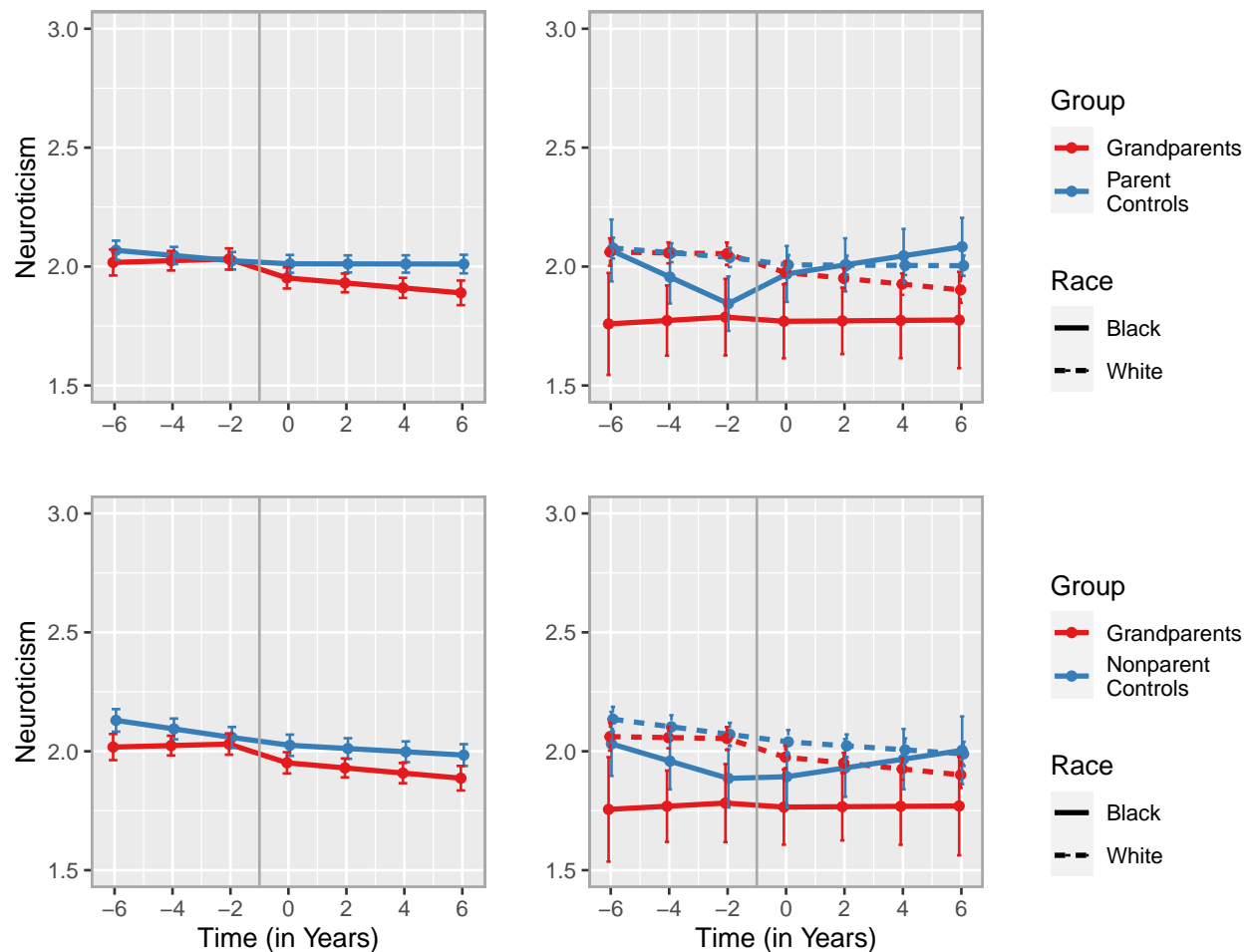
LISS
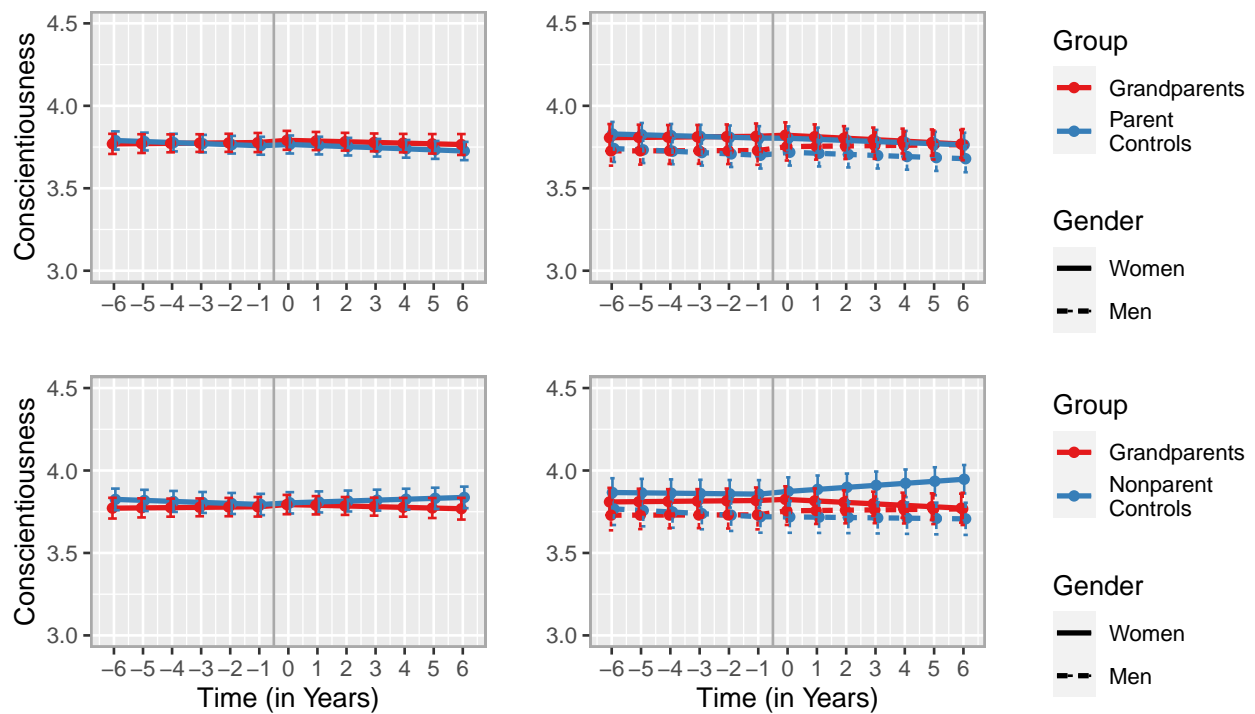
HRS
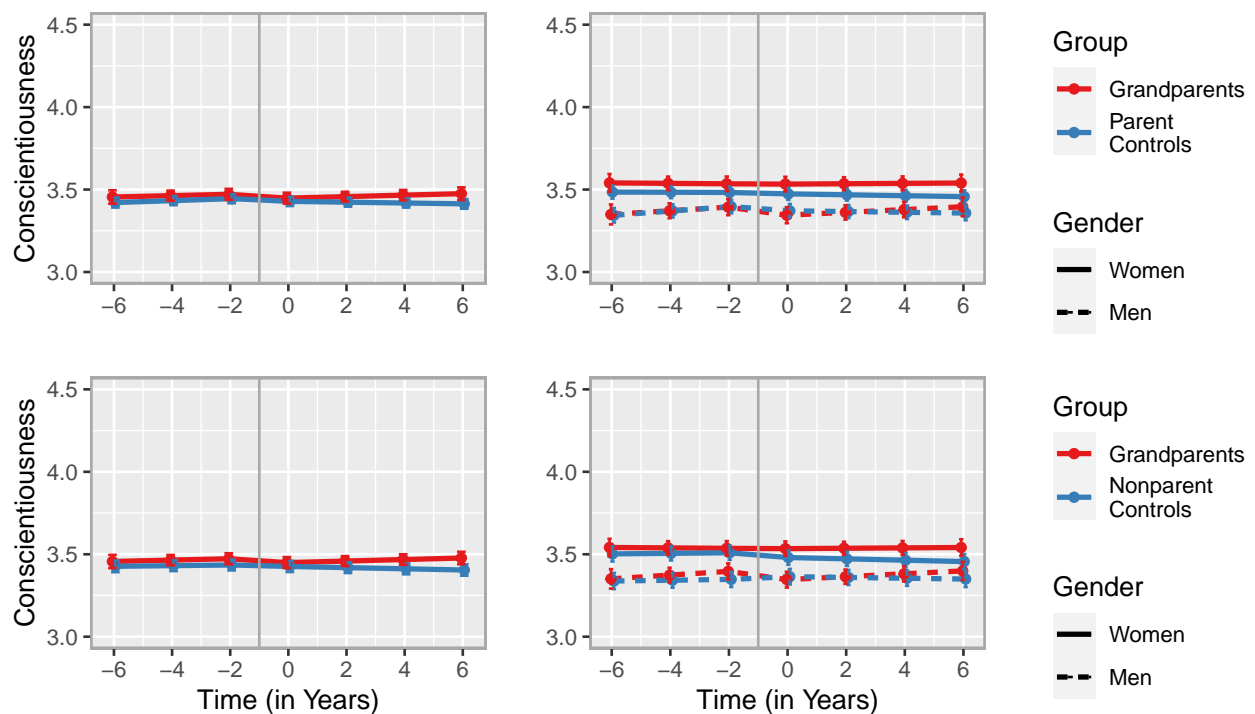
Figure S11

Change trajectories of conscientiousness based on the basic models (left column) and the models including the gender interaction (right column). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood.
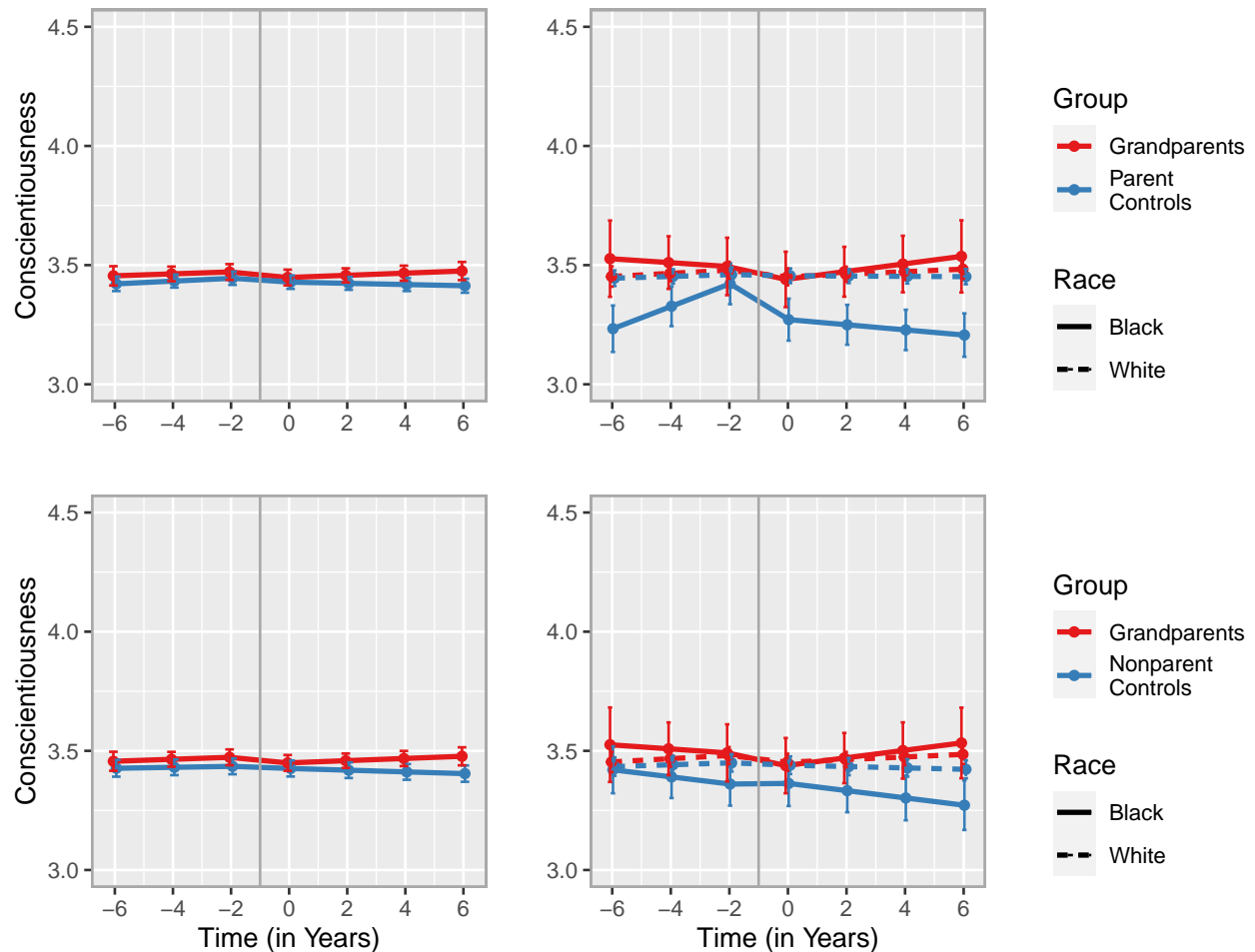
Figure S12

Change trajectories of conscientiousness based on the models of moderation by race/ethnicity (see Table S22). black = 0 indicates White/Caucasian race/ethnicity, black = 1 indicates Black/African American race/ethnicity. The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S11 (basic models) and added here for better comparability.
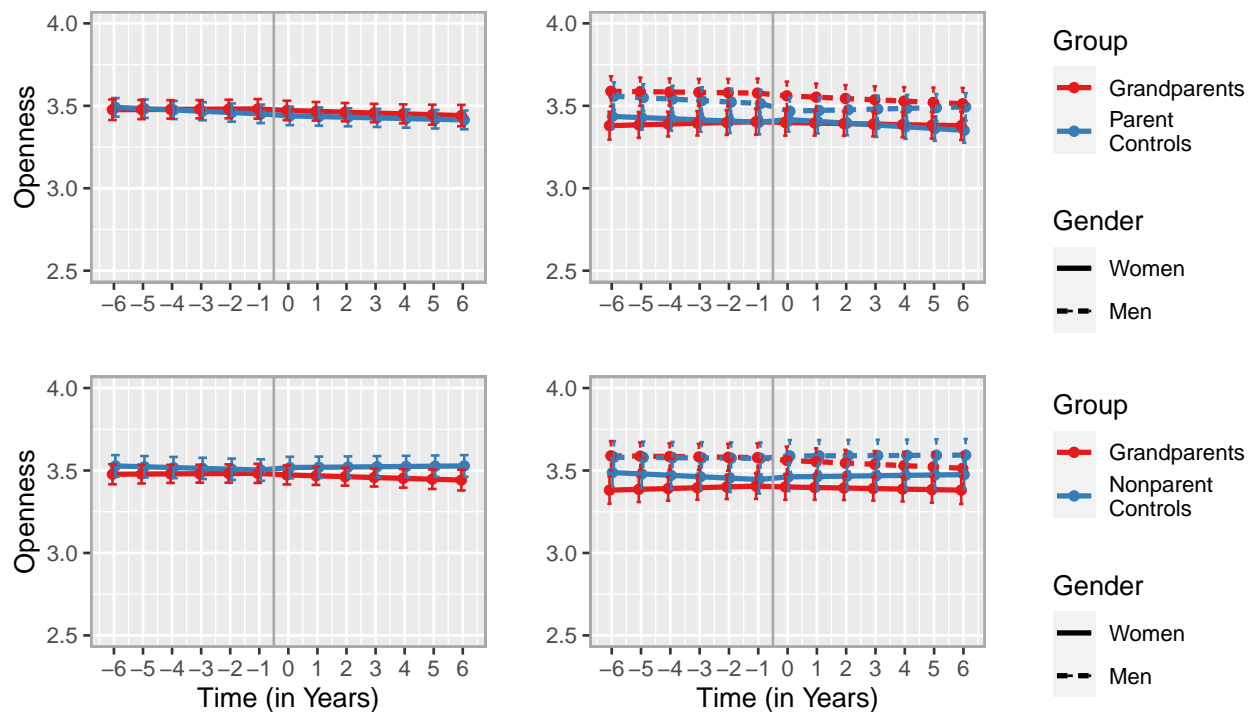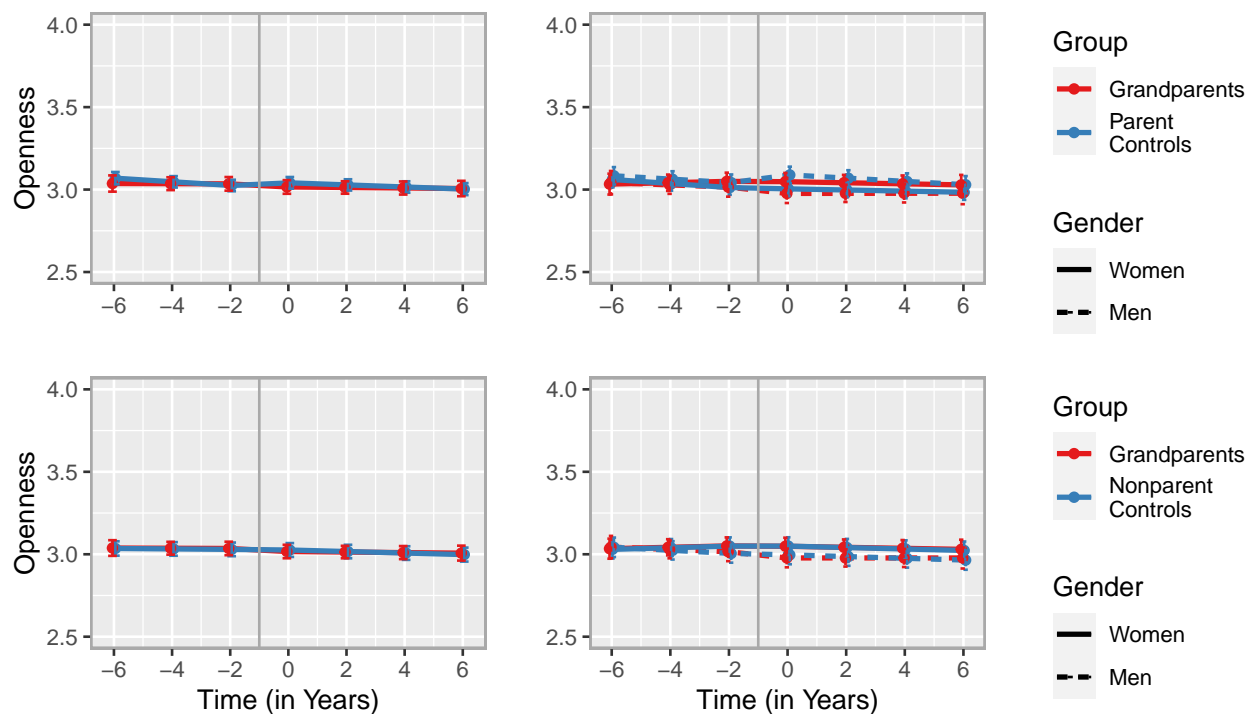
LISS
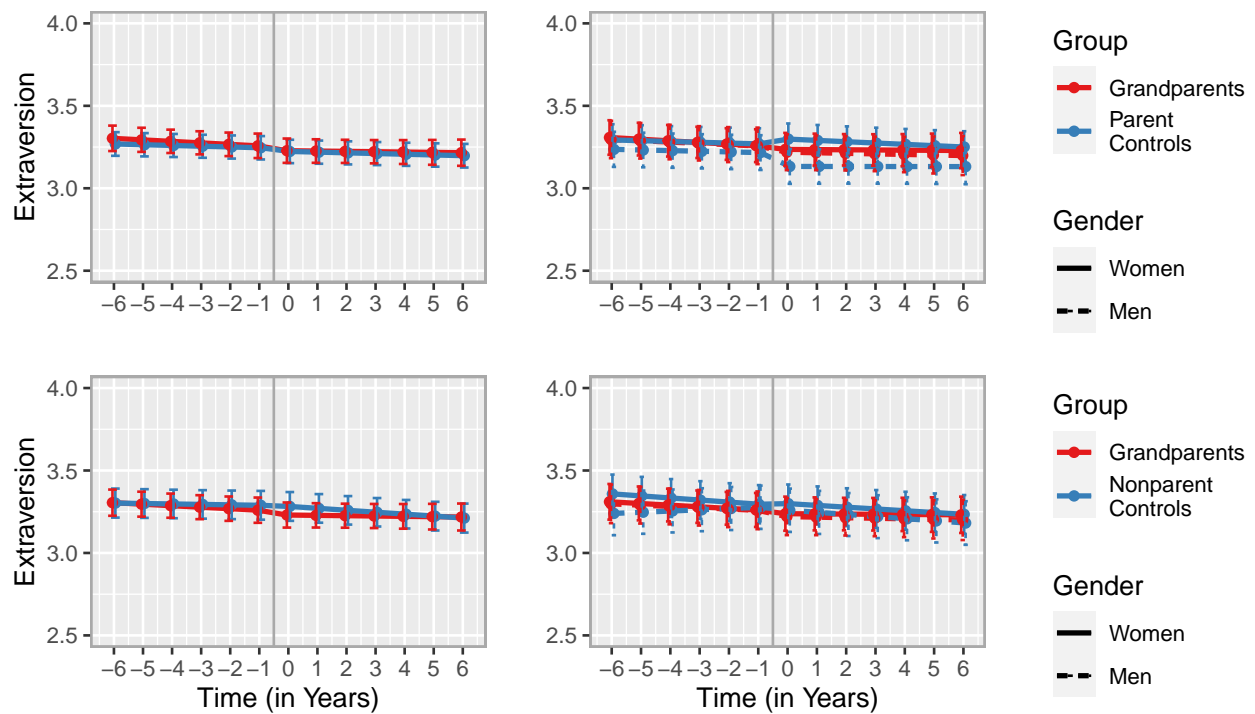
HRS
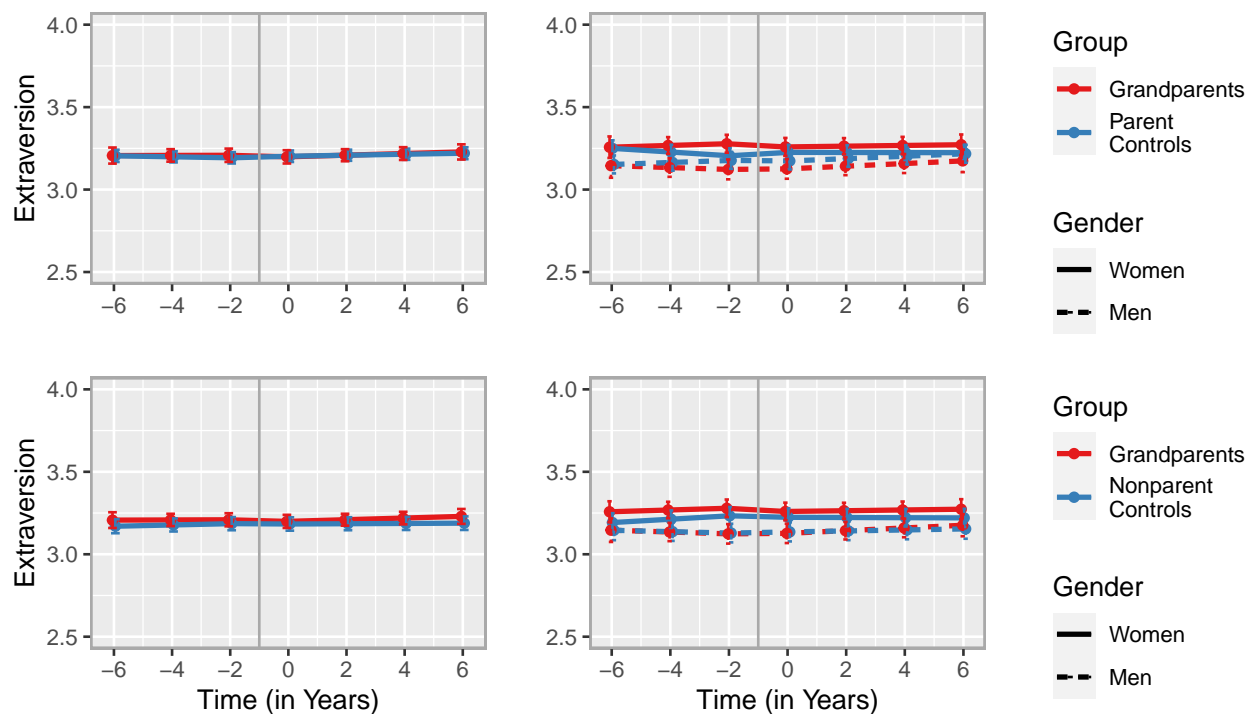
Figure S13

Change trajectories of extraversion based on the basic models (left column) and the models including the gender interaction (right column). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood.

HRS
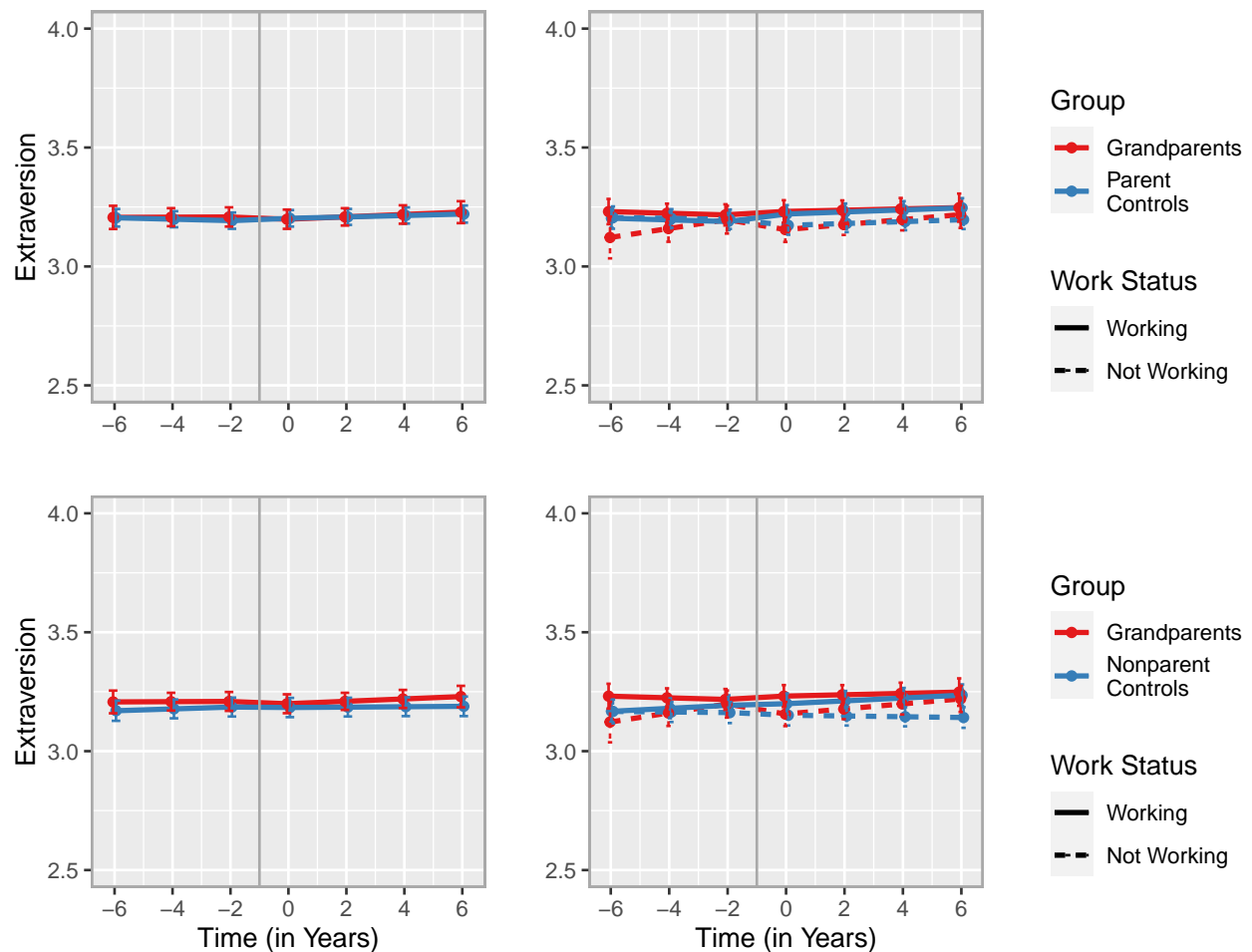
Figure S14

Change trajectories of extraversion based on the models of moderation by paid work (see Table S28). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S13 (basic models) and added here for better comparability.
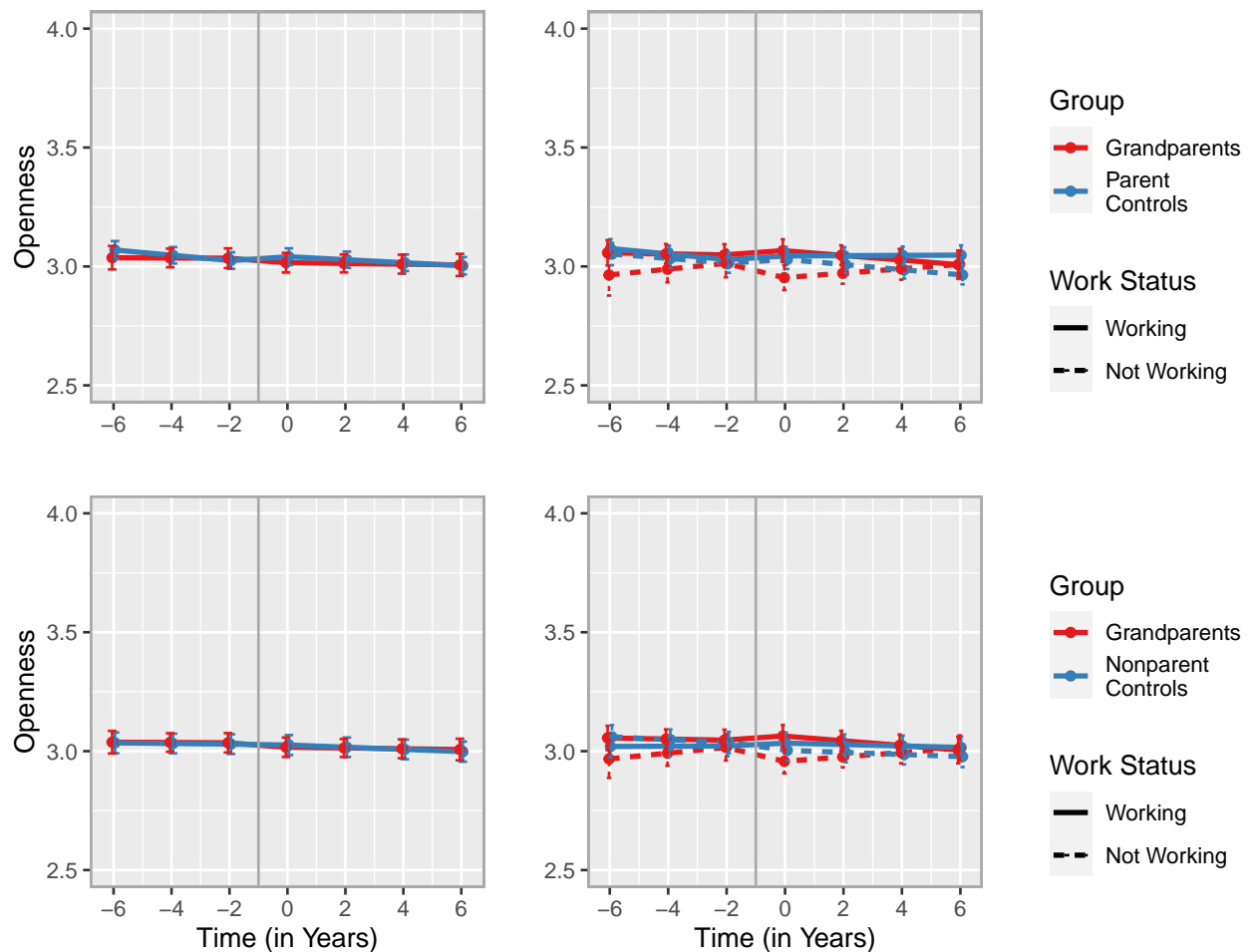
HRS
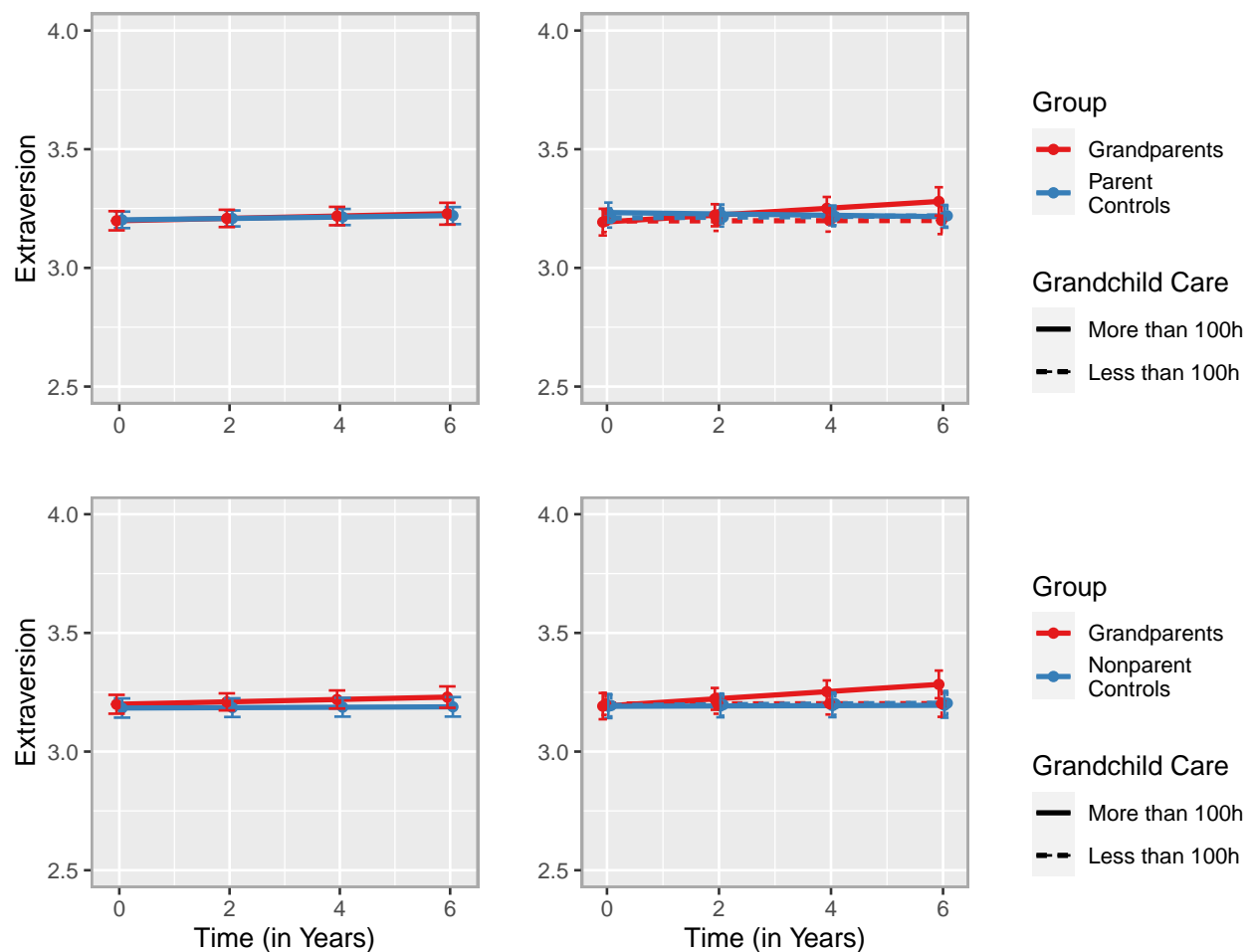
Figure S15

Change trajectories of extraversion based on the models of moderation by grandchild care (see Table S30). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The plots in the left column are the same as in Figure S13 (basic models) but restricted to the post-transition period for better comparability.
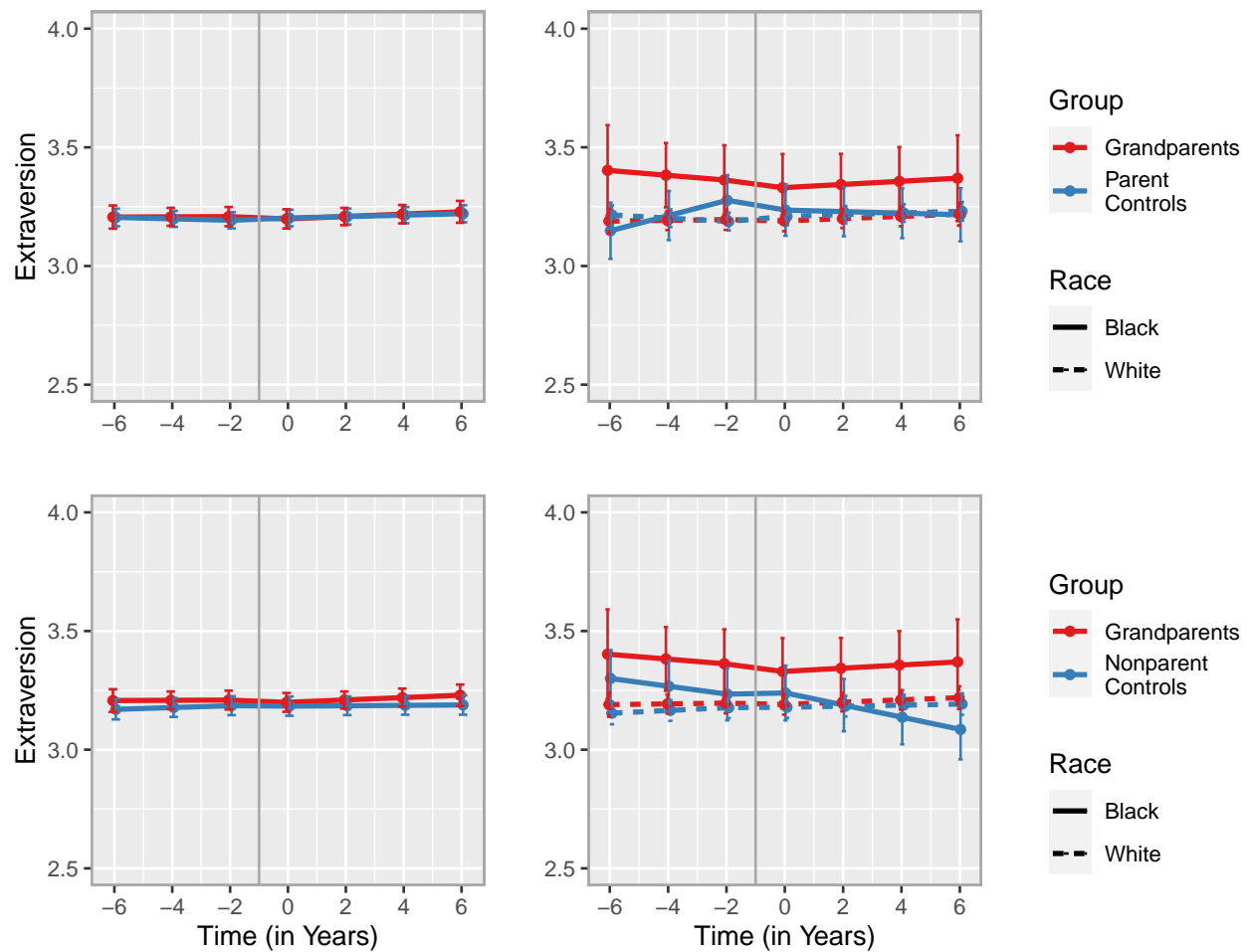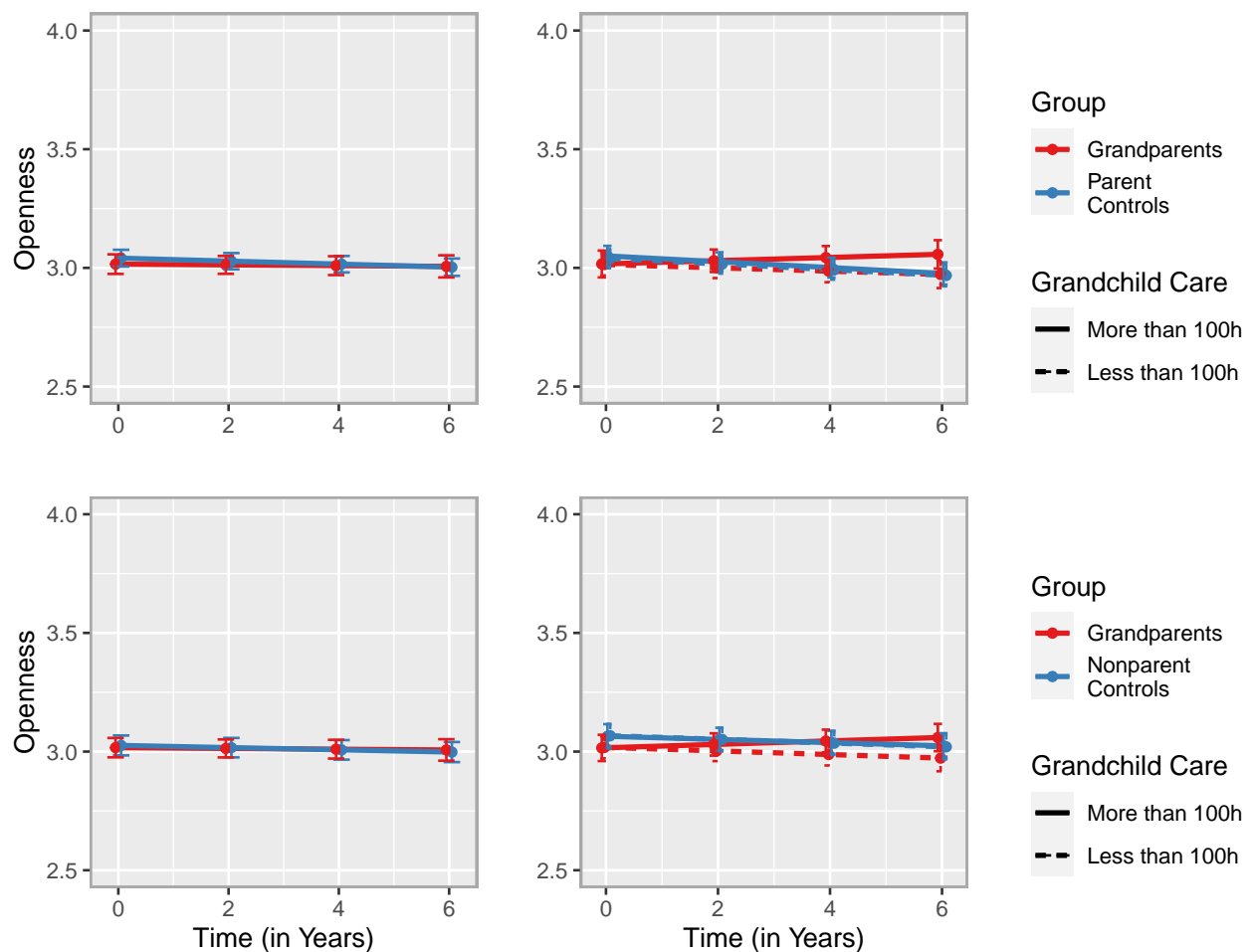
Figure S16

Change trajectories of extraversion based on the models of moderation by race/ethnicity (see Table S32). black = 0 indicates White/Caucasian race/ethnicity, black = 1 indicates Black/African American race/ethnicity. The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S13 (basic models) and added here for better comparability.
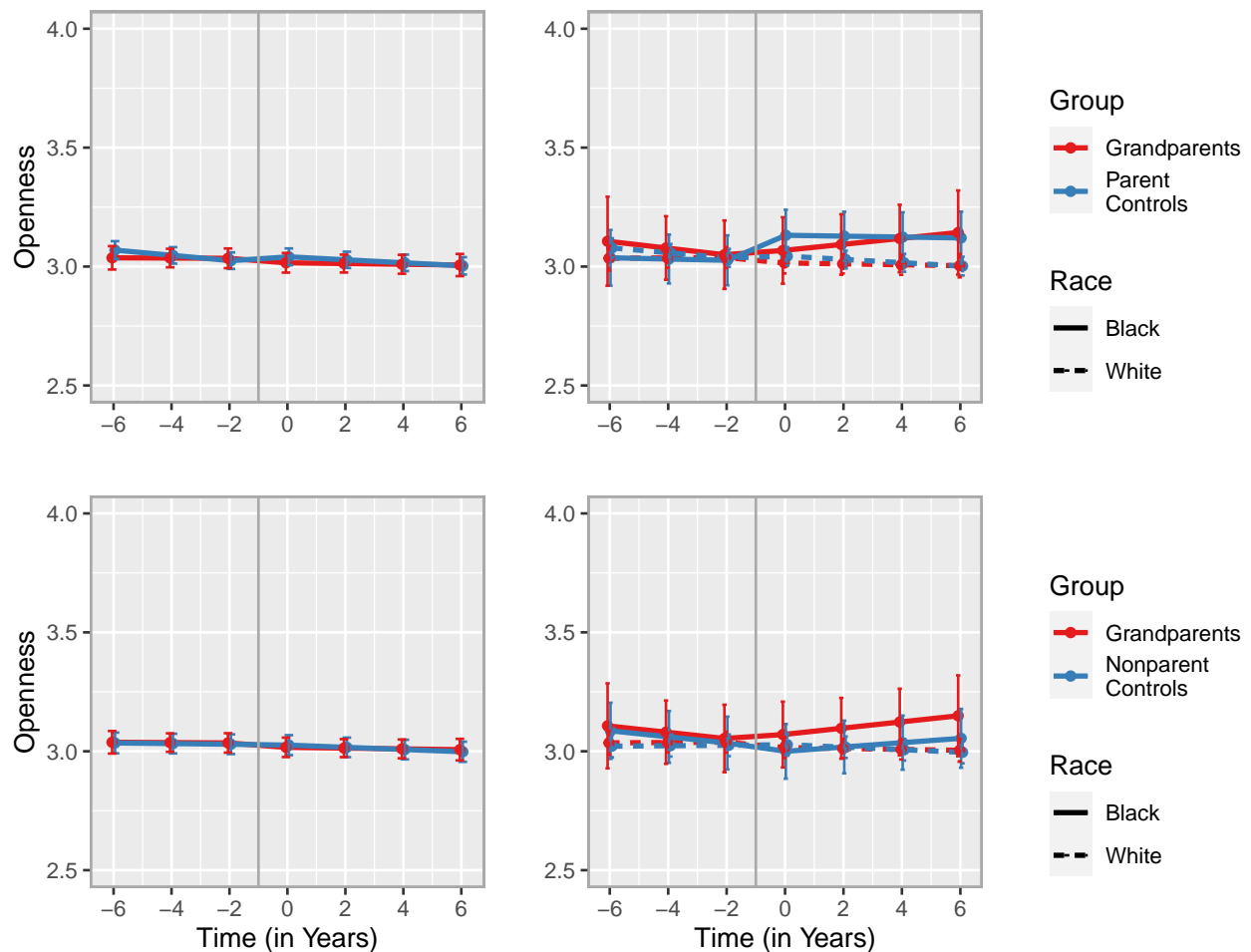
LISS
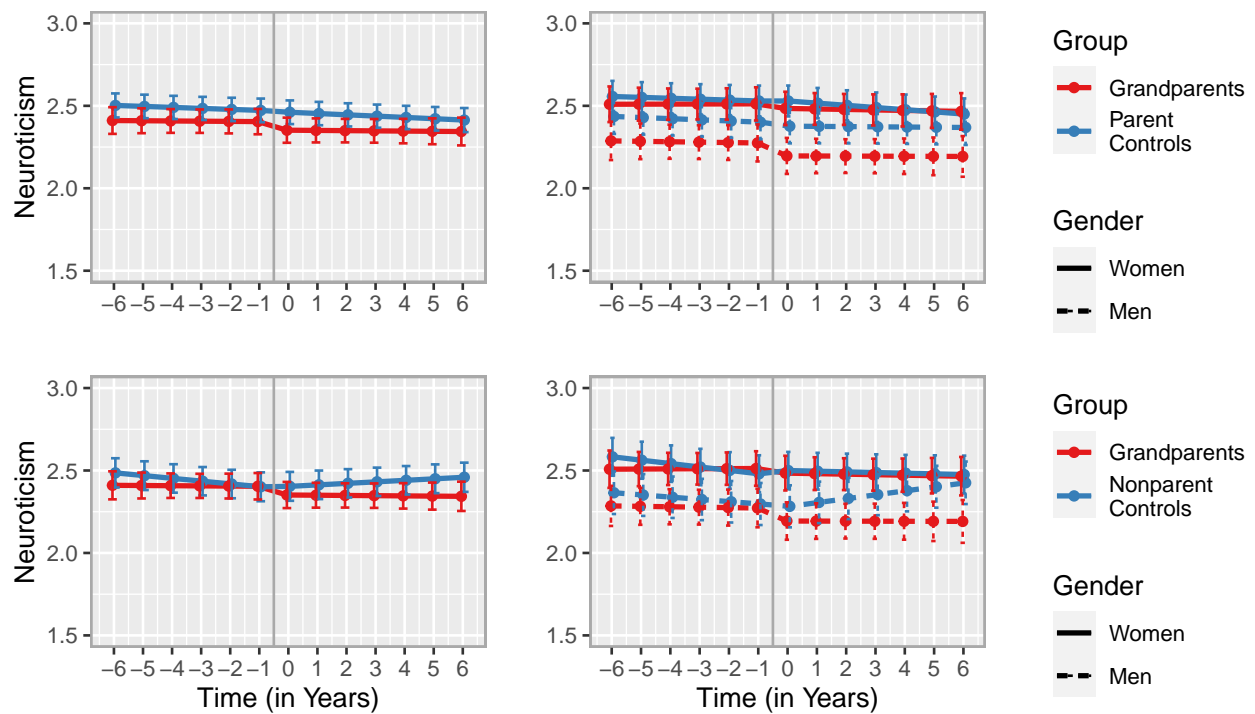
HRS
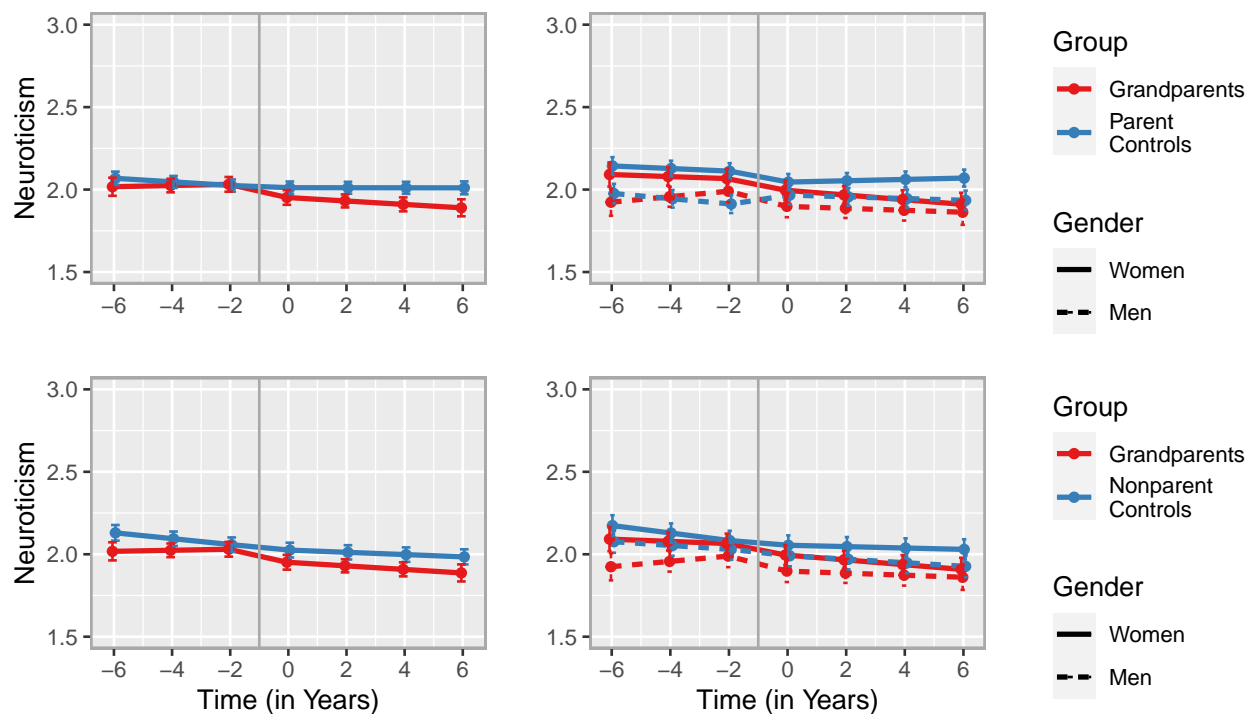
Figure S17

Change trajectories of neuroticism based on the basic models (left column) and the models including the gender interaction (right column). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood.

Figure S18

Change trajectories of neuroticism based on the models of moderation by paid work (see Table S38). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S17 (basic models) and added here for better comparability.
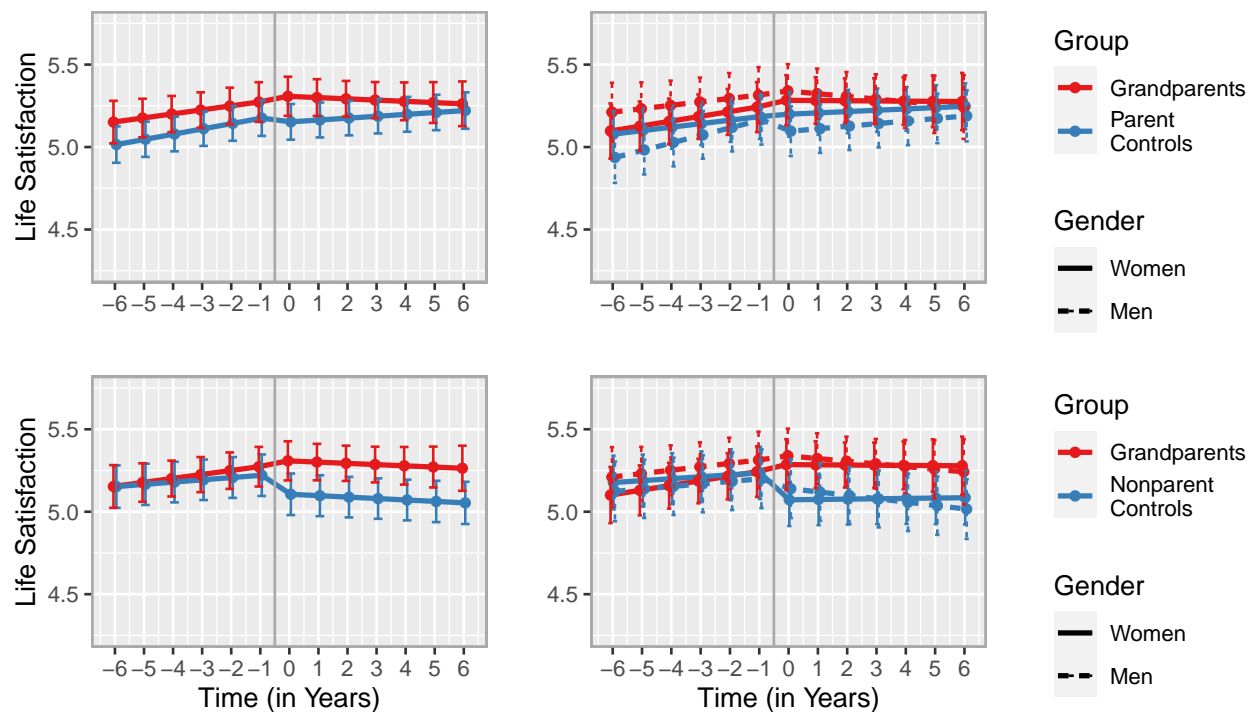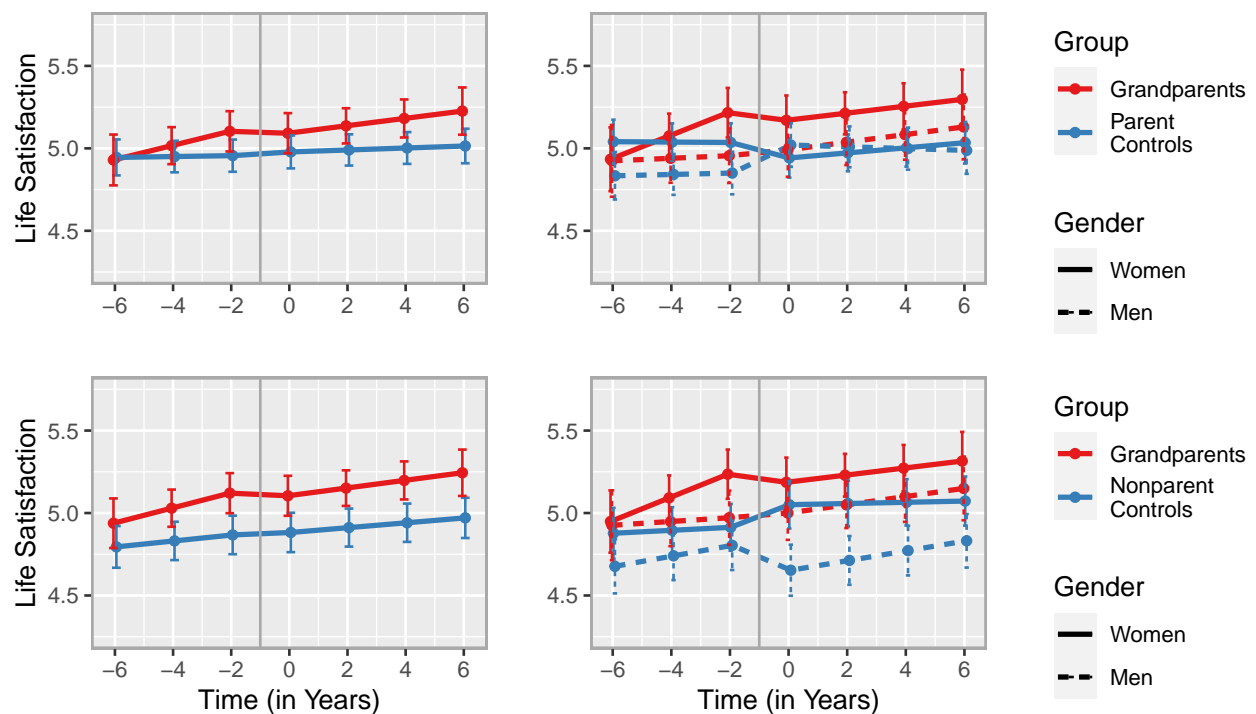
HRS

Figure S19

Change trajectories of neuroticism based on the models of moderation by grandchild care (see Table S40). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The plots in the left column are the same as in Figure S17 (basic models) but restricted to the post-transition period for better comparability.

Figure S20

Change trajectories of neuroticism based on the models of moderation by race/ethnicity (see Table S42). black = 0 indicates White/Caucasian race/ethnicity, black = 1 indicates Black/African American race/ethnicity. The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S17 (basic models) and added here for better comparability.

LISS

HRS

Figure S21

Change trajectories of openness based on the basic models (left column) and the models including the gender interaction (right column). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood.

HRS

Figure S22

Change trajectories of openness based on the models of moderation by paid work (see Table S48). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S21 (basic models) and added here for better comparability.
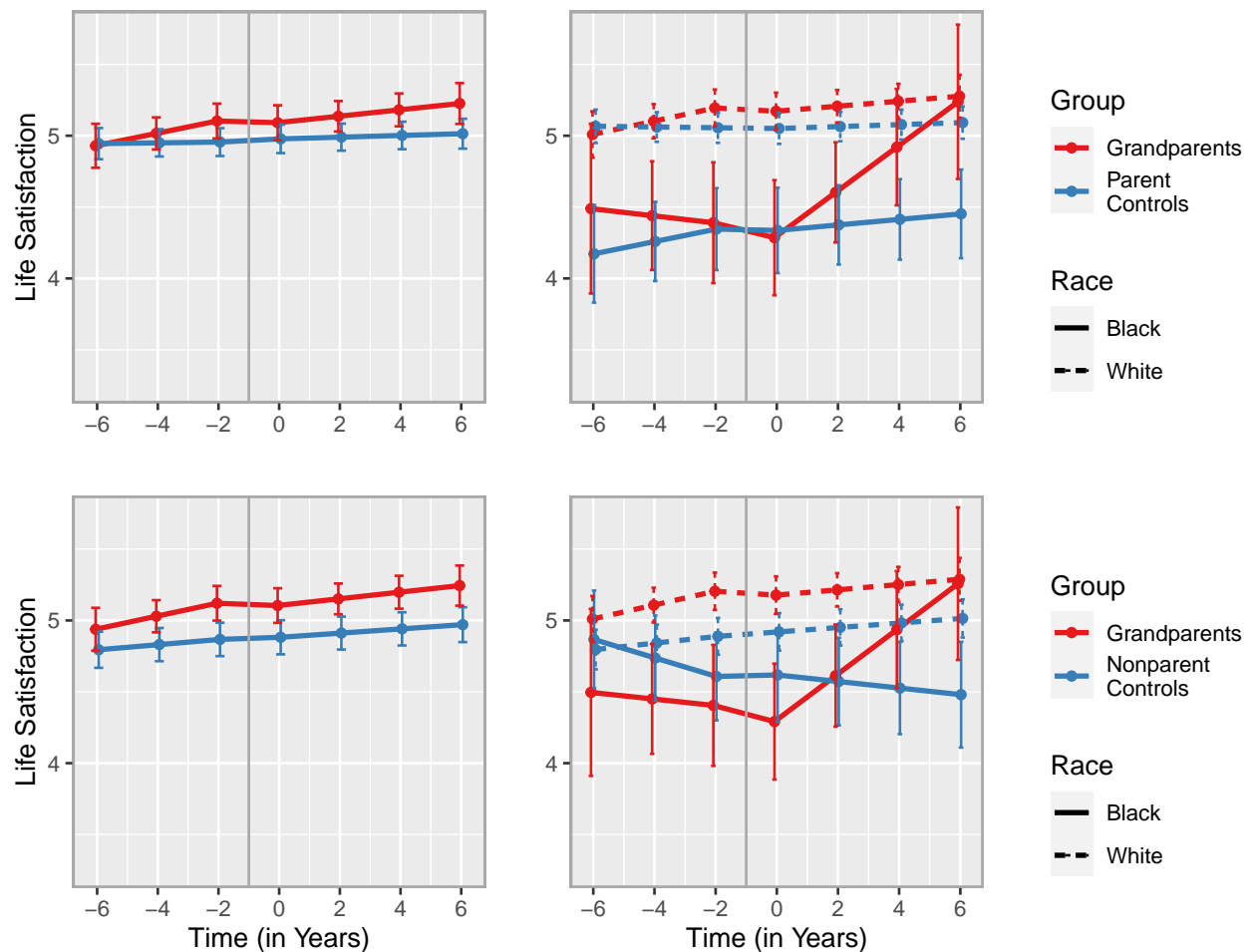
HRS

Figure S23

Change trajectories of openness based on the models of moderation by grandchild care (see Table S50). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The plots in the left column are the same as in Figure S21 (basic models) but restricted to the post-transition period for better comparability.

Figure S24

Change trajectories of openness based on the models of moderation by race/ethnicity (see Table S52). black = 0 indicates White/Caucasian race/ethnicity, black = 1 indicates Black/African American race/ethnicity. The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S21 (basic models) and added here for better comparability.

LISS

HRS

Figure S25

Change trajectories of life satisfaction based on the basic models (left column) and the models including the gender interaction (right column). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood.

HRS
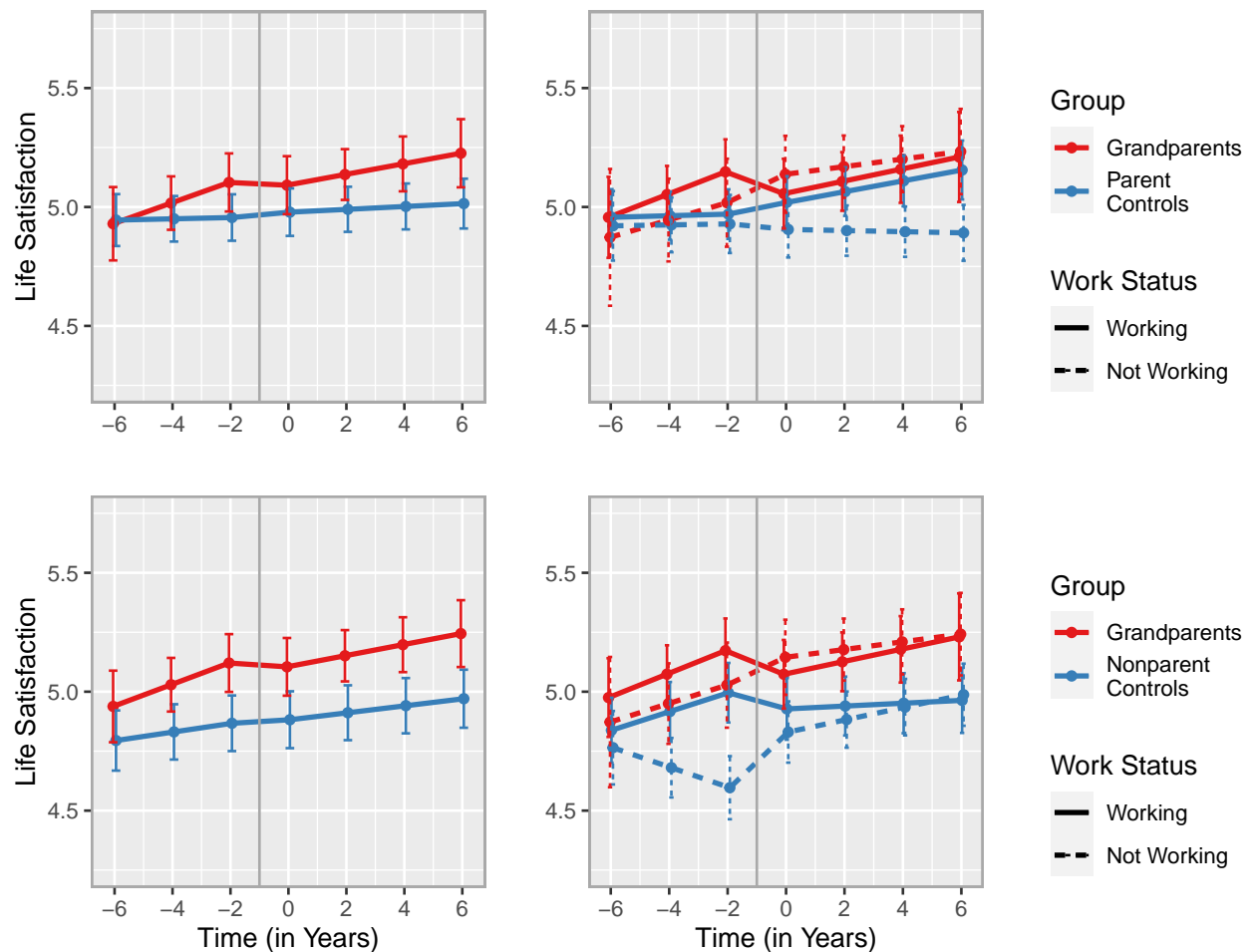
Figure S26

Change trajectories of life satisfaction based on the models of moderation by paid work (see Table S58). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S25 (basic models) and added here for better comparability.

HRS
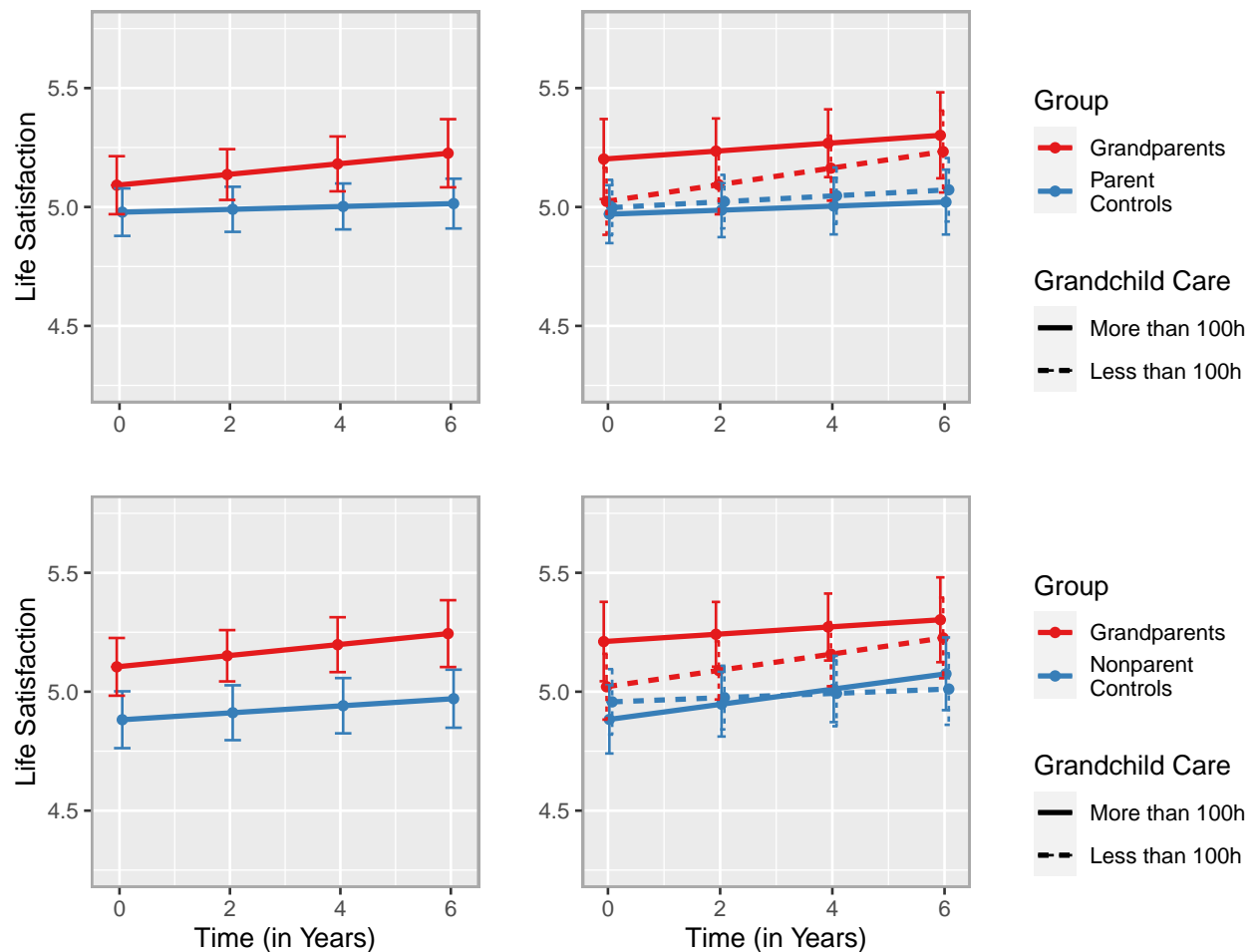
Figure S27

Change trajectories of life satisfaction based on the models of moderation by grandchild care (see Table S60). The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The plots in the left column are the same as in Figure S25 (basic models) but restricted to the post-transition period for better comparability.

Figure S28

Change trajectories of life satisfaction based on the models of moderation by race/ethnicity (see Table S62). black = 0 indicates White/Caucasian race/ethnicity, black = 1 indicates Black/African American race/ethnicity. The error bars are 95% confidence intervals of the predicted values, which only account for the fixed-effects portion of the model. The vertical line indicates the approximate time of the transition to grandparenthood. The plots in the left column are the same as in Figure S25 (basic models) and added here for better comparability.

Complete Software and Session Information

We used R (Version 4.0.4; R Core Team, 2021) and the R-packages *car* (Version 3.0.12; Fox et al., 2020a, 2020b), *carData* (Version 3.0.4; Fox et al., 2020b), *citr* (Version 0.3.2; Aust, 2019), *cowplot* (Version 1.1.1; Wilke, 2020), *dplyr* (Version 1.0.7; Wickham, François, et al., 2021), *forcats* (Version 0.5.1; Wickham, 2021a), *Formula* (Version 1.2.4; Zeileis & Croissant, 2010), *ggplot2* (Version 3.3.5; Wickham, 2016), *GPArotation* (Version 2014.11.1; Bernaards & I.Jennrich, 2005), *Hmisc* (Version 4.6.0; Harrell Jr, 2021), *lattice* (Version 0.20.41; Sarkar, 2008), *lme4* (Version 1.1.27.1; Bates et al., 2015), *lmerTest* (Version 3.1.3; Kuznetsova et al., 2017), *magick* (Version 2.7.3; Ooms, 2021), *MASS* (Version 7.3.53; Venables & Ripley, 2002), *Matrix* (Version 1.3.2; Bates & Maechler, 2021), *multcomp* (Version 1.4.18; Hothorn et al., 2008), *mvtnorm* (Version 1.1.1; Genz & Bretz, 2009), *nlme* (Version 3.1.152; Pinheiro et al., 2021), *papaja* (Version 0.1.0.9997; Aust & Barth, 2020), *png* (Version 0.1.7; Urbanek, 2013), *psych* (Version 2.1.9; Revelle, 2021), *purrr* (Version 0.3.4; Henry & Wickham, 2020), *readr* (Version 2.1.1; Wickham, Hester, et al., 2021), *scales* (Version 1.1.1; Wickham & Seidel, 2020), *shiny* (Version 1.7.1; Chang et al., 2021), *stringr* (Version 1.4.0; Wickham, 2019), *survival* (Version 3.2.7; Terry M. Therneau & Patricia M. Grambsch, 2000), *TH.data* (Version 1.0.10; Hothorn, 2019), *tibble* (Version 3.1.6; Müller & Wickham, 2021), *tidyr* (Version 1.1.4; Wickham, 2021b), *tidyverse* (Version 1.3.1; Wickham, Averick, Bryan, Chang, McGowan, François, et al., 2019), and *tinylabels* (Version 0.2.2; Barth, 2021) for data wrangling, analyses, and plots. We used *renv* to create a reproducible environment for this R-project (Version 0.15.2; Ushey, 2022).

The following is the output of R's *sessionInfo()* command, which shows information to aid analytic reproducibility of the analyses.

R version 4.0.4 (2021-02-15) Platform: x86_64-apple-darwin17.0 (64-bit) Running under: macOS Big Sur 10.16

Matrix products: default BLAS:

1815 /Library/Frameworks/R.framework/Versions/4.0/Resources/lib/libRblas.dylib LAPACK:

1816 /Library/Frameworks/R.framework/Versions/4.0/Resources/lib/libRlapack.dylib

1817   locale: [1]

1818 en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8

1819   attached base packages: [1] grid stats graphics grDevices datasets utils methods

1820   [8] base

1821   other attached packages: [1] png_0.1-7 magick_2.7.3 car_3.0-12

1822   [4] carData_3.0-4 scales_1.1.1 cowplot_1.1.1

1823   [7] nlme_3.1-152 lmerTest_3.1-3 lme4_1.1-27.1

1824   [10] Matrix_1.3-2 GPArotation_2014.11-1 psych_2.1.9

1825   [13] forcats_0.5.1 stringr_1.4.0 dplyr_1.0.7

1826   [16] purrr_0.3.4 readr_2.1.1 tidyr_1.1.4

1827   [19] tibble_3.1.6 tidyverse_1.3.1 Hmisc_4.6-0

1828   [22] ggplot2_3.3.5 Formula_1.2-4 lattice_0.20-41

1829   [25] multcomp_1.4-18 TH.data_1.0-10 MASS_7.3-53

1830   [28] survival_3.2-7 mvtnorm_1.1-1 citr_0.3.2

1831   [31] papaja_0.1.0.9997 tinylabels_0.2.2

1832   loaded via a namespace (and not attached): [1] minqa_1.2.4 colorspace_2.0-2

1833 ellipsis_0.3.2

1834   [4] htmlTable_2.4.0 base64enc_0.1-3 fs_1.5.2

1835   [7] rstudioapi_0.13 fansi_1.0.2 lubridate_1.8.0

1836   [10] xml2_1.3.3 codetools_0.2-18 splines_4.0.4

1837   [13] mnormt_2.0.2 knitr_1.37 jsonlite_1.7.3

1838   [16] nloptr_1.2.2.2 broom_0.7.11.9000 cluster_2.1.0

1839   [19] dbplyr_2.1.1 shiny_1.7.1 compiler_4.0.4

1840   [22] httr_1.4.2 backports_1.4.1 assertthat_0.2.1

1841   [25] fastmap_1.1.0 cli_3.1.1 later_1.3.0

1842   [28] htmltools_0.5.2 tools_4.0.4 gtable_0.3.0

1843   [31] glue_1.6.1 Rcpp_1.0.7 cellranger_1.1.0

1844   [34] vctrs_0.3.8 xfun_0.29 rvest_1.0.2

1845   [37] mime_0.12 miniUI_0.1.1.1 lifecycle_1.0.1

1846   [40] renv_0.15.2 zoo_1.8-8 hms_1.1.1

1847   [43] promises_1.2.0.1 parallel_4.0.4 sandwich_3.0-0

1848   [46] RColorBrewer_1.1-2 yaml_2.2.2 gridExtra_2.3

1849   [49] rpart_4.1-15 latticeExtra_0.6-29 stringi_1.7.6

1850   [52] checkmate_2.0.0 boot_1.3-26 rlang_1.0.0

1851   [55] pkgconfig_2.0.3 evaluate_0.14 htmlwidgets_1.5.2

1852   [58] tidyselect_1.1.1 magrittr_2.0.2 bookdown_0.24

1853   [61] R6_2.5.1 generics_0.1.1 DBI_1.1.0

1854   [64] pillar_1.6.5 haven_2.4.3 foreign_0.8-81

1855   [67] withr_2.4.3 abind_1.4-5 nnet_7.3-15

1856   [70] modelr_0.1.8 crayon_1.4.2 utf8_1.2.2

1857   [73] tmvnsim_1.0-2 tzdb_0.2.0 rmarkdown_2.11

1858   [76] jpeg_0.1-8.1 readxl_1.3.1 data.table_1.13.2

1859   [79] reprex_2.0.1 digest_0.6.29 xtable_1.8-4

1860   [82] httpuv_1.6.5 numDeriv_2016.8-1.1 munsell_0.5.0