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EMPIRICAL ARTICLE

# Longitudinal associations of parental psychological control and friend support with autonomy during early adolescence

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**Abstract**

Although theories suggest transactional associations between adolescents' autonomy and relationships with parents and friends, few studies have examined these within-person effects. This longitudinal study examined the within-person co-development of adolescents' autonomy and relationships with parents and friends. Adolescents ($N = 244$ $M_{age} = 11.54$, $SD = 0.43$ at T1; 50% boys) participated in a four-wave study across 2 years in the Netherlands. In random-intercept cross-lagged panel models, within-person results showed that higher levels of autonomy predicted less parental psychological control but not vice versa. However, no lagged-effects between friend support and autonomy were found. This study suggests that adolescents' autonomy steers changes in parental psychological control.

**KEYWORDS**

adolescents, autonomy, friend support, parental psychological control

## INTRODUCTION

Adolescents are thought to increase in autonomy and become more capable to bring their experiences in agreement with their values, interests, and preferences (Ryan et al., 2017; Soenens et al., 2017; Van Petegem et al., 2015). The development of autonomy is facilitated by relational contexts that are supportive of adolescents' need for autonomy (Soenens et al., 2017). School transitions can be major turning points in adolescent development (Holas & Huston, 2012; Shortt et al., 2010). During school transitions, adolescents go through multiple concurrent changes that might stimulate their autonomy (Rowe et al., 2018), such as adapting to a new peer environment and having increased responsibilities in organizing and planning academic activities (Graber & Brooks-Gunn, 1996; Rice et al., 2011). However, some adolescents might experience more experience challenges and experience less autonomy due to negative parenting or lack of support from friends, which can impair their academic adjustment and mental health (Martínez et al., 2011; Symonds & Galton, 2014). As developing autonomy in adolescence is strongly related to academic achievement, relationship quality and well-being (Knee et al., 2013; Ryan & Deci, 2017), understanding the relational factors that contribute to changes in autonomy during school transitions is important.

Whether or not adolescents successfully navigate the transition to secondary school in terms of autonomy might depend on their relationships with important others such as parents (Hernández et al., 2014; Hirano & Rowe, 2016) or friends (Loeb et al., 2020). The autonomy-relatedness perspective suggests that autonomy and relatedness mutually reinforce each other, and a study conducted among adult close relationship partners supported this (Feeney, 2007). Experiencing psychological control by parents or having low friend support might hamper the development of autonomy, in general but especially in this transitional period. Altogether, by focusing on the transition from primary to secondary school, the current study aimed to test longitudinal *bidirectional* associations between parental psychological control, friend support and adolescent autonomy. In our study using Dutch data, the transition to secondary school occurred in early adolescence (around age 11–13), after 8 years of elementary school. These associations were

examined at the within-person level, which can provide more accurate estimates of individual changes in autonomy among adolescents (Berry & Willoughby, 2017; Hamaker et al., 2015).

## Bidirectional associations between parental psychological control and autonomy

From the perspective of Self-Determination Theory (Deci & Ryan, 2000), autonomy can be defined as self-determination, or the consenting or owning of one's beliefs and values and subsequent behavior (Ryan & Deci, 2000). Autonomy is different from independence or self-reliance, which refers to the ability or tendency to function without relying on others for support or assistance (Anderson, 2020). In the context of parent-adolescent relationships, autonomy may involve negotiating with parents to make decisions about one's life, while independence may involve being able or tending to complete tasks or manage responsibilities without parental guidance or support. Indeed, autonomy is particularly strengthened when individuals feel more *related* to others (Koepke & Denissen, 2012; Ryan & Deci, 2000). Such relatedness refers to feeling connected to and loved by others. Important figures to which adolescents have a need to feel related to include parents and friends, and a lack of relatedness to these figures might therefore hamper their autonomy.

Regarding the role of relatedness to parents, parental psychological control might be particularly important for adolescent autonomy. Psychological control refers to parents' intrusion into or restriction of children's self-expression, thinking, emotions, and attachment (Barber, 1996). Parents who exert psychological control over their children might interfere with adolescents' needs for relatedness by devaluating their childrens' ideas and preventing them from making their own decisions. Indeed, cross-sectional and longitudinal studies conducted from early to late adolescence consistently showed that less autonomous adolescents typically have more psychologically controlling parents than peers who experience more autonomy—a finding observed across different countries such as China (Xiang & Liu, 2018), America (Hare et al., 2015), Belgium and Greece (Fousiani et al., 2014).

The direction of this association is, however, unclear. It is possible that the association is bidirectional in nature: Parents might not only undermine their adolescents' autonomy by using psychological control, but adolescents' autonomy might also elicit changes in parental psychological control because parents likely respond to adolescents' changes in autonomy (Chung et al., 2011; Kaufman et al., 2019). Theoretical models, such as the transactional model of parenting (Sameroff & MacKenzie, 2003), suggest that parenting is bidirectionally related to child or adolescent behaviors. Previous research suggests that exploring children's perspectives may provide more precise outcomes than relying on parent-reported behaviors, as parents have a tendency to view their parenting more positively than their children do (Bögels & Van Melick, 2004). Additionally, associations might be stronger when focusing on adolescents' perspectives as one's perceptions are more strongly related to one's behavior than others' perceptions. Empirical research showed that adolescents' socio-emotional maladjustment (e.g., anxiety, depression, aggression; Yu et al., 2021, social withdrawal; Lin et al., 2020) and poor academic achievement (Fu & Zhang, 2020) predicted more parental psychological control. Similarly, decreases in autonomy-supportive parenting were predicted by adolescents' emotional dysregulation (Brenning et al., 2015; Keskin & Branje, 2022). This perspective might apply to autonomy as well. Generally, parents might adapt their behaviors to their children's changing autonomy (Branje, 2018). When children increase in autonomy, parents might perceive this as a sign of healthy normative development and decrease their psychological control. Similarly, when adolescents *decrease* in autonomy, parents may consequently distrust their children's abilities to act in agreement with their values, interests, and preferences and therefore increase their psychological control. Thus, although it is known that adolescent maladjustment can predict parental psychological control, it is unclear whether adolescents' autonomy can also do so.

It should be noted, however, that the direction of effects is potentially reversed, with autonomy predicting *increases* in parental psychological control. During the transition period, parents might confuse their child's autonomy with independence and feel that their children are not ready yet to deal with responsibilities or to make healthy choices. From this perspective, parents may perceive their children's autonomy as a sign of an impending separation process or a threat of loss (Soenens et al., 2006). If parents perceive adolescents' increased autonomy as threatening, they may exert more psychological control to pressure their children to comply with their own agenda (Soenens et al., 2010). In addition, parents might perceive adolescents' autonomy as a threat to their parental authority (Branje, 2018). For example, a study on real-time interaction behaviors found that increases in adolescent autonomy (i.e., stating reasons and trying to persuade parents during a conflict discussion, showing confidence in expressing thoughts and opinions in the disagreement, and taking the initiative to choose the discussion topics) in a given epoch predicted increases in maternal control in the next epoch (Ravindran et al., 2020). Considering the lack of consistent research on this, we have competing expectations regarding this association.

The associations between autonomy and parental psychological control are expected to become especially visible in turbulent periods in which autonomy or parental control change more rapidly, such as the transition from primary to secondary school. During this transition, adolescents are facing a range of new challenges such as increased academic demands, social pressures, and changes in their personal identity (Symonds & Galton, 2014). Adolescents might suddenly rely more on attachment figures such as parents for a sense of security and belongingness in insecure situations (Bowlby, 1989), and parents might respond even stronger to

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their children in the new situation, trying to guide and protect their child during the transition. This transition period might therefore augment individual or relational patterns, resulting in stronger relations.

## Bidirectional associations between friend support and autonomy

In addition to the role of parents, relatedness to friends, in terms of the affective quality of friendships, might also bidirectionally relate to adolescents' autonomy. During adolescence, friends become more important sources of support (De Goede, Branje, & Meeus, 2009) as adolescents tend to spend less time with parents and increasing time with friends. Friend support can also meet teenagers' need for relatedness, which may directly promote the development of autonomy. Yet the relations between friend support and autonomy remain unknown. In line with the idea that autonomy and relatedness mutually reinforce each other, one study showed that individuals who perceive more support from partners are less dependent and function more autonomously (Feeney, 2007). This connection may also exist in the context of friendships. More friend support may predict more autonomy in adolescents over time, and vice versa, more autonomy might predict an increase in friend support. Adolescents with higher levels of autonomy may connect and relate to their friends authentically and in a positive and honest manner (Kluwer et al., 2020). These adolescents are better able to maintain high quality relationships, as they can respond constructively in times of conflicts (Knee et al., 2005), and are less likely to be too dependent or too avoidant. Correspondingly, previous research found that adolescents' ability to engage flexibly with thoughts and behavior relates to good relationship quality and peer cooperation (Bonino & Cattelino, 1999; Wen et al., 2021). Given the lack of research exploring the associations between friend support and autonomy, this study aimed to examine reciprocal associations between autonomy and friend support.

Although friendships tend to become more important with age, the roleof friendships in adolescent autonomy might become *less* strong surrounding the transition to secondary school. During this period, adolescents disintegrate with familiar peer networks and are exposed to new peers (Midgley et al., 2012), and might focus on creating new friendship networks. They might, consequently, temporarily invest less in existing friendships. Therefore, the effect of perceived friend support on autonomy may temporarily decrease.

## Within-person processes

Within-person analytic approaches are needed to test these possibilities, as processes at the group level are not related to processes at the individual level (Hamaker et al., 2015). However, most previous studies have explored adolescents' autonomy at the between-person or "group" level. These studies have not captured the intraindividual associations of autonomy with adolescent relationship quality by focusing on whether changes in adolescents' relationships affect their own development of autonomy over time. One study examined the intraindividual associations between parenting behaviors and adolescents' autonomy during a 10-min conflict discussion task between parents and their adolescent child. The results showed that increases in paternal autonomy support in a given 30-s epoch predicted increases in adolescent autonomy in the next epoch, and increases in adolescents' autonomy in a given 30-s epoch predicted increases in maternal behavioral control in the next epoch at the within-person level (Ravindran et al., 2020). Interestingly, results did not show associations between parenting behaviors and adolescent autonomy at the between-person level, which might be due to the short time interval of the design. In addition, no studies have examined the within-person association between friend support and autonomy. Understanding the within-person associations of parental psychological control and friend support with adolescents' autonomy is necessary for understanding risk and promotive factors for autonomy and advancing translational efforts aimed at the individual level.

## Current study and hypotheses

The general aim of this longitudinal study was to examine the reciprocal intraindividual associations between parental psychological control, friend support and autonomy. The study focused on early adolescence, examining the transition to secondary education because autonomy and independence play an increasingly salient role in the relationships with parents and peers during this period (Steinberg, 2001). By disentangling the within-person from between-person associations, the following hypotheses were tested: First, we expected that parental psychological control and adolescent autonomy would be bidirectionally associated with each other. We expected that (H1a) when adolescents report more parental psychological control than their average level (i.e., than usual) would subsequently report more autonomy than their average level (i.e., than usual). Regarding the predictive effect of adolescent autonomy on parental psychological control, we had two competing hypotheses: More adolescent autonomy than their average level (i.e., than usual) might predict higher ($H1b_1$) or lower ($H1b_2$) parental psychological control than their average level (i.e., than usual). In addition (H1c), the predictive associations between parental psychological control and adolescent autonomy were expected to be stronger during the primary to secondary school transition period than before or after this period.

Second, we expected that friend support and adolescent autonomy were bidirectionally and positively associated with each other. We hypothesized that (H2a) higher friend support would predict more adolescent autonomy than their average level (i.e., than usual), and (H2b) more adolescent

autonomy would predict higher friend support than their average level (i.e., than usual). Further, (H2c) the predictive associations between friend support and adolescent autonomy were expected to be weaker during the primary to secondary school transition period, than before or after this period. The hypotheses were preregistered at https://osf.io/dt7qu. It should be noted that a moderation hypothesis was originally included in the preregistration of this study but was removed due to the impossibility of testing it with the available data or methodology.

# METHODS

## Participants and procedure

This study used data from the INTRANSITION project, which has a longitudinal design with four time points or "waves" (two waves before the transition from elementary to secondary school and two waves after the transition). Adolescents in our sample were followed every 6 months, starting at the beginning of their last year in primary school (September 2019) until 18 months later at the end of their first year in secondary school (May 2021) across the Netherlands. The sample consisted of $N = 244$ Dutch adolescents ($M_{age} = 11.54$, $SD = 0.43$, ranging from 10.49 to 12.84 at T1). 50% of them were boys. 95.9% of the participants identified themselves as Dutch and of the remaining 4.1%, 0.8% identified themselves as Moroccan and Turkish, 0.4% identified themselves as Antillean, 1.2% used self-chosen ethnic label, and 0.8% did not respond. 86.5% of them lived in a two-parent household at T1.

The perceived socioeconomic status of adolescents was at a relatively high level. Adolescents perceived their SES as $M = 7.71$, $SD = 1.10$, on a 1–10 scale. Net monthly family income was reported by parents and was measured categorically with categories from 1 = less than €1000″ to "18=more than €9000", with €500 intervals. The median net family income was relatively high in terms of Dutch standards (€4000–4500 per month, $SD$ = about 2215 euros), as the average household income in the Netherlands is about 3225 euros per month.

All participants provided written active informed consent at the beginning of the study, and they received 10 euros each wave after completing the questionnaires. The local faculty ethical review board approved this project. Of the 244 participants who agreed to participate in the first wave of our study, 197 adolescents (80.7%) completed questionnaires at T2, 193 adolescents (79.1%) completed questionnaires at T3, and 173 adolescents (70.9%) completed questionnaires at T4. Attrition analyses showed no significant difference between adolescents who consistently participated and those who did not in age [$F$ (1, 233) = 3.15, $p = .077$, $\eta^2 = 0.013$], socioeconomic status (SES) [$\chi^2$ (1) = 1.616, $p = .204$, Cramer's $V = .08$], autonomy [$F$ (1, 236) = 1.11, $p = .293$, $\eta^2 = 0.005$], and friend support [$F$ (1, 221) = 0.57, $p = .452$, $\eta^2 = 0.003$] at Wave 1. However, significant differences in gender [$\chi^2$ (1) = 3.94, $p = .047$, Cramer's $V = 0.13$] and parental psychological control [$F$ (1, 228) = 9.42, $p = .04$, $\eta^2 = 0.002$] were found: Adolescents who dropped out included more boys and reported more parental psychological control than those who participated in all waves, but the effects were small. Furthermore, although Little's (1988) missing completely at random (MCAR) test was significant ($\chi^2 = 2320.53$, $df = 2177$, $p = .016$), the normed $\chi^2/df$ (2320.53/2177 = 1.07) indicated that the assumption of missingness being completely at random was not considerably violated across study variables (e.g., Bollen, 1989). Therefore, we decided to include all adolescents with and without missing data in our analyses using Full Information Maximum Likelihood (FIML; Muthén & Muthén, 1998–2020).

## Measures

### Parental psychological control

The Psychological Control Scale—Youth Self-Report was used for adolescents to report their perceived parental psychological control. Barber (1996) provided evidence for the validity and unidimensional factor structure of this scale and suggested the first eight items should be used in future work. All items were answered on a 1 (does not apply at all) to 5 (applies strongly) Likert scale. A sample item is: "My parents would like to be able to tell me how to feel or think about things all the time." Internal consistency was good at every time point; Cronbach's α ranged from 0.79 to 0.90.

### Friend support

Seven items of the support scale of the Network of Relationships Inventory—short form were used to assess adolescents' perceptions of friend support (Furman & Buhrmester, 1985). The items were rated on a 5-point Likert scale, ranging from 1 (never) to 5 (always). A sample item is "How much does your best friend really care about you?" Internal consistency was good across waves, with Cronbach's α ranging from 0.83 to 0.84.

### Autonomy

Autonomy was measured using the five-item Perceived Choice subscale of the Perceived Choice and Awareness Scale (Sheldon & Deci, 1996). It has been verified to have good reliability and validity (Lisinskiene et al., 2020; Sheldon et al., 1996). Participants indicated how strongly they agreed with five statements on a 7-point scale (1 = really disagree to 7 = really agree). A sample item is, "I always feel like I choose the things I do." Reliability across waves was good; Cronbach's α ranged from 0.84 to 0.90 across the measurement waves.

## Analytic plan

We estimated bidirectional associations over time of parental psychological control and friend support with autonomy (H1a and H1b, H2a and H2b) using a random intercept cross-lagged panel model (RI-CLPM; Hamaker et al., 2015) in Mplus Version 8.6 (Muthén & Muthén, 1998–2020). RI-CLPM shifts the interpretation of the parameters from a between-person level to a within-person level because it includes a random intercept for each construct (i.e., adolescent-reported parental psychological control, friend support, and autonomy) to capture stable individual differences between adolescents. In each model, we examined (a) within-person cross-lagged paths from parental psychological control/friend support to adolescents' autonomy 6 months later and possible reverse paths (e.g., from autonomy to parental psychological control/friend support). Moreover, we included (b) six-month within-person stability paths for all three constructs (e.g., autonomy at T1 predicting autonomy at T2, etc.), and (c) within-time correlations between all study variables. All the variance of the observed scores is captured in the within-person and between-person latent factors.

In order to obtain a more parsimonious model, and to test whether effects were different after the transition (H1c, H2c), we investigated whether the longitudinal associations among parental psychological control, friend support and autonomy could be constrained across time points. We first computed a fully constrained model in which the within-person autoregressive and cross-paths across were constrained to be equal across all waves. Within-time error covariances among the three variables were also constrained to be equal for Waves 2–4. Next, we tested, for each path separately, models in which time constraints for that path were removed and compared it to the fully constrained model. When the Wald test was significant, we freely estimated this path across all time points. When the Wald test was not significant, we retained the constraints for that particular association and concluded that this association was not different during the transition to secondary school.

In all models, we included gender as a covariate of the random intercepts for all constructs. Maximum likelihood estimation with robust standard errors was used to correct for non-normally distributed data (MLR; Satorra & Bentler, 2010), and FIML was used to handle missing data. All continuous variables and interaction terms were standardized. The following indices and criteria were used to determine whether the model fit was acceptable: the comparative fit index (CFI) and the Tucker–Lewis index (TLI) at >0.90 (Fan et al., 1999; Marsh et al., 2004), and the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) at <0.08 (Browne & Draper, 2006).

# RESULTS

## Preliminary analyses

Table 1 shows the means and standard deviations of the variables and bivariate correlations between variables. Repeatedly measured constructs were moderately stable over time, as suggested by *r*'s ranging from 0.27 to 0.60 across time points. Associations among parental psychological control, friend support and autonomy across 4 waves were small to medium (Cohen, 1992).

As shown in Table 2, Wald tests showed that the stability paths, cross-lagged effects, and within-time correlations could be constrained over time. The most parsimonious solution was thus the model which assumes stability over time of all concurrent associations and cross-lagged paths, implying that the size of effects was not different during the transition period (rejecting H1c, H2c). The model fit of the final model was good, $\chi^2(56) = 77.078$, CFI = 0.957, TLI = 0.940, RMSEA = 0.040, 90% RMSEA = 0.012–0.060, and SRMR = 0.074.

## Longitudinal relations between parental psychological control, friend support and autonomy

### Between-person associations among parental psychological control, friend support and adolescents' autonomy

The between-person associations between parental psychological control, friend support and autonomy are presented in Figure 1. The association between adolescents' autonomy and parental psychological control was negative and significant ($r = -0.35$, $SE = 0.13$, $p = .008$, 95% CI [−0.61, −0.09]), and the association between adolescents' autonomy and friend support was positive and significant ($r = 0.31$, $SE = 0.11$, $p = .035$, 95% CI [0.14, 0.54]). In addition, parental psychological control was not significantly associated with friend support ($r = -0.10$, $SE = 0.14$, $p = .445$, 95% CI [−0.37, 0.16]). Thus, adolescents who experienced less parental psychological control and more friend support than peers reported higher levels of autonomy than peers.

### Within-person associations among parental psychological control, friend support and adolescents' autonomy

The within-person associations between parental psychological control, friend support and autonomy are presented in Figure 1 and Table 3. First, the concurrent associations between parental psychological control and autonomy were not significant at Wave 1, but were negative and significant at Wave 2–4. Second, parental psychological control had no significant predictive effect on autonomy (rejecting H1a). However, higher autonomy significantly predicted lower psychological control (support for $H1b_2$). Altogether, adolescents who reported more autonomy than usual reported lower psychological control than usual both concurrently and a half year later.

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**TABLE 1** Correlations and descriptive statistics across all variables.

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | *n* | *M (SD)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Autonomy T1 | — | | | | | | | | | | | 236 | 5.62 (0.84) |
| 2. Autonomy T2 | 0.41** | — | | | | | | | | | | 190 | 5.82 (0.73) |
| 3. Autonomy T3 | 0.27** | 0.43** | — | | | | | | | | | 191 | 5.86 (0.70) |
| 4. Autonomy T4 | 0.31** | 0.34** | 0.51** | — | | | | | | | | 172 | 5.68 (0.98) |
| 5. Psychological control T1 | −0.14* | −0.19** | −0.16** | −0.15* | — | | | | | | | 228 | 2.06 (0.54) |
| 6. Psychological control T2 | −0.17* | −0.32** | −0.35** | −0.26** | 0.46** | — | | | | | | 188 | 1.89 (0.58) |
| 7. Psychological control T3 | −0.16* | −0.32** | −0.39** | −0.24** | 0.46** | 0.50** | — | | | | | 190 | 1.86 (0.57) |
| 8. Psychological control T4 | −0.03 | −0.15* | −0.36** | −0.32** | 0.42** | 0.56** | 0.60** | — | | | | 171 | 1.92 (0.68) |
| 9. Friend support T1 | 0.15* | 0.10 | 0.08 | 0.23** | −0.14** | −0.12 | −0.06 | −0.13 | — | | | 221 | 3.83 (0.41) |
| 10. Friend support T2 | 0.20* | 0.26** | 0.09 | 0.10 | −0.18** | −0.13 | −0.21** | −0.02 | 0.47** | — | | 176 | 3.46 (0.60) |
| 11. Friend support T3 | 0.13* | 0.11 | 0.10 | 0.20* | 0.01 | −0.05 | −0.03 | −0.01 | 0.43** | 0.57** | — | 168 | 3.77 (0.48) |
| 12. Friend support T4 | −0.05 | 0.03 | 0.12* | 0.32** | 0.03 | −0.05 | 0.06 | −0.09 | 0.27* | 0.27* | 0.57** | 156 | 3.63 (0.47) |

*Note*: Psychological control = parental psychological control.

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

**TABLE 2** Wald test for time constraints.

| | $\chi^2$ | Df | CFI | TFI | SRMR | RMSEA | RMSEA 90% CI | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fully constrained model** | **77.08** | **56** | **0.957** | **0.940** | **0.074** | **0.040** | **0.012; 0.060** | **Wald** | ***p*** | **Df** |
| Auto-regressive paths | | | | | | | | | | |
| Psychological control T1-T4 | 73.82 | 54 | 0.960 | 0.942 | 0.072 | 0.039 | 0.010; 0.060 | 2.85 | .240 | 2 |
| Autonomy T1-T4 | 75.89 | 54 | 0.955 | 0.936 | 0.067 | 0.041 | 0.015; 0.062 | 1.30 | .522 | 2 |
| Friend support T1-T4 | 77.18 | 54 | 0.953 | 0.932 | 0.073 | 0.042 | 0.017; 0.063 | 0.23 | .893 | 2 |
| Cross-lagged paths | | | | | | | | | | |
| Psychological control → Autonomy | 74.03 | 54 | 0.959 | 0.941 | 0.078 | 0.039 | 0.010; 0.060 | 3.23 | .199 | 2 |
| Autonomy → Psychological control | 70.83 | 54 | 0.966 | 0.950 | 0.068 | 0.036 | 0.000; 0.058 | 4.19 | .123 | 2 |
| Autonomy → Friend support | 72.98 | 54 | 0.961 | 0.944 | 0.072 | 0.038 | 0.007; 0.059 | 4.01 | .134 | 2 |
| Friend support → Autonomy | 73.76 | 54 | 0.960 | 0.942 | 0.070 | 0.039 | 0.010; 0.060 | 4.14 | .126 | 2 |
| Concurrent-association paths | | | | | | | | | | |
| Psychological control – Autonomy T2-T4 | 77.51 | 54 | 0.952 | 0.931 | 0.076 | 0.043 | 0.018; 0.063 | 0.14 | .932 | 2 |
| Friend support – Autonomy T2-T4 | 72.37 | 54 | 0.963 | 0.946 | 0.067 | 0.038 | 0.004; 0.059 | 4.95 | .084 | 2 |
| Friend support – Psychological control T2-T4 | 76.16 | 54 | 0.955 | 0.935 | 0.075 | 0.041 | 0.015; 0.062 | 1.27 | .529 | 2 |

*Note*: Psychological control = parental psychological control.

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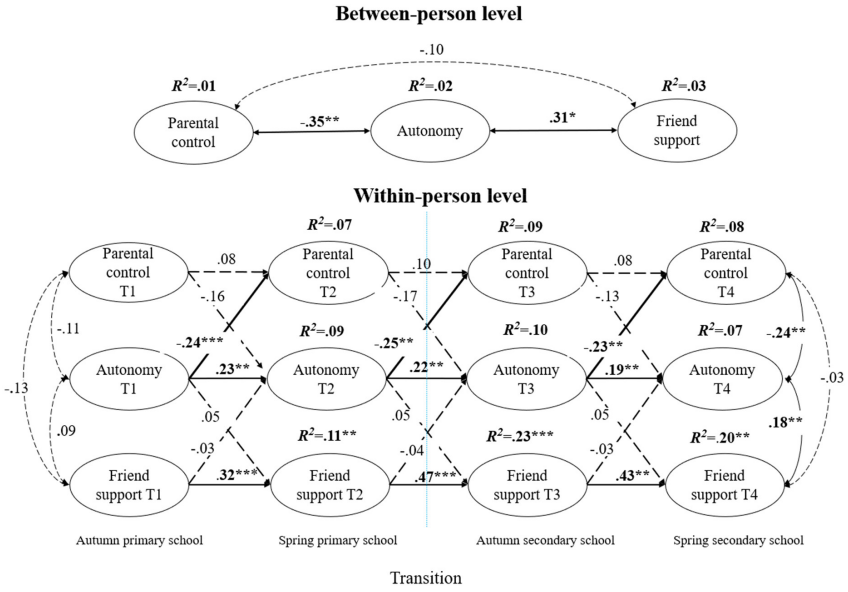


**FIGURE 1** Standardized RI-CLPM of Parental Psychological Control and Autonomy, Friend Support and Autonomy (With Time Constraints). *Note*. RI-CLPM on parental psychological control and autonomy, friend support and autonomy over time (controlled for gender). Parental control = parental psychological control, T = Time. ***$p < .001$, **$p < .01$, *$p < .05$.

**TABLE 3** Parameter estimates for parental psychological control and friend support in association with autonomy.

| | *B* | *SE* | 95% CI | *p* | β |
|---|---|---|---|---|---|
| Autoregressive paths | | | | | |
| Psychological control T → T + 1 | 0.08 | 0.12 | −0.14; 0.31 | .731 | 0.08 to 0.10 |
| Friend support T → T + 1 | **0.42*** ** | **0.07** | **0.28; 0.56** | **.000** | **0.32 to 0.47** |
| Autonomy T → T + 1 | **0.21**** | **0.07** | **0.08; 0.35** | **.002** | **0.19 to 0.23** |
| Cross-lagged paths | | | | | |
| Psychological control T → Autonomy T + 1 | −0.21 | 0.11 | −0.42; 0.01 | .063 | −0.13 to −0.17 |
| Autonomy T1 → Psychological control T + 1 | **−0.18*** ** | **0.05** | **−0.28; −0.08** | **.000** | **−0.23 to −0.25** |
| Friend support T1 → Autonomy T + 1 | −0.04 | 0.08 | −0.19; 0.11 | .598 | −0.03 to −0.04 |
| Autonomy T1 → Friend support T + 1 | 0.05 | 0.06 | −0.06; 0.15 | .414 | 0.05 |
| Concurrent associations | | | | | |
| Psychological control T1 – Autonomy T1 | −0.05 | 0.04 | −0.13; 0.03 | .246 | −0.11 |
| Psychological control T2-T4 – Autonomy T2-T4 | **−0.11**** | **0.04** | **−0.18; −0.04** | **.001** | **−0.24 to −0.31** |
| Friend support T1 – Autonomy T1 | 0.04 | 0.04 | −0.05; 0.12 | .378 | 0.09 |
| Friend support T2-T4 – Autonomy T2-T4 | **0.08**** | **0.03** | **0.02; 0.14** | **.006** | **0.17 to 0.21** |
| Psychological control T1 – Friend support T1 | −0.04 | 0.03 | −0.10; 0.02 | 0.214 | −0.13 |
| Psychological control T2-T4 – Friend support T2-T4 | −0.01 | 0.02 | −0.05; 0.03 | 0.636 | −0.02 to 0.03 |

*Note*: Psychological control = parental psychological control. Bold values indicate the 95% confidence interval and p-value.
***$p < .001$; **$p < .01$,

As for friend support and adolescents' autonomy, the concurrent associations between autonomy and friend support were not significant at Wave 1, yet were positive and significant at Waves 2–4, see Table 3. There were, however, no longitudinal within-person associations between friend support and autonomy (rejecting H2a and H2b). That is, adolescents who reported more friend support than usual did not report more autonomy than usual half a year later, and vice versa.

## DISCUSSION

How do relationships with parents and friends and adolescents' autonomy co-develop within adolescents over time? In this study, we addressed this question by focusing on within-person associations between parental psychological control, friend support and autonomy in a time span of 2 years during which adolescents transitioned to secondary school. The between-person findings provided support for concurrent

associations between parental psychological control and autonomy. At the within-person level, our findings provided support for the predictive effect of adolescents' autonomy on parental psychological control, showing that when adolescents were more autonomous than usual, they reported *less* parental psychological control than usual half a year later. By contrast, parental psychological control did not predict changes in adolescents' autonomy at the within-person level. Although the between-person findings provided support for concurrent associations between friend support and autonomy, no significant lagged effects between friend support and autonomy were found at the within-person level. Overall, this study adds to existing knowledge that more autonomy is related to more friend support and less parental psychological control at the between-person level, and higher levels of autonomy predicted less parental psychological control but not vice versa at the within-person level.

## Adolescent autonomy predicted decreases in parental psychological control

The finding that adolescents who experience more parental psychological control than others also report less autonomy than others is in agreement with previous research on the associations of parental psychological control with adolescent autonomy, which mainly focused on between-person effects (Fousiani et al., 2014; Hare et al., 2015; Xiang & Liu, 2018). This study added to previous studies that it focused on within-person associations, which could help to understand if changes in parents' psychological control as compared to their usual level of control indeed are related to changes from adolescents' usual level of autonomy. Findings indeed suggested that when parents used more psychological control than usual, the adolescents reported lower autonomy than usual. In line with Self-Determination Theory, our findings suggest that higher parental psychological control goes together with lower adolescent autonomy, as it undermines their sense of relatedness, competence and autonomy. However, the findings indicated that there were *no* predictive associations of parental psychological control on adolescent autonomy. As concurrent correlated change in autonomy and psychological control was observed, it might be that changes in psychological control affect autonomy on shorter intervals. However, there might also be other factors that explain the associations between change of parental psychological control and change of adolescent autonomy, such as individual adjustment. For example, it is possible that when adolescents get better self-regulated, this both relates to less psychological control from parents and more autonomy.

The findings indicated a reverse, predictive effect of adolescents' autonomy on parental psychological control. When adolescents were more autonomous than usual, they reported *less* parental psychological control than usual half a year later. This result is consistent with the transactional model of parenting, which suggests that parents adjust their behaviors to adapt to their children's changing behaviors (Sameroff & MacKenzie, 2003). Although increased autonomy in adolescents was found to predict short-term increases in maternal control (Ravindran et al., 2020), in line with the developmental perspective, parents are gradually adapting to the changes of adolescents (Branje, 2018), and they may regard their child's autonomy as taking on the responsibility of their own growth and becoming mature over time. Naturally, they might become less psychologically controlling when their child's autonomy is increasing. This pattern likely contributes to the more horizontal, egalitarian relationship between parents and children that is typically observed in late adolescence (Branje, 2018).

Generally, our results suggest that parents, as perceived by adolescents, especially respond to adolescents' behaviors regarding autonomy at the within-person level, but not vice versa. Although we cannot draw causal conclusions, it is possible that adolescents' autonomy "steers" changes in parents related to autonomy, because adolescents are changing the most. Adolescents' autonomy, as well as their agency in shaping relationships, develops continuously, and parents seem to be responsive to these developmental changes. In support of this expectation, a review of longitudinal studies in adolescents across the world (albeit mostly not distinguishing between-level associations from within-level associations) concluded that adolescents influence parent-adolescent relationship quality and parenting styles, yet for the reverse pattern, less systematic evidence was found (Meeus, 2016).

## The role of friend support

Regarding the role of friendships, we found that adolescents who experienced more friend support than peers, reported more autonomy than their peers. This between-person finding is in line with previous studies suggesting that high friendship quality is associated with more autonomy at the group level (Collibee et al., 2016), and this has been interpreted as a positive function of friends (Collibee et al., 2016; Demir & Özdemir, 2010). However, when focusing on within-person effects, changes in friend support were only related to concurrent changes in adolescents' autonomy and did not *predict* adolescents' autonomy over time or vice versa. One possible explanation for the lack of these predictive associations between friend support and autonomy is that the importance of support from best friends may be relatively short-lived in a period in which adolescents move to the new social context of secondary school (Eccles et al., 1998). During this period, adolescents tend to focus on adapting to the changing environment and establishing new peer networks. Another explanation is that the influence of friends is weaker during the transition period (Liao et al., 2013), and the influence of parent-adolescent relationships on friendships tends to be stronger than vice versa in early to middle adolescence (De Goede, Branje, Delsing, et al., 2009). For example, one study examined the role of parents' and friends' support on adolescents' adjustment and found that only parental support was bidirectionally associated with the development of

depressive symptoms in early and middle adolescence (Van der Giessen et al., 2014). Overall, it thus seems that adolescents' autonomy and friend support are associated in early adolescence, perhaps as a result of third factors such as coping or self-regulation skills that facilitate both, but that they do not affect each other over time.

## Strengths, limitations and future directions

The current research has several strengths: We studied within-person processes, which has rarely been done in previous research on this topic, whilst this is a more robust method to detect predictive associations between constructs (Fousiani et al., 2014; Xiang & Liu, 2018). Moreover, we focused on an important transition period, and were able to study the role of both parents and friends in autonomy development. However, there are also several limitations that should be taken into account. First, this study relied exclusively on self-reported information, adolescents' reports of parenting behaviors might differ from parent reports or observations (De Los Reyes et al., 2015; Nelemans et al., 2016). However, child-reported parental behaviors are preferred over parents' self-report, because parents tend to perceive their parenting as more positive than their children (Bögels & Van Melick, 2004). Therefore, self-report can be a powerful method to assess internal states and perceived behaviors of parents and friends. In addition, the present study assessed adolescent perceptions of psychological control by fathers and mothers together. Future research could explore the possibility of separately assessing adolescents' perceptions of father and mothers. For instance, this could include examining whether one parent's psychological control moderates the relations between the other parent's psychological control and adolescent autonomy. Such additional analyses could provide a more nuanced understanding of the influence of parental psychological control on adolescent autonomy. Furthermore, we were not able to study gender differences between autonomy and parental psychological control due to limited power, but this could be relevant as suggested by the literature on gender disparities in parenting and adolescent outcomes (Gao et al., 2022; Wong et al., 2022). Our results also showed that parental psychological control, friend support, and autonomy were not significantly related to gender. Second, we only examined perceived friend support with one best friend in our study, and cannot draw conclusions on experiences of feeling supported by friends in general. Even though adolescents might rely on different friends for different types of support especially after changing to a new social context (Kiesner & Fassetta, 2009), the best friend, despite might not be the same person over time, still plays the most important role for adolescents to provide social support (Ng-Knight et al., 2019). Third, with our 6-month time intervals, it is possible that we could not capture the moment that the transition affected adolescents and their parents most strongly. Future research can employ intensive longitudinal designs to determine the specific period in which the transition occurs, as well as examine the long-term and prolonged effects of the transition crisis on the development of adolescents. Fourth, the data of wave 2 was collected at the time of the COVID-19 outbreak. Adolescents were in partial lockdown while completing some of the questionnaires. Being in lockdown might increase time adolescents spend with parents and decrease time adolescents spend with friends, which provides a possibility that friend support did not significantly associate with adolescents' autonomy at the within-person level. However, associations did not differ across time points according to Wald tests, which might suggest that this event did not strongly impact the findings. Finally, the Western context should be considered in generalizing the present study. Our research included only adolescents who grow up in an individualistic culture and are considered to have relatively less close family relations and be allowed to make their own decisions earlier (Dwairy & Achoui, 2010). However, collectivist cultures (e.g., China) emphasize relatedness to the family and parental authority more strongly, which means that individuals are expected to obey their parents and thus have less autonomy (Hwang, 1999; Hwang & Chang, 2009). Moreover, parent–child relationships in, for example, China are less horizontal, and parents are less likely to adapt to children's autonomy (Soenens & Vansteenkiste, 2010). Thus it is worth examining our findings in this context.

# CONCLUSIONS

The present study provides relevant new insights into the within-person processes in early adolescents' autonomy in the relationships with parents and friends. At the between-person level, less parental psychological control and more friend support were found to be related to more autonomy. However, the within-person lagged effects showed that autonomy predicted declines in parental psychological control, and not vice versa. In doing so, this study demonstrated that adolescents are not always passively influenced by their family and peer world, and instead their changes in autonomy "steer" changes in perceived parental psychological control. Additionally, while friends become increasingly important during adolescence, it seems that the family is still the most central microsystem in early adolescence. These findings imply that it is beneficial to educate parents about the concept of autonomy and about alternative, more successful parenting strategies that can promote autonomy in a supportive way as a response to adolescents' increasing need of autonomy. Based on the present longitudinal findings, it seems valuable to examine whether adolescents' autonomy predicts parental psychological control and friend support, and vice versa, in other stages of adolescence.

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## CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

## DATA AVAILABILITY STATEMENT

This study was preregistered at OSF (https://osf.io/dt7qu). The data, study material, and analysis scripts are available at https://osf.io/57hbx/.

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