Developmental Trajectories of Mother-Adolescent Agreement on Maternal Autonomy Support and Their Contributions to Adolescents' Adjustment

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Abstract

Based on a multi-informant, longitudinal perspective on parent-adolescent relationships, this study examined patterns of convergence and divergence on maternal autonomy support. It had two aims: First, it sought to identify developmental trajectories of maternal autonomy support across adolescence from the perspectives of both mothers and adolescents. A second was to evaluate the longitudinal relation between self-reported and perceived maternal autonomy support by combining informants' trajectories. Data comes from two 5-year longitudinal multi-informant studies (N_{S1} = 687 mother-child dyads; N_{S2} = 745 mother-child dyads). Each year, mothers and adolescents completed a questionnaire assessing maternal autonomy support. In both samples, results of growth mixture modeling showed from mothers' perspective the presence of two distinct trajectories: High (91% of the sample) and Moderate and relatively stable (9%) trajectories. From adolescents' perspective, three trajectories were identified: High and relatively stable (75.7%), High and Decreasing (11.8%), and Moderate and Increasing (12.5%). The normative mother-adolescent convergence pattern was one in which both adolescents and their mother reporting high levels of autonomy support. It was generally associated with more positive indices of adjustment, although academic achievement was highest when adolescents reported comparatively more autonomy support than their mother. The worst mother–adolescent convergence pattern tended to be one in which mothers reported initially moderate levels of autonomy support that remained relatively stable while it was initially high but decreasing for youths. Implications for parenting research and interventions are discussed.

Keywords: Mothers; Autonomy Support; Longitudinal Studies; Adolescence; Multi-Informant Methodology

Adolescence is an effervescent developmental period characterized by important changes regarding puberty, education, social relationships, and personal identity (Steinberg, 2020). Parents are important figures in their child's development, even as they increasingly assert their individuality (Laursen & Collins, 2009; Ryan & Lynch, 1989; Soenens et al., 2019). In fact, youth optimal development requires parents supporting their autonomy rather than disengaging (Fousiani et al., 2014; Soenens et al., 2007; see Ryan & Deci, 2017; Soenens et al., 2019). By being autonomy supportive, parents nurture their child's inner resources, which facilitates the expression of their natural tendency toward development, internalization, and adjustment (Ratelle & Duchesne, 2017; Ryan & Deci, 2017; Soenens et al., 2019). This multi-informant study examines heterogeneous longitudinal patterns of autonomy support from adolescent and mother perspectives in a combined fashion to provide a more nuanced and exhaustive understanding of adolescent functioning in school than can single-informant designs.

Parental Autonomy Support

Autonomy support entails encouraging youth volitional engagement and capacity to act in a self-determined fashion (Grolnick & Pomerantz, 2022; Soenens et al., 2019). Parents support adolescents' autonomy when they encourage them to assume age-appropriate responsibilities, acknowledge their feelings and ways of thinking, explain the reasons for their asks, and offer opportunities to make meaningful choices (Mageau et al., 2015). It also requires refraining from using controlling behaviors such as motivating one's child with rewards and punishment, inducing guilt, encouraging performance goals, and making threats (Ryan & Deci, 2017). Robust evidence exists for the benefits of parental autonomy support for adolescent development and functioning (Soenens et al., 2019; Ryan & Deci, 2017), especially in the schooling context—a central sphere in adolescents' lives (Eccles & Roeser, 2011). Indeed, past studies demonstrated the importance of parental autonomy support for adolescents' psychological need satisfaction (i.e., autonomy, competence, and relatedness), optimal motivational functioning, adjustment, achievement, and persistence (e.g., Duineveld et al., 2017; Ratelle et al., 2020;

Vasquez et al., 2016; see reviews by Pomerantz et al., 2012; Ratelle & Duchesne, 2017; Soenens et al., 2019). It is important to note, however, that most of these studies were cross-sectional or prospective and, thus, less is known about parental autonomy support from a truly longitudinal approach.

The few longitudinal studies on parental autonomy support reported little information on its developmental patterns, whether from mothers or fathers. The key conclusion is that autonomy support is moderately high and remains relatively stable across years among preadolescents and adolescents (Bradley et al., 2015; Van der Giessen et al., 2014; Wang et al., 2007), as well as emerging adults (Pan & Gauvain, 2012). However, these studies did not typically report descriptive analyses that specifically estimated heterogeneous longitudinal patterns in autonomy support (i.e., whether patterns of change were uniform across samples). There is evidence demonstrating heterogenous groupings of parental autonomy support in adolescence (i.e., parenting profiles), but using only adolescent reports and with a cross-sectional design (Ahn et al., 2022). Thus, the number and shape of distinct trajectories of autonomy support during adolescence remain unclear. Moreover, whether findings differ depending on the informants is unclear since different informants may offer complementary perspectives.

When studying parental autonomy support one can rely on parent reports, child perceptions, or observation. Choosing which source of information to rely on depends on several factors, one of which is the child's age or developmental level (Putnick, 2019). For young children, researchers typically use observation or parental reports, as child reports are impossible or impractical (Frick et al., 2010). For research with adolescents and emerging adults, youth perceptions are the most frequently used, mainly because researchers view parental reports as having lower predictive value (Paikoff & Brooks-Gunn, 1991). Our recent findings suggest that this conclusion might not apply to parental autonomy support and depends on the context where it is manifested—where stronger links with youth perceived autonomy were obtained with parental reports on autonomy support in the context of problem solving and of a discussion (Ratelle et al., 2024). It can also be more convenient and cost-effective to survey adolescents than to reach their parents. Also influencing which sources of information are studied are research questions and goals. Hence, estimating longitudinal trends over years in youth development or intensive changes over short periods (e.g., weeks, months) is less suited to observations for time and resources concerns. These studies typically use scales and rely on adolescent perspective, although parental reports are also considered. Yet, few studies combined youth and parent perspectives on autonomy support although multi-informant designs provide rich and valuable information.

Using Multi-Informant Designs

It has been argued that psychological assessments of adolescents necessitate the use of multiple methods of gathering information (Kazdin, 2005); we believe this argument applies to the parent-adolescent relationship such as parental autonomy support. Hence, rather than comparing sources of information with respect to their relevance or superiority, we should aim to enrich our understanding of parenting constructs by adding informants to research designs, thereby improving assessment (Carlson et al., 2013; Johnston & Murray, 2003; De Los Reyes & Ohannessian, 2016). As a result, one assessment method can compensate for the limits of another (see Putnick, 2019) while creating some challenges (Barry et al., 2013). Indeed, researchers will need to conceptualize how to integrate different sources of information and deal with possible informant discrepancies. The psychometric literature offers compelling models for conceptualizing and integrating data from multiple informants. The operations triad model (OTM; De Los Reyes et al., 2013) acknowledges the need to have more than one source of information to assess behaviors, as well as the fact that these informants will often be discrepant in their evaluations—sometimes to a large extent. Applying the OTM to family dynamics, De Los Reyes and Ohannessian (2016) highlighted that (1) across several indicators of family functioning, parent-adolescent correspondence is at best moderate; (2) there are substantial variations in parent-adolescent correspondence across dyads, which signals the need to examine parent-adolescent correspondence using a person-centered approach (i.e., assuming heterogeneous patterns within a sample; Bogat et al., 2016); (3) variations exist as to which informant provides the most positive evaluations (i.e., sometimes the parent overestimates family functioning while at others it is the adolescent); and, (4) parent-adolescent discrepancies are distinguishable from having a conflictual relationship. As a result, the remaining question is, What does parent-adolescent dis/agreement mean. The OTM posits that meaningful information on family functioning can be revealed by patterns of correspondence between informants. Also, convergence patterns can predict important child outcomes over time.

Regarding parental autonomy support—and its opposite, control—our review of the literature identified some 20 studies assessing autonomy support with at least two informants. Results suggest that parent-child correspondence ranged from nil (r = .06; Ratelle et al., 2017) or low (r = .12 to .14; Grolnick et al., 1991; Koçak et al., 2020) to moderate (r = .36 to .40; Brenning et al., 2012; Ingoglia et al., 2021; Nelemans et al., 2019; Van Heel et al., 2019; Van Petegem et al., 2020; see meta-analysis by Korelitz & Garber, 2016). In general, these studies found that autonomy support (or control) was higher (or lower) when self-reported by parents than perceived by adolescents, although opposite patterns were obtained (e.g., Van Der Kaap-Deeder et al., 2019). Most of these studies used a cross-sectional design and, among those whose design was longitudinal, only Vrolijk et al. (2023) reported information on changes in parent-child correspondence over time. Adopting a variable-centered approach, this recent study estimated latent discrepancy scores between adolescents' perceptions of each parent and their parents' self-report on autonomy support over a 6-year period (Vrolijk et al., 2023). Their findings showed that mothers tended, more than fathers, to overestimate their autonomy supportive behaviors, compared to their child's perceptions. Together, these studies make it difficult to predict whether and how parent-adolescent longitudinal correspondence fluctuates over long periods of time. Furthermore, except for Vrolijk et al.'s study, which found that parent-adolescent discrepancies did not predict youth depressive symptoms from one year to the other, convergence patterns of parental autonomy support have not, to our knowledge, been examined with respect to their predictive utility. There is, however, evidence that each perspective explains unique variance in adjustment in school and academic achievement (Ratelle et al., 2017, 2018). With respect to parental control, results suggest that adolescents fared worst (i.e., maladjustment, need frustration) when they perceived their mother as more controlling (overprotective) compared to her reports (Van Petegem et al., 2020). Discrepancies between late adolescents' ratings of maternal and paternal control and their parents' self-reports also predicted lower autonomy (for mothers) and relatedness (for fathers) satisfaction (Ingoglia et al., 2021).

Since disagreement between parent and adolescent ratings is frequent in multi-informant designs, an important issue is how to model their level of dis/agreement. Some studies used bivariate correlations while others estimated difference scores, which were criticized for their low reliability and their neglect of absolute scores (see Zilcha-Mano et al., 2021). This last shortcoming (i.e., ambiguity due to combining two informant scores) also applies to latent discrepancy scores (e.g., Inguglia et al., 2019). A central issue with the u se of difference scores—particularly when they are tasked to assess a new domain from its component parts—is that of incremental value and its lack of falsifiability in this respect (see De Los Reyes, Wang et al., 2023; Laird, 2020). Another strategy is to examine the interaction between informants' score using a polynomial regression model (De Los Reyes & Ohannessian, 2016; De Los Reyes et al., 2019) and surface analysis (Human et al., 2016), which was done using parental control (Van Petegem et al., 2020) and other parental constructs (e.g., parental sacrifice, relationship quality; Leung, 2018; Nelemans et al., 2016). Despite its advantages (e.g., considering each informant's perspective), it also makes it difficult to study longitudinal patterns of agreement and their heterogeneity. These limits can be overcome by person-centered approaches recommended for analyzing informant discrepancies (De Los Reyes et al., 2019).

Hence, parent-child correspondence patterns vary (Rescorla, 2016,) pointing to the need to model the heterogeneity in informants' evaluation of autonomy support and control. Accordingly, a person-centered approach will be used in this study. Moreover, De Los Reyes and Ohannessian (2016) called for improving the methods used to model correspondence between parent and child reports on family functioning. They especially discourage the use of discrepancy scores—which have important limitations and little benefits. To address these concerns, parallel-process modeling (Sterba, 2013) can be used to model heterogeneous patterns of maternal autonomy support from both mothers and adolescents as well as their combinations. This approach allows identifying distinct longitudinal patterns of adolescent-mother agreement on autonomy support, which can be used to predict youth functioning.

The Present Study

Focusing on the mother-child relationship, this longitudinal study examines convergences in adolescent and mother evaluations of autonomy support across adolescence. Mothers were considered given their more powerful contribution to youth adjustment (Yap & Jorm, 2015) and stronger school involvement (vs. fathers; Kim & Hill, 2015). Parallel-process modeling (Sterba, 2013) is used to simultaneously model heterogeneous patterns of maternal autonomy support from both mothers and adolescents as well as combined patterns. This allowed testing whether there are distinct longitudinal patterns of adolescent-mother agreement on maternal autonomy support. To our knowledge, no study has examined this question using a person-centered approach. The exploratory nature of these trajectories makes it difficult to predict the number and shape (i.e., stable, increasing, decreasing) of developmental patterns. Nevertheless, parent-youth agreement on autonomy support varies widely across studies, which can signal a heterogeneous agreement pattern. The OTM (also see De Los Reyes & Epkins, 2023) suggests that these discrepancies inform our understanding of student functioning.

A second goal of this study was to test whether these longitudinal patterns of convergence on maternal autonomy support were associated with adolescents' adjustment in school (i.e., academic, social, emotional) and academic achievement. Using the OTM in the context of family functioning, one assumes that not all disagreements are created equal: some reflect "noise" or "bias" whereas others reflect data that ought to be considered, modeled, or retained to explain the phenomena about which informants provide reports (i.e., here, autonomy support) (De Los Reyes & Ohannessian, 2016). Such discrepancies are found to be normative and can signal adaptive (e.g., adolescents establishing their autonomy) as well as maladaptive (e.g., parents failing to grasp and be aware of adolescents' life) family dynamics. Hence, divergences in evaluations of maternal autonomy support could predict adolescents' adaptive as well as maladaptive adjustment and achievement. Past studies using a variable-centered approach (i.e., not consider heterogeneous agreement patterns) to study discrepancies in parental control found discrepancies to be detrimental to youth functioning (Ingoglia et al., 2021; Van Petegem, et al., 2020). Using a person-centered approach to examining mother-adolescent agreement, we can expect that some agreement patterns will predict poorer adjustment in school. Specifically, given cross-sectional findings showing that youth perceiving their mother as more controlling than she reports suffer more (Van Petegem et al., 2020), we expect dyads in which youths underestimate autonomy support over long periods to be more poorly adjusted. Also, since previous single-informant studies found maternal autonomy support to predict higher levels of student adjustment and achievement (Soenens et al., 2019), we expect more positive adjustment when longitudinal trajectories indicate high maternal autonomy support from both perspectives. We also expect high and concordant trajectories to be associated with the highest levels of school achievement and adjustment. Similarly, concordant and low trajectories of maternal autonomy support should predict poorer achievement and adjustment.

Finally, the benefits of a person-centered approach also come with shortcomings such as requiring large datasets and statistical power, as well as yielding results that can be sampled specific (Morin et al., 2016). To address this concern, analyses will be replicated across two distinct samples of mother-adolescent dyads. It also considered variables like adolescent gender and family socioeconomic background when predicting student adjustment.

Method

Transparency and Openness

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study, and we follow JARS (Kazak, 2018). Data is available upon request to the first author (it was not deposited on the repository because of the requirements of our institution's ethics committee; approuval #2004-136 [Sample 1] and #2010-243 [Sample 2]). This study's design and its analysis were not pre-registered.

Participants

Data comes from two multi-informant longitudinal studies on adolescents' motivational development and parenting. Data from youths and mothers for 5 years (5 waves) were used to study longitudinal convergence patterns of maternal autonomy support. Our large samples allowed person-centered, longitudinal modeling, in line with Olivera-Aguilar and Rikoon (2018).

Sample 1. This sample includes 687 dyads of mothers and adolescents who individually filled a questionnaire each winter semester (paper or electronic format). A sample was provided by the Quebec Ministry of Education to be representative of students attending a French-speaking public school in the province of Quebec, Canada, and who were in Grade 6 at the onset of the study. It was stratified based on student gender, geographic representation (rural or urban), and socioeconomic status. Adolescent data was collected from Secondary 1 (Time 1 [T1]; 2005) to Secondary 5 (Time 5 [T5]; 2010). In the Quebec education system, students go through 6 years of elementary school, followed by five years of secondary school, after which they can enter the job market or continue with a college education. Hence, this sample surveyed the entire secondary education continuum. Data collection occurred over a 2-month period; sample size was determined by the number of families reached during this period. The sample included 374 girls and 309 boys (4 missing; M_{age} at T1 = 12.81 years; SD = 0.50) mostly born in Quebec (94%). Mothers' average age at T1 was 41.81 years (SD = 4.55) and 92% of them had at least a secondary school diploma and their average annual family income ranged between $50,000 and $59,000 CAN, which is comparable to the average family income in the province of Quebec at the onset of the study ($59,734; Statistics Canada, 2009). Most dyads (71%) were from intact families and spoke French at home (98%).

Sample 2. This sample includes 745 mother-adolescent dyads who completed an individual questionnaire (paper or electronic format) each fall. A stratified sample provided by the Quebec Ministry of Education based on the same conditions, but also considering the type of school (public or private). Adolescent data was collected from Secondary 3 (Time 1 [T1]; 2011) to their second year of college (Time 5 [T5]; 2016). Before entering university, students in Quebec attend college for two or three years in general (e.g., social sciences) or vocational and technical programs (e.g., nursing), respectively. Sample size determination was the same as for Sample 1. The sample included 375 girls and 353 boys (17 missing; M_{age} at T1 = 14.23 years; SD = 0.49) mostly born in Quebec (93%) and attending a public school (79%). Mothers' average age at T1 was 44.19 years (SD = 4.92). About 77% of them earned at least a secondary school diploma and their average annual family income ranged between $60,000 and $69,000 CAN, which aligns to the average family income in the province of Quebec at the onset of the study ($68,170 CAN; Statistics Canada, 2013). Most dyads (64%) were from intact families and spoke French at home (94%). Hence, these two samples overlapped over a three-year period in adolescents' schooling (i.e., during Secondary 3, 4, and 5) that corresponds roughly to mid-adolescence (Levesque, 2018).

Measures

Child Questionnaire.

***Perceived Maternal Autonomy Support*.** The Perceived Parental Autonomy Support Scale (P-PASS; Mageau et al., 2015) was used to assess adolescents' perceptions of their mother's autonomy support. They rated on a 7-point scale (1 = *do not agree at all*; 7 = *very strongly agree*) the extent to which each item represented how their mother behaves with them (e.g., "When my mother asks me to do something, she explains why she wants me to do it"; 12 items). This scale demonstrated satisfying psychometric qualities in the past (e.g., Mageau et al., 2015; Ratelle et al., 2017, 2018) as well as in these samples (McDonald's ω ranged from .90 to .92 for Sample 1 and from .91 to .94 for Sample 2).

***Adjustment in School*.** Adolescents reported on their ability to manage the various demands encountered in school in the last year of secondary using the French version (Larose et al., 1996) of the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989), which was previously adapted to the secondary school setting (e.g., Duchesne et al., 2007; Ratelle & Duchesne, 2014). This multidimensional scale measures *academic* (e.g., "I have been keeping up to date with my academic work"; 4 items), *social* (e.g., "I have friendly relationships with several people at school"; 4 items), and *personal-emotional* (e.g., "I have been feeling in good health"; 4 items), dimensions of student adjustment. Youth were asked to indicate the extent to which these statements applied to them using a 5-point scale ranging from 1 (*does not apply to me at all*) to 5 (*totally applies to me*). Past research with this scale supported its psychometric qualities (Duchesne et al., 2007; Ratelle & Duchesne, 2014), which was echoed in both Sample 1 (ωs = .66 – .88) and Sample 2 (ωs = .79 – .85).

***Academic Achievement*.** Adolescents reported their secondary 5 achievement (0-100 metric).

***Sociodemographic Information*.** Adolescents also answered questions regarding their age, gender, and academic year.

Mother Questionnaire.

***Self-Reported Autonomy Support*.** Mothers reported on their autonomy supportive behaviors toward their child using the parent version of the P-PASS. Mothers indicated the extent to which items (e.g., "When I try to help my child to do something that is difficult for him/her, I make an effort to see things from his/her perspective"; 12 items) reflected their behaviors with their child using a 5-point scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). Past research supported the psychometric qualities of this measure (Ratelle et al., 2017). Here, satisfying reliability coefficients were obtained in both Sample 1 (ωs ranged from .79 to .85 across waves) and Sample 2 (ωs ranged from .82 to .86).

***Sociodemographic Information*.** Mothers answered descriptive questions on their age, marital status, family income, education level, and family structure (i.e., whether the family is intact or not).

Statistical Analyses

Missing Data. As often encountered in longitudinal research, there was missing data points across data waves for each sample. To reduce loss in statistical power and prevent biases in parameter estimates brought by listwise deletion, all participants were included in analyses and missingness was statistically handled with full information maximum likelihood (FIML) estimation, which proved superior to other strategies such as mean substitution or expectation–maximization (EM) imputation (see Enders, 2010; Graham, 2009).

Trajectory Modeling. Analyses were performed on youth and mother data from T1 to T5 in both samples, separately, using mixture models (Morin & Litalien, 2019). To do so, we performed general growth mixture modeling (GGMM; Muthén, 2002; Muthén & Shedden, 1999) to identify heterogeneous developmental patterns within a sample while allowing within group variability in the intercept (i.e., absolute level of autonomy support) and slope (i.e., patterns of change in autonomy support; e.g., increasing, stable, decreasing). Models were run using Mplus (Muthén & Muthén, 1998-2018; Version 8.8) under robust estimation (MLR) that provides standard errors and fit indices robust to non-normality (Asparouhov, 2005). Each solution was estimated using multiple random sets of start values to ensure proper model identification and changes in trajectory group membership (Lubke & Lunningham, 2017).

The adequacy of each solution was evaluated with the Akaike information criteria (AIC), the Bayesian information criteria (BIC), and sample-size adjusted Bayesian information criteria (ABIC). For these indices, smallest values indicate a better fit to the data (Morin et al., 2019; Morin & Wang, 2016). When applicable, other indices that were considered were the Vuong-Lo-Mendell-Rubin Likelihood ratio test (LMRT) and the Parametric Bootsrapped Likelihood ratio test (BLRT) for which *p* values below .05 indicate statistically nonsignificant differences between a model with *k* classes versus a model with *k*-1 classes. In such cases, the most parsimonious model is favored (Morin & Wang, 2016). Finally, entropy values were examined to assess classification quality, where higher entropy (range 0-1) indicates better profile separation (Morin et al., 2019; Morin & Wang, 2016). This last index, while offering useful information on model classification, should not be used alone to select the optimal model. "Elbow" plots were also examined where fit indices are plotted on a graph (Morin, et al., 2019; Petras & Masyn, 2010). Finally, models with profiles containing fewer than 5% of the sample were rejected.

We used Morin et al.'s (2016) analytical framework to guide systematic tests of latent profile analysis similarity across different samples, which we adapted to longitudinal data. Latent transition growth analyses (LTGA) were carried, which are similar to latent transition analysis (LTA; Asparouhov & Muthén, 2014; Morin et al., 2019) but rather than examining the association between individuals' group membership in a class or profile across two separate occasions, it examined the association between membership in a trajectory group across two separate informants (mother and adolescent).

***Testing the Invariance Across Samples*.** The invariance of the combinations of mother-adolescent trajectories across samples was tested based on procedures established by Morin and Litalien (2017) for LTA, which was here applied to LTGA. This procedure consists of the following steps. First, we tested for *configural similarity* (i.e., whether the same number of trajectories are found across samples) by doing a class enumeration procedure and identifying the appropriate number of classes in each sample. Second, we tested *structural similarity* (i.e., whether combined trajectory groups were the same across samples) by constraining means for intercepts and slopes across samples. Third, we tested *dispersional similarity* (i.e., whether variances and covariances within combined trajectories are the same in both samples) by constraining the variance and covariance of slopes and intercepts to equality across samples. Fourth, *distributional similarity* (i.e., whether the size of combined trajectories was the same in both samples) was tested by constraining probabilities for trajectory membership to equality in the two samples (see Morin et al., 2019). Finally, a series of analyses examined *regression similarity* (i.e., whether the association between mother trajectory group membership and adolescent trajectory group membership is similar across samples) by constraining the multinomial regression link in both maternal and adolescent classes to equality across samples (see Mplus code in the Supplementary Materials).

***Predicting Membership in Trajectories*.** Once cross-sample invariance of trajectories was confirmed, membership in these trajectories was examined as a function of control variables (e.g., adolescent gender, maternal education level, family income, family structure). These variables were entered as predictor variables in the final model using a two-step estimation strategy (Bakk & Kuha, 2018), which allowed testing the final model's *predictive similarity* (i.e., the relations between predictors and combined group membership; Morin et al., 2019). It produced estimates for the strength of prediction of each variable for each trajectory group membership using multinomial regressions, which produces an odds ratio (OR)—a ratio above 1 indicating an increase in the odds of the outcome and a ratio below 1 indicating a decrease in the odds of the outcome. Effect sizes are interpreted based on Cohen's (1988) guidelines where OR values lower or equal to 1.44, 2.48, and 4.27 reflect very small, small, and moderate effect sizes, respectively, and values above 4.27 reflect a large effect size.

***Predicting Adjustment From Combined Trajectories*.** In a final step, adolescents' academic, social, and personal-emotional adjustment scores, as well as their secondary 5 grades were compared across combined classes using a two-step estimation strategy (Bakk & Kuha, 2018). This allows the estimation of *explanatory similarity* (i.e., the relations between combined trajectory membership and student outcomes; Morin et al., 2019). Furthermore, Cohen's (1988) *d*s were calculated to estimate effect sizes for each mean difference on each student outcome.

Results

Preliminary Analyses

Results of descriptive analyses for both samples and per measurement wave are presented in Table 1. On average, adolescents and their mothers in samples 1 and 2 tended to rate maternal autonomy support as moderate and youth perceptions appears more positive than maternal reports. Correlations among variables revealed that autonomy support was moderately stable over time and there are moderate to large within-informant associations, whereas cross-informant associations were small to very small and rarely reached statistical significance (see Table 1).

Testing the Invariance of Combined Trajectories

We first tested if the same number of classes were found across samples (i.e., configural similarity). Based on preliminary analyses for each informant separately (see Tables S1-S4 and Figures S1-S2 in the Supplementary Materials), linear models were chosen and there was a diminishing return after 2 trajectory groups for mothers and 3 trajectory groups for adolescents. Hence, subsequent analyses considered solutions with up to 3 trajectories for mothers and 4 trajectories for adolescents. In Sample 2, errors due to negative (yet statistically nonsignificant) residual variances in almost all models led to fixing slope variances at zero at this step with the intention of freeing them when testing invariance across studies. Results per sample are presented on Tables S4-S5 and Figures S3-S4.

For mothers, fit indices decreased when moving from 1 to 2 trajectories and further decreased for 3 trajectories in Sample 1 but increased in Sample 2. In Sample 1, models with 3 trajectories for mother reports did not converge or had a negative residual variance so they were rejected. For youth reports, each additional trajectory improved fit indices. A diminishing improvement was seen after 2 trajectories in Sample 1, and after 3 trajectories in Sample 2. In Sample 1, models with 4 trajectories all had a negative residual variance so they were not deemed admissible. Among the admissible models, the one with 2 trajectories for mothers and 3 trajectories for adolescents seemed preferable based on fit indices. Visual inspection of the trajectories for models with 2 trajectory groups for mothers and 3 trajectory groups for adolescents showed similarities across samples and were thus retained as the best fitting models in both samples to further test the invariance of trajectories across samples. Thus, these results support configural similarity: the same number of classes were found across samples.

As we found evidence of configural similarity, we then further tested increasingly restrictive invariance constraints on the trajectories across samples (see Table 2). First, we estimated a baseline model with the same number of classes across samples, but without other invariance constraints (configural similarity; Model 1). Since we had a different number of trajectory groups for each informant, parameters were constrained within informant but not across informants. Second, we tested structural similarity by constraining the means of the intercept and linear slope factors across samples (see Model 2). Structural similarity was supported, as evidenced by a decrease in BIC values compared to Model 1 (Δ BIC = -29.04). Before testing dispersion similarity (which pertained to the variances of intercepts and slopes), we needed to free the slope variances in Sample 2 since we previously had to constrain them to zero to avoid estimation issues (as mentioned above). In Model 2.1, we thus estimated the slope variances for mothers and adolescents in both samples but constraining them to equality across samples. This resulted in an increase in BIC (Δ BIC = +39.36), which is unsurprising given that we estimated more parameters than in the previous model. Third, we tested dispersion similarity by constraining intercepts and slopes across samples. Dispersion similarity was supported as Model 3 lead to a decrease in BIC values compared to Model 2.1 (Δ BIC = -51.66). Fourth, we tested distribution similarity by constraining the trajectory group probabilities to equality across samples. Distribution similarity was supported as Model 4 lead to a decrease in BIC values compared to Model 3 (Δ BIC = -14.51). Fifth, regression similarity (Model 5) was supported, as constraining odds ratio for the linking of mother and youth trajectories across samples leads to a decrease compared to Model 4 (Δ BIC = -11.74).

The resulting trajectories derived from Model 5 are depicted in Figure 1 for adolescents (above) and mothers (below). For adolescents, results showed three developmental patterns: (1) a trajectory representing a normative pattern (76% of adolescents) which showed a *High* and slightly increasing trajectory, (2) a *Decreasing* trajectory (12% of the sample) which showed a high but rapidly declining pattern, and (3) an *Increasing* trajectory (12% of the sample) which showed moderate but rapidly increasing levels of autonomy support. The 95% confidence interval further show that the Decreasing trajectory initially reported levels of autonomy support comparable to that of the High trajectory, but the Increasing trajectory did not reach levels of autonomy support comparable to that of the High trajectory by T5. For mothers, results showed two developmental patterns: (1) a normative trajectory (91% of mothers) who showed *High* and slightly declining levels of autonomy support, and (2) a *Moderate* trajectory (9% of mothers) who showed a moderate but stable level of autonomy support.

Combined Trajectory Membership. Having identified trajectories for each informant, we then examined their associations between informants. Results showed that adolescents whose mother was in the high trajectory had a 75% chance of belonging to the high adolescent trajectory, 13% chance of being in the increasing adolescent trajectory, and 13% chance of being in the decreasing adolescent trajectory. Globally, most mother-adolescent dyads (68%) reported high levels of autonomy support by both informants. Adolescents of mothers in the moderate maternal class had an 87% chance of belonging in the high adolescent trajectory, 13% chance of being in the increasing adolescent trajectory, and 0% chance of being in the decreasing adolescent trajectory. Thus, results show a very low level of cross-informant consistency when mothers reported moderate levels of autonomy support as their adolescents reported high levels of maternal autonomy support in 87% of cases.

Predicting Membership in Combined Trajectories

Based on the final invariant model, we tested predictors of class membership. For adolescent trajectories, no statistically significant predictors were identified (see Table 3). For mother trajectories, we found two statistically significant predictors (see Table 3). Maternal age was associated with an increased odd of being in the High and decreasing trajectory (OR = 1.02; equivalent to Cohen's *d* of .01, a very small effect size) and maternal full-time work was associated with a lower odds of belonging in the decreasing trajectory (OR = .71, equivalent to Cohen's *d* of .19, a small effect size).

Predicting Academic Achievement and Adjustment

A final set of analyses tested whether adjustment outcomes in the last year of secondary school (secondary 5) varied across combined trajectory groups, while controlling for maternal age and their employment regime. We report data for all observed combinations of mother and youth trajectories (see Figure 2), excluding a combination that was not observed in our data (i.e., when both mothers and adolescents reported decreasing levels of maternal autonomy support). Values for which 95% confidence intervals do not overlap are interpreted as statistically different. We tested whether the means/variances of trajectory outcomes differed across samples, while controlling for predictors of group membership. As we found evidence supporting this invariance (see Table S8 in Supplementary Materials for fit indices), we report results based on the invariant model (i.e., sample invariant).

The general pattern of results indicates that adolescents fared worst when they perceived their mothers as decreasingly autonomy supportive over the 5-year period while she reported moderate levels of autonomy support (i.e., $\text{Decreasing}_{\text{youth}}/\text{Moderate}_{\text{mother}}$ combination). Their levels of academic, social, and personal-emotional adjustment in school were about a standard deviation below average and yielded very strong effect sizes (*d* = -1.85, -3.81, and -4.25, respectively; see Table S9). When adolescents reported a Decreasing trajectory, they were also less adapted when their mother reported high levels of autonomy support, compared to other youths, further demonstrating the costs of perceiving one's mother as decreasingly autonomy supportive, regardless of how she perceived herself (*d* = -0.91, -0.87, and -0.88, respectively for academic and personal adjustment, and achievement). In contrast, youth reported most positive outcomes when they perceived their mother as highly autonomy supportive and mothers reported being highly or moderately autonomy supportive. In fact, adolescents' academic adjustment was higher when they perceived their mother as more autonomy support than she did (*d* = 1.42), despite their achievement being lower (*d* = -0.91). Finally, youth who perceived their mother as moderately yet increasingly autonomy supportive and whose mother reported being highly autonomy supportive (i.e., $\text{Increasing}_{\text{youth}}/\text{High}_{\text{mother}}$ combination) are disadvantaged on all outcomes, although not as strongly as those in the $Decreasing_{youth}$/$Moderate_{mother}$ combination (*d* = -0.65, -1.20, and -1.02, respectively for academic, social, and personal-emotional adjustment). Mother-adolescent combinations were generally not distinguishable on academic achievement, and the only positive (albeit weak) pattern was in High-High combined trajectories (*d* = .32).

Discussion

Results of this multi-sample, multi-informant longitudinal study illustrates how, across adolescence and until emerging adulthood, there are distinct longitudinal patterns of mother and youth perceptions of maternal autonomy support, and that the most normative agreement pattern is one where both mothers and adolescents report high and relatively stable levels of maternal autonomy support. Other developmental patterns include a moderate trajectory for mothers as well as moderate and increasing and high and decreasing trajectories for adolescents. These different trajectories of maternal autonomy support illustrate how developmental patterns were not equivalent across informants. Importantly, we did not find trajectories to be predicted by youth gender, nor where they linked with other sociodemographic factors such as mothers' education level. Results suggested that the worst agreement pattern when predicting student outcomes was when adolescents reported their mother as decreasingly autonomy supportive over years combined with mothers reporting moderate autonomy support. In contrast, optimal outcomes were generally linked to high and stable levels of adolescent perceptions of maternal autonomy support, with little changes as a function of maternal reports—except for the finding that academic adjustment was highest when youth overestimated their mothers (i.e., they perceived the mother as strongly autonomy supportive over the 5-year period while mothers reported being moderately autonomy supportive). Below, we discuss the implications of these findings for research and theory on parental need support and student development.

Theoretical and Scientific Implications

This study contributes first to knowledge on parental autonomy support. There already is robust evidence on the positive contribution that parental autonomy support has for several indices of youth functioning across contexts, including school (Pomerantz et al., 2012; Ratelle & Duchesne, 2018; Soenens et al., 2019). The present findings demonstrate how longitudinal patterns of high maternal autonomy support can promote adolescents' adjustment and achievement in school. By using a truly longitudinal design, this study adds to existing research that used cross-sectional or retrospective design. It also illustrates how this important maternal supportive practice unfolds during a substantial part of adolescence until emerging adulthood. Hence, these findings concur with those of past studies that demonstrated the importance of parents even in late adolescence and emerging adulthood (Padilla-Walker & Nelson, 2019). Furthermore, they extend past results that highlighted how autonomy support is globally perceived as moderately high and stable over time from preadolescence and adolescence (Bradley et al., 2015; Van der Giessen et al., 2014; Wang et al., 2007) to emerging adulthood (Pan & Gauvain, 2012) by showing that developmental patterns of autonomy support are not homogeneous either as perceived by adolescents—where three distinct trajectories are identified—or reported by mothers—for whom we find two distinct trajectories.

Another important contribution of this study pertains to research using a multi-informant methodology. Few studies in the parenting literature examined autonomy support using more than one perspective, and, when they did, patterns of convergence or divergence on maternal (or parental) autonomy support were often not reported. Among the studies that reported associations between perspectives, there is great variability in agreement patterns (Korelitz & Garber, 2016). To our knowledge, this is the first study to examine longitudinal patterns of mother-adolescent agreement on autonomy support. Our findings align with the application of the OTM to family dynamics (De Los Reyes & Ohannessian, 2016) and their proposition that convergence patterns vary across dyads—and go a step further by examining these patterns longitudinally. The normative pattern for each informant was a high trajectory that remained stable (adolescent perspective) of decreased slightly over time (mother perspective) and the typical convergence pattern in one where dyads agree that she is highly autonomy supportive. This is encouraging given the positive outcomes associated with high parental autonomy support (Ryan & Deci, 2017; Soenens et al., 2019). To the extent that autonomy support is adaptive, our findings align with prior work on informant discrepancies in reports of adolescent mental health, which found that in community samples in which the overall base rate of maladjustment is relatively low, informants agree on ratings to a particularly large extent when both informants rate adaptive functioning (e.g., Rescorla et al., 2013). Hence, we can conclude that for a large proportion of these two representative samples of mother-youth dyads, a shared understanding of mothers as highly autonomy supportive was the norm. A key finding in recent work on informant discrepancies is that, although at the sample level, agreement can be low, that does not mean that all informants disagree. Quite the contrary, embedded in samples in the developmental and clinical literature are profound individual differences in between-dyad agreement patterns, with some dyads agreeing in their reports and others disagreeing, often in quite varied patterns (e.g., parent > adolescent, adolescent > parent). Collectively, a sample in which such varied dyadic patterns manifest should result in an omnibus estimate of sample-level correspondence that is rather low, even if the modal dyadic pattern is that of agreement (see also De Los Reyes & Epkins, 2023; De Los Reyes, Epkins et al., 2023).

Using a person-centered approach, we found longitudinal convergence to be heterogeneous. That is, the level of agreement between youth and their mother regarding how autonomy supportive she is over several years varies across dyads. Our research confirmed that parallel-process modeling (Sterba, 2013) can be used to model heterogeneous patterns of maternal autonomy support from two perspectives as well as their combinations. Applied to dyadic data, such modeling overcomes limits associated with other analytical approaches such as discrepancy scores (De Los Reyes & Ohannessian, 2016; Zilcha-Mano et al., 2021) and extends knowledge over what is provided by more basic analyses such as correlations and discrepancy scores. Had we only relied on correlational results, we would have concluded that mother-adolescent associations were at best weak.

Finally, the present study has important implications for how agreement patterns predict important outcomes. Applied to family dynamics, the OTM proposed that patterns of correspondence between informants provide researchers with valuable information on family functioning and can help predict important dimensions of child functioning as well (De Los Reyes & Ohannessian, 2016). Until now, we knew little on the consequences associated with converging perceptions of autonomy support. This is the first study to evaluate the predictive utility of convergence patterns on maternal autonomy support, here focusing on better understanding youth adjustment in school. Past cross-sectional findings on parental control suggested that overestimating maternal controlled was most detrimental to adolescents (Van Petegem et al., 2020). Mirroring these findings, our results show that overestimating maternal autonomy support over several years predicts the strongest levels of academic adjustment. They further demonstrate that underestimating maternal autonomy support (i.e., when youth perceive their mother as initially highly autonomy supportive but decreasingly less so over time while she reports being strongly autonomy supportive over the same period) is detrimental for how youth adjust to academic demands, how they cope emotionally, and how they succeed in school.

Over and beyond the scientific contribution of this work, several recommendations can be drawn to improve family interventions as well as student services. First, having found that the best scenario involves students perceiving their mother as highly autonomy supportive, regardless of how they perceive themselves to be, the most promising avenue is to help mothers manifest more autonomy supportive behaviors toward their child (and ideally reduce their controlling techniques). Intervention programs aimed at improving parental need support such as the How-To program (Mageau et al., 2022) and the Parent Check-In (Grolnick et al., 2021) were found to be effective in improving parental supportive behaviors and child outcomes. Programs also exist in an online version, making parent training more accessible, without losing its efficacy (Duchesne et al., 2024). Second, interventions can also target youth, to help them improve their recognition of need supportive behaviors. Without discounting their experience, they can nevertheless be encouraged to acknowledge autonomy supportive behaviors when their mother manifests them. Knowing that parental need support can be explained by child factors (Grolnick, 2003; Bornstein, 2016), we can increase their awareness regarding how they can contribute—both positively and negatively— to the quality of their interaction with their mother. Finally, acknowledging the importance of mobilizing different sources of information on maternal autonomy support, having stakeholders (e.g., counselors, psychologists) intervene from a family system approach to allow parents and youth to share their perspectives.

Strengths, Limits, and Future Directions

This study has several important strengths such as its longitudinal design the encompasses five years, the replication across two distinct samples, which are stratified to be representative of the student population, the use of multiple informant methodology, the use of sophisticated statistical modeling, and the underlying theoretical frameworks. Nevertheless, we find important to acknowledge the limits of this research when interpreting its findings. First, the research design was descriptive in that no experimental control could be exerted on key variables. Consequently, no causal inferences can be derived from these findings, despite the strengths of the longitudinal design. Second, even with representative samples such as those we used, there is still a possible selection bias in that highly unsupportive parents might have declined to participate, preventing us from recruiting more conflictual families. Additional efforts to reach such families could be deployed in future research. Third, although two informants were considered in this study, namely those involved in the targeted mother-adolescent dyad, a third informant not directly involved in the dyadic interaction (e.g., father, sibling, observer) could have offered additional useful information. Adding a source of information will help rule out shared method variance (i.e., criterion contamination; De Los Reyes et al., 2023) in explaining the findings since youths provided all data for examining outcomes. Finally, convergence issues typical of GGMM (McNeish & Harring, 2020; McNeish et al., 2023) were found, which required adding constraints to our models. Replications with other samples are thus needed to offer robust support to our findings, while attending to measurement quality of scales, which impacts model fit (Greene et al., 2022).

Future research should replicate these findings in father-adolescent dyads. Despite similarities in coparents' autonomy supportive style (Guay et al., 2018), more and more research has documented the unique role played by fathers in youth development (e.g., Van Lissa et al., 2019). Hence, it will be important to determine whether the same developmental patterns exist for paternal autonomy support from adolescents' and fathers' perspective, as well as whether convergence patterns explain the same student outcomes. Having found no differences as a function of adolescent sex at birth, it will be interesting to evaluate whether it is also the case with father-adolescent dyads. Another research avenue is to test bidirectional links between informants' account on parental autonomy support to determine if parent and youth reports longitudinally predict each other. This will help identify whether these perceptions are mutually influential and if there are inflection points for each informant where interventions are more suited. Finally, we suggest testing the mediation role played by psychological needs when examining the contribution of agreement patterns for important adolescent outcomes.

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Table 1

Descriptive Statistics and Correlations for Informant Reports on Maternal Autonomy Support in Sample 1 and Sample 2 Across Waves

		Sample 1				Sample 2													
Informant		*Mean*	*SD*	*N*	ω	*Mean*	*SD*	*N*	ω	1	2	3	4	5	6	7	8	9	10
Mother	T1	5.03	0.90	372	.79	5.00	1.03	534	.82		.58*	.44*	.47*	.45*	.08	.11*	.14*	.12	.13
	T2	4.91	0.95	377	.80	5.11	0.98	416	.84	.59*		.59*	.63*	.50*	.05	.07	.07	.05	.01
	T3	4.77	1.03	374	.82	5.01	1.04	464	.84	.56*	.63*		.57*	.47*	-.01	.12*	.10*	.05	.04
	T4	4.67	1.08	329	.84	4.87	1.11	277	.86	.62*	.58*	.62*		.57*	.07	.05	.06	.01	-.02
	T5	4.65	1.10	365	.85	4.74	1.16	206	.86	.56*	.57*	.63*	.70*		.15*	.03	.07	.11	.06
Adolescent	T1	5.42	1.04	458	.90	5.39	1.14	521	.92	.12*	.03	.10	.11	.08		.64*	.58*	.52*	.33*
	T2	5.32	1.07	473	.91	5.33	1.14	378	.93	.07	.04	.06	.07	.12*	.60*		.73*	.60*	.47*
	T3	5.36	1.02	436	.91	5.47	1.09	402	.91	.05	.07	.05	.01	.05	.47*	.58*		.73*	.62*
	T4	5.32	1.02	351	.91	5.51	1.14	229	.92	.08	-.01	.05	.00	.07	.48*	.50*	.60*		.77*
	T5	5.45	1.02	375	.92	5.62	1.14	166	.94	.06	.01	-.05	-.03	.04	.36*	.36*	.50*	.64*	

Note. Scores ranged from 1 to 5.

* $p < .05$. Shaded coefficients refer to within-informant correlations.

Sample 1 = below diagonal; Sample 2 = above diagonal.

Table 2

Fit Indexes for Models Testing Similarity Across Samples

Models	AIC	BIC	aBIC	Entropy
1. Configural Similarity	21253.73	21590.85	21387.54	.78
2. Structural Similarity	21277.37	21561.81	21390.28	.74
2.1 Slope Variances to Equality	21279.85	21601.17	21407.39	.74
3. Dispersion Similarity	21280.86	21549.51	21387.50	.74
4. Distribution Similarity	21282.16	21535.00	21382.52	.78
5. Regression Similarity	21280.95	21523.26	21377.13	.78

Table 3

Covariates Predicting Membership in Adolescent Trajectories and Mother Trajectories

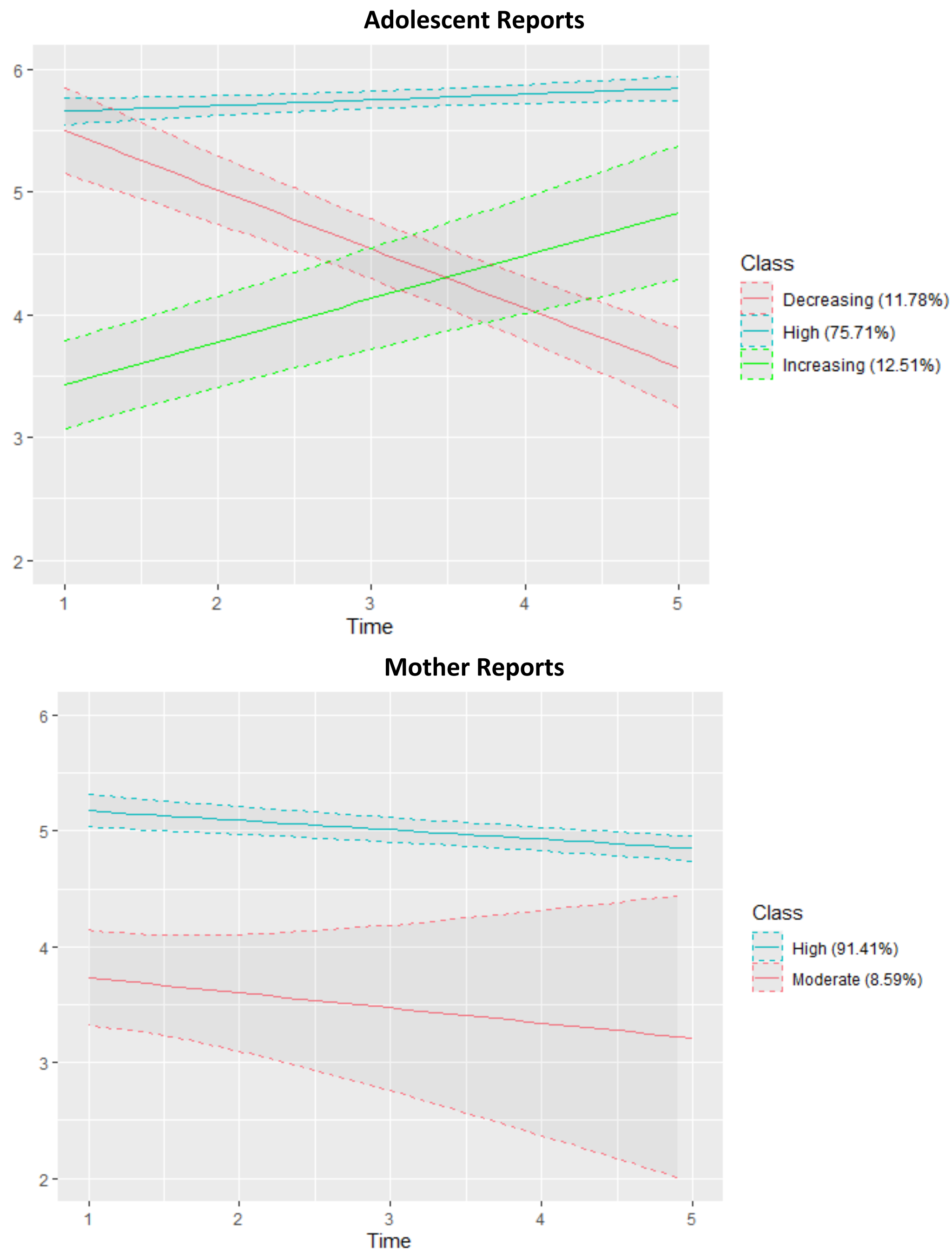
	Predicting Adolescent Trajectories				Predicting Adolescent Trajectories			
	Low Increasing vs. High Decreasing		Low Increasing vs. High Increasing		High Decreasing vs. High Increasing		Decreasing vs. Normative	
Variables	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Gender (Being a Girl)	1.09	[0.76, 1.57]	1.22	[0.95, 1.56]	1.12	[0.85, 1.47]	1.04	[0.76, 1.46]
Maternal Age	0.99	[0.97, 1.01]	1.00	[0.99, 1.01]	1.01	[1.00, 1.03]	1.02*	[1.01, 1.04]
Family Income	1.01	[0.92, 1.12]	0.94	[0.88, 1.01]	0.93	[0.85, 1.01]	0.95	[0.86, 1.05]
Maternal Education	1.03	[0.93, 1.15]	0.98	[0.92, 1.04]	0.95	[0.86, 1.04]	0.92	[0.83, 1.02]
Maternal Occupation	0.92	[0.61, 1.40]	1.15	[0.87, 1.51]	1.24	[0.88, 1.75]	0.71*	[0.51, 0.99]
Single Parent Family	1.26	[0.80, 2.00]	1.09	[0.76, 1.57]	0.87	[0.61, 1.24]	1.01	[0.64, 1.61]

Note. OR = Odds ratio; 95% CI = 95% confidence interval.

* $p < .05$

Figure 1

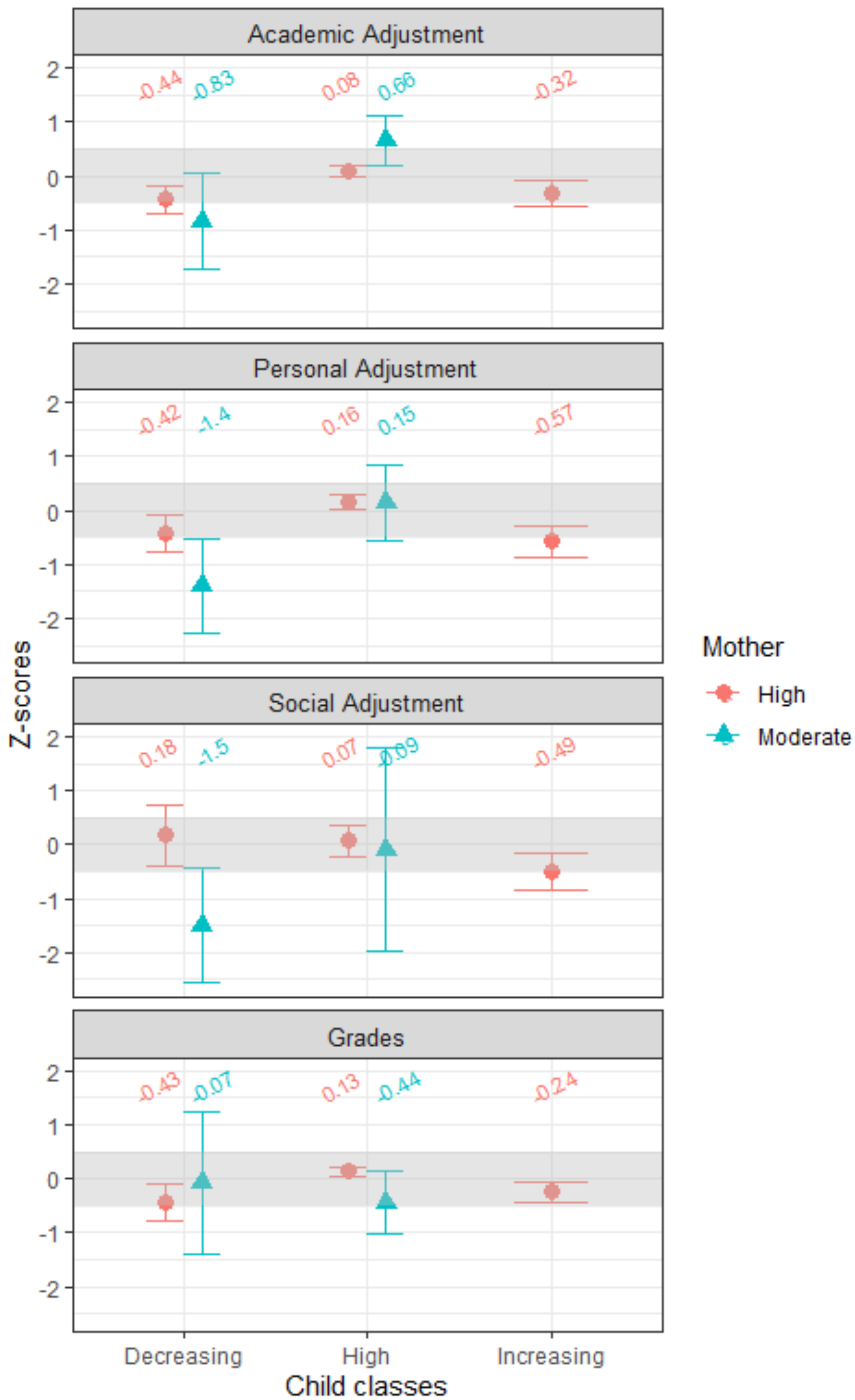
Growth Trajectories for Each Informant in Samples 1 and 2 and Their 95% Confidence Intervals



Note. Results based on Model 5 (*regression similarity)*. Dotted lines represent 95% confidence intervals.

Figure 2

Mean Level and 95% Confidence Intervals for Adjustment Outcomes as a Function of Combined Informant Trajectory Membership in Both Samples



Online Supplements for

Developmental Trajectories of Mother-Adolescent Agreement on Maternal Autonomy Support and Their Contributions to Adolescents' Adjustment

Authors' note:

These online technical appendices are to be posted on the journal website and hot-linked to the manuscript. If the journal does not offer this possibility, these materials can alternatively be posted on one of our personal websites (we will adjust the in-text reference upon acceptance).
We developed these materials to provide additional technical information and to keep the main manuscript from becoming needlessly long.

Mplus Script For Model 5 – Regression Similarity

Given the number of models in the current manuscript, we only include the script for one model. We include here a copy of the Mplus input that we used to perform the final step (model 5 – Regression similarity). We direct readers to a book chapter that thoroughly describes each step required to test the invariance in latent profiles, as well as discusses various important considerations (Morin & Litalien, 2019).

```
DATA:

  FILE IS "merged.dat";

VARIABLE:

NAMES ARE
ID

M1_SAM
M2_SAM
M3_SAM
M4_SAM
M5_SAM

E1_SAM
E2_SAM
E3_SAM
E4_SAM
E5_SAM

ETUDE
;

!identify variables to use
USEVARIABLES ARE
M1_SAM
M2_SAM
M3_SAM
M4_SAM
M5_SAM

E1_SAM
E2_SAM
E3_SAM
E4_SAM
E5_SAM

;
```

```
!identify missing data value
MISSING ARE ALL (-999);

!identify the studies using the knownclass option
knownclass=cg (etude=1 etude=2);

!also identify the number of classes for mothers and children
classes=cg(2) parent (2) child(3) ;


analysis:
type=mixture;
start = 1500 500;
proc=12;

model:
  %OVERALL%

!for all parameters, we use the starting values based on the previous model (i.e., distribution similarity)
!to facilitate convergence


    i_e s_e | e1_sam@0 e2_sam@1 e3_sam@2 e4_sam@3 e5_sam@4;
    i_m s_m | m1_sam@0 m2_sam@1 m3_sam@2 m4_sam@3 m5_sam@4;


    [ cg#1*-0.07960 ];
    [ parent#1*-2.12898 ];

    %CG#1.PARENT#1.CHILD#1%

    s_e WITH i_e*-0.00241 (16);
    i_m WITH i_e*0.09079 (18);
    i_m WITH s_e*-0.00181 (19);
    s_m WITH i_e*0.00540 (21);
    s_m WITH s_e*-0.00323 (22);
    s_m WITH i_m*-0.01700 (23);

    [ m1_sam@0 ];
    [ m2_sam@0 ];
    [ m3_sam@0 ];
    [ m4_sam@0 ];
    [ m5_sam@0 ];
    [ e1_sam@0 ];
    [ e2_sam@0 ];
    [ e3_sam@0 ];
    [ e4_sam@0 ];
    [ e5_sam@0 ];
    [ i_e*3.42907 ] (27);
    [ s_e*0.35841 ] (28);
    [ i_m*4.26143 ] (13);
    [ s_m*-0.24421 ] (14);
```

```
m1_sam*0.29840 (1);
m2_sam*0.37217 (2);
m3_sam*0.42574 (3);
m4_sam*0.38072 (4);
m5_sam*0.33327 (5);
e1_sam*0.37161 (6);
e2_sam*0.49444 (7);
e3_sam*0.46609 (8);
e4_sam*0.38356 (9);
e5_sam*0.31698 (10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#1.PARENT#1.CHILD#2%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.50155 ] (25);
[ s_e*-0.47932 ] (26);
[ i_m*4.26143 ] (13);
[ s_m*-0.24421 ] (14);

m1_sam*0.29840 (1);
m2_sam*0.37217 (2);
m3_sam*0.42574 (3);
m4_sam*0.38072 (4);
m5_sam*0.33327 (5);
e1_sam*0.37161 (6);
e2_sam*0.49444 (7);
e3_sam*0.46609 (8);
e4_sam*0.38356 (9);
e5_sam*0.31698 (10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
```

```
s_m*0.01198 (24);

%CG#1.PARENT#1.CHILD#3%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.66311 ] (11);
[ s_e*0.04628 ] (12);
[ i_m*4.26143 ] (13);
[ s_m*-0.24421 ] (14);

m1_sam*0.29840 (1);
m2_sam*0.37217 (2);
m3_sam*0.42574 (3);
m4_sam*0.38072 (4);
m5_sam*0.33327 (5);
e1_sam*0.37161 (6);
e2_sam*0.49444 (7);
e3_sam*0.46609 (8);
e4_sam*0.38356 (9);
e5_sam*0.31698 (10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#1.PARENT#2.CHILD#1%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
```

```
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*3.42907 ] (27);
[ s_e*0.35841 ] (28);
[ i_m*5.19245 ] (29);
[ s_m*-0.05147 ] (30);

m1_sam*0.29840 (1);
m2_sam*0.37217 (2);
m3_sam*0.42574 (3);
m4_sam*0.38072 (4);
m5_sam*0.33327 (5);
e1_sam*0.37161 (6);
e2_sam*0.49444 (7);
e3_sam*0.46609 (8);
e4_sam*0.38356 (9);
e5_sam*0.31698 (10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#1.PARENT#2.CHILD#2%

 s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.50155 ] (25);
[ s_e*-0.47932 ] (26);
[ i_m*5.19245 ] (29);
[ s_m*-0.05147 ] (30);

m1_sam*0.29840 (1);
m2_sam*0.37217 (2);
```

```
m3_sam*0.42574 (3);
m4_sam*0.38072 (4);
m5_sam*0.33327 (5);
e1_sam*0.37161 (6);
e2_sam*0.49444 (7);
e3_sam*0.46609 (8);
e4_sam*0.38356 (9);
e5_sam*0.31698 (10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#1.PARENT#2.CHILD#3%

 s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
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[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.66311 ] (11);
[ s_e*0.04628 ] (12);
[ i_m*5.19245 ] (29);
[ s_m*-0.05147 ] (30);

m1_sam*0.29840 (1);
m2_sam*0.37217 (2);
m3_sam*0.42574 (3);
m4_sam*0.38072 (4);
m5_sam*0.33327 (5);
e1_sam*0.37161 (6);
e2_sam*0.49444 (7);
e3_sam*0.46609 (8);
e4_sam*0.38356 (9);
e5_sam*0.31698 (10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);
```

```
%CG#2.PARENT#1.CHILD#1%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*3.42907 ] (27);
[ s_e*0.35841 ] (28);
[ i_m*4.26143 ] (13);
[ s_m*-0.24421 ] (14);

m1_sam*0.54689 (mc1);
m2_sam*0.34656 (mc2);
m3_sam*0.52286 (mc3);
m4_sam*0.47085 (mc4);
m5_sam*0.62752 (mc5);
e1_sam*0.52183 (mc6);
e2_sam*0.38157 (mc7);
e3_sam*0.32842 (mc8);
e4_sam*0.29286 (mc9);
e5_sam*0.31157 (mc10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#2.PARENT#1.CHILD#2%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
```

```
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.50155 ] (25);
[ s_e*-0.47932 ] (26);
[ i_m*4.26143 ] (13);
[ s_m*-0.24421 ] (14);

m1_sam*0.54689 (mc1);
m2_sam*0.34656 (mc2);
m3_sam*0.52286 (mc3);
m4_sam*0.47085 (mc4);
m5_sam*0.62752 (mc5);
e1_sam*0.52183 (mc6);
e2_sam*0.38157 (mc7);
e3_sam*0.32842 (mc8);
e4_sam*0.29286 (mc9);
e5_sam*0.31157 (mc10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#2.PARENT#1.CHILD#3%

 s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.66311 ] (11);
[ s_e*0.04628 ] (12);
[ i_m*4.26143 ] (13);
[ s_m*-0.24421 ] (14);

m1_sam*0.54689 (mc1);
m2_sam*0.34656 (mc2);
m3_sam*0.52286 (mc3);
m4_sam*0.47085 (mc4);
```

```
m5_sam*0.62752 (mc5);
e1_sam*0.52183 (mc6);
e2_sam*0.38157 (mc7);
e3_sam*0.32842 (mc8);
e4_sam*0.29286 (mc9);
e5_sam*0.31157 (mc10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#2.PARENT#2.CHILD#1%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*3.42907 ] (27);
[ s_e*0.35841 ] (28);
[ i_m*5.19245 ] (29);
[ s_m*-0.05147 ] (30);

m1_sam*0.54689 (mc1);
m2_sam*0.34656 (mc2);
m3_sam*0.52286 (mc3);
m4_sam*0.47085 (mc4);
m5_sam*0.62752 (mc5);
e1_sam*0.52183 (mc6);
e2_sam*0.38157 (mc7);
e3_sam*0.32842 (mc8);
e4_sam*0.29286 (mc9);
e5_sam*0.31157 (mc10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#2.PARENT#2.CHILD#2%

s_e WITH i_e*-0.00241 (16);
```

```
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
[ e4_sam@0 ];
[ e5_sam@0 ];
[ i_e*5.50155 ] (25);
[ s_e*-0.47932 ] (26);
[ i_m*5.19245 ] (29);
[ s_m*-0.05147 ] (30);

m1_sam*0.54689 (mc1);
m2_sam*0.34656 (mc2);
m3_sam*0.52286 (mc3);
m4_sam*0.47085 (mc4);
m5_sam*0.62752 (mc5);
e1_sam*0.52183 (mc6);
e2_sam*0.38157 (mc7);
e3_sam*0.32842 (mc8);
e4_sam*0.29286 (mc9);
e5_sam*0.31157 (mc10);
i_e*0.30037 (15);
s_e*0.00491 (17);
i_m*0.42168 (20);
s_m*0.01198 (24);

%CG#2.PARENT#2.CHILD#3%

s_e WITH i_e*-0.00241 (16);
i_m WITH i_e*0.09079 (18);
i_m WITH s_e*-0.00181 (19);
s_m WITH i_e*0.00540 (21);
s_m WITH s_e*-0.00323 (22);
s_m WITH i_m*-0.01700 (23);

[ m1_sam@0 ];
[ m2_sam@0 ];
[ m3_sam@0 ];
[ m4_sam@0 ];
[ m5_sam@0 ];
[ e1_sam@0 ];
[ e2_sam@0 ];
[ e3_sam@0 ];
```

```
    [ e4_sam@0 ];
    [ e5_sam@0 ];
    [ i_e*5.66311 ] (11);
    [ s_e*0.04628 ] (12);
    [ i_m*5.19245 ] (29);
    [ s_m*-0.05147 ] (30);

    m1_sam*0.54689 (mc1);
    m2_sam*0.34656 (mc2);
    m3_sam*0.52286 (mc3);
    m4_sam*0.47085 (mc4);
    m5_sam*0.62752 (mc5);
    e1_sam*0.52183 (mc6);
    e2_sam*0.38157 (mc7);
    e3_sam*0.32842 (mc8);
    e4_sam*0.29286 (mc9);
    e5_sam*0.31157 (mc10);
    i_e*0.30037 (15);
    s_e*0.00491 (17);
    i_m*0.42168 (20);
    s_m*0.01198 (24);


!the new aspect of the regression similarity model is that we constrain the
!regression that captures the association between maternal and child classes
!to equality across samples
  MODEL CG:
    %CG#1%

    child#1 ON parent#1 (ba1);
    child#2 ON parent#1 (ba2);

    %CG#2%

    child#1 ON parent#1 (ba1);
    child#2 ON parent#1 (ba2);

output: standardized svalues;
plot:
type=plot3;
series= m1_sam-m5_sam e1_sam-e5_sam  (*);
```

Morin, A.J.S. & Litalien, D. (2019). Mixture modeling for lifespan developmental research. In *Oxford Research Encyclopedia of Psychology. Oxford University Press.*
http://dx.doi.org/10.1093/acrefore/9780190236557.013.364

Developmental Trajectories of Maternal Autonomy Support per Informant

We first ran models separately for mothers and adolescents in each sample. This was done for two reasons: (1) to choose between linear and quadratic models; (2) to identify the number of classes where there is a diminishing return in terms of improved fit.

These results suggested that linear models were preferable over quadratic models in all cases (see Tables S1 to S4 in Supplementary Material). In both samples, BIC values were more satisfying in linear models. In Sample 1 (see Tables S1 and S2, and Figure S1 in the Supplementary Material), linear models were favored over quadratic models for mothers and adolescents. For adolescents, models started to experience issues (i.e., no convergence, a class below 5%) starting at 3 classes. Although the quadratic 2-class model was favored over the linear 2-class model based on BIC, we retained the linear model because these models did not differ in terms of class sizes and overall rate of change between waves 1-5. In Sample 2, linear models were favored over quadratic models for mothers and adolescents (see Tables S3 and S4, and Figure S1). For mothers, the quadratic models had a small class (i.e., below 5%) starting at 2 classes. For adolescents, the quadratic models experienced problems (e.g., negative residuals, small classes) starting at 2 classes. Given this set of results, we retained only the linear models in subsequent analyses.

Furthermore, the results suggest that there was a diminishing return after 2 classes for mothers and 3 classes for adolescents. For mothers, BIC values started increasing after 3 classes for both samples while, for adolescents, BIC values started increasing after 4 classes in both samples. Hence, subsequent analyses considered solutions with up to 3 classes for mothers and 4 classes for adolescents.

Table S1

Fit Indices for Growth Mixture Models with Adolescent Reports (Sample 1)

Model	Traj	AIC	BIC	aBIC	Entropy	VLMR	LMR	BLRT	min_N
Linear - 1 class	1	5474.905	5519.933	5488.183	NA	NA	NA	NA	667
Linear - 2 classes	2	5405.168	5463.704	5422.428	.795	0	0	0	70
Linear - 3 classes	3	5380.287	5452.332	5401.531	.704	.0558	.0645	0	52
Linear - 4 classes	4	5364.89	5450.443	5390.116	.712	.195	.2083	0	18
Linear - 5 classes	5	5362.792	5461.853	5392.002	.709	.2865	.2942	.1429	12
Quadratic - 1 class	1	5459.612	5522.651	5478.200	NA	NA	NA	NA	667
Quadratic - 2 classes	2	5388.091	5469.141	5411.990	.789	.0082	.0096	0	71
Quadratic - 3 classes	3	NA	NA	NA	NA	NA	NA	NA	NA
Quadratic - 4 classes	4	5333.150	5450.222	5367.671	.719	.1282	.1365	0	9
Quadratic - 5 classes	5	5316.487	5451.571	5356.319	.684	.3612	.3757	0	13

Note. Traj = number of trajectories; AIC = Akaïke Information Criteria; BIC = Bayesian Information Criteria; aBIC = Sample-Size Adjusted BIC; VLMR = Vuong–Lo–Mendell–Rubin likelihood ratio test; LMR: Lo-Mendell-Rubin likelihood ratio test = BLRT: Bootstrap Likelihood Ratio Test.

Table S2

Fit Indices for Growth Mixture Models with Mother Reports (Sample 1)

Model	Traj	AIC	BIC	aBIC	Entropy	VLMR	LMR	BLRT	min_N
Linear - 1 class	1	4457.029	4500.573	4468.827	NA	NA	NA	NA	575
Linear - 2 classes	2	4441.120	4497.727	4456.457	.644	.2229	.2355	0	71
Linear - 3 classes	3	4431.223	4500.893	4450.100	.620	.0201	.0237	.0128	36
Linear - 4 classes	4	4422.932	4505.665	4445.348	.593	.0276	.0336	.0128	31
Linear - 5 classes	5	4425.461	4521.257	4451.416	.545	.6581	.6703	1	25
Quadratic - 1 class	1	4457.803	4518.764	4474.320	NA	NA	NA	NA	575
Quadratic - 2 classes	2	4443.022	4521.401	4464.258	.681	.2541	.2649	0	59
Quadratic - 3 classes	3	4432.310	4528.106	4458.265	.625	.3505	.3595	0	38
Quadratic - 4 classes	4	4426.959	4540.173	4457.633	.593	.1772	.1847	.04	32
Quadratic - 5 classes	5	4425.662	4556.294	4461.056	.577	.617	.6239	.5	14

Note. Traj = number of trajectories; AIC = Akaïke Information Criteria; BIC = Bayesian Information Criteria; aBIC = Sample-Size Adjusted BIC; VLMR = Vuong–Lo–Mendell–Rubin likelihood ratio test; LMR: Lo-Mendell-Rubin likelihood ratio test = BLRT: Bootstrap Likelihood Ratio Test.

Figure S1

Fit Indices for Adolescent and Mother Reports in Sample 1

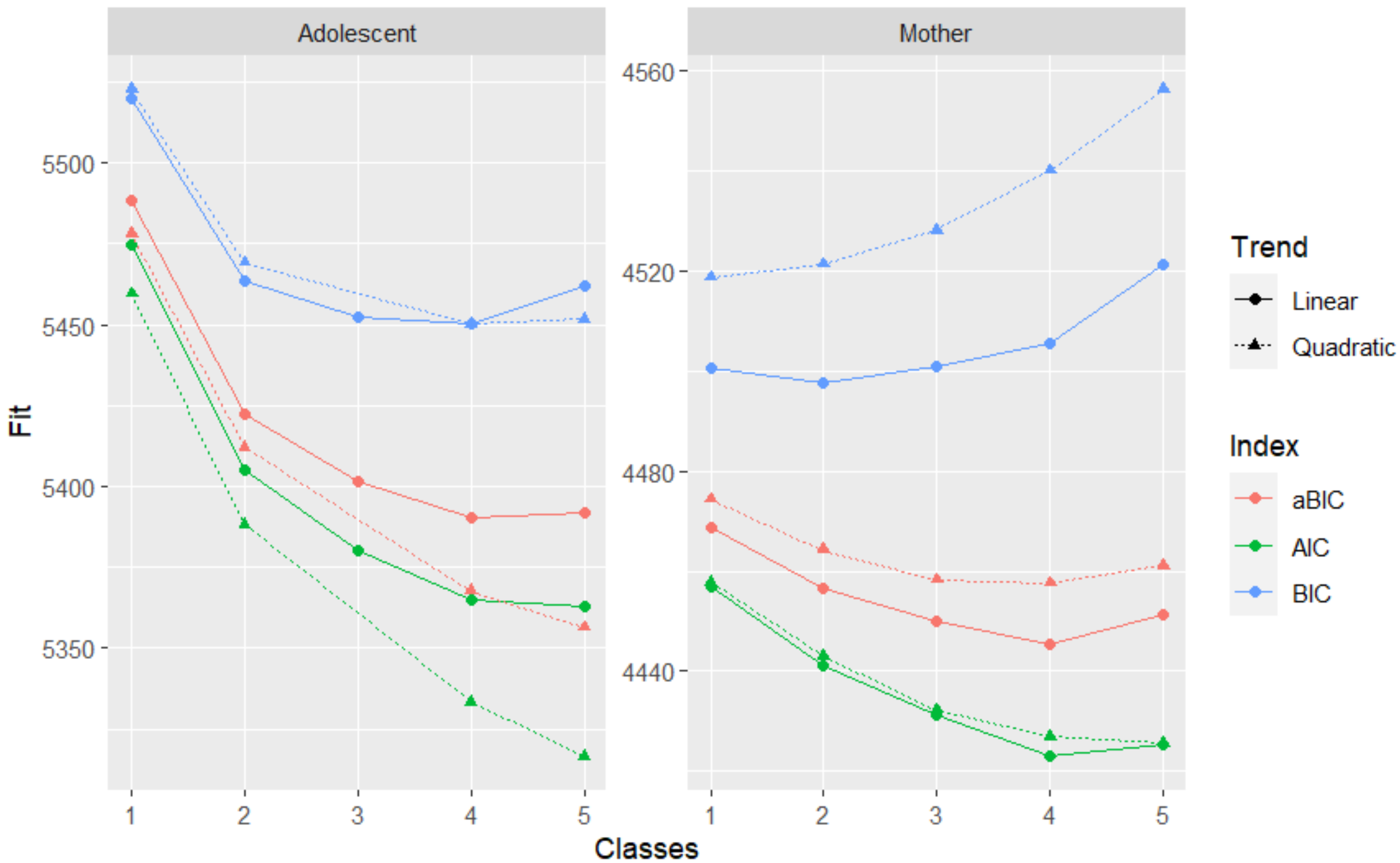

Table S3

Fit Indices for Growth Mixture Models with Adolescent Reports (Sample 2)

Model	Traj	AIC	BIC	aBIC	Entropy	VLMR	LMR	BLRT	min_N
Linear - 1 class	1	4544.188	4588.819	4557.069	NA	NA	NA	NA	641
Linear - 2 classes	2	4475.211	4533.231	4491.956	.685	.003	.004	0	99
Linear - 3 classes	3	4442.061	4513.469	4462.670	.713	.061	.068	0	54
Linear - 4 classes	4	4428.302	4513.099	4452.775	.701	.047	.054	0	28
Linear - 5 classes	5	4422.813	4520.999	4451.151	.726	.066	.074	.04	5
Quadratic - 1 class	1	4533.887	4596.369	4551.92	NA	NA	NA	NA	641
Quadratic - 2 classes	2	4464.067	4544.401	4487.253	.754	.001	.001	0	95
Quadratic - 3 classes	3	4418.528	4516.714	4446.866	.722	.041	.046	0	44
Quadratic - 4 classes	4	4378.415	4494.453	4411.905	.718	.017	.020	0	33
Quadratic - 5 classes	5	4369.921	4503.811	4408.563	.742	.026	.029	.03	7

Note. Traj = number of trajectories; AIC = Akaïke Information Criteria; BIC = Bayesian Information Criteria; aBIC = Sample-Size Adjusted BIC; VLMR = Vuong–Lo–Mendell–Rubin likelihood ratio test; LMR: Lo-Mendell-Rubin likelihood ratio test = BLRT: Bootstrap Likelihood Ratio Test.

Table S4

Fit Indices for Growth Mixture Models with Mother Reports (Sample 2)

Model	Traj	AIC	BIC	aBIC	Entropy	VLMR	LMR	BLRT	min_N
Linear - 1 class	1	5026.283	5071.052	5039.302	NA	NA	NA	NA	650
Linear - 2 classes	2	5023.531	5081.732	5040.457	.57	.186	.201	.250	38
Linear - 3 classes	3	5021.832	5093.463	5042.664	.597	.235	.252	.217	17
Linear - 4 classes	4	5021.078	5106.141	5045.816	.537	.247	.263	.429	17
Linear - 5 classes	5	5019.766	5118.260	5048.41	.597	.035	.040	.308	2
Quadratic - 1 class	1	5015.046	5077.724	5033.274	NA	NA	NA	NA	650
Quadratic - 2 classes	2	5009.124	5089.710	5032.56	.982	.130	.137	.071	2
Quadratic - 3 classes	3	5003.663	5102.156	5032.307	.831	.393	.410	.267	2
Quadratic - 4 classes	4	5000.155	5116.556	5034.006	.622	.674	.680	.429	12
Quadratic - 5 classes	5	4995.521	5129.830	5034.581	.657	.206	.211	.098	3

Note. Traj = number of trajectories; AIC = Akaïke Information Criteria; BIC = Bayesian Information Criteria; aBIC = Sample-Size Adjusted BIC; VLMR = Vuong–Lo–Mendell–Rubin likelihood ratio test; LMR: Lo-Mendell-Rubin likelihood ratio test = BLRT: Bootstrap Likelihood Ratio Test.

Figure S2

Fit Indices for Adolescent and Mother Reports in Sample 2

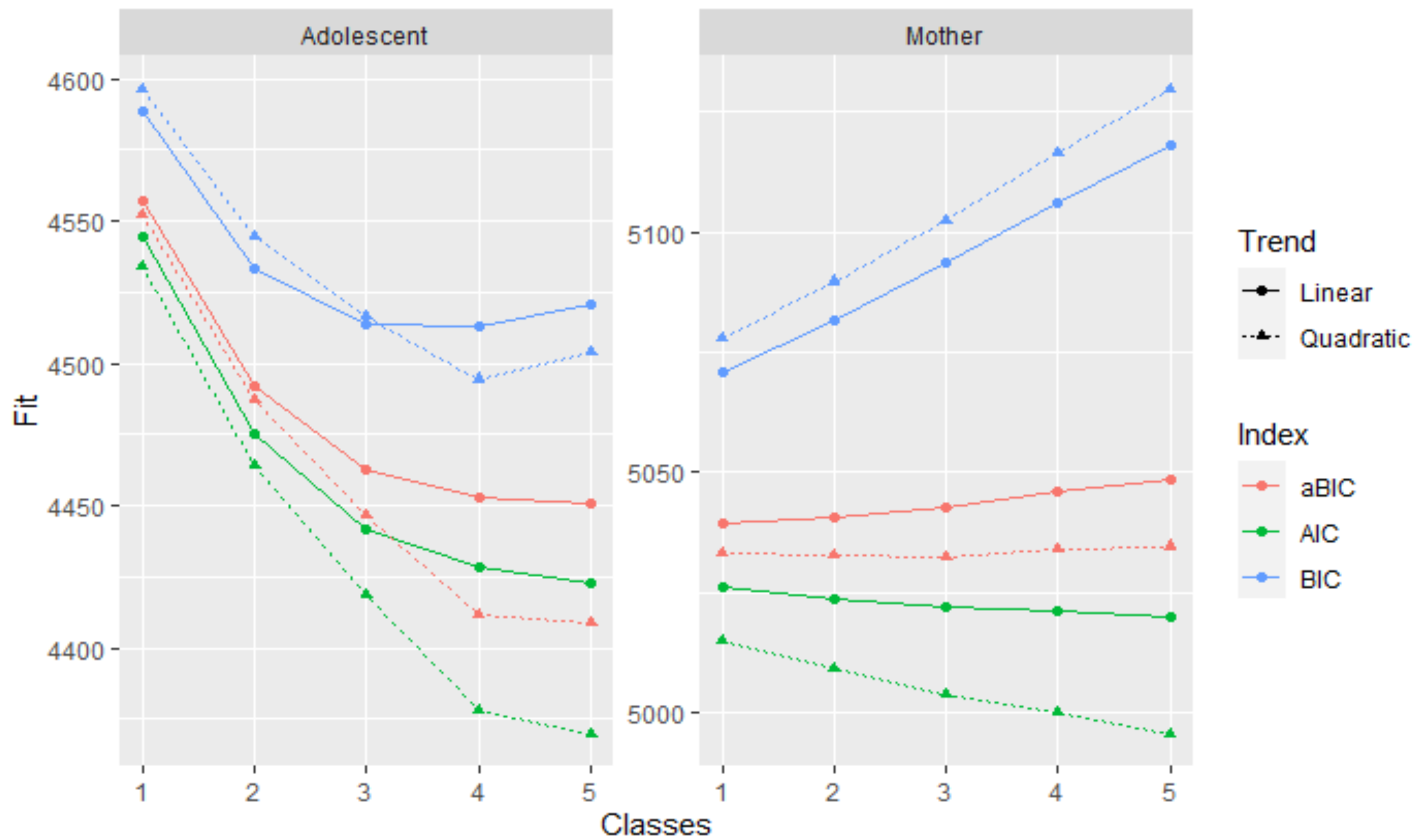

Table S5

Fit Indices for Linear Growth Mixture Models for Mother and Adolescent Reports (Sample 1)

Model	AIC	BIC	aBIC	Entropy
Adolescent 1 class - Mother 1 class	9934.00	10042.81	9966.60	NA
Adolescent 1 class - Mother 2 classes	9918.20	10040.61	9954.88	.61
Adolescent 1 class - Mother 3 classes	NA	NA	NA	NA
Adolescent 2 classes - Mother 1 class	9867.66	9990.08	9904.35	.78
Adolescent 2 classes - Mother 2 classes	9848.41	9988.96	9890.53	.68
Adolescent 2 classes - Mother 3 classes	9835.16	10002.90	9885.43	.66
Adolescent 3 classes - Mother 1 class	9842.43	9978.44	9883.19	.69
Adolescent 3 classes - Mother 2 classes	9824.13	9982.81	9871.68	.68
Adolescent 3 classes - Mother 3 classes	9813.43	9994.78	9867.78	.64
Adolescent 4 classes - Mother 1 class	9826.17	9975.79	9871.01	.69
Adolescent 4 classes - Mother 2 classes	9805.78	9982.59	9858.76	.69
Adolescent 4 classes - Mother 3 classes	9796.69	1000.71	9857.83	.65

Note. AIC = Akaïke Information Criteria; BIC = Bayesian Information Criteria; aBIC = Sample-Size Adjusted BIC.

Figure S3

Fit Indices for Adolescent Reports in Both Samples.

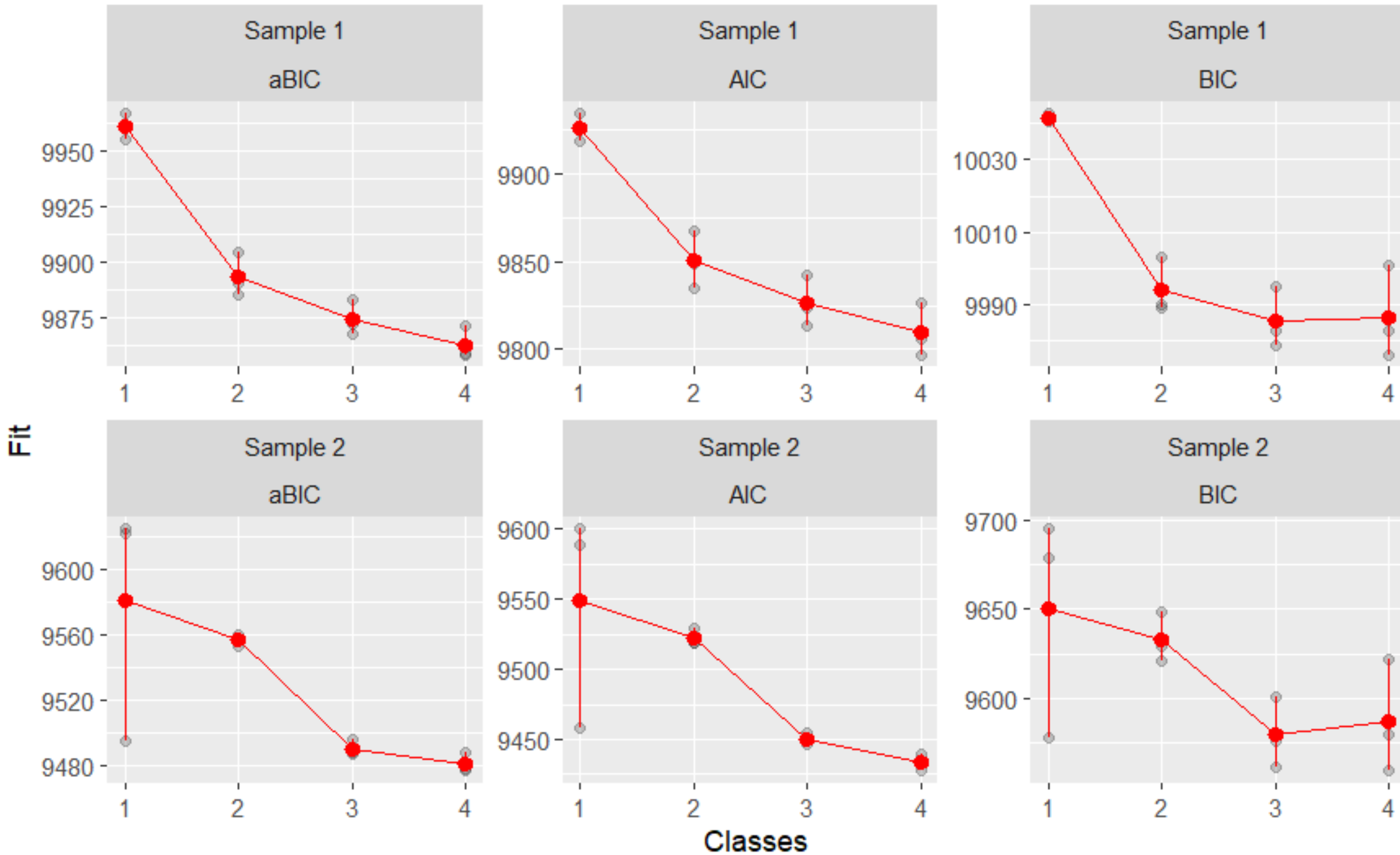

Figure S4

Fit Indices for Mother Reports in Both Samples.

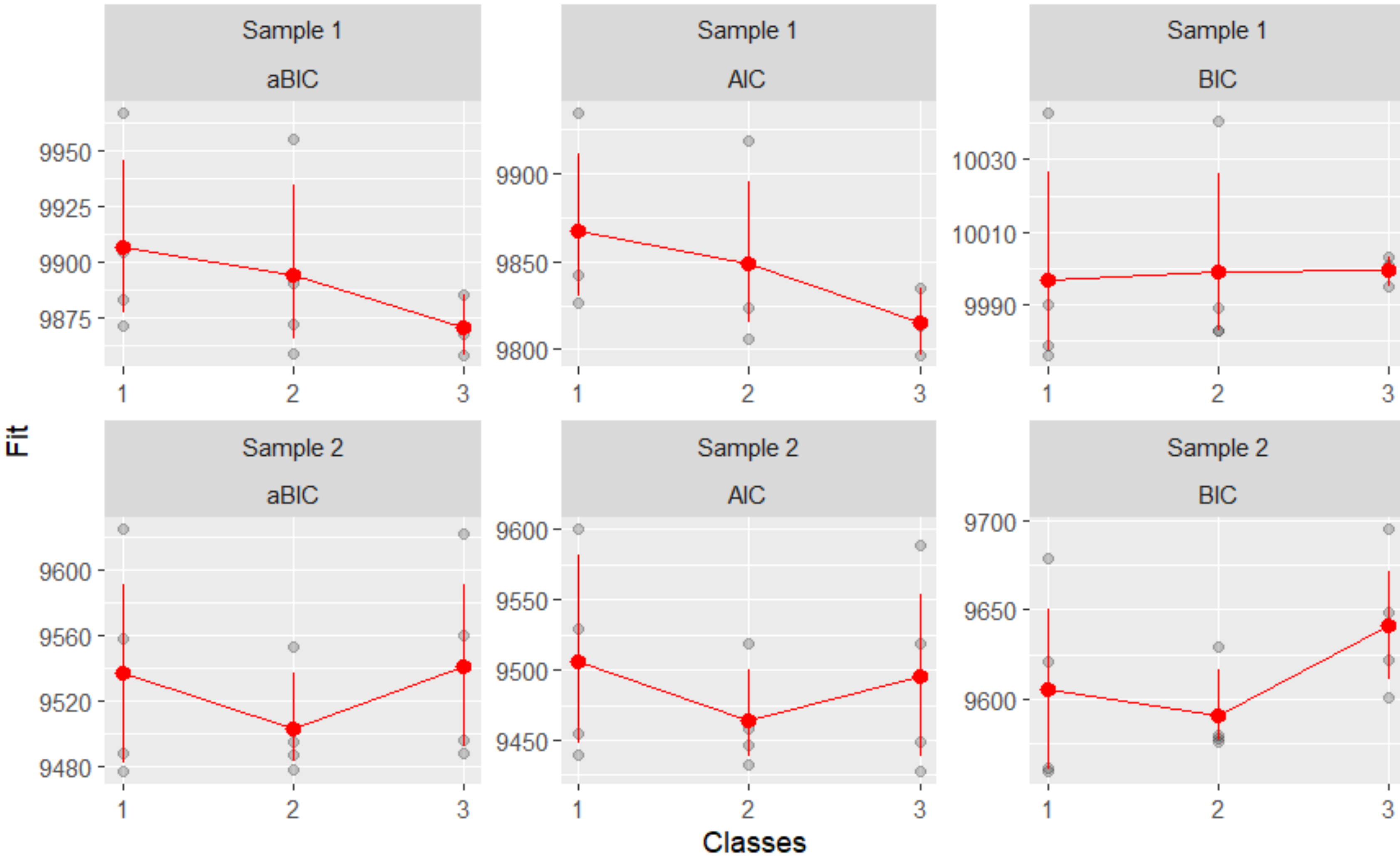

Table S6

Fit Indices for Linear Growth Mixture Models for Mother and Adolescent Reports (Sample 2)

Models	AIC	BIC	aBIC	Entropy
Adolescent 1 class - Mother 1 class	9600.08	9678.50	9624.52	NA
Adolescent 1 class - Mother 2 classes	9458.04	9577.98	9495.42	.38
Adolescent 1 class - Mother 3 classes	9588.55	9694.66	9621.62	.70
Adolescent 2 classes - Mother 1 class	9528.80	9621.07	9557.56	.67
Adolescent 2 classes - Mother 2 classes	9518.59	9629.31	9553.10	.65
Adolescent 2 classes - Mother 3 classes	9519.37	9648.54	9559.63	.69
Adolescent 3 classes - Mother 1 class	9455.11	9561.22	9488.18	.67
Adolescent 3 classes - Mother 2 classes	9446.65	9575.82	9486.91	.69
Adolescent 3 classes - Mother 3 classes	9448.75	9600.99	9496.20	.69
Adolescent 4 classes - Mother 1 class	9439.48	9559.42	9476.86	.66
Adolescent 4 classes - Mother 2 classes	9432.48	9580.11	9478.49	.66
Adolescent 4 classes - Mother 3 classes	9427.60	9621.36	9488.00	.62

Note. Due to errors, slope variances were constrained to zero in all models.

Table S7

Fit Indices For Models Testing Predictive Similarity

Model	LL	Parameters	AIC	AICC	BIC
Youth - Sample Varying	-21111.01	51	42324.01	42327.40	42598.88
Youth - Sample Invariant	-21118.41	39	42314.82	42316.80	42525.01
Mother - Sample Varying	-21114.53	39	42307.07	42309.04	42517.26
Mother - Sample Invariant	-21118.11	33	42302.23	42303.64	42480.08

Table S8

Fit Indices For Models Testing Explanatory Similarity

Outcome	Model	#Parameters	AIC	BIC	aBIC
Personal Adjustment	Youth - Sample Varying	12	23431.29	23494.50	23456.38
	Youth - Sample Invariant	6	23421.37	23452.97	23433.92
	Mother - Sample Varying	8	23437.37	23479.51	23454.10
	Mother - Sample Invariant	6	23446.83	23478.44	23459.38
Academic Adjustment	Youth - Sample Varying	12	23381.32	23444.54	23406.42
	Youth - Sample Invariant	6	23371.44	23403.05	23383.99
	Mother - Sample Varying	8	23394.70	23436.84	23411.43
	Mother - Sample Invariant	6	23382.00	23413.61	23394.55
Social Adjustment	Youth - Sample Varying	12	23397.69	23460.91	23422.79
	Youth - Sample Invariant	6	23392.76	23424.37	23405.31
	Mother - Sample Varying [a]	n/a	n/a	n/a	n/a
	Mother - Sample Invariant	6	23400.28	23431.88	23412.83
Grades	Youth - Sample Varying	12	23153.40	23216.62	23178.50
	Youth - Sample Invariant	6	23152.97	23184.58	23165.53
	Mother - Sample Varying	8	23158.65	23200.79	23175.38
	Mother - Sample Invariant	6	23153.09	23184.70	23165.64

Note. [a] This model did not converge.

Table S9

Standardized Mean Differences and Effect Size Estimates for the Prediction of Adolescents' Academic Achievement and Dimensions of Adjustment in School from Combined Mother-Child Trajectories of Maternal Autonomy Support

		Academic Achievement		Academic Adjustment		Social Adjustment		Emotional Adjustment	
Mother	Child	*z*	*d*	*z*	*d*	*z*	*d*	*z*	*d*
High	High	0.13	.32	0.08	.16	0.07	.14	0.16	.32
	Increasing	-0.24	-.49	-0.32	-.65	-0.49	-1.02	-0.57	-1.20
	Decreasing	-0.43	-.88	-0.44	-.91	0.18	.36	-0.42	-.87
Moderate	High	-0.44	-.91	0.66	1.42	-0.09	-.18	0.15	.30
	Increasing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Decreasing	-0.07	-.14	-0.83	-1.85	-1.5	-4.26	-1.4	-3.81

Note. Results are not applicable (n/a) when a combination of trajectory could not be found.