THE EFFECT OF OBLIGATION ON RELATIONSHIPS AND WELL-BEING OVER TIME

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ABSTRACT

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This study examines the effect of obligation on middle-aged adults' relationships and well-being over time. Previous research has offered mixed evidence on whether a sense of obligation benefits or harms individuals and their relationships. Given that few studies are prospective and look at diverse close relationships, I used longitudinal data spanning 18 years (Brim, Ryff, & Kessler, 2004) to model whether two types of obligation predict intra- and interindividual changes in relational and individual well-being. Latent growth curve analyses indicated that intra- and interpersonal well-being increased over time for middle-aged adults. Lighter day-to-day obligation predicted higher levels of intra and interpersonal well-being at the first time point, while substantive obligation generally predicted lower levels of well-being at the first time point. Mostly, both types of obligation did not predict *change* in intra- and interpersonal well-being over time, except light obligation was associated with slower increases in life satisfaction and substantive obligation predicted slower increases in friend support. These findings together suggest that understanding people's obligations toward close others is important not only for their own well-being but also their relationships in adulthood.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

We feel a sense of obligation to many people in our lives—our spouses, our families, and our friends. This obligation is one of the many things that distinguishes close relationships from relationships with strangers. However, obligation can often be a burden and a source of great stress to the individual as well. Is obligation ultimately good for us and our relationships? Previous research has offered limited evidence on whether a sense of obligation improves or hinders relationships over time and has focused on adolescents and emerging adults or older caregivers. In the current study of approximately 7,000 middle-aged adults, I examine the effects of obligation on close relationships and on the well-being of individuals across 18 years.

Researchers sometimes describe obligation as the *glue* that connects individuals through duties and a sense of responsibility in their relationships (Stein, 1992). In many relationships, obligation is viewed as a sense of duty to reciprocate—to equally give and take from a relationship (Neufeld & Harrison, 1995; Stuifbergen & Van Delden, 2011). Voluntary relationships, such as friendships, are often characterized by this obligation to exchange resources and assistance; in a qualitative study on reciprocity and caregiving, one respondent highlighted the importance of reciprocity in close relationships: “If someone is doing all the giving and somebody is doing all the taking, there is no relationship. That’s like a parasite” (Neufeld & Harrison, 1995, p. 354). Other respondents likewise agreed that they pursued and maintained relationships with friends only when there was a sense of reciprocity.

However, family relationships are largely involuntary, meaning people do not get to choose who their parents and siblings are, and involuntary relationships seem to have different expectations for reciprocity. For instance, in parent-child relationships, although parents often provide a great deal of support to their children, the extent to which children need to reciprocate

as adults is oftentimes unclear and unexpected (Stuifbergen & Van Delden, 2011). In the field of psychology, researchers have long studied the degree to which close relationships reflect reciprocal rules (i.e., exchange; Trivers, 1971) or unfettered giving and receiving (i.e., communal; Clark & Mills, 1979).

While obligation reflects reciprocity norms in voluntary relationships, filial obligation may arise from the sense of belonging and connectedness of two related individuals (see Stuifbergen & Van Delden, 2011for a review on theories of filial obligation). Even people who strongly endorsed reciprocity in relationships expressed unique ties with family members that allow them to tolerate a lack of reciprocity for an extended period of time (e.g. caregiving situations; Neufeld & Harrison, 1995). With or without reciprocity, individuals' sense of obligation frequently seems to be the glue that holds some of their relationships together. Yet, it also seems that *too much* obligation can have adverse effects for individuals and their close relationships (e.g. Tedgård, Råstam, & Wirtberg, 2018). A survey of the existing literature provides a mixed portrait of the role of obligation on both individuals' well-being and the quality of their relationships. In the sections below, I review evidence for whether a sense of obligation is beneficial or harmful for individuals and their relationships.

The Benefits of Obligation

Some studies suggest that family obligation benefits both relationships and the individuals within them. Many researchers studied adolescents and their relationships with their families in different contexts and cultures (Macfie, Brumariu, & Lyons-Ruth, 2015). For example, Fuligni, Tseng, and Lam (1999) found that a sense of obligation in relationships during adolescence is related to positive relationship quality with friends and family. They measured family obligation in 10th and 12th graders from diverse backgrounds by assessing the students'

views on how much they currently assist (e.g., helping and spending time), respect, and expect to provide support to their families in adulthood. Adolescents with a higher sense of obligation felt closer to their parents and sought more advice from family members. Adolescents with stronger familial obligation also had more positive *peer relationships*—seeking more advice and spending more time with their peers. Furthermore, having a strong sense of obligation seemed to help adolescents connect with friends who shared similar values and beliefs regarding their family.

Beyond improving relationships, family obligation has a series of other benefits. In the aforementioned study of adolescents, those with stronger family obligation reported higher academic motivation, more time studying and more ambitious dreams for their future (Fuligni et al., 1999). These ancillary associations between obligation and non-relationship outcomes can lead to enhanced relationship quality. For instance, academic success can be one way for adolescents to fulfill their obligation toward their families assuming it allows adolescents to achieve sustainable careers, and further provide for their families in the future and show respect for their parents (Fuligni et al., 1999; van Geel & Vedder, 2011). Family obligation is also associated with many benefits, including but not limited to better school adjustment, fewer behavioral problems (van Geel & Vedder, 2011), and higher life satisfaction (Hooper, Tomek, Bond, & Reif, 2015; King & Ganotice Jr, 2015). The sense of duty and responsibility likely motivates adolescents to obey their parents, leading to fewer behavioral problems and better school adjustment (van Geel & Vedder, 2011). Furthermore, in a study of Chinese-American adolescents, those who reported higher family obligation also reported fewer depressive symptoms 2 years later (Juang & Cookston, 2009). This suggested that even though obligation decreases in adolescence, its protective effects *persisted* over time. Thus, obligation was shown to have multiple benefits for adolescents.

Even into adulthood, obligation continues to exert a positive influence on relational commitment. In spousal relationships, obligation is intertwined with commitment; such that feeling their partner is highly obligated is associated with one's own commitment (Nock, 1995). Greater investment and commitment predict better relationship functioning and foster relationship maintenance behaviors, ultimately helping relationships last (Arriaga & Agnew, 2001).

The association between obligation and commitment can also be extended to organizational settings. Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades (2001) found that a sense of obligation to one's organization explains the effect of perceived organizational support on one's own commitment to the organization and job performance. When employees receive support from an organization, they believe they should care about the growth and goals of that organization. This feeling of investment then may create a sense of emotional attachment to an organization. Altogether, there are many examples of obligation enhancing relationships between not only people but also organizations.

The Drawbacks of Obligation

Although obligation benefits individuals and their relationships in multiple ways, it can also be a burden, creating strain for individuals and their relationships. This burden can appear as early as in childhood in the form of *parentification*. Parentification is when children assume too much responsibility in a family and carry out roles traditionally meant for adults, (Byng-Hall, 2002; Hooper et al., 2015; Nuttall & Valentino, 2017). Holding developmentally inappropriate emotional and/or instrumental responsibilities may lead children to assume their roles in relationships are about giving care rather than receiving care and form insecure attachment relationships with caregivers (Byng-Hall, 2002). Even studies that show positive outcomes of

obligation also find that obligation can be simultaneously associated with a host of negative outcomes. For instance, although Fuligni et al. (1999) found multiple positive effects of obligation on relationships and academic motivation, they also found that these same high-obligation students received some of the lowest grades at school compared to the other groups, even with higher levels of academic motivation. The authors speculate that *too much* obligation may be inappropriate and harmful in the case of academic achievement, possibly because efforts to fulfill other family responsibilities limit adolescents from focusing on school work. In fact, Hooper et al. (2015) also found that parentification experiences as children were associated with greater depression and lower well-being in college students, again showing that too much obligation can be harmful.

We learn from the adult caregiving literature that a sense of obligation is particularly strenuous and stressful for adults serving as caregivers to their parents, partners, or children. Around the world, informal care—as opposed to institutional care—is carried out by spouses and adult children, frequently out of obligation (Butler, Turner, Kaye, Ruffin, & Downey, 2005; Australian Bureau of Statistics, 2008 as cited in Cash, Hodgkin, & Warburton, 2013; Cicirelli, 1993). Informal caregiving is quite common in some regions, and the prolonged responsibilities can be psychologically strenuous for caregivers. Some estimates suggest that up to half of adult caregivers report significant levels of burden and depression, whether it be caring for their spouses or parents (Butler et al., 2005). Because caregiver obligation is associated with a greater sense of burden and depression (Cicirelli, 1993; Stein, 1992 in men), and depression is a risk factor for lower relationship satisfaction (Whisman, Uebelacker, & Weinstock, 2004), it is possible that burdensome obligation could also negatively affect relationships through increases in stress and depression. However, situations like caregiving and parentification contain unique

stressors. Less clear is how feelings of obligation are related to important outcomes for individuals in less strenuous situations.

Taken together, previous research suggests that while obligation is generally associated with benefits, obligation may also be associated with negative outcomes for individuals. However, most studies focus on the effect of obligation on individual functioning, rather than its effects on relationships (see Fuligni et al., 1999, for a rare exception). The current study extends previous research to examine whether obligation is beneficial or harmful for a variety of relationships in people's lives. Further, given the few prospective tests of the role of obligation on relationship outcomes across the lifespan, there has been little attention paid to how obligation influences 1) our relationships after adolescence, when people are more autonomous in how they spend their time and invest in their relationships and developmentally able to perform those responsibilities and, 2) other close relationships beyond parent-child relationships (e.g., friends and partners). I addressed these gaps in the current study by employing a longitudinal sample of middle-aged adults and sampling a wide range of relationships to study how obligation affects relationships and the people within them.

THE CURRENT STUDY

The goal of this study is to investigate the longitudinal effect of obligation on intrapersonal and interpersonal well-being over time using a large panel study of midlife adults in the United States (Brim et al., 2004). To accurately examine structural relations between variables. it was important to first examine the quality and reliability (i.e., their factor structure) of the measures used. Therefore, the current study undertakes two efforts. The first part of the study describes factor analyses on the main construct of interest—obligation—and the second part of the study shows the structural analyses (i.e., how obligation affects outcome variables) using a structural equations modeling framework.

METHOD

Participants

Participants were from the National Survey of Midlife Development in the United States (MIDUS; Brim et al., 2004). The first wave of the MIDUS study (MIDUS I, 1995-1996) consisted of 7,108 English-speaking adults in the U.S. (M_{age} = 46.38, *SD* = 13.00, range: 20-75 51.1% Female; 90.7% White, 5.2% Black/African American, 4.1% other race/ethnicities, $Mdn_{Education}$ = 1-2 years of college). Regarding the follow up assessments, wave two (MIDUS II, 2004-2005) retained 69.82% (n = 4,963) from the first wave, and wave three (MIDUS III, 2013-2014) retained 46.34% of MIDUS I (66.37% of MIDUS II; n = 3,294). Compared to participants with only one wave of data, those with two or more waves were more educated (*d* = .35), received more support from their partners (*d* = .17) and other family members (*d* = .14), and received less strain from partners (*d* = .14), family (*d* = .07) and friends (*d* = .08). Those who had longitudinal data and those who did not were otherwise comparable on other variables (e.g., obligation; *p* = .10).

Measures

Obligation. Obligation was assessed once at the first wave of data collection (MIDUS I). Participants responded to eight statements or hypothetical situations to which participants indicated how obligated they would feel (e.g. “To call, write, or visit your adult children on a regular basis,” “To take a friend into your home who could not afford to live alone”; see Table 1 for a full list of items). Among the eight total statements, three asked about children, three about friends, one about parents, and one about spouses. Participants rated how much obligation they would feel in each situation on a scale of 0 (*no obligation*) to 10 (*very great obligation*). Ratings for eight situations have generally been summed or averaged to yield a normative obligation

score (α = .82). Other times, a simplified four-item version was used (Grzywacz & Marks, 1999; α = .79).

Life Satisfaction. Satisfaction with life was assessed at all three time points using five items that assess satisfaction in different domains (α = .67; Prenda & Lachman, 2001). Each item asked participants to rate their overall satisfaction with respect to their life, work, health, and relationship with spouse/partner (if applicable), and relationship with children (if applicable). After computing an average relationship satisfaction score from ratings of relationships with spouse/partner and children, the four ratings were averaged to calculate an overall life satisfaction score which ranged from 0 (*the worst possible*) to 10 (*the best possible*).

Depression. Depression was assessed at all three time points (Wang, Berglund, & Kessler, 2000). Participants answered yes or no to two seven-item subscales: depressed affect and anhedonia. A sample item of depressed affect is "During two weeks in past 12 months, when you felt sad, blue, or depressed, did you lose your appetite?" A sample item of anhedonia is "During two weeks in past 12 months, when you lost interest in most things, did you feel more tired out or low on energy than is usual." After adding the number of "yes" responses to the items, the two subscales were averaged. Therefore, the final measure of depression ranged from 0 to 7.

Support and Strain from Close Relationships. Measures of social support and strain from spouses, family members, and friends were used to capture the quality of relationship with those individuals (Schuster, Kessler, & Aseltine, 1990; Walen & Lachman, 2000). Support and strain were assessed at all three waves. Six questions assessed the amount of support participants perceived from their spouse/ partner (e.g. "How much does he or she appreciate you?"); six questions assessed the amount of strain participants perceived from spouse/partner (e.g. "How

often does he or she make you feel tense?"). Eight questions assessed how much support participants perceived from family members and friends (e.g. "How much can you rely on them for help if you have a serious problem?"; four questions for family members and four questions for friends). Eight questions assessed how much strain participants perceived from family members and friends (e.g. "How often do they criticize you?"; four questions for family members and four questions for friends). Questions were skipped if participants thought they were not relevant to them (e.g., single individuals did not answer questions about spouses/partners).

Participants responded to each question on a scale ranging from 1(*a lot*) to 4(*not at all*). All responses were reverse-scored and then averaged to yield composites for spousal support (α_{t1} = .86), spousal strain (α_{t1} = .81), family support (α_{t1} = .82), family strain (α_{t1} = .80), friend support (α_{t1} = .88) and friend strain (α_{t1} = .79; all alphas at MIDUS I). Higher scores indicate greater support and strain. Support and strain were examined as distinct scales because previous factor analyses suggested that they were distinct constructs (Chopik, 2017).

Affect. Positive and negative affect at the first wave were used in the context of the factor analyses to establish some discriminant validity for the obligation measure should separable components were identified. If there were multiple factors that were differentially related to adjustment, it was expected that they might at least differ on predicting positive/negative affect reported in the past 30 days. A total of twelve items measured positive and negative affect; six items were positive (e.g. in good spirits, satisfied) and six items were negative (e.g. nervous, so sad nothing could cheer you up). Participants reported how often they had felt each of the twelve emotions in the past 30 days, on a scale from 1(*all of the time*) to 5(n*one of the time*). All responses were reverse-scored so that higher scores indicate more of the certain affect.

Responses were then averaged to yield composites for positive affect (α = .91) and negative affect (α = .87).

Data Analytic Strategy

Factor Analysis of Obligation. MIDUS measured obligation as a unidimensional construct, summing or averaging all items to yield a single composite score. However, this may not be the best approach as the measure (a) asks about situations that reflect different levels of obligation and sacrifice and (b) assesses obligations to different people—spouses, children, parents and friends. Therefore, it might be the case that there is more than one latent factor being represented by the measure, such that items measuring obligation towards a spouse predict relationship quality with one's spouse but not relationship quality with one's friends. Using a combined score would be misleading in such cases.

Further, using unreliable measures would be problematic for the following structural analyses. I use goodness-of-fit indices to evaluate whether and how obligation was associated with initial levels and changes in intra- and interpersonal well-being. However, many common fit indices (e.g. RMSEA) evaluate the fit of the entire model. The fit of the measurement portion of the model to the data (which generally takes up more degrees of freedom in the model) may overpower the fit of the structural portion of the model (Lance, Beck, Fan, & Carter, 2016). In other words, a poor measure may hide a good structure and the structural results may be misleading or simply uninterpretable or vice versa. In order to ensure the following structural analyses are valid, it is important to first evaluate the psychometric properties of any multiple-item testing instrument. Factor analysis is a common procedure to assess whether multiple items in a measure are reasonable indicators of the underlying construct (Brown, 2014; Floyd & Widaman, 1995). Therefore, I conduct exploratory and confirmatory factor analyses (EFA/CFA)

to test whether obligation can be treated as a unidimensional measure before proceeding with examining predictive associations.

Analyses were conducted in Mplus 8.1 (Muthén & Muthén, 2017) using full information maximum likelihood estimation to handle missing data. Factor models were identified by constraining factor variance to 1. Model fit was assessed using multiple goodness-of-fit indices: 1) non-significant χ^2 (however, this metric is often overly sensitive when examined in large samples like ours; Bentler & Bonett, 1980), 2) comparative fit index (CFI > .95; Hu & Bentler, 1999), 3) root mean square error of approximation (RMSEA confidence interval < .08 fair fit; MacCallum, Browne, & Sugawara, 1996), 4) Tucker-Lewis index (TLI>.95), and 5) standardized root mean squared residual (SRMR <.08; Hu & Bentler, 1999). A one-factor confirmatory factor analysis (CFA) tested the eight-item obligation measure, given that previous research operationalized it as a unidimensional measure.

Structural Analyses

In the second part of the study, I examine a series of unconditional and conditional models to model intra- and interindividual changes in relationship quality (operationalized as support and strain from relationships) and individual well-being (life satisfaction and depression) predicted by obligation (whose factor structure was defined in the first part of the study). Participants' obligation to their close others was assessed at the first wave of data collection. The amount of support/strain from various close relationships (spouse/partner, other family members, and friends), life satisfaction and depression were assessed three times across eighteen years.

Latent growth curve modeling techniques were used to investigate changes in an individual and relational well-being across eighteen years. This approach allows modeling of both intra- and interindividual changes in the variables of interest (Baltes & Nesselroade, 1979;

Grimm & Ram, 2012; see Nuttall, Valentino, Wang, Lefever, & Borkowski, 2015, for a similar approach). First, I tested a series of competing unconditional models to determine overall patterns of change over time in each of the outcomes—life satisfaction, depression, and relationship specific support/strain. Both an intercept-only and a linear model were tested, and I retained the model that best described the data (using the aforementioned criteria and the χ^2 difference test). The first model was an intercept-only model with three parameters (intercept mean, intercept variance, and residual variance). The second model was a linear model with six parameters (intercept and slope means, intercept and slope variances and their covariance, and a residual variance). Life satisfaction, depression, support and strain were centered at the first wave of data collection and scaled so that estimated intercepts could be interpreted as an average score at wave one and estimated slopes interpreted as an average unit change per wave (MIDUS I = 0, MIDUS II = 1, MIDUS III = 2).

Next, I tested eight conditional models (for each outcome variable: life satisfaction, depression, three relationship-specific support measures and three relationship-specific strain measures) where the intercepts and slopes of each outcome were modeled as conditional on obligation. Since obligation was measured only once, it was treated as a time-invariant predictor.

RESULTS

Factor Analysis of Obligation

Descriptive statistics of study variables related to the factor analyses (e.g., means of the obligation items) are presented in Table 3. A total of 5446 participants in the sample provided full or partial data on the obligation measure. The one-factor confirmatory factory analysis (CFA) suggested that a one-factor solution was not appropriate for this measure. Model fit was poor (Table 2); no model fit indices reached the assessment criteria (SRMR was on the edge), and standardized residuals suggested a systematic pattern of misfit[1].

To follow up examining the factor structure of the measure, I conducted an exploratory factor analysis (EFA; Brown, 2014). First, the entire sample was randomly split into two subsamples in order to explore the factor structure (EFA) in one sample and test/confirm a final factor solution (CFA) in a separate sample based on the final EFA solution. Since the measure asked questions about four types of relationships, it seemed reasonable that there could be up to four underlying factors each characterizing a different type of relationship. However, two of the relationships (with parents and spouses) each had only one item associated with it, while factor analyses require at least three indicators for each factor (T. A. Brown, 2014). Therefore, the present eight-item measure calls for a comparison between a one-factor solution and a two-factor solution (to allow for the minimum number of indicators for each factor).

EFA suggested the two-factor solution was the best way to proceed. The eigenvalues suggested a two-factor solution as indicated by two eigenvalues (3.65 and 1.21) greater than 1,

[1] The systematic misfit appeared to originate from model parameters underestimating the association between particular obligation items but overestimating those items and other items (e.g. the association between 1 and 2 was underestimated while associations between obligation items 1 and 3, and 2 and 3 were overestimated)

and model fit indices were acceptable (see Table 2 for all indices)[2]. Geomin factor loadings for this two-factor solution are presented in Table 3. The factor loadings for the two-factor solution showed that all items, except item 5, loaded at least moderately on one of the factors (range: .38-.96). Items 1, 2, 4, and 7 loaded on one factor characterized by situations that require lighter, day-to-day obligations toward family members (children, spouse or parents). Items 3, 6 and 8 loaded on another factor characterized by situations that call for more substantive caregiving toward friends. Item 5 moderately cross-loaded on both factors (.39 and .45). This was reasonable given that the item is about substantive caregiving for adult children, which may have overlapped between one factor that tapped into family-type relationships and another factor that tapped into substantive caregiving. Due to the conceptual overlap and the cross-loadings item 5 was excluded for future analyses.

After excluding item 5, an EFA was rerun on the seven-item obligation measure in the same sample following recommendations by Brown (2014). Model fit improved, and the two-factor solution was retained. I then used a CFA on the second random subsample to replicate the final EFA solution. Results indicated good/fair fit using CFI and SRMR, and approaching fair fit using other indices (see Table 2). Therefore, the two-factor solution (substantive (α = .98) and light (α = .99) obligation) excluding item 5 was selected as the final factor structure.[3]

Since not all fit indices indicated good fit, the factor analyses were further extended using exploratory structural equation modeling to examine whether substantive obligation and light

[2] Although a three-factor solution also fit the data well, 1) interpretation of eigenvalues did not support a three factor solution and 2) factor loadings for the three factor solution were not interpretable because the loadings patterns were weak (i.e. one factor had only one indicator strongly loading on it (loading =.61)) (see T. A. Brown, 2014 for evaluating the quality of factor solutions).

[3] A two-factor CFA was tested once more on the full sample as a final confirmation following T. A. Brown (2014). Model fit indices showed similar or expected (larger $\chi 2$ value for the full sample; Bentler & Bonett, 1980) results compared to the two-factor CFA on the split sample.

obligation differentially predicted outcomes. Positive and negative affect at time 1 (MIDUS I) were chosen as outcomes, because they are likely to be associated with obligation (Telzer & Fuligni, 2009) and extensive research suggested that they are separate constructs, allowing us to see how two factors predicted different outcomes (e.g. Diener & Emmons, 1984). Substantive obligation and light obligation were allowed to covary; positive and negative affect were also allowed to covary. Fit indices indicated good fit (χ^2 = 838.09, *df* = 23, *p* <.001, RMSEA = .08 [.076,.085], CFI = .94, TLI = .91, SRMR = .04). Results showed that light obligation toward family members predicted more positive affect (*b* = .11, *p* <.001) and less negative affect (*b* = -.11, *p* <.001). Substantive obligation toward friends predicted more negative affect (*b* =.05, *p* <.001) but was not significantly related to positive affect (*b* = .01, *p* > .51; see Figure 1 for a path diagram with standardized coefficients). This differential predictive power of light obligation and substantive obligation suggested that two factors of obligation are different both with respect to their properties (as ascertained in the factor analyses) and in potentially predicting outcomes differently, which I return to in my conditional model analyses.

Unconditional Models of Individual Adjustment

Means, standard deviations and correlations among variables pertaining to the structural analyses are presented in Table 4. Table 5 presents model fit indices for eight unconditional latent growth curve models (individual adjustment and relationship quality for each relationship) and results of the χ^2 difference tests between intercept-only and linear models.

Life Satisfaction. Model fit for the intercept-only model and linear model were both acceptable, but the linear model better described the data. Although the estimated average linear rate of change was not significantly different from 0 (*b* = .007, *SE* = .011, *p* =.53, *β* =.020), the estimated variation in the slopes, .130 (*SE* =.016, *p* <.001), was different from 0. This suggests

that there were individual differences in how life satisfaction changed across the 18 years of the study. Further, 15.58% of within-person variation in life satisfaction is explained by adding the slope parameter compared to the intercept only model. Therefore, the linear model was selected as the final model.

Depression. The intercept-only model fit poorly according to multiple indices. However, the linear model fit well and significantly better than the intercept-only model. On average, depression decreased by .087 per wave (*SE* = .169, $p < .001$, β = -.211). This slope of depression also significantly varied by .169 (*SE* = .038, $p < .001$), highlighting individual differences in changes in depression over time.

Unconditional Models of Relationship Quality

The linear models fit significantly better than intercept-only models for all relationship variables and hence were selected as the final models. In short, support in each relationship tended to increase over time; strain in each relationship tended to decrease over time; there were significant individual differences in the rate of change in each facet of relationship quality.

Family Relationships. On average, family support increased .035 per wave (*SE* = .022, $p < .001$, β =.234) and the rate of increase significantly varied across individuals by .022 (*SE* = .003, $p < .001$). Family strain decreased on average .076 per wave (*SE* = .006, $p < .001$, β = -.483), and the slope varied by .025 (*SE* = .004, $p < .001$).

Partner Relationships. On average, partner support increased .014 per wave (*SE* = .006, $p = .02$, β = .084) and varied across individuals by .027 (*SE* = .003, $p < .001$). Partner strain on average, decreased .051 per wave (*SE* = .006, $p < .001$, β = -.300), and the slope significantly varied by .029 (*SE* = .004, $p <$. 001).

Relationships with Friends. On average, friend support increased .027 per wave (*SE*

= .006, $p < .001$, $\beta = .169$) and the rate of increase varied by .025 (*SE* = .004, $p < .001$). Friend strain on average, decreased .101 per wave (*SE* = .005, $p < .001$, $\beta = -.875$), and the rate of decrease varied by .013 (*SE* = .003, $p < .001$).

Conditional Models of Individual Adjustment

After selecting linear latent growth curve models of life satisfaction and depression, two factors of obligation were added as predictors of life satisfaction and depression. All path coefficient estimates, standard errors, and *p*-values are presented in Table 6. Figure 2 presents a generic conceptual path diagram that applies to all individual adjustment outcomes.

Life Satisfaction. The life satisfaction model showed good fit: $\chi^2 = 994.509$, $df = 33$, $p < .001$, CFI = .940, RMSEA = .067, TLI = .918, SRMR = .040. Light obligation was associated with greater life satisfaction at the first wave (i.e. intercept). Substantive obligation was associated with lower life satisfaction at the first wave. More light obligation was associated with a smaller increase in life satisfaction over time, but obligation was otherwise not significantly related to changes in life satisfaction.

Depression. The depression model showed good fit: $\chi^2 = 1001.209$, $df = 33$, $p < .001$ CFI = .931, RMSEA = .064, TLI = .906, SRMR = .040. Light obligation was associated with less depression at the first wave (i.e. intercept). Substantive obligation was associated greater depression at the first wave. Both factors of obligation were unrelated to changes in depression.

Conditional Models of Relationship Quality

Linear models were selected as the model for the relationship quality measures predicted by two factors of obligation. All path coefficient estimates, standard errors and *p*-values for conditional models predicting relationship quality are presented in Table 6. Figure 2 presents a generic path diagram that applies to all relationship outcomes.

Family Relationships. The family support model showed good fit: $\chi^2 = 1134.107$, *df* = 33, *p* <.001 CFI = .930, RMSEA = .072, TLI = .905, SRMR = .042. The family strain model also showed good fit: $\chi^2 = 984.934$, *df* = 33, *p* <.001 CFI = .937, RMSEA = .067, TLI = .915, SRMR = .040. Light obligation only affected the intercepts; higher levels of light obligation were associated with more support and less strain in family relationships at the first wave. Substantive obligation was only associated with more family strain at the first wave (i.e., the intercept of strain).

Partner Relationships. The partner support model showed acceptable fit: $\chi^2 = 1237.894$, *df* = 33, *p* <.001 CFI = .919, RMSEA = .076, TLI = .890, SRMR = .064. The partner strain model also showed acceptable fit: $\chi^2 = 1110.340$, *df* = 33, *p* <.001 CFI = .929, RMSEA = .072, TLI = .904, SRMR = .050. Obligation affected partner support/strain in an almost identical way as it affected family support/strain. Light obligation only affected the intercepts; light obligation was associated with more support and less strain at the start of data collection. Substantive obligation was associated with lower partner support at the start of data collection but unrelated to levels of partner strain or changes in support/strain over time.

Relationships with Friends. The friend support model showed good fit: $\chi^2 = 1007.628$, *df* = 33, *p* <.001, CFI = .938, RMSEA = .068, TLI = .915, SRMR = .046. The friend strain model also showed good fit: $\chi^2 = 953.978$, *df* = 33, *p* <.001 CFI = .937, RMSEA = .066, TLI = .915, SRMR = .041. Light obligation was associated with more support and less strain initially. Interestingly, substantive obligation predicted more friend strain *and* support initially. Further, substantive obligation was associated with the slope, such that more substantive obligation predicted smaller increases in friend support over time. Obligation was otherwise unrelated to

changes in friend relationships over time.[4]

Summary of Results

Both intra- and interpersonal well-being increased over the 18-year study; participants increased in life satisfaction, decreased in depression, while support with each relationship increased, and strain with each relationship declined. The light obligation factor was generally associated with positive outcomes—people with higher levels of light obligation reported greater life satisfaction, lower depression, and more support/less strain from their families, spouses, and friends at the first time point. The substantive obligation factor was generally associated with negative outcomes—people with higher levels of substantive obligation reported lower life satisfaction, greater depression, less support (from their partners), and more strain (from their families and friends). Obligation was generally unrelated to *changes* in intra- and interpersonal well-being over time, except light obligation predicted slower increases in life satisfaction and substantive obligation predicted slower increases in friend support.

[4] In a series of supplementary analyses, I examined linear age-based growth models (eight unconditional and eight conditional models) because parameter estimates may be biased when using waves as the time metric (Coulombe, Selig, & Delaney, 2016). I used the definition variable approach, where changes are tracked against age at each wave (Grimm, Ram, & Estabrook, 2016). Age was centered at the youngest age at the first time point (age 20). These models showed slightly different results. Most slope variances across unconditional models were no longer significant, and only one type of obligation significantly predicted the intercept for a certain outcome. For example, the estimated average linear slope of life satisfaction was significantly different from 0 (b = .006, SE = .001, p < .001), but there was no significant variance in the slopes (b < .001, SE < .001, p =.56). Nevertheless, light obligation was still associated with greater life satisfaction at the youngest age (i.e. intercept; b = .343, SE = .080, p < .001), but light and substantive obligation were otherwise unrelated to intercepts and slopes in life satisfaction. Due to issues with convergence in some of the models (25% of the models did not converge), it was difficult to get a comprehensive understanding of the effects of light and substantive obligation. Therefore, I do not devote more space to interpreting these results.

DISCUSSION

The current study examined the associations between substantive obligation on intra- and interpersonal well-being and light obligation on intra- and interpersonal well-being across 18 years of adulthood. I conducted a series of factor analyses on the obligation measure, which revealed that the measure is more complex that is previously understood. Instead of being a unidimensional measure, there were two underlying factors. Light obligation involved arguably easier day-to-day activities (e.g. calling parents regularly). Substantive obligation involved strong commitment that would create long-lasting changes to the individual's life (e.g. taking in a child of a friend). These two factors differentially predicted individuals' intra- and interpersonal well-being. While light obligation benefitted people and their relationships, substantive obligation was associated with more negative outcomes for people and their relationships.

Do Intra- and Interpersonal Well-being Change over Time?

Both intra- and interpersonal well-being increased over the 18-year time period. Similar to previous work on changes in life satisfaction (Baird, Lucas, & Donnellan, 2010; Gana, Bailly, Saada, Joulain, & Alaphilippe, 2012) and depression over time (Chopik & Edelstein, 2018), the current study also found that life satisfaction increased and depression decreased. Unlike individual well-being variables, support and strain from relationships have not received as much attention as outcome variables (see Walen & Lachman, 2000 for a study that used support and strain as predictors) and with respect to whether and how they change over time, particularly among middle-aged adults. The current study found that across adulthood, support increased and strain decreased across all relationships. These results are consistent with other research on older adults experiencing more positive emotions and relationships because they optimize positive interpersonal exchanges by avoiding conflicts, improving in social expertise and experience, and

affiliating with people who treat them more positively (Carstensen, Isaacowitz, & Charles, 1999; Luong, Charles, & Fingerman, 2011). Although people's lives generally improved over time, people also differed in their levels and changes of well-being, and obligation largely predicted differences in levels at the first wave.

Effects of Obligation

Previous research on obligation showed many benefits of obligation for adolescents including better school adjustment, life satisfaction, and higher quality family relationships (Fuligni et al., 1999; Hooper et al., 2015; van Geel & Vedder, 2011). However, obligation was not uniformly positive for individuals. Research often finds a "sweet spot" of obligation, meaning that both too much or too little render negative outcomes in adolescents (Fuligni et al., 1999). When people (e.g. parentified children or caregiving adults) feel too obligated to carry out responsibilities beyond their capabilities, obligation is associated with lower well-being (Cicirelli, 1993; Hooper et al., 2015).

The current study suggests a more nuanced view of how obligation affects adults' individual well-being. Light obligation predicted higher levels of life satisfaction and lower levels of depression; substantive obligation predicted lower levels of life satisfaction and higher levels of depression. In other words, light obligation was associated with positive outcomes while substantive obligation was associated with more negative outcomes. The current results might explain why some studies have found curvilinear effects of obligation when they did not separate obligation into distinctive types (Nuttall, Zhang, Valentino, & Borkowski, 2019).

Why Is Light Obligation Associated with Positive Outcomes? Why might light obligation render positive outcomes even at higher levels? Light obligation might enrich relationships and promote well-being by inducing positive emotions within and between

individuals. Regulatory focus theory suggests people feel certain positive emotions, such as calmness, when they expect to meet their obligations (Higgins, 1997). Looking more broadly, people find prosociality and giving in general to be emotionally rewarding. Prosociality increases happiness and self-esteem, and likewise, family assistance promotes positive emotions (Crocker, Canevello, & Brown, 2017; Telzer & Fuligni, 2009). Since prosociality and generous behavior are linked to better health and well-being (S. L. Brown & Brown, 2015; Penner, Dovidio, Piliavin, & Schroeder, 2005), it is unsurprising to find people who feel lighter obligations report better well-being across time assuming that people who feel more obligated to help are more likely to help. In the current study, the exploratory structural equation modeling approach used to test discriminant validity of the two-factor obligation solution supported this cross-sectionally. Light obligation was associated with greater positive affect and less negative affect.

In addition, when people respond to others' needs, the recipient generally shows gratitude. Receiving/seeing gratitude is associated with 1) greater life and relationship satisfaction for the individual and 2) mutually responsive behavior between individuals (Algoe, 2012). A norm of reciprocity builds a sense of satisfaction in individuals, and relational partners become a source of support as a consequence (Neufeld & Harrison, 1995; Reinhardt, 1996). Therefore, as the current study suggests, lighter forms of obligation is associated with individual well-being and positive relationships.[5]

Why Is Substantive Obligation Associated with Mostly Negative Outcomes? We may think that the mechanism suggested for light obligation is equally likely to hold for substantive obligation. Particularly, we may think substantive obligations should make recipients feel more

[5] Although light obligation also predicted slower increases in life satisfaction, this is likely a ceiling effect given that light obligation also predicted higher initial levels of life satisfaction and participants were on average, quite satisfied.

thankful, and thus lead to more supportive relationships (e.g. feeling more thankful to a friend, who is willing to take care of my child vs. a friend who calls every week). However, the current study mostly finds that substantive obligation is associated with more negative outcomes. In other words, feeling highly obligated to fulfill responsibilities involving more permanent, life-changing sacrifices was not only negatively associated with the individual's well-being but also their close relationships. While holding lighter forms of obligations is not particularly costly to the individual (e.g. regularly calling parents), substantive obligations require larger investments in various resources, which may interfere with sustaining other relationships or areas of life (e.g. giving money to a friend in need, when this makes it harder to meet own needs). Because substantive obligations require greater investments, it may not always be feasible for people to fulfill their obligations unlike light obligations. When people cannot meet their obligations, they may experience negative emotions such as agitation, anxiety and nervousness (Higgins, 1997). Even when people do meet their obligations, the costs may outweigh the benefits over time although they may feel good initially.

Previous research supported the idea that obligations with high costs are harmful. For instance, intensity of caregiving is related to worse health for the giver (Schulz & Sherwood, 2008). Further, when people feel like they are giving too much support even on social media, they report feeling exhausted and less satisfied with life (Maier, Laumer, Eckhardt, & Weitzel, 2015). The current results are in line with these previous studies. However, an interesting exception was found for friendships, where substantive obligation predicted higher levels of both strain *and* support at the first wave. One possible explanation for this may be the voluntary nature of friendships. On one hand, substantive obligation may create strain in the friendship while people try to get others to reciprocate equally (Trivers, 1971). On the other hand,

substantive obligation also signals a strong desire to stay in the relationship, which may motivate the friend who receives benefits to reciprocate—ultimately resulting in a more supportive friendship. Of course, many relationships in people's lives involve mixed emotions—the closest relationships we have that provide us with support and love are often the most difficult and frustrating (Fingerman, Hay, & Birditt, 2004). Friendships hold a particularly interesting place in relationships research in that, despite lacking filial investments and typical obligations (e.g. exclusivity in romantic relationships), they persist as long as they provide emotional benefits (Baker, Chopik, & Nguyen, 2019; Chopik, 2017). In other words, friendships last because people enjoy them, more so than other types of relationships. The extent to which relationships of choice persist even in the context of substantive obligation and investments (which may undermine our enjoyment of these relationships) is an important direction for future research.

Overall, the findings in this study presented evidence that in addition to the overall amount of obligation, *type* of obligation seems to matter. While light obligation might be the glue that keeps us together, substantive obligation might be the handcuffs that keep us together, mostly causing pain and unhappiness.

Limitations and Future Directions

The current study addressed important limitations in the existing obligation literature. I examined middle-aged adults who are developmentally able to perform obligations and are likely more autonomous than adolescents in that they can actively choose which relationships to invest and feel obligations toward. The current study also examined relationship quality within a diverse set of relationships in addition to individual functioning.

Nevertheless, there are also limitations to this study that are worth explicitly mentioning. First, there is a possibility that obligation may have been changing in concert, or simultaneously,

with relationship quality and adjustment over the 18-year duration of the study. This possibility may explain why obligation (measured at MIDUS I) predicted initial levels of outcomes but rarely predicted changes in the outcomes. Although the current data did not allow for us to examine whether changes in obligation predict changes in outcomes, it would be interesting to test this possibility in future studies that measure obligation repeatedly over time.

Second, while the current study was able reveal the underlying factor structure of the MIDUS obligation measure, it also revealed some limitations that can affect the interpretation and generalization of the results with respect to individual and relational functioning. For instance, each obligation factor differentially predicted individual and relational well-being. However, the obligation scale made available in MIDUS conflates relationship source with the degree of investment (e.g., the substantive obligation items referenced only friends). Thus, we cannot completely ascertain whether the results mean that there is 1) an effect of relationship type (family or friends), 2) an effect of obligation type (light or substantive), or 3) an interaction between relationship type and obligation type. An extreme (and superficial) interpretation of the current study is that family obligations benefit intra- and interpersonal well-being, and friend obligations are maladaptive for intra- and interpersonal well-being. However, it could be that feeling strongly obligated to friends necessarily includes having fewer resources (defined broadly) to dedicate to family relationships. This taxing of resources would lead to the prediction that substantive obligation leads to less positive relationships with family members but still positive relationships with friends, who are receiving our time and attention. Worth noting, the MIDUS obligation measure asked about hypothetical situations to which anyone could respond, suggesting that respondents may have been evaluating their general feelings toward obligation and not the relative investment in spousal vs. family vs. friend relationships. Yet another

possibility is that light obligation reflects a person's *general* tendencies to feel obligation and therefore affects all relationships similarly, and substantive obligation is more relationship-specific. To date, there have been no studies directly comparing levels of obligation toward different relationships in people's lives, how these relationships might conflict with one another, and how obligation in one relationship might translate to poor outcomes in another relationship. Future research can more directly compare light and substantive obligation from different sources (e.g., spouses, family, friends) using more carefully constructed measures than the one used here.

Lastly, although we provided some reasons for why certain forms of obligation might be better or worse for people and their relationships, we did not specifically examine any of the mechanisms that might link obligation to individual and relational well-being. Affect is a possible mediator that explains why light or substantive obligation is related to well-being in certain ways. Specifically, substantive obligation may be associated with worse relationship quality because it leads to increases in negative affect (e.g. Juang & Cookston, 2009; Hooper et al., 2015; Whisman, Uebelacker & Weinstock, 2004). Light obligation and reciprocity may enrich relationships by promoting positive emotions between individuals, which would be consistent with a few theoretical models specifically hypothesizing links between close relationships and well-being (e.g. Algoe, 2012; Eisenberger et al., 2001). Further, there are likely additional variables that might enhance or diminish the effects of obligation on individual and relational well-being. For example, the concept of the relational self has been suggested as a moderator of the effects of obligation, such that having a relational-interdependent self-construal was associated with higher well-being in Filipino students who felt higher levels of obligation (King & Ganotice Jr, 2015). Future research can more formally model these moderating and

mediating processes of the link between obligation and important outcomes.

CONCLUSION

In the current 18-year longitudinal study of middle-aged adults, intra- and interpersonal well-being increased over time. Light obligation toward family members was associated with benefits—higher well-being and higher quality of close relationships, including friendships. However, substantive obligation toward friends was associated with lower individual and relational well-being in most cases. Because many of us feel a sense of obligation to people in our lives, it is important to understand when obligation may be beneficial and harmful for individuals and their close relationships. Future research can reveal the process through which obligation affects close relationships, particularly how varying degrees of obligation towards different relational partners intersect and affect the quality of our close relationships.

APPENDICES

APPENDIX A: Tables

Table 1.

Obligation Measure and Geomin Rotated Factor Loadings for All Items

		Light	Substantive
1	To drop your plans when your children seem very troubled.	**0.792***	-0.019
2	To call, write, or visit your adult children on a regular basis.	**0.699***	0.079*
3	To raise the child of a close friend if the friend died.	0.230*	**0.489***
4	To drop your plans when your spouse seems very troubled.	**0.598***	-0.003
5	To take your divorced or unemployed adult child back into your home.	0.394*	0.453*
6	To take a friend into your home who could not afford to live alone.	0.010*	**0.963***
7	To call your parents on a regular basis.	**0.384***	0.175*
8	To give money to a friend in need, even if this made it hard to meet your own needs.	0.080*	**0.625***

Note. Loadings were bolded to indicate to which latent factor a given item belonged.

Table 2.

Comparing Model Fit Indices between Various Factor Analytic Models

	χ2	*df*	*p*	*CFI*	*RMSEA*
Full Sample					
One factor CFA (8 items)	3388.13	20	<.001	0.77	.176 (.171, .181)
Split samples					
Two factor EFAa (8 items)	289.61	13	<.001	0.96	.089 (.08, .098)
Three factor EFAa (8 items)	108.139	7	<.001	0.99	.073 (.062, .086)
Two factor EFAa (7 items)	140.53	8	<.001	0.98	.079 (.068,.090)
Two factor CFAb (7 items)	436.491	13	<.001	0.93	.108 (.100, .117)
Full sample					
Two factor CFA (7 items)	761.738	13	<.001	0.93	.103 (.097, .109)

Note. Exploratory factor analyses (EFA) and a follow up confirmatory factor analysis (CFA) were conducted on split samples. The entire sample was randomly split in half and models sharing a subscript used the same sample. Evaluated fit indices with the following criteria: Non-significant Chi-square, comparative fit index (CFI) >.95, root mean square error of approximation (RMSEA) <.06, Tucker-Lewis index (TLI) > .95, standardized root mean squared residual (SRMR) <.08. Confidence intervals for RMSEA are presented in parentheses.

Table 2 (cont'd).

Comparing Model Fit Indices between Various Factor Analytic Models

	TLI	*SRMR*	*N*
Full Sample			
One factor CFA (8 items)	0.68	0.08	5460
Split samples			
Two factor EFAa (8 items)	0.92	0.03	2676
Three factor EFAa (8 items)	0.94	0.02	2676
Two factor EFAa (7 items)	0.94	0.02	2676
Two factor CFAb (7 items)	0.88	0.05	2784
Full sample			
Two factor CFA (7 items)	0.89	0.05	5460

Note. Exploratory factor analyses (EFA) and a follow up confirmatory factor analysis (CFA) were conducted on split samples. The entire sample was randomly split in half and models sharing a subscript used the same sample. Evaluated fit indices with the following criteria: Non-significant Chi-square, comparative fit index (CFI) >.95, root mean square error of approximation (RMSEA) <.06, Tucker-Lewis index (TLI) > .95, standardized root mean squared residual (SRMR) <.08. Confidence intervals for RMSEA are presented in parentheses.

Table 3.

Means, *SD*s and Correlations among Obligation Items, Positive and Negative Affect

	1	2	3	4	5	6	7	8	9
1. Ob 1									
2. Ob 2	.552**								
3. Ob 3	.342**	.357**							
4. Ob 4	.497**	.372**	.272**						
5. Ob 6	.260**	.324**	.554**	.209**					
6. Ob 7	.315**	.399**	.298**	.339**	.307**				
7. Ob 8	.233**	.315**	.462**	.194**	.630**	.392**			
8. PA	.056**	.104**	.073**	.110**	.055**	.102**	.067**		
9. NA	-.066**	-.076**	-.022	-.105**	-.001	-.073**	.001	-.629**	
M	8.88	7.89	6.97	8.74	5.91	7.96	6.25	3.39	1.54
SD	1.76	2.21	2.74	2.15	2.72	2.57	2.61	0.73	0.62
N	6235	6221	6219	6164	6204	6071	6220	6306	6299

Note. Ob 1 = Obligation item 1, PA = Mean Positive Affect, NA = Mean Negative Affect.

Obligation 5 was excluded. ***p* <.001

Table 4.

Means, *SD*s and Correlations as a Function of Wave of Data Collection

		1	2	3	4	5
MIDUS I	1. Light Ob					
(1995-1996)	2. Substantive Ob	.469**				
	3. Life Satisfaction I	.255**	.103**			
	4. Depression1	-.031*	.048**	-.268**		
	5. Family Support 1	.261**	.132**	.359**	-.134**	
	6. Family Strain 1	-.100**	-.011	-.281**	.152**	-.393**
	7. Partner Support 1	.131**	.039**	.476**	-.129**	.273**
	8. Partner Strain 1	-.118**	-.040**	-.430**	.138**	-.194**
	9. Friend Support 1	.179**	.224**	.262**	-.041**	.385**
	10. Friend Strain 1	-.090**	-.024	-.229**	.092**	-.168**
MIDUS II	11. Life Satisfaction 2	.208**	.082**	.541**	-.190**	.279**
(2004-2005)	12. Depression 2	-.006	.029	-.203**	.315**	-.125**
	13. Family Support 2	.227**	.113**	.284**	-.132**	.513**
	14. Family Strain 2	-.054**	.027	-.246**	.125**	-.224**
	15. Partner Support 2	.097**	.018	.291**	-.091**	.230**
	16. Partner Strain 2	-.093**	-.034	-.265**	.073**	-.155**
	17. Friend Support 2	.190**	.194**	.240**	-.046**	.307**
	18. Friend Strain 2	-.100**	-.016	-.208**	.076**	-.149**
MIDUS III	19. Life Satisfaction 3	.172**	.041*	.465**	-.186**	.247**
(2013-2014)	20. Depression 3	-.029	.018	-.150**	.279**	-.101**
	21. Family Support 3	.225**	.114**	.304**	-.125**	.424**
	22. Family Strain 3	-.086**	-.009	-.218**	.123**	-.214**
	23. Partner Support 3	.052*	.000	.229**	-.059*	.162**
	24. Partner Strain 3	-.055*	.003	-.228**	.044	-.106**
	25. Friend Support	.204**	.206**	.224**	-.049*	.295**
	26. Friend Strain	-.107**	-.023	-.184**	.076**	-.138**
	M	8.37	6.38	7.70	0.79	3.43
	SD	1.63	2.26	1.31	1.93	0.62

Note. N = 7108-1892, ** p <.01, * p <.05. Ob = Obligation.

Table 4 (cont'd).

Means, *SD*s and Correlations as a Function of Wave of Data Collection

6	7	8	9	10	11	12	13	14
-.169**								
.299**	-.646**							
-.139**	.193**	-.145**						
.475**	-.116**	.270**	-.144**					
-.233**	.260**	-.265**	.214**	-.195**				
.146**	-.116**	.111**	-.059**	.074**	-.260**			
-.240**	.190**	-.137**	.260**	-.149**	.349**	-.145**		
.515**	-.173**	.269**	-.099**	.370**	-.296**	.176**	-.361**	
-.178**	.517**	-.387**	.156**	-.109**	.450**	-.172**	.289**	-.222**
.263**	-.379**	.575**	-.109**	.228**	-.398**	.139**	-.205**	.356**
-.093**	.131**	-.095**	.533**	-.097**	.291**	-.066**	.375**	-.139**
.325**	-.102**	.204**	-.090**	.472**	-.214**	.117**	-.165**	.501**
-.228**	.223**	-.229**	.164**	-.192**	.581**	-.228**	.289**	-.248**
.104**	-.069**	.075**	-.039*	.060**	-.220**	.343**	-.154**	.129**
-.233**	.200**	-.138**	.251**	-.160**	.297**	-.157**	.536**	-.252**
.426**	-.142**	.243**	-.100**	.339**	-.219**	.128**	-.229**	.510**
-.163**	.409**	-.309**	.110**	-.074**	.302**	-.087**	.189**	-.140**
.241**	-.333**	.503**	-.076**	.203**	-.270**	.045	-.134**	.251**
-.099**	.105**	-.108**	.426**	-.099**	.243**	-.064**	.320**	-.085**
.264**	-.082**	.203**	-.076**	.399**	-.180**	.070**	-.152**	.330**
2.11	3.59	2.23	3.23	1.93	7.76	0.63	3.52	2.04
0.61	0.57	0.62	0.67	0.51	1.25	1.74	0.59	0.60

Note. N = 7108-1892, ** p <.01, * p <.05. Ob = Obligation.

Table 4 (cont'd).

Means, *SD*s and Correlations as a Function of Wave of Data Collection

15	16	17	18	19	20	21	22	23
-.636**								
.217**	-.142**							
-.125**	.304**	-.133**						
.275**	-.288**	.207**	-.193**					
-.116**	.088**	-.057**	.056**	-.299**				
.181**	-.148**	.318**	-.177**	.351**	-.168**			
-.101**	.262**	-.113**	.341**	-.261**	.134**	-.374**		
.554**	-.456**	.134**	-.114**	.475**	-.157**	.228**	-.151**	
-.417**	.633**	-.071**	.223**	-.403**	.097**	-.152**	.314**	-.655**
.138**	-.124**	.525**	-.099**	.290**	-.094**	.397**	-.150**	.183**
-.092**	.214**	-.097**	.428**	-.216**	.105**	-.179**	.515**	-.095**
3.63	2.15	3.28	1.84	7.80	0.60	3.51	1.95	3.64
0.53	0.61	0.66	0.50	1.31	1.71	0.58	0.63	0.54

Note. N = 7108-1892, ** p <.01, * p <.05. Ob = Obligation.

Table 4 (cont'd).

Means, *SD*s and Correlations as a Function of Wave of Data Collection

24	25	26
-.131**		
.278**	-.158**	
2.10	3.30	1.72
0.63	0.64	0.53

Note. N = 7108-1892, ** p <.01, * p <.05. Ob = Obligation.

Table 5.

Model Fit Indices for Unconditional No-growth and Linear Models by Outcome

Variable	Model	$\chi 2$	*df*	*p*	*RMSEA*
Life Satisfaction	No-growth	83.178	6	<.001	.045 (.036,.053)
	Linear	6.073	3	.108	.013 (.000,.027)
Depression	No-growth	139.304	6	<.001	.056 (.048,.064)
	Linear	39.743	3	<.001	.042 (.031, .053)
Family Support	No-growth	137.867	6	<.001	.059 (.050, .067)
	Linear	46.773	3	<.001	.048 (.036, .060)
Family Strain	No-growth	266.372	6	<.001	.082 (.074, .091)
	Linear	3.537	3	.316	.005 (.000,.022)
Partner Support	No-growth	78.714	6	<.001	.049 (.040,.059)
	Linear	14.055	3	.003	.027 (.014, .042)
Partner Strain	No-growth	141.424	6	<.001	.067(.057,.076)
	Linear	8.236	3	.041	.019(.003,.034)
Friend Support	No-growth	76.664	6	<.001	.043(.035,.052)
	Linear	16.616	3	<.001	.027 (.015,.040)
Friend Strain	No-growth	517.442	6	<.001	.115(.107,.124)
	Linear	19.165	3	<.001	.029(.018,.042)

Note. No-growth/intercept only models had 3 parameters and the linear models had 6 parameters. Model comparisons (test of $\Delta\chi 2$) were made between No-growth and linear models. The linear models were centered at the first wave of data collection and evaluated fit with the following criteria: Non-significant Chi-square, comparative fit index (CFI) >.90, root mean square error of approximation (RMSEA) <.08, Tucker-Lewis index (TLI) > .90, standardized root mean squared residual (SRMR) <.08. Confidence intervals for RMSEA are presented in parentheses.

Table 5 (cont'd).

Model Fit Indices for Unconditional No-growth and Linear Models by Outcome

CFI	*TLI*	*SRMR*	*N*	Δχ2	*df*	*p*
0.970	0.985	0.099	6455			
0.999	0.999	0.02	6455	77.105	3	<.001
0.873	0.937	0.069	7108			
0.965	0.965	0.029	7108	99.561	3	<.001
0.94	0.97	0.104	6396			
0.98	0.98	0.02	6396	91.094	3	<.001
0.876	0.938	0.107	6397			
1	1	0.01	6397	262.835	3	<.001
0.953	0.977	0.103	5076			
0.993	0.993	0.021	5076	64.659	3	<.001
0.934	0.967	0.089	5076			
0.997	0.997	0.015	5076	133.188	3	<.001
0.968	0.984	0.072	6395			
0.994	0.994	0.051	6395	60.048	3	<.001
0.692	0.846	0.152	6394			
0.99	0.99	0.038	6394	498.277	3	<.001

Note. No-growth/intercept-only models had 3 parameters and the linear models had 6 parameters. Model comparisons (test of Δχ2) were made between No-growth and linear models. The linear models were centered at the first wave of data collection and evaluated fit with the following criteria: Non-significant Chi-square, comparative fit index (CFI) >.90, root mean square error of approximation (RMSEA) <.08, Tucker-Lewis index (TLI) > .90, standardized root mean squared residual (SRMR) <.08. Confidence intervals for RMSEA are presented in parentheses.

Table 6.

Path Coefficient Estimates from the Latent Growth Curve Models in which Light and Substantive Obligation Predicts Levels and Changes in Outcomes

Predictor		Outcome	*b*	*SE*	*p*	*β*
Light obligation	→	Life satisfaction level	0.43	0.02	<.001	0.42
	→	Life satisfaction change	-0.05	0.02	0.01	-0.13
Substantive obligation	→	Life satisfaction level	-0.10	0.02	<.001	-0.09
	→	Life satisfaction change	-0.02	0.02	0.40	-0.04
Light obligation	→	Depression level	-0.15	0.04	<.001	-0.12
	→	Depression change	0.04	0.03	0.17	0.09
Substantive obligation	→	Depression level	0.19	0.04	<.001	0.16
	→	Depression change	-0.06	0.03	0.03	-0.14
Light obligation	→	Family support level	0.18	0.01	<.001	0.38
	→	Family support change	-0.01	0.01	0.39	-0.05
Substantive obligation	→	Family support level	-0.01	0.01	0.35	-0.02
	→	Family support change	-0.01	0.01	0.56	-0.03
Light obligation	→	Family strain level	-0.09	0.01	<.001	-0.19
	→	Family strain change	0.01	0.01	0.61	0.03
Substantive obligation	→	Family strain level	0.04	0.01	<.001	0.09
	→	Family strain change	0.00	0.01	0.69	0.02
Light obligation	→	Partner support level	0.11	0.01	<.001	0.23
	→	Partner support change	-0.01	0.01	0.24	-0.07
Substantive obligation	→	Partner support level	-0.03	0.01	0.01	-0.07
	→	Partner support change	0.00	0.01	0.68	-0.02
Light obligation	→	Partner strain level	-0.09	0.02	<.001	-0.18
	→	Partner strain change	0.01	0.01	0.47	0.05
Substantive obligation	→	Partner strain level	0.02	0.01	0.14	0.04
	→	Partner strain change	0.01	0.01	0.21	0.07
Light obligation	→	Friend support level	0.06	0.01	<.001	0.12
	→	Friend support change	0.02	0.01	0.08	0.11
Substantive obligation	→	Friend support level	0.13	0.01	<.001	0.25
	→	Friend support change	-0.02	0.01	0.01	-0.15
Light obligation	→	Friend strain level	-0.07	0.01	<.001	-0.20
	→	Friend strain change	0.00	0.01	0.63	-0.03
Substantive obligation	→	Friend strain level	0.03	0.01	0.01	0.07
	→	Friend strain change	0.01	0.01	0.47	0.05

APPENDIX B: Figures

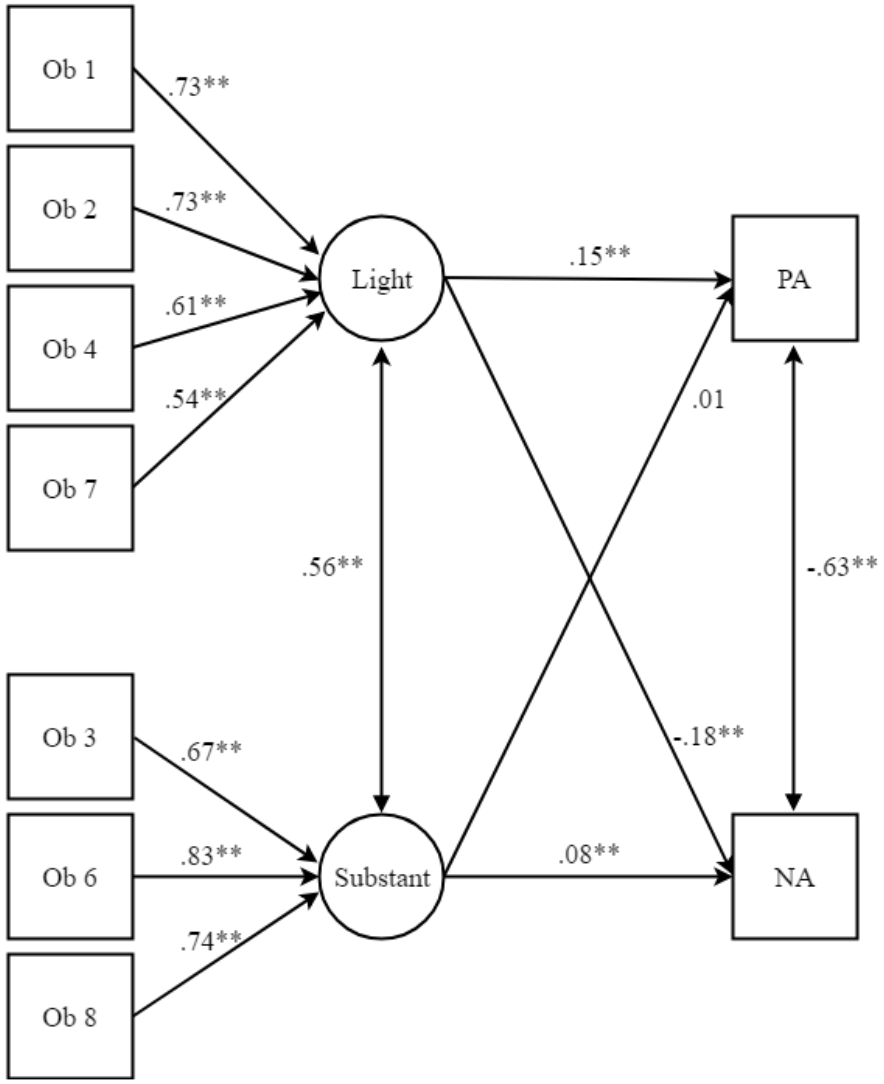

Figure 1.

Path diagram of Two Factor Obligation Predicting Positive and Negative Affect

Note. Ob 1 = Obligation item 1. PA = positive affect, NA = negative affect. Standardized coefficients are reported. Factor variances were set to 1. ***p*< .001

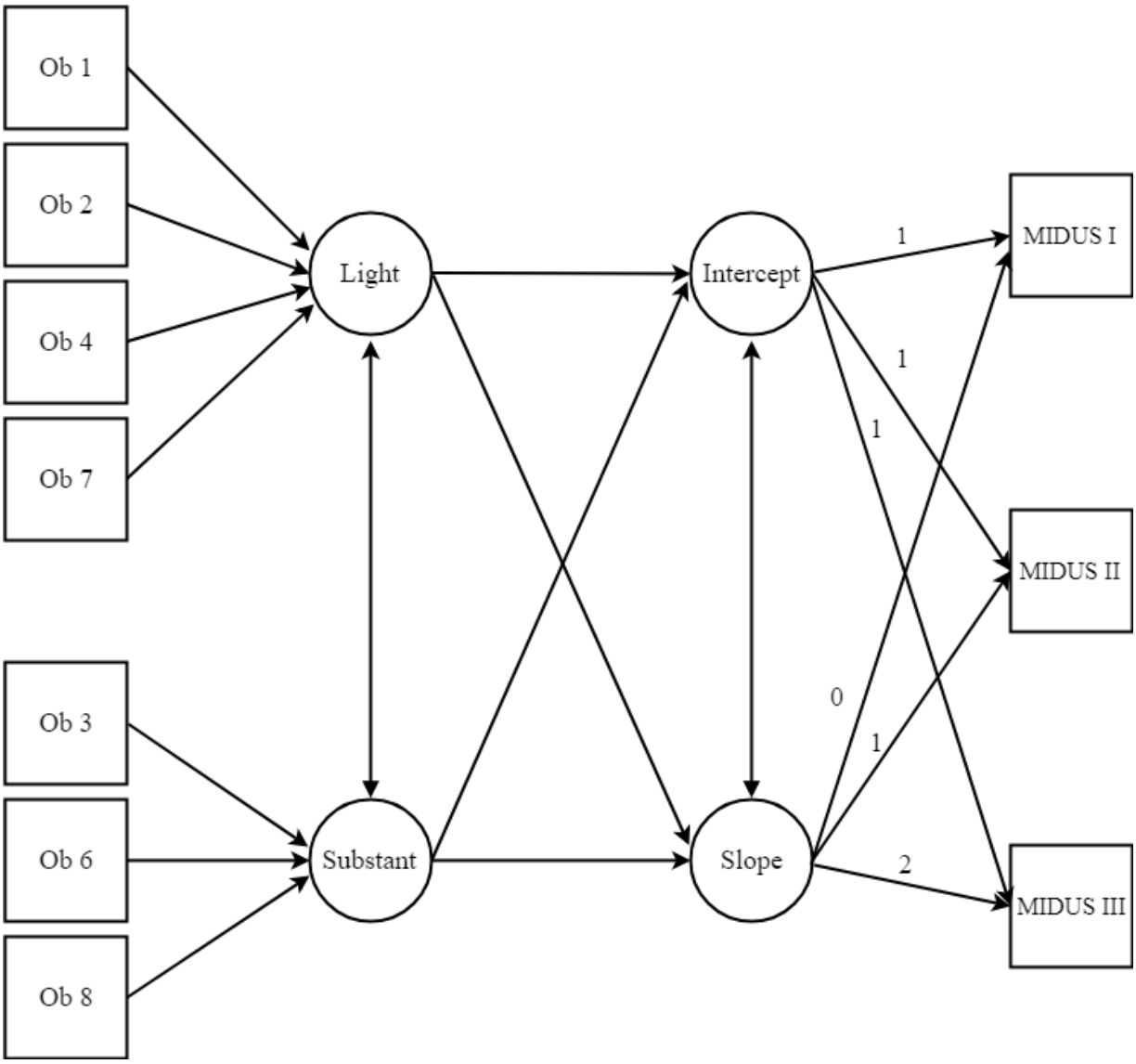

Figure 2.

Generic Path Diagram of Conditional Models

Note. Ob 1 = Obligation item 1; Light = light obligation; Substant = substantive obligation; MIDUS I = outcome measured at MIDUS I. Consistently specified factor loadings are shown in the figure. Variances for MIDUS I, II and III, light and substantive obligations were fixed to 1. All other parameters were freely estimated.

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