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## Personality Change among Newlyweds: Patterns, Predictors, and Associations with Marital Satisfaction over Time

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### Abstract

The early years of marriage are a time of significant personal and relational changes as partners adjust to their new roles, but the specific ways that spouses' personalities may change in early marriage and how these changes are associated with spouses' marital satisfaction trajectories have been overlooked. Using 3 waves of data collected over the first 18 months of marriage ( $N = 338$  spouses, or 169 heterosexual newlywed marriages), we examined changes in spouses' self-reported Big 5 personality traits over time and the association between initial levels and changes in personality and spouses' concurrent marital satisfaction trajectories. Results indicated significant changes in personality over time, including declines in agreeableness for husbands and for wives, declines in extraversion for husbands, declines in openness and neuroticism for wives, and increases in conscientiousness for husbands. These results did not differ by spouses' age, demographics, relationship length prior to marriage, cohabitation prior to marriage, initial marital satisfaction, or parenthood status. Initial levels of personality as well as changes in personality over time were associated with spouses' marital satisfaction trajectories. Taken together, these findings indicate that newlywed spouses' personalities undergo meaningful changes during the newlywed years and these changes are associated with changes in spouses' marital satisfaction. Further research is needed to understand the processes underlying changes in personality early in marriage and to examine the mechanisms linking changes in personality and changes in marital satisfaction.

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<sup>7</sup>Paired sample t-tests at Time 1 indicated that husbands' mean conscientiousness (35.16,  $SD = 6.33$ ) was significantly less than wives' mean conscientiousness (37.88,  $SD = 6.43$ ),  $t(168) = -3.66, p < .001$ . Wives' mean neuroticism (29.30,  $SD = 7.40$ ) was significantly greater than husbands' mean neuroticism (22.89,  $SD = 7.17$ ),  $t(168) = -8.31, p < .001$ .

## Keywords

Personality; Big Five; marital satisfaction; newlywed marriage; longitudinal

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Personality changes and develops over time (e.g., Roberts & DelVecchio, 2000), especially as a function of personal transitions and interpersonal relationships (e.g., Neyer & Lenhart, 2007). Getting married is one of the most important personal transitions someone can experience and is commonly identified as one of the factors related to personality change (e.g., Caspi & Roberts, 2001). Yet research on personality changes among married couples has failed to examine these changes during the transition into a first marriage when spouses are adjusting to their new roles, thereby overlooking the period when these changes may be most likely to occur. This incomplete picture of personality change in early marriage has also limited our understanding of the association between personality and marital quality. Research on the influence of personality on marriage has treated personality as a stable and static feature of an individual, assessed once in relation to later marital outcomes, rather than considering how initial levels and subsequent changes in personality may independently predict marital outcomes (Karney & Bradbury, 1995). In the present study we address these gaps by using three waves of data from 169 heterosexual newlywed couples assessed over the first 18 months of marriage to examine (1) changes in self-reported Big 5 personality traits over the first year and a half of marriage and (2) how initial levels of personality and changes in personality over time are associated with spouses' marital satisfaction trajectories during this period.

## Personality Stability and Change in Marriage

Several theories propose that personality changes reliably across the life course (e.g., Roberts, Wood, & Smith, 2005). Although some theories attribute these mean-level changes in personality to intrinsic temperamental or genetic factors (e.g., McCrae et al., 2000), other theories attribute these changes to environmental factors such as new social roles and experiences (Roberts & Bogg, 2004). For example, the social investment principle argues that personality changes partially as a function of investing in specific roles within social institutions such as work, marriage, and family (Roberts et al., 2005). Investing in such roles leads to personality change through contingent reward structures that offer stable reinforcement of certain personality states over others. In particular, this theory argues that the reward systems inherent in these social institutions should promote largely adaptive changes, such as greater social dominance, agreeableness, and conscientiousness, and lower levels of neuroticism (Roberts et al., 2005, p. 174).

The limited research examining stability and change in personality within marriage has largely focused on understanding changes over spans of at least a decade and has not focused on the newlywed period. For example, the Mills Longitudinal Study has yielded several insights about personality development among women from age 21 to 52, and about how marriage is associated with changes in personality. Results from this study indicate that experiencing a divorce from age 27 to 43 was negatively associated with changes in social dominance (Roberts, Helson, & Klohnen, 2002), whereas women who were married longer

from age 21 to age 43 increased in social responsibility from age 43 to age 52 (Roberts & Bogg, 2004). Among men, marriage – particularly high quality marriage – has been associated with desistance in delinquent behavior over a 25-year period (Laub, Nagin, & Sampson, 1998). Although other work has found that marriage is associated with personality continuity, such that the mean correlation between personality scores over an 11-year period was .50 for both husbands and wives (Caspi & Herbener, 1990), this type of analysis reflects differential continuity (i.e., the stability of one’s relative placement within a group) rather than absolute continuity (i.e., the degree to which one’s own score remains constant over time; Caspi & Roberts, 2001), and therefore cannot speak to how mean levels of personality might change over time.

These previous studies focusing on personality changes over decades of married life are not capable of assessing personality change during the newlywed period. Yet the newlywed years are a period of elevated risk and change for many couples (e.g., Kreider & Ellis, 2011; Lavner & Bradbury, 2010) and they often take place during a developmental stage (young adulthood) in which personality change is expected and normative (Roberts & DelVecchio, 2000). To the extent that getting married is a significant life decision and transition for most people, it has the potential to give rise to changes in lifestyle, identity, and responsibilities, making it a period in marriage in which personality change may be likely to occur. To our knowledge, however, there has been no research examining how personality traits change during the newlywed period. The transition to marriage has, however, been associated with significant changes in attachment, such that 22% of spouses in one study changed their attachment classification from 3 months prior to their wedding to 18 months after their wedding (Crowell, Treboux, & Waters, 2002). In addition, research among young adults (mean age = 24.4 years) studied twice over a four year period showed that beginning a romantic partnership (married or unmarried) was associated with significant decreases in neuroticism and shyness, significant increases in extraversion, self-esteem, and conscientiousness, and was not associated with changes in agreeableness or sociability (Neyer & Asendorpf, 2001). This study provides some insight into the types of patterns that we might expect during the transition to marriage but the two-wave assessment over a four-year period does not allow for an isolation of the specific changes that one might observe over the first years of marriage. Accordingly, the first aim of the current study addresses these limitations by examining changes in newlywed spouses’ Big 5 personality traits using three waves of data over the first 18 months of marriage. Although we do not have a comparison group of coupled individuals who did not marry or of single individuals, we do consider several possible alternative predictors of personality change, including spouses’ age and demographic characteristics, premarital relationship characteristics, initial marital satisfaction, and whether they became parents. Doing so allows us to examine whether patterns are similar across spouses with varied individual and relationship profiles and therefore provides a test of the robustness of any observed effects.

## Personality and Marital Satisfaction over Time

The second aim of this study is to examine whether initial levels and changes in personality over time are associated with newlyweds’ marital satisfaction trajectories. One of the most consistent findings from the marital literature is the honeymoon-is-over-effect (Kurdek,

1998) or the “typical honeymoon then years of blandness” pattern (Aron, Norman, Aron, & Lewandowski, 2002, p. 182), whereby high initial levels of satisfaction among newlyweds decline on average over time. Indeed, more than 30 years ago, Aron and Aron (1986) declared, “The strongest, best validated fact about relationships (at least marriage relationships) is that satisfaction with them declines as time passes” (p. 81). These findings, replicated across numerous studies (e.g., Kurdek, 1998; Lavner & Bradbury, 2010; VanLangingham, Johnson, & Amato, 2001), have also led to a robust body of work examining the variables associated with these changes. This work aims to increase our basic understanding of the factors that put couples at risk for deteriorating marital outcomes and to inform intervention efforts aimed at preventing marital distress.

Personality characteristics are commonly identified as a significant predictor of marital trajectories, with some scholars arguing that marital distress ultimately stems from the personality characteristics of the partners (e.g., Kelly & Conley, 1987). Indeed, cross-sectional findings from two large meta-analyses indicate that neuroticism, agreeableness, conscientiousness, and extraversion are associated with an individual’s own marital satisfaction (actor effect) and his or her partner’s marital satisfaction (partner effects) (Heller, Watson, & Ilies, 2004; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010). Results from longitudinal studies also indicate significant associations between Big 5 personality characteristics and marital satisfaction over time, with meta-analytic findings indicating that husbands’ and wives’ self- and partner-rated neuroticism is the strongest personality predictor of marital dissatisfaction and that agreeableness, extraversion, and conscientiousness exhibit small, statistically significant effects as well (Karney & Bradbury, 1995).

Despite these well-documented associations, this research has examined only how *initial levels* of personality characteristics are associated with marital satisfaction, not how *changes* in personality over time are independently associated with marital satisfaction. Failing to consider personality change may neglect an important source of variability in satisfaction, because changes in independent variables such as personality may be as important as initial levels of these variables for understanding marital quality (Karney & Bradbury, 1995). That is, how satisfied spouses are with their marriage is likely a reflection not only of their own and their partner’s initial personality characteristics, but also reflects how those characteristics change over time: Partners may find themselves more or less satisfied with their marriage as their personality changes and/or as their partner’s personality changes. Indeed, in popular culture, it is common perception that changes in one or both partners coincide with changes in marital satisfaction (e.g., “he changed” or “I’m not the same person I was”), and a plethora of self-help websites are directed at helping spouses cope when their partners change. Accordingly, to provide a more dynamic and complete representation of how personality is associated with marital functioning over time, we consider both how initial levels of personality characteristics as well as changes in these characteristics over time are associated with spouses’ marital satisfaction trajectories early in marriage.

## Method

### Participants

Participants were drawn from a study of 169 heterosexual newlywed couples that began in 2001 in a Northern Florida community surrounding a major state university.<sup>1</sup> The study received approval from the Institutional Review Board at the University of Florida (Study title: Cognitive complexity and change in marital satisfaction; IRB approval number: 2002-U-1063). Couples were recruited by (a) placing advertisements in community newspapers and bridal shops, offering payment to couples willing to participate in a study of newlyweds and by (b) sending invitations to eligible couples who had completed marriage license applications in counties near study locations. Couples responding to either solicitation were screened for eligibility in a telephone interview. Inclusion required that this was the first marriage for each partner; the couple had been married less than 6 months; each partner was at least 18 years of age; each partner spoke English and had completed at least 10 years of education (to ensure comprehension of the questionnaires); couples did not have children; and wives were not older than 35. Eligible couples, after providing oral consent, were scheduled for an initial laboratory session.

Husbands averaged 25.6 ( $SD = 4.1$ ) years of age and 16.3 ( $SD = 2.4$ ) years of education; 59% were employed full time, 34% were full-time students, and 94% were White. Wives averaged 23.4 years of age ( $SD = 3.6$ ) and 16.2 ( $SD = 2.0$ ) years of education; 45% were employed full time, 45% were full-time students, and 86% were White. Approximately 35% of couples reported living together before marriage [36% percent of husbands ( $N = 60$ ) and 39% of wives ( $N = 66$ ) reported premarital cohabitation<sup>2</sup>] and spouses reported knowing each other approximately 4.5 years on average before they married (Mean = 4.34,  $SD = 2.95$  for husbands; Mean = 4.46,  $SD = 3.17$  for wives; husbands' and wives' reports correlated  $r(157) = .85, p < .001$ ).

### Procedure

Couples meeting eligibility requirements were scheduled to attend a 3-hour laboratory session within the first 6 months of marriage. Before the session, participants were mailed a packet of questionnaires to complete at home and bring with them to their appointment, along with a letter instructing couples to complete all questionnaires independently of one another. Upon arriving to the session, spouses completed a written consent form approved by the local human subjects review board, participated in a variety of tasks beyond the scope of the present study, and were paid \$70.

Approximately 6 months (Time 2) and 12 months (Time 3) after the initial assessment, couples were recontacted by telephone and again mailed questionnaires, along with postage-paid return envelopes and a letter of instruction reminding partners to complete forms

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<sup>1</sup>Data from this study have been described in several other published reports (e.g., Lavner, Karney, & Bradbury, 2014), but this is the first to examine personality change over time and how personality change is associated with marital satisfaction.

<sup>2</sup>For all 60 husbands who reported living with their wives before marriage, their wives also reported that they lived with their husband before marriage. An additional 6 wives reported that they lived with their husbands before marriage. Given these slight discrepancies, we used the report from the individual (rather than a couple-level variable) for all analyses examining premarital cohabitation.

independently. After completing each phase, couples were mailed a \$40–50 check for participating.<sup>3</sup>

## Measures

**Marital satisfaction**—Marital satisfaction was assessed at all three time points using the Quality of Marriage Index (QMI; Norton, 1983), a six-item scale asking spouses to report the extent to which they agree or disagree with general statements about their marriage (e.g., “We have a good marriage”). Five items ask spouses to respond according to a 7-point scale and one item asks spouses to respond according to a 10-point scale, yielding scores from 6 to 45. Higher scores reflected greater satisfaction. Coefficient alpha was  $> .90$  for husbands and for wives across all phases of the study.

**Big Five personality**—We assessed the Big Five model of personality at all three time points using the 50-item International Personality Item Pool (IPIP; Goldberg, 1992), a set of personality inventory questions in the public domain (International Personality Item Pool). Items were rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Internal consistency was high for each dimension at all three time points: extraversion (husband  $\alpha = .91, .90, .90$ ; wife  $\alpha = .88, .90, .89$ ), agreeableness (husband  $\alpha = .84, .86, .83$ ; wife  $\alpha = .76, .80, .81$ ), conscientiousness (husband  $\alpha = .84, .78, .82$ ; wife  $\alpha = .85, .86, .84$ ), neuroticism (husband  $\alpha = .88, .89, .84$ ; wife  $\alpha = .88, .88, .89$ ), and openness (husband  $\alpha = .79, .83, .79$ ; wife  $\alpha = .81, .81, .82$ ).

In supplemental analyses, we tested for measurement invariance for marital satisfaction and all five personality factors over time. Overall, metric invariance was moderately- to well-supported in all cases, and scalar invariance was moderately- to well-supported in the majority of cases (for additional details, see Supplemental Materials).

## Results

### Personality Change over the First Years of Marriage

**Big 5 Personality Change**—We began by examining how spouses’ Big 5 personality traits changed over the first 18 months of marriage using dyadic growth curve modeling in a multilevel modeling framework and the HLM 7.0 computer program (Raudenbush, Bryk, & Congdon, 2010). Growth curve analytic techniques allow for a two-level data analysis. Level 1 estimates within-subject trajectories of change (growth curves) for a variable, described by two parameters: an intercept (initial level of the variable) and a slope (rate of change over time). Level 2 examines between-subjects differences in these parameters using individual-level predictors. The HLM computer program accommodates missing data using full information maximum likelihood, so we included all available data in the analyses.

<sup>3</sup>At Time 2, 153 husbands (91%) and 155 wives (92%) provided personality data, and 163 husbands (96%) and 162 wives (96%) provided marital satisfaction data. At Time 3, 145 husbands (86%) and 147 wives (87%) provided personality data, and 161 husbands (95%) and 161 wives (95%) provided marital satisfaction data. There were few initial differences in personality between individuals providing data at follow-up and those missing data: the only significant differences at Time 2 and Time 3 were that husbands missing data had higher initial levels of neuroticism. All other comparisons for husbands were not significant, and no comparisons for wives were significant ( $p > .10$ ). In addition, there were no differences in initial marital satisfaction levels between spouses providing marital satisfaction data at Time 2 and Time 3 and spouses missing data at these waves.

Husbands' and wives' data were estimated simultaneously within the same equations using the dual intercept and slope model outlined by Raudenbush, Brennan, and Barnett (1995). This model allows for sex-specific intercepts, slopes, and random effects (Atkins, 2005) and is widely used in couples research to estimate dyadic growth curves (Ledermann & Kenny, 2017). Time was uncentered so that the intercept terms ( $B_{f00}$  and  $B_{m00}$ ) could be interpreted as the value at the initial assessment, and each follow-up assessment was equal to 1 unit (e.g., Time 2 was entered as 1). We used the following Level 1 equation for each of the Big 5 traits:

$$Y_{ti}(\text{Personality trait}) = (\text{wife})_{ti}[\pi_{f0i} + \pi_{f1i}(\text{Time})_{ti}] + (\text{husband})_{ti}[\pi_{m0i} + \pi_{m1i}(\text{Time})_{ti}] + e_{tij}$$

These equations include separate intercepts and linear slopes for husbands and wives. We conducted five separate models, one for each personality trait of interest (extraversion, agreeableness, conscientiousness, neuroticism, and openness).

Results, shown in Table 1 and displayed in Figure 1, indicated significant changes in personality over time.<sup>4</sup> On average, husbands showed significant declines in extraversion and agreeableness, and a significant increase in conscientiousness. Wives showed significant declines in agreeableness, neuroticism, and openness. These changes were small to moderate in size. There was significant variability in slopes for women's neuroticism and for husbands' and wives' agreeableness and conscientiousness, indicating that the degree of change in these domains varied significantly across participants.

**Item Level Change**—To further understand changes in personality during the newlywed years, we conducted a series of exploratory item-level analyses in which we examined dyadic growth curves for each item of the IPIP. Results are shown in Table 2. Given the large number of tests, these results need to be interpreted with caution, but they do reveal important information about the main effects for the Big 5 composite scores described above. Most notably, they indicate that for all of the significant main effects for the Big 5 composite scores, at least three of the individual items comprising each composite were also significant in the same direction, and the majority of the other items had effects that were in the same direction. In contrast, item analysis for the Big 5 composites that were not significant (e.g., husbands' neuroticism) revealed fewer/no significant items, significant items that were in opposite directions, and/or inconsistent direction of effects for non-significant items. Taken together, these findings give us greater confidence in the Big 5 personality trajectories described above by indicating that these effects reflect general tendencies among the items that comprise each composite score and were not disproportionately driven by scores from a single significant item.<sup>5</sup>

<sup>4</sup>For comparison, we also provide estimated trajectories based on standard scores in Supplemental Table 3. In these analyses, we first standardized scores within sex based on Time 1, and then applied this normalization factor to the remaining time points (also within sex). These standardized estimates are depicted in Figure 1.

<sup>5</sup>Indeed, one of the items for husbands' openness ("I spend time reflecting on things") showed a relatively large significant decline over time, but given that no other items for this scale were significant and many had inconsistent directions, the main effect for husbands' openness was not significant.



## Predictors of Personality Change

Next, we examined whether spouses' age, demographics, relationship history, initial marital satisfaction, and parenthood during the study were significant predictors of Big 5 personality trajectories (intercepts and slopes) and whether the main effects described above changed when controlling for these factors. The analyses all followed a similar approach in which the predictor was added as a Level 2 predictor for intercepts and slopes in the equations described above, with the exception of parenthood, which only predicted slopes (given that none of the couples were parents when the study began). We analyzed only the three personality domains for which there was significant variability in slope: agreeableness, conscientiousness, and neuroticism.<sup>6</sup> We conducted separate models for each domain and for each predictor. Given the large number of tests, we focus our discussion only on results that were significant  $p < .01$  (reflecting the standard  $p < .05$  significance level, divided by 5 to represent the 5 different personality domains), though we also report results  $p < .05$  in the tables. On the whole, these results generally indicated that these characteristics were not significantly associated with personality trajectories and that the pattern of significance of the main effects did not change (i.e., significant results remained significant and non-significant results remained non-significant) when these variables were entered in the model.

**Age, Demographics, and Personality Change**—Age was not significantly associated with husbands' or wives' initial levels of or changes in agreeableness, conscientiousness, or neuroticism (Supplemental Table 4). Moreover, the pattern of significance of the main effects did not change when age was entered in the model, suggesting that these effects held even when controlling for possible maturation effects.

We explored other demographic predictors of personality trajectories, including education (Supplemental Table 5), income (Supplemental Table 6), and race (Supplemental Table 7). These characteristics were not significantly associated with personality slopes (all  $p > .01$ ) and the pattern of significance of the main effects did not change when they were entered in the model, such that husbands showed a significant decline in agreeableness and a significant increase in conscientiousness, and wives showed significant declines in agreeableness and neuroticism.

**Relationship History and Personality Change**—We examined whether spouses' relationship history was associated with personality trajectories by examining effects of premarital relationship duration (i.e., the amount of time spouses knew each other before marriage) and premarital cohabitation (i.e., whether the spouses had lived together before marriage). Premarital relationship duration was not associated with personality intercepts or slopes and the pattern of significance of the main effects for agreeableness, conscientiousness, and neuroticism did not change when controlling for premarital relationship duration (Supplemental Table 8), indicating that personality change over the first years of marriage was similar regardless of how long the couple had been together prior to marriage.

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<sup>6</sup>Although there was significant variability only in wives' neuroticism slopes, we also examined predictors of husbands' neuroticism slopes because these were dyadic growth curves, meaning that husbands' and wives' neuroticism slopes are modeled simultaneously.

Results for premarital cohabitation generally found similar patterns in personality change for spouses who had lived with their partner prior to marriage and spouses who had not lived with the partner prior to marriage (Supplemental Table 9). Specifically, premarital cohabitation did not significantly predict slopes for husbands (although it was significantly associated with lower intercepts for neuroticism) and did not predict changes in agreeableness or conscientiousness for wives. Premarital cohabitation was a significant predictor of wives' neuroticism slopes, however, such that wives who had lived with their partners prior to marriage reported lower initial levels of neuroticism that remained stable over time (slope = 0.44,  $t(166) = 1.27$ ,  $p > .10$ ) whereas wives who had not lived with their partners prior to marriage reported higher initial levels of neuroticism that subsequently declined over time (slope = -1.28,  $t(166) = 4.24$ ,  $p < .001$ ). Taken together, these findings indicate that the trajectory of personality change over the first year and a half of marriage was generally similar regardless of spouses' relationship history.

**Initial Marital Satisfaction and Personality Change**—Next we examined whether personality trajectories were predicted by one's own and one's partner's marital satisfaction at Time 1 (Supplemental Table 10). These results indicated that own or partner initial marital satisfaction did not significantly predict personality slopes (all  $p > .01$ ) and the pattern of the main effects described above – significant declines in husbands' agreeableness and significant increases in husbands' conscientiousness, and significant declines in wives' agreeableness and neuroticism – did not change. Accordingly, newlywed spouses underwent similar changes in personality regardless of their initial levels of marital satisfaction.

**Parenthood and Personality Change**—Finally, we examined the possibility that these changes were due to couples becoming parents rather than the transition to marriage. Fifteen couples became parents during the second or third wave of the study. Parenthood was not a significant predictor of personality slopes and the pattern of significance of the main effects did not change when parenthood was included in the model (Supplemental Table 11), indicating that these effects generalized to parents and non-parents.

### Personality Change and Marital Satisfaction Trajectories

We then examined how personality trajectories over the first 18 months of marriage were associated with marital satisfaction trajectories during this period. Specifically, we assessed how initial levels of personality at Time 1 (intercept predictors) were associated with initial levels of marital satisfaction at Time 1 (satisfaction intercepts), as well as how initial levels and changes in personality over the first three assessments (intercept and slope predictors) were associated with changes in spouses' marital satisfaction from Time 1 to Time 3 (satisfaction slopes). Doing so allowed us to test whether changes in personality were uniquely associated with changes in satisfaction, above and beyond the effects of initial levels of personality.

To address these questions, we used the ordinary least squares estimates of intercepts and slopes produced by the HLM analyses examining personality change over time to compile the intercept and slope estimates for each of the five personality traits for husbands and

wives. We then used these estimates as Level 2 predictors in a two-level multilevel model with marital satisfaction as the outcome. We used the following equations:

$$\text{Level 1: } Y_{it}(\text{Marital satisfaction}) = (\text{wife})_{it}[\pi_{f0i} + \pi_{f1i}(\text{Time})_{it}] + (\text{husband})_{it}[\pi_{m0i} + \pi_{m1i}(\text{Time})_{it}] + e_{ij}$$

$$\begin{aligned} \text{Level 2: } \pi_{f0i} (\text{wife marital satisfaction intercept}) &= \beta_{f00} + \text{husband trait intercept} + \text{wife trait intercept} + \mu_{f0i} \\ \pi_{f1i} (\text{wife marital satisfaction slope}) &= \beta_{f10} + \text{husband trait intercept} + \text{wife trait intercept} + \text{husband trait slope} \\ &+ \text{wife trait slope} + \mu_{f1i} \\ \pi_{m0i} (\text{husband marital satisfaction intercept}) &= \beta_{m00} + \text{husband trait intercept} + \text{wife trait intercept} + \mu_{m0i} \\ \pi_{m1i} (\text{husband marital satisfaction slope}) &= \beta_{m10} + \text{husband trait intercept} + \text{wife trait intercept} + \text{husband trait slope} \\ &+ \text{wife trait slope} + \mu_{m1i} \end{aligned}$$

Husbands' and wives' marital satisfaction intercepts and slopes were estimated simultaneously at Level 1. Satisfaction intercepts were predicted by husbands' and wives' personality trait intercepts at Level 2, and satisfaction slopes were predicted by husbands' and wives' personality traits intercepts and slopes at Level 2. This design allows us to examine how initial levels of marital satisfaction are associated with spouses' own personality intercepts and their partner's personality intercepts, and how changes in marital satisfaction over time are associated with initial levels and changes in spouses' and their partner's personality over time. Time was uncentered so that the intercept terms ( $B_{f00}$  and  $B_{m00}$ ) could be interpreted as the value at Time 1, and each follow-up assessment was equal to 1 unit (e.g., Time 2 was entered as 1). We conducted five separate models, one for each personality trait of interest (extraversion, agreeableness, conscientiousness, neuroticism, and openness) predicting satisfaction.

Results are shown in Table 3. In all models, marital satisfaction underwent a significant decline for husbands and wives. Given the large number of tests, we focus our discussion only on results that were significant  $p < .01$  (again reflecting the standard  $p < .05$  significance level, divided by 5 to represent the 5 different personality domains), though we also report results  $p < .05$  in the table.

Consistent with previous research (e.g., Karney & Bradbury, 1995), initial levels of personality served as significant predictors of marital satisfaction intercepts and slopes. Husbands reported higher levels of initial marital satisfaction when they had higher levels of conscientiousness (Figure 2A) and when their wives had lower levels of neuroticism. Husbands' satisfaction also declined less over time when they had higher initial levels of openness (Figure 2B). Wives had higher initial levels of satisfaction when they reported higher initial levels of agreeableness and lower initial levels of neuroticism.

We also found some evidence that changes in personality were uniquely associated with changes in marital satisfaction, above and beyond the effects of initial levels of personality. Most notably, changes in wives' neuroticism were negatively associated with changes in husbands' and wives' marital satisfaction, indicating that wives with greater increases in neuroticism from Time 1 to Time 3 experienced steeper declines in satisfaction during this period (Figure 2C), as did their husbands (Figure 2D). In addition, changes in wives'

openness were positively associated with changes in wives' marital satisfaction, indicating that satisfaction declined less steeply for wives who increased in these traits. Changes in husbands' personality traits were not significantly associated with changes in their own marital satisfaction or their wives' marital satisfaction.

As a final step, we examined the percent of total variance in husbands' and wives' marital satisfaction slopes explained by including personality intercepts and personality slopes. To do so, we compared the variance estimates of husbands' and wives' satisfaction slopes in (1) a model with no predictors (i.e., an empty model), (2) a model with only personality intercepts predicting satisfaction slopes, and (3) a model with personality intercepts and personality slopes predicting satisfaction slopes. Results, shown in Table 4, indicate that the percent of variance explained in satisfaction slopes was greatest when including both personality intercepts and personality slopes as predictors, with particularly large increases for neuroticism (0% to 39% for men and 3% to 42% for women).

## Discussion

The start of a marriage represents one of the most significant personal transitions individuals can experience, raising important questions about whether and how personality might also change during this period and how these changes are associated with marital functioning. These data from 169 couples assessed over the first 18 months of marriage provide several new insights into personality change in early marriage and how these changes are associated with newlyweds' marital satisfaction.

### Personality Changes Early in Marriage

Our results showed significant changes in personality over the first year and a half of marriage for husbands and wives. Spouses reported several significant changes in their own personality characteristics. For husbands and wives, agreeableness declined on average. For husbands, extraversion declined on average and conscientiousness increased on average. For wives, openness and neuroticism decreased on average. Our general finding that personality changes is consistent with prior findings that marital experiences occasion changes in personality over longer periods of time (Roberts et al., 2002; Sampson & Laub, 1990), but are the first to document changes occurring during this early transitional period and are unique in suggesting that both adaptive (e.g., increases in husbands' conscientiousness and decreases in wives' neuroticism) and maladaptive (e.g., decreases in agreeableness and extraversion [husbands]) changes take place.

Because our study design did not include a comparison group of individuals who were unmarried (either single or in a non-marital relationship), it is not possible to conclude that these changes are specific to the transition into marriage. However, we did examine several alternative predictors of these trajectories, which allowed us to test several competing explanations for these effects. If these changes were due to normative developmental changes or maturation effects, then age should predict the trajectory of personality change (e.g., older individuals should show different patterns than younger individuals). If these findings were simply due to spouses adjusting to being together, then we would expect that either the length of relationship prior to marriage or premarital cohabitation should weaken

these effects, as presumably these changes would have already taken place. If these findings were due to spouses becoming parents, then we would expect different patterns for parents and non-parents. However, our results indicated that none of these factors were significantly associated with the personality trajectories, suggesting that these patterns generalize across newlyweds regardless of their age or other relationship characteristics and providing greater confidence that the changes in personality observed here reflect something about the transition to marriage rather than these other factors. Even so, caution is needed in interpreting these results in this manner, pending comparisons with individuals who were in serious non-marital romantic relationships and/or with individuals who were not involved in relationships.

With these caveats in mind, these findings provide important insights into how newlywed spouses' personalities change early in marriage. Some of these patterns reflect adaptive changes in personality. In particular, husbands increased in conscientiousness and wives decreased in neuroticism (though wives' declining neuroticism was limited to those who had not cohabited before marriage). Both patterns build on previous findings among young adults who transitioned to a romantic relationship (Neyer & Asendorf, 2001) and are consistent with general trends of personality change during early adulthood (McCrae et al., 2000; Roberts & Mroczek, 2008). Notably, these patterns reflect more adaptive changes among the sex with more maladaptive overall levels of these traits, given that men report lower levels of conscientiousness than women on average and women report higher levels of neuroticism than men on average (Schmitt, Realo, Voracek, & Allik, 2008). We also found evidence for declines in husbands' extraversion and wives' openness, consistent with other research indicating declines in adults' extraversion and openness from age 18 to age 30 (e.g., McCrae et al., 1999).

Our finding that husbands' and wives' agreeableness decline on average indicates a more maladaptive change, however. This surprising finding is inconsistent with previous research on changes in the five factors during early adulthood (e.g., McCrae et al., 2000; Roberts & Mroczek, 2008). The early years of marriage may represent a difficult transitional period as couples adjust and come to terms with their new status that often involves new living arrangements, financial, emotional, and physical interdependence, and a general coming to grips with the notion that "actual marriage" might not be the same as "ideal marriage" (e.g., Higgins, 1989). In this view, the early years of marriage would mark a uniquely difficult period of individual adjustment, much in the same way that the newlywed years have been described as representing a "honeymoon-then-years-of-blandness" pattern (Aron et al., 2002, p. 182). This hypothesis would leave open the possibility that marital relationships could eventually promote higher levels of agreeableness, but suggests that these effects might take longer to unfold. Future research examining changes in agreeableness over longer periods of time could test this possibility. Future research that includes narrower, facet-level personality data would be helpful too, as it may speak more specifically to the nature of these changes (e.g., whether the decreases in agreeableness happen across all aspects of the domain or only for more specific trait subcomponents; e.g., compliance, modesty, trust). Nonetheless, these decreases in agreeableness may well be important given that this domain is among the most robust correlates of externalizing behaviors including aggression, substance use, and sexual risk taking (e.g., Hoyle, Fejfar, & Miller, 2000; Jones, Miller, & Lynam, 2011; Kotov,

Gamez, Schmidt, & Watson, 2010) – behaviors that may be of significant importance to relational functioning.

### Personality Change and Changes in Marital Satisfaction

The use of longitudinal data also allowed us to examine how changes in personality were associated with changes in spouses' marital satisfaction. Underscoring the importance of studying personality change, our results showed that changes in personality were uniquely associated with changes in satisfaction, above and beyond the effect of spouses' initial levels of personality at Time 1. In particular, changes in wives' neuroticism were negatively associated with changes in their own marital satisfaction and their husbands' marital satisfaction, above and beyond the effects of wives' initial neuroticism (which was negatively associated with husbands' and wives' initial levels of satisfaction). Neuroticism has long been seen as one of the most important factors predicting marital trajectories (e.g., Kelly & Conley, 1987; see Karney & Bradbury, 1995 for meta-analysis), with most work in this area focusing on how initial levels of neuroticism are associated with subsequent marital outcomes (e.g., Karney & Bradbury, 1997). The current work adds to this robust body of literature by indicating that *changes* in neuroticism are also associated with marital functioning, underscoring the importance of this particular trait.<sup>8</sup> More generally, more variance in spouses' satisfaction slopes was explained when including personality intercepts and personality slopes as predictors compared to including only personality intercepts, highlighting the benefit of considering initial levels in personality as well as changes in personality over time when understanding the processes underlying marital change.

In interpreting these findings, it is important to recognize that these were simultaneous changes – changes in personality from Time 1 to Time 3 were associated with changes in marital satisfaction from Time 1 to Time 3. As such, they do not address the direction of influence, such as whether changes in personality led to changes in marital satisfaction, changes in marital satisfaction led to changes in personality, or some combination of the two. We were limited in our ability to test these types of questions given that we only had three waves of data, the spacing of which did not allow for robust estimates of change in shorter lags. Future research should address these questions about directionality with more waves of data and/or greater temporal distance between lags. For now, the more general point to take away from these findings is that changes in personality covary (at least in some instances) with changes in marital functioning. As such, personality factors can account for variability in marital outcomes in two different ways: initial levels of personality can be associated with concurrent and subsequent marital functioning, consistent with theories of marital dynamics emphasizing the influence of initial differences, and changes in personality

<sup>8</sup>Exploratory post-hoc analyses probing these findings to determine the directionality of effects were inconclusive. Specifically, we computed zero-order correlations for changes in wives' neuroticism and changes in husbands' and wives' marital satisfaction from T1 to T3, T1 to T2, and T2 to T3. Consistent with the findings reported in the Results section and detailed in Table 3, changes in wives' neuroticism from T1 to T3 were negatively associated with concurrent changes in husbands' and wives' marital satisfaction from T1 to T3,  $r(143) = -0.25, p = .003$  and  $r(143) = -0.22, p = .008$ , respectively. However, lagged effects did not explain these patterns. T1 to T2 changes in wives' neuroticism were not significantly associated with T2 to T3 changes in husbands' or wives' marital satisfaction (both  $p > .05$ ). Surprisingly, T1 to T2 changes in husbands' marital satisfaction were positively associated with T2 to T3 changes in wives' neuroticism,  $r(135) = .181, p = .036$ , though changes in wives' marital satisfaction from T1 to T2 were not significantly associated with changes in their neuroticism from T2 to T3,  $r(134) = .108, p = .215$ . Together, these findings tentatively suggest that the negative association between changes in wives' neuroticism and changes in husbands' and wives' satisfaction are best understood as occurring concurrently, rather than being disproportionately driven by change in one domain leading to change in the other domain.

can be associated with concurrent changes in marital functioning, consistent with theories of marital dynamics emphasizing the influence of changes over time (e.g., Lavner, Bradbury, & Karney, 2012). This simple but powerful point calls for a shift away from considering personality as a static variable that predicts levels and changes in marital satisfaction, as has long been the case in the vast majority of marital research (Karney & Bradbury, 1995), and toward considering personality as a dynamic variable that changes in tandem with satisfaction. More generally, it also highlights the value for marital researchers to consider whether changes in various risk factors (e.g., personality, stress, communication) occur alongside changes in satisfaction and uniquely explain some of the variability in marital change.

### Strengths and Limitations

This study has several methodological strengths, including rigorous dyadic assessments of newlywed spouses' personality traits and marital satisfaction at three waves over the first 18 months of marriage. This design allowed us to isolate and capture personality change very early in marriage as spouses were still adjusting to their new roles and before they became more settled into new patterns and routines. Furthermore, the use of three assessments of personality over a one-and-a-half year period allowed for a better representation of personality changes as they unfolded compared to prior studies examining personality changes using assessments that spanned a period of several years (e.g., Neyer & Asendorpf, 2001) or even decades (e.g., Roberts & Bogg, 2004). The longitudinal data on marital satisfaction also allowed us to examine the effects of personality change on the relationship itself, and the use of dyadic data allowed us to examine how personality change in one's partner is associated with one's own marital satisfaction, above and beyond one's own personality changes.

Despite these methodological strengths, it is also important to acknowledge the study's limitations. First, because couples were first assessed after they were married, we were unable to examine changes in personality that arose as couples transitioned from engagement into marriage. Second, our study examined these changes using three waves of data over the first 18 months of marriage. Additional data after the first year and a half of marriage would be valuable to determine whether the changes in personality observed here continue over time. Third, we assessed personality using a measure of the Big 5. Although this is a widely used personality framework, alternative conceptualizations and/or measures of personality should be considered in future research, including more micro level examinations of specific facets within these domains as well as more macro level examinations of a general factor of personality (e.g., Musek, 2007). Future work should also examine changes in multiple traits simultaneously, in addition to the univariate approach adopted here. Doing so may yield interesting new insights about how traits may change in tandem (e.g., neuroticism decreases and openness increases) and how changes in combinations of traits may uniquely relate to changes in marital satisfaction. Fourth, our sample comprised couples that were all heterosexual, in their first-marriages, and without children at the time of marriage. These inclusion criteria had the advantage of allowing us to focus on a specific population of couples who were transitioning to marriage. Nonetheless, to the extent that the demographic profile of married couples continues to change (e.g.,

Cherlin, 2004), it will be important for future research to examine these patterns among other samples, including same-sex couples, remarriages, and couples who enter marriage with a child. Finally, results of measurement invariance testing generally supported strong invariance over time but did not do so in all cases (see supplemental materials). Longitudinal invariance is rarely tested empirically (particularly for multilevel modeling) and is often rejected when it is (e.g., Obradovi, Pardini, Long, & Loeber, 2007), but these findings nonetheless necessitate some caution before assuming that the changes in personality described here reflect underlying changes in the construct rather than differences in measurement over time (e.g., Widaman, Ferrer, & Conger, 2010). However, we note that our item-level analyses also supported the robustness of the findings in that the significant Big 5 effects reflected multiple significant items rather than being disproportionately affected by a single significant item. Future research using dyadic latent growth curve modeling (e.g., Ledermann & Kenny, 2017) could further examine these issues (see Dyer, 2015 for further discussion of the importance of measurement invariance testing in the context of family research).

## Conclusion

In sum, the early years of marriage are marked by significant changes in spouses' personality and these changes are uniquely associated with changes in couples' marital satisfaction above and beyond the effects of initial levels of personality. Future research capturing these types of dynamic changes and the mechanisms linking them will advance the science of personality and marriage.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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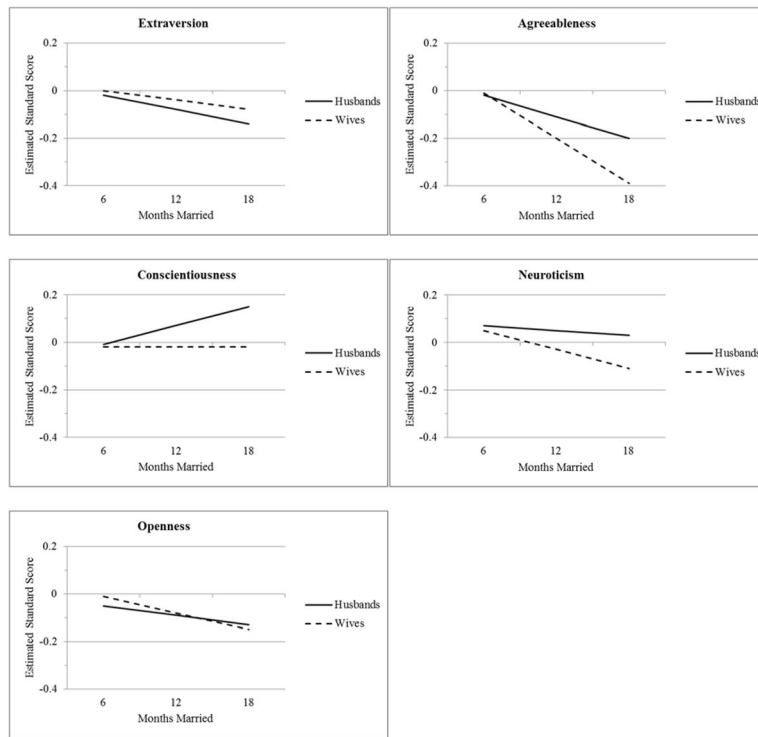
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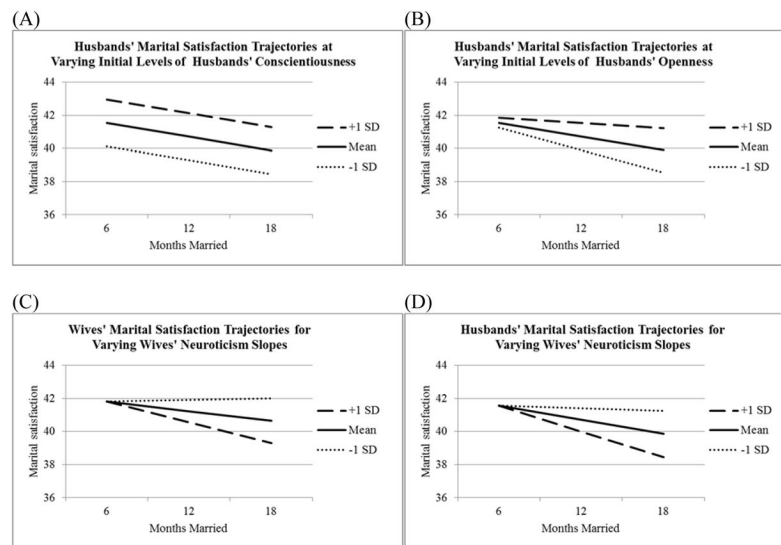
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**Figure 1. Estimated Big 5 Personality Trajectories for Husbands and Wives**  
*Note.* Trajectories are estimated based on standardized within-sex results detailed in Supplemental Table 3.



**Figure 2. Associations between Husbands' and Wives' Personality Intercepts and Slopes and Husbands' and Wives' Marital Satisfaction Trajectories**

*Notes.* In all Figures, trajectories were estimated based on the values provided in Table 3. Because all personality intercept and slope predictors were grand-mean centered in these analyses, a value of 0 reflects the mean for each of the IVs. To estimate the values for individuals at  $\pm 1$  SD of these terms, we calculated standard deviations using the values from the ordinary least squares estimates of the personality intercepts and slopes that were used as the independent variables in the analyses for Table 3. Values for husbands' and wives' personality intercepts and slopes other than those specifically depicted were held constant and were entered at their respective grand means (0). Figure 2A shows significant differences in husbands' marital satisfaction intercepts (levels) based on husbands' initial conscientiousness (grand-mean centered values for conscientiousness:  $-1$  SD =  $-5.89$ , Mean = 0, and  $+1$  SD =  $5.89$ ). Figure 2B shows significant differences in husbands' marital satisfaction slopes based on husbands' initial openness (grand-mean centered values for openness:  $-1$  SD =  $-5.09$ , Mean = 0, and  $+1$  SD =  $5.09$ ). Figure 2C shows significant differences in wives' marital satisfaction slopes based on wives' neuroticism slopes (grand-mean centered values for neuroticism slopes:  $-1$  SD =  $-3.36$ , Mean = 0, and  $+1$  SD =  $3.36$ ). Figure 2D shows significant differences in husbands' marital satisfaction slopes based on wives' neuroticism slopes (grand-mean centered values for neuroticism slopes:  $-1$  SD =  $-3.36$ , Mean = 0, and  $+1$  SD =  $3.36$ ).

**Table 1**  
 Big 5 Personality Trajectories for Husbands and Wives over the First Year and a Half of Marriage

	Personality Intercept		Personality Linear Slope			Level 1 Residual Variance	Intercept/ Slope <i>r</i>
	$\beta$ (SE)	Variance	$\beta$ (SE)	<i>t</i> ratio	Effect size <i>r</i>		
Results for Husbands							
Extraversion	33.71 (0.62)	56.61**	-0.49 (0.18)	-2.64**	0.20	0.69	8.97
Agreeableness	39.05 (0.44)	26.80**	-0.53 (0.18)	-2.94**	0.22	1.70**	6.29
Conscientiousness	35.10 (0.46)	29.23**	0.48 (0.19)	2.50*	0.19	2.00**	7.57
Neuroticism	23.39 (0.55)	41.15**	-0.17 (0.19)	-0.91	0.07	0.36	12.09
Openness	39.50 (0.40)	20.54**	-0.23 (0.17)	-1.40	0.11	0.70	6.86
Results for Wives							
Extraversion	34.74 (0.56)	44.62**	-0.32 (0.18)	-1.73	0.13	0.66	8.97
Agreeableness	42.97 (0.32)	12.03**	-0.82 (0.17)	-4.77**	0.35	1.34**	6.29
Conscientiousness	37.75 (0.49)	34.15**	-0.02 (0.19)	-0.12	0.01	1.71**	7.57
Neuroticism	29.66 (0.55)	40.82**	-0.60 (0.24)	-2.51*	0.19	2.45**	12.09
Openness	38.24 (0.42)	24.32**	-0.39 (0.14)	-2.74**	0.21	0.02	6.86

Notes. Intercepts were significant  $p < .01$  because the lowest possible score was greater than zero, so *t* and *r* statistics these statistics are not reported for these terms. *N* = 169 couples, *df* = 168 for all analyses. Effect size  $r = \sqrt{\beta^2 / (\beta^2 + df)}$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

Table 2

Item-Level Personality Trajectories for Husbands and Wives

	Husbands			Wives		
	Intercept $\beta$ (SE)	Slope $\beta$ (SE)	t ratio	Intercept $\beta$ (SE)	Slope $\beta$ (SE)	t ratio
<b>Extraversion</b>						
(1) I am the life of the party	<b>2.99 (0.07)</b>	<b>-0.13 (0.03)</b>	<b>-3.76***</b>	<b>2.83 (0.08)</b>	<b>-0.13 (0.04)</b>	<b>-3.78***</b>
(6r) I don't talk a lot	3.43 (0.09)	-0.04 (0.04)	-1.10	3.96 (0.08)	-0.05 (0.04)	-1.39
(11) I feel comfortable around people	3.90 (0.07)	-0.05 (0.03)	-1.62	4.06 (0.06)	-0.04 (0.03)	-1.49
(16r) I keep in the background	3.34 (0.08)	-0.07 (0.04)	-1.82	3.51 (0.08)	0.01 (0.04)	0.35
(21) I start conversations	<b>3.71 (0.07)</b>	<b>-0.08 (0.03)</b>	<b>-2.51*</b>	3.89 (0.07)	-0.04 (0.04)	-0.97
(26r) I have little to say	3.82 (0.08)	0.01 (0.04)	0.16	4.18 (0.06)	-0.05 (0.04)	-1.38
(31) I talk to a lot of different people at parties	<b>3.44 (0.09)</b>	<b>-0.15 (0.04)</b>	<b>-3.83***</b>	<b>3.32 (0.09)</b>	<b>-0.09 (0.04)</b>	<b>-2.20*</b>
(36r) I don't like to draw attention to myself	2.78 (0.08)	0.00 (0.04)	-0.01	2.75 (0.08)	0.04 (0.04)	1.07
(41) I don't mind being the center of attention	3.42 (0.09)	-0.06 (0.04)	-1.40	3.27 (0.09)	-0.01 (0.04)	-0.30
(46r) I am quiet around strangers	2.86 (0.09)	0.07 (0.04)	1.91	2.96 (0.09)	0.04 (0.04)	1.20
<b>Agreeableness</b>						
(2r) I feel little concern for others	<b>4.23 (0.07)</b>	<b>-0.11 (0.05)</b>	<b>-2.19*</b>	4.59 (0.06)	0.00 (0.04)	-0.20
(7) I am interested in people	3.96 (0.07)	-0.05 (0.03)	-1.41	<b>4.43 (0.05)</b>	<b>-0.12 (0.03)</b>	<b>-3.86***</b>
(12r) I insult people	4.15 (0.07)	0.02 (0.04)	0.61	4.37 (0.07)	-0.02 (0.04)	-0.58
(17) I sympathize with others' feelings	3.87 (0.07)	0.00 (0.03)	0.02	<b>4.43 (0.05)</b>	<b>-0.11 (0.03)</b>	<b>-3.65***</b>
(22r) I am not interested in others' problems	<b>3.90 (0.06)</b>	<b>-0.10 (0.04)</b>	<b>-2.47*</b>	<b>4.37 (0.05)</b>	<b>-0.12 (0.04)</b>	<b>-3.04**</b>
(27) I have a soft heart	3.89 (0.07)	-0.07 (0.04)	-1.92	<b>4.30 (0.06)</b>	<b>-0.08 (0.03)</b>	<b>-2.91**</b>
(32r) I am not really interested in others	3.96 (0.07)	-0.06 (0.04)	-1.36	<b>4.38 (0.06)</b>	<b>-0.11 (0.04)</b>	<b>-2.87**</b>
(37) I take time out for others	3.75 (0.06)	-0.04 (0.03)	-1.19	<b>4.14 (0.05)</b>	<b>-0.09 (0.03)</b>	<b>-2.67**</b>
(42) I feel others' emotions	<b>3.65 (0.07)</b>	<b>-0.08 (0.04)</b>	<b>-2.28*</b>	<b>4.16 (0.05)</b>	<b>-0.14 (0.03)</b>	<b>-4.29***</b>
(47) I make people feel at ease	3.70 (0.06)	-0.04 (0.03)	-1.37	3.79 (0.06)	-0.01 (0.03)	-0.30
<b>Conscientiousness</b>						
(3) I am always prepared	3.47 (0.06)	0.04 (0.03)	1.35	3.69 (0.06)	0.01 (0.04)	0.40
(8r) I leave my belongings around	<b>3.02 (0.09)</b>	<b>0.09 (0.04)</b>	<b>2.17*</b>	3.11 (0.09)	0.06 (0.04)	1.32

	Husbands			Wives		
	Intercept $\beta$ (SE)	Slope $\beta$ (SE)	t ratio	Intercept $\beta$ (SE)	Slope $\beta$ (SE)	t ratio
(13) I pay attention to details	3.81 (0.07)	0.03 (0.04)	0.73	4.17 (0.06)	-0.04 (0.03)	-1.35
(18r) I make a mess of things	<b>3.83 (0.07)</b>	<b>0.13 (0.04)</b>	<b>3.34**</b>	3.97 (0.07)	0.03 (0.04)	0.91
(23) I get chores done right away	2.79 (0.08)	0.06 (0.04)	1.36	<b>3.32 (0.08)</b>	<b>-0.10 (0.04)</b>	<b>-2.41*</b>
(28r) I often forget to put things back in their proper place	3.20 (0.09)	0.06 (0.04)	1.42	3.57 (0.09)	-0.02 (0.05)	-0.41
(33) I like order	3.79 (0.07)	-0.03 (0.03)	-1.00	<b>4.08 (0.07)</b>	<b>0.07 (0.03)</b>	<b>2.23*</b>
(38r) I shirk my duties	<b>3.90 (0.06)</b>	<b>0.11 (0.03)</b>	<b>3.44***</b>	<b>4.05 (0.06)</b>	<b>0.08 (0.03)</b>	<b>2.60*</b>
(43) I follow a schedule	3.51 (0.07)	-0.02 (0.04)	-0.49	3.92 (0.07)	-0.07 (0.04)	-1.90
(48) I am exacting in my work	3.77 (0.06)	0.00 (0.03)	0.12	3.89 (0.06)	-0.05 (0.04)	-1.31
<b>Neuroticism</b>						
(4) I get stressed out easily	<b>2.34 (0.09)</b>	<b>0.09 (0.03)</b>	<b>2.66**</b>	<b>3.45 (0.08)</b>	<b>-0.09 (0.04)</b>	<b>-2.10*</b>
(9r) I am relaxed most of the time	2.64 (0.07)	0.05 (0.04)	1.34	<b>2.64 (0.07)</b>	<b>0.11 (0.04)</b>	<b>2.81**</b>
(14) I worry about things	<b>3.05 (0.09)</b>	<b>-0.12 (0.04)</b>	<b>-2.80**</b>	<b>3.79 (0.08)</b>	<b>-0.12 (0.04)</b>	<b>-3.00**</b>
(19r) I seldom feel blue	2.35 (0.08)	0.04 (0.05)	0.88	2.83 (0.08)	-0.01 (0.05)	-0.22
(24) I am easily disturbed	2.36 (0.07)	0.00(0.04)	-0.09	2.76 (0.08)	-0.06 (0.04)	-1.37
(29) I get upset easily	2.23 (0.07)	-0.02 (0.04)	-0.43	<b>3.06 (0.08)</b>	<b>-0.12 (0.04)</b>	<b>-2.99**</b>
(34) I change my mind a lot	<b>2.44 (0.07)</b>	<b>-0.12 (0.04)</b>	<b>-3.33**</b>	<b>3.12 (0.08)</b>	<b>-0.14 (0.04)</b>	<b>-3.31**</b>
(39) I have frequent mood swings	2.05 (0.07)	-0.06 (0.03)	-1.90	2.77 (0.09)	-0.07 (0.04)	-1.70
(44) I get irritated easily	2.50 (0.08)	-0.05 (0.04)	-1.43	2.96 (0.08)	-0.04 (0.04)	-0.88
(49) I often feel blue	1.87 (0.07)	-0.01 (0.03)	-0.33	2.27 (0.07)	-0.06 (0.04)	-1.44
<b>Openness</b>						
(5) I have a rich vocabulary	3.58 (0.07)	0.00 (0.03)	0.02	3.51 (0.07)	-0.04 (0.03)	-1.25
(10r) I have difficulty understanding abstract ideas	4.28 (0.06)	-0.01 (0.03)	-0.22	3.90 (0.08)	0.02 (0.04)	0.41
(15) I have a vivid imagination	4.07 (0.07)	-0.05 (0.03)	-1.66	<b>4.02 (0.07)</b>	<b>-0.07 (0.03)</b>	<b>-2.08*</b>
(20r) I am not interested in abstract ideas	4.03 (0.07)	0.00 (0.04)	-0.01	<b>3.94 (0.07)</b>	<b>-0.13 (0.03)</b>	<b>-4.22***</b>
(25) I have excellent ideas	4.08 (0.06)	0.00 (0.03)	0.04	3.89 (0.05)	-0.02 (0.03)	-0.76
(30r) I do not have a good imagination	4.30 (0.060)	-0.04 (0.04)	-1.07	4.24 (0.07)	-0.05 (0.03)	-1.38
(35) I am quick to understand things	4.12 (0.05)	0.02 (0.03)	0.64	3.98 (0.07)	0.04 (0.03)	1.33
(40) I use difficult words	2.97 (0.09)	0.03 (0.04)	0.70	2.86 (0.08)	0.00 (0.03)	-0.12



	Husbands			Wives		
	Intercept $\beta$ (SE)	Slope $\beta$ (SE)	<i>t</i> ratio	Intercept $\beta$ (SE)	Slope $\beta$ (SE)	<i>t</i> ratio
(45) I spend time reflecting on things	<b>3.94 (0.06)</b>	<b>-0.13 (0.04)</b>	<b>-3.53***</b>	3.91 (0.07)	-0.04 (0.04)	-1.10
(50) I am full of ideas	4.13 (0.06)	-0.03 (0.03)	-0.89	<b>3.99 (0.06)</b>	<b>-0.09 (0.03)</b>	<b>-3.13**</b>

Notes. The number in parentheses indicates the item number from the 50-item IPP based on Goldberg (1992), available online from: [http://ippip.ori.org/new\\_ippip-50-item-scale.html](http://ippip.ori.org/new_ippip-50-item-scale.html). An *r* indicates that the item was reverse-scored. Items were rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Intercepts were significant  $p < .01$  because the lowest possible score was greater than zero, so *t* statistics are not reported for these terms.  $N = 169$  couples.  $df = 168$  for all analyses. Significant effects are in bold.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

From International Personality Item Pool: A Scientific Collaboratory for the Development of Advanced Measures of Personality Traits and Other Individual Differences (<http://ippip.ori.org/>). Internet Web Site.

**Table 3**  
Associations between Husbands' and Wives' Personality Intercepts and Slopes and Husbands' and Wives' Marital Satisfaction Trajectories

	Marital Satisfaction Intercept			Marital Satisfaction Linear Slope			Level 1 Residual Variance	Intercept/ Slope <i>r</i>
	$\beta$ (SE)	<i>t</i> ratio	Effect size <i>r</i>	Variance	$\beta$ (SE)	<i>t</i> ratio		
<b>Results for Husbands' Marital Satisfaction</b>								
Model 1: Extraversion								
Main effect	41.54 (0.38)	—	—	14.06**	-0.83 (0.19)	-4.32**	0.33	1.22
Husbands' E intercept	0.08 (0.05)	1.85	0.15	—	-0.01 (0.03)	-0.46	0.04	—
Wives' E intercept	0.04 (0.05)	0.90	0.07	—	0.01 (0.03)	0.24	0.02	—
Husbands' E slope	—	—	—	—	-0.04 (0.09)	-0.49	0.04	—
Wives' E slope	—	—	—	—	0.04 (0.09)	0.50	0.04	—
Model 2: Agreeableness								
Main effect	41.54 (0.38)	—	—	14.03**	-0.84 (0.19)	-4.36**	0.33	1.14
Husbands' A intercept	0.03 (0.06)	0.53	0.04	—	0.04 (0.03)	1.26	0.10	—
Wives' A intercept	<b>0.15 (0.07)</b>	<b>2.05*</b>	0.16	—	0.03 (0.05)	0.72	0.06	—
Husbands' A slope	—	—	—	—	-0.01 (0.08)	-0.15	0.01	—
Wives' A slope	—	—	—	—	0.09 (0.10)	0.93	0.08	—
Model 3: Conscientiousness								
Main effect	41.54 (0.36)	—	—	12.64**	-0.84 (0.19)	-4.38**	0.34	1.09
Husbands' C intercept	<b>0.24 (0.06)</b>	<b>3.96***</b>	0.30	—	0.00 (0.03)	0.07	0.01	—
Wives' C intercept	0.04 (0.06)	0.73	0.06	—	<b>0.06 (0.03)</b>	<b>1.98*</b>	0.16	—
Husbands' C slope	—	—	—	—	0.06 (0.09)	0.66	0.05	—
Wives' C slope	—	—	—	—	-0.01 (0.09)	-0.09	0.01	—
Model 4: Neuroticism								
Main effect	41.55 (0.36)	—	—	12.82**	-0.85 (0.19)	-4.55**	0.35	0.76
Husbands' N intercept	-0.08 (0.05)	-1.57	0.13	—	-0.02 (0.03)	-0.50	0.04	—
Wives' N intercept	<b>-0.16 (0.05)</b>	<b>-3.46***</b>	0.27	—	-0.02 (0.02)	-0.77	0.06	—
Husbands' N slope	—	—	—	—	-0.09 (0.07)	-1.24	0.10	—
Wives' N slope	—	—	—	—	<b>-0.21 (0.06)</b>	<b>-3.67***</b>	0.29	—

	Marital Satisfaction Intercept				Marital Satisfaction Linear Slope				Level 1 Residual Variance		Intercept/ Slope <i>r</i>
	$\beta$ (SE)	<i>t</i> ratio	Effect size <i>r</i>	Variance	$\beta$ (SE)	<i>t</i> ratio	Effect size <i>r</i>	Variance			
<b>Model 5: Openness</b>											
Main effect	41.54 (0.37)	—	—	13.81**	-0.83 (0.19)	-4.48**	0.34	0.88	10.45		0.73
Husbands' O intercept	0.06 (0.08)	0.83	0.07		<b>0.10 (0.03)</b>	<b>3.11**</b>	0.25				
Wives' O intercept	<b>0.15 (0.06)</b>	<b>2.36*</b>	0.19		-0.02 (0.04)	-0.56	0.05				
Husbands' O slope	—	—	—	—	-0.02 (0.11)	-0.14	0.01				
Wives' O slope	—	—	—	—	0.18 (0.10)	1.71	0.14				
<b>Results for Wives' Marital Satisfaction</b>											
<b>Model 1: Extraversion</b>											
Main effect	41.81 (0.37)	—	—	13.80**	-0.57 (0.17)	-3.27**	0.26	0.65	10.50		0.66
Husbands' E intercept	0.02 (0.04)	0.56	0.05		-0.02 (0.02)	-0.90	0.07				
Wives' E intercept	<b>0.10 (0.05)</b>	<b>2.08*</b>	0.17		0.02 (0.02)	0.77	0.06				
Husbands' E slope	—	—	—	—	-0.05 (0.07)	-0.73	0.06				
Wives' E slope	—	—	—	—	<b>0.20 (0.08)</b>	<b>2.40*</b>	0.19		10.53		0.63
<b>Model 2: Agreeableness</b>											
Main effect	41.81 (0.36)	—	—	13.41**	-0.58 (0.17)	-3.34**	0.26	0.54	10.53		0.63
Husbands' A intercept	-0.01 (0.05)	-0.17	0.01		0.00 (0.03)	0.00	0.00				
Wives' A intercept	<b>0.21 (0.08)</b>	<b>2.71**</b>	0.21		0.13 (0.08)	1.71	0.14				
Husbands' A slope	—	—	—	—	-0.05 (0.06)	-0.82	0.07				
Wives' A slope	—	—	—	—	<b>0.22 (0.10)</b>	<b>2.28*</b>	0.18		10.55		0.63
<b>Model 3: Conscientiousness</b>											
Main effect	41.81 (0.37)	—	—	13.44**	-0.57 (0.17)	-3.27**	0.26	0.53	10.55		0.63
Husbands' C intercept	0.13 (0.07)	1.86	0.15		0.04 (0.03)	1.21	0.10				
Wives' C intercept	0.09 (0.06)	1.56	0.13		<b>0.07 (0.03)</b>	<b>2.18*</b>	0.17				
Husbands' C slope	—	—	—	—	0.09 (0.06)	1.42	0.11				
Wives' C slope	—	—	—	—	0.09 (0.07)	1.30	0.11		10.54		0.87
<b>Model 4: Neuroticism</b>											
Main effect	41.81 (0.35)	—	—	12.21**	-0.58 (0.17)	-3.34**	0.26	0.43	10.54		0.87

	Marital Satisfaction Intercept				Marital Satisfaction Linear Slope				Level 1 Residual Variance		Intercept/ Slope <i>r</i>
	$\beta$ (SE)	<i>t</i> ratio	Effect size <i>r</i>	Variance	$\beta$ (SE)	<i>t</i> ratio	Effect size <i>r</i>	Variance			
Husbands' N intercept	-0.04 (0.05)	-0.75	0.06		0.00 (0.02)	-0.17	0.01				
Wives' N intercept	<b>-0.19 (0.05)</b>	<b>-3.64***</b>	0.28		-0.03 (0.02)	-1.46	0.12				
Husbands' N slope	—	—	—		0.01 (0.06)	0.24	0.02				
Wives' N slope	—	—	—		<b>-0.20 (0.05)</b>	<b>-4.33***</b>	0.33				
Model 5: Openness									10.45	0.73	
Main effect	41.81 (0.37)	—	—	13.88***	-0.57 (0.17)	-3.37***	0.26	0.42			
Husbands' O intercept	0.09 (0.06)	1.33	0.11		0.03 (0.04)	0.84	0.07				
Wives' O intercept	0.10 (0.08)	1.24	0.10		<b>0.09 (0.04)</b>	<b>2.23*</b>	0.18				
Husbands' O slope	—	—	—		-0.07 (0.06)	-1.17	0.09				
Wives' O slope	—	—	—		<b>0.33 (0.12)</b>	<b>2.85***</b>	0.23				

Notes. Intercepts were significant  $p < .01$  because the lowest possible score was greater than zero, so these statistics are not reported. Intercepts represent Time 1 and slopes represent the change from Time 1 to Time 3. Personality slopes were not included as predictors of satisfaction intercepts given that they occurred after this assessment. Husbands' and wives' personality parameters were entered simultaneously and were grand-mean centered. Significant effects of personality on marital satisfaction are in bold.  $N = 156$  couples.  $df = 153$  for all intercept terms and 151 for all slope terms. Effect size  $r = \sqrt{\beta^2 / (\beta^2 + df)}$ .

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

**Table 4**

Variance in Husbands' and Wives' Marital Satisfaction Slopes in No Predictor Models, Personality Intercept Predictor Models, and Personality Intercept and Slope Predictor Models

	Husbands' Satisfaction Slope		Wives' Satisfaction Slope	
	Variance	% Total Variance Explained	Variance	% Total Variance Explained
<b>Results for Extraversion</b>				
Model 1: No predictors	1.24	—	0.74	—
Model 2: Intercept predictors	1.24	0%	0.73	1%
Model 3: Intercept and slope predictors	1.23	1%	0.65	12%
<b>Results for Agreeableness</b>				
Model 1: No predictors	1.24	—	0.74	—
Model 2: Intercept predictors	1.22	2%	0.65	12%
Model 3: Intercept and slope predictors	1.14	8%	0.54	27%
<b>Results for Conscientiousness</b>				
Model 1: No predictors	1.24	—	0.74	—
Model 2: Intercept predictors	1.12	10%	0.58	22%
Model 3: Intercept and slope predictors	1.09	12%	0.54	27%
<b>Results for Neuroticism</b>				
Model 1: No predictors	1.24	—	0.74	—
Model 2: Intercept predictors	1.24	0%	0.72	3%
Model 3: Intercept and slope predictors	0.76	39%	0.43	42%
<b>Results for Openness</b>				
Model 1: No predictors	1.24	—	0.74	—
Model 2: Intercept predictors	1.05	15%	0.63	15%
Model 3: Intercept and slope predictors	0.88	29%	0.42	43%

Notes. Percent total variance explained represents the amount of variance explained by adding the predictors compared to the no predictor (empty) model [e.g., (no predictor model variance – intercept predictor model variance)/no predictor model variance].