

EMPIRICAL ARTICLE

How autonomy-supportive parenting fosters adolescent identity across the transition to higher education: The role of an authentic inner compass

Sam Houthuys  | Branko Vermote | Maarten Vansteenkiste  | Wim Beyers  |
Peter Prinzie  | Bart Soenens 

Universiteit Gent Vakgroep Ontwikkelings-
Persoonlijkeids- en Sociale Psychologie,
Ghent, Belgium

Correspondence

Sam Houthuys, Universiteit Gent Vakgroep
Ontwikkelings- Persoonlijkeids- en Sociale
Psychologie, Henri Dunantlaan 2, Gent 9000,
Belgium.

Email: sam.houthuys@ugent.be

Funding information

Fonds Wetenschappelijk Onderzoek, Grant/
Award Number: 1172726N and G0DCB23N

Abstract

During the transition from high school to higher education, late adolescents are faced with numerous decisions that can significantly impact their identity, such as choosing a major. This study investigated the role of late adolescents' sense of having an authentic inner compass (AIC)—the sense of knowing what is truly important to them by having personally endorsed values, preferences, and goals—in identity development. Moreover, we tested whether basic autonomy-supportive parenting and more identity-specific autonomy-supportive practices can facilitate late adolescents' sense of having an AIC and subsequent identity development. A three-wave longitudinal study involved 377 families with an adolescent from the 12th grade of Flemish secondary education during the transition to higher education (69.1% girls, $M_{\text{age}} = 16.87$), along with their mothers ($M_{\text{age}} = 45.75$ years) and fathers ($M_{\text{age}} = 47.95$ years). In the 12th grade, adolescents' AIC was related to more identification with commitment and study choice commitment and less ruminative exploration. Furthermore, adolescents' AIC had beneficial effects on changes in these identity outcomes across time. Both parents' identity-specific autonomy-supportive practices of inherent value demonstration (IVD) and reflective authentic inner compass facilitation (RAICF) related positively to adolescents' AIC and subsequent identity outcomes, in addition to basic autonomy support. These effects were stronger when reported by adolescents (than when reported by parents) and at the level of stable between-person differences (than at the level of within-person change). The findings indicate that parents can promote the development of an AIC through identity-specific autonomy-supportive practices, thereby indirectly fostering identity development among late adolescents.

KEYWORDS

authentic inner compass (AIC), autonomy-supportive parenting, identity development, late adolescents, study choice commitment

INTRODUCTION

During the transition from high school to higher education adolescents make decisions (e.g., a study choice) that greatly affect their identity (Waterman, 1985). In today's society, this transition period is accompanied by an abundance of information, opportunity, and freedom (Arnett, 2024). Whereas

some adolescents thrive under these conditions (Schwartz et al., 2010), others experience this unbridled freedom as confusing (Vansteenkiste & Soenens, 2015) and consequently struggle to make satisfying identity decisions (Schwartz et al., 2005). For example, some adolescents are unable to make a deliberate study choice, which may hamper their adjustment to higher education (Germeijs & Verschueren, 2007).

Although it is generally assumed that parents can play a supportive role in helping adolescents navigate identity-related decisions (Vansteenkiste & Soenens, 2015), little is known about specific practices that facilitate these decisions. Research highlights the importance of parental autonomy support for identity development (e.g., Christiaens et al., 2021; Soenens et al., 2011; Sznitman et al., 2019). Most studies, however, rely on general measures of autonomy support and do not attend to practices that may be specifically relevant for adolescents' identity formation. Assor's (2012) notion of the authentic inner compass (AIC)—adolescents' sense of knowing what is truly important to them by having personally endorsed values, preferences, and goals—offers a conceptual basis for identifying such practices. While some cross-sectional studies examined how specific parental practices support adolescents' AIC, longitudinal research is scarce. Particularly, it is unclear whether such practices predict *changes* in adolescents' AIC, and whether these changes subsequently influence their identity decisions, such as a study choice.

Identity development

Erikson (1968) argued that identity formation is a central developmental task during adolescence. A successful resolution of this task involves clear awareness of one's own beliefs, values, and ideals after having explored various possibilities (Schwartz, 2001). Adolescents failing to develop a coherent identity remain confused about who they are and have difficulty finding a place in society (e.g., forming educational or vocational goals; Bosma, 2004).

Marcia (1966) identified two dimensions that reflect the supposed latent identity structure: *exploration and commitment*. Luyckx et al. (2005) extended this two-dimensional model. On the one hand, *exploration in breadth* and *exploration in depth* refer to going through various alternatives prior to making a commitment and reflecting and discussing with others about already existing commitments, respectively. On the other hand, *commitment making* implies making identity-relevant decisions per se, whereas *identification with commitment* entails feeling confident about those commitments and perceiving them as self-concordant. Importantly, identity formation involves not only stable differences between adolescents but also dynamic within-person changes, as adolescents reconsider and adjust their commitments while navigating developmental transitions.

Studies found that European adolescents who make strong commitments after adaptive exploration processes report more well-being and academic adjustment (Mannerström et al., 2021), with particularly strong effects of identification with commitment. In contrast, adolescents who engage in *ruminative exploration* (i.e., brooding about options without reaching a decision) experience less well-being (Becht et al., 2019; Luyckx et al., 2008; Raemen et al., 2022).

Although much of this research focuses on identity development at a global level, several scholars have also examined domain-specific identity development, particularly in the academic domain. For instance, studies on the transition to higher education indicate that strong *study choice commitment* is beneficial for European students' well-being and academic adjustment while also lowering the risk of dropout (Germeijs & Verschueren, 2007; Hirschi, 2012).

Overall, research demonstrates that the way in which adolescents make identity decisions—both at a global and a domain-specific level—has implications for their well-being and academic career. To better understand the role of parents in these processes, Assor (2012) coined the notion of an authentic inner compass.

An authentic inner compass

An authentic inner compass (AIC) refers to having a personal and holistic framework encompassing one's values, preferences, and goals. By knowing what one genuinely values and strives for, individuals can independently and thoughtfully *select* and *organize* long-term commitments that are fulfilling. Further, due to its guiding role, an AIC may foster psychological stability and *persistence* amid challenges (Vansteenkiste & Soenens, 2015). Thus, an AIC is conceived as a decision-guiding antecedent that *facilitates* identity decision-making, rather than merely endorsing commitments already made (i.e., identification with commitment).

Empirical research has shown that an AIC benefits adolescents' identity formation and mental health. In a cross-sectional study among 476 Flemish adolescents, Assor, Soenens, et al. (2020) found that a stronger AIC was linked to more self-endorsed identity commitments, in turn predicting less depressive feelings and more self-esteem. Russo-Netzer and Shoshani (2020) obtained similar results in a sample of 677 Israeli adolescents. Furthermore, Vermote et al. (2023) found that Flemish 12th graders with a stronger AIC exhibited more study choice commitment. Longitudinal studies have extended these findings by showing that an AIC predicts higher well-being and less internalizing problems over time among Israeli and Chinese adolescents (Assor et al., 2021; Zhou, Ti, et al., 2025; Zhou, Yi, et al., 2025). However, it remains unclear whether an AIC also fosters identity formation over time.

The notion of an AIC helps to better understand identity development *and* provides a conceptual basis to identify specific parental practices that may facilitate identity development. Assor et al. (2023) assume that the development of an AIC happens in interaction with others, especially parents. They argue that, beyond basic autonomy support, it is crucial for parents to engage in specific practices that directly nurture adolescents' sense of AIC.

Basic and identity-specific autonomy-supportive parenting

The role of autonomy-supportive parenting in identity formation is mainly studied within Self-Determination Theory (SDT; Ryan & Deci, 2017), a general theory on motivation and social development in which autonomy is central to healthy psychosocial development.

Autonomy-supportive parenting promotes adolescents' volitional functioning and is characterized by taking the child's perspective, offering choice, and providing rationales when setting expectations (Grolnick et al., 1991). Cross-cultural studies show that *basic autonomy support* positively predicts well-being (e.g., Lokes et al., 2009), psychosocial development (e.g., Brenning et al., 2015), and academic motivation and achievement (e.g., Vasquez et al., 2016).

In the context of identity development, cross-sectional studies found that basic autonomy support is related to more commitment making and identification with commitment and with less ruminative exploration (Soenens et al., 2011; Sznitman et al., 2019). Moreover, Christiaens et al. (2021) found that adolescents who experienced an increase in educational commitment after transitioning from high school to higher education perceived more basic autonomy support than adolescents who experienced a decrease in educational commitments.

Basic autonomy support also relates positively to adolescents' AIC (Assor, Soenens, et al., 2020), which may indicate that such parenting creates an environment in which adolescents feel free to discover, form, and express their values, interests, and goals. Yet, Assor (2012) contends that, besides basic autonomy support, adolescents may also need parents to proactively and directly support the formation of an AIC. When adolescents do not (yet) know what they want in life, the mere freedom to make independent decisions may be insufficient to facilitate the development of self-guiding values (Assor, Soenens, et al., 2020). Therefore, Assor (2012) identified *inherent value demonstration* (IVD) and *reflective authentic inner compass facilitation* (RAICF) as two parenting practices that may specifically enhance adolescents' AIC. Assor and colleagues describe these practices more broadly as “autonomy-supportive practices supporting AIC formation,” emphasizing that they may support autonomy not only during identity-related decision-making in adolescence, but also earlier processes of value internalization and preference formation in childhood (Assor, 2017). In the present study, however, we refer to these practices as identity-specific autonomy-supportive practices because we examine them specifically in relation to adolescents' identity processes during the transition to higher education.

IVD is characteristic of parents who, through their activities, express values and principles they respect and identify with. Because acting upon these values provides parents with a sense of fulfillment, adolescents may be inspired to engage in similar activities and recognize that value-based commitments contribute to a meaningful life (Assor, Benita,

et al., 2020). Cross-cultural, cross-sectional studies found that IVD relates to a greater sense of self-congruence and well-being (Cohen et al., 2024; Yu et al., 2014), and the autonomous internalization of religious values (Brambilla et al., 2014). Assor, Benita, et al. (2020) also found that an AIC mediates the unique, concurrent associations of both IVD and basic autonomy support with resistance to negative peer pressure. Recent findings further support the unique contribution of IVD beyond basic autonomy support (Assor et al., 2025). However, due to the studies' cross-sectional design, it is unclear whether IVD predicts changes in adolescents' sense of AIC over time.

RAICF comprises three parental practices that encourage adolescents to discover their authentic values, interests, and ambitions (Assor, Soenens, et al., 2020). First, *supporting the examination of values, interests, and commitments* involves encouraging adolescents to responsibly experiment with various experiences. This enables them to reflect deeper on ideals and interests with fewer prejudices. Second, *fostering inner valuing* entails behaviors that encourage students to pay more attention to their authentic values and needs than to social pressures. This may stimulate them to reflect on what they truly value when facing challenges. Third, *supporting authentic inner compass clarification* refers to stimulating adolescents to view their beliefs from alternative perspectives. Assor, Soenens, et al. (2020) have shown that RAICF is positively related to Belgian adolescents' AIC, in addition to basic autonomy support. Further, Yu et al. (2018) found that, in addition to IVD, both fostering inner valuing and supporting the examination of values, interests, and commitments positively predicted Chinese adolescents' AIC. However, as these findings are based on cross-sectional data, longitudinal research is needed to determine whether RAICF contributes to changes in adolescents' AIC over time.

The present study

During the transition from high school to higher education, adolescents make many identity-related decisions, such as selecting a major (Waterman, 1985). Assor (2012) argues that adolescents' sense of AIC and parental support for this AIC are key resources for identity formation. Although research has begun to identify associations between specific autonomy-supportive parental practices—such as IVD and RAICF—and adolescents' AIC and identity, most studies used cross-sectional designs and thus cannot capture change over time. Because parenting practices influence adolescent development and identity can undergo substantial shifts during transitional periods (e.g., Beyers & Goossens, 2008; Grossmann et al. 2024), longitudinal research is warranted. To address this gap, the present study examined associations between parental autonomy support and late adolescents' identity at the level of between-person differences and within-person change across the transition to higher education. As data were collected during the COVID-19 pandemic, research questions were addressed

while accounting for COVID-related concerns. Three main hypotheses were formulated.

First, we examined the specific contribution of adolescents' AIC to identity formation—independent of parenting. We hypothesized that, at the beginning of the 12th grade (T1), a stronger AIC would be associated with more identification with commitment and study choice commitment and less ruminative exploration (*Hypothesis 1a*). Furthermore, higher initial AIC levels (T1) were expected to predict increases in identification with commitment and study choice commitment and decreases in ruminative exploration toward both the end of the 12th grade (T2) and the start of higher education (T3) (*Hypothesis 1b*). Similarly, increases in AIC toward the end of the 12th grade (T1–T2) and the start of higher education (T2–T3) were anticipated to be associated with increases in identification with commitment and study choice commitment and decreases in ruminative exploration (*Hypothesis 1c*).

Second, we examined whether parents can facilitate adolescents' identity development through IVD and RAICF, in addition to basic autonomy support. We hypothesized that, above and beyond basic autonomy support, both IVD and RAICF would uniquely predict higher initial levels of adolescents' AIC, identification with commitment, and study choice commitment, as well as lower initial levels of ruminative exploration (*Hypothesis 2a*). Further, we expected that IVD and RAICF would predict increases in adolescents' AIC, identification with commitment, and study choice commitment as well as decreases in ruminative exploration (*Hypothesis 2b*).

Third, we tested a process model integrating the hypotheses (see [Figure 1](#)). Specifically, in addition to basic autonomy support, we expected parents' levels of IVD and RAICF to predict both the initial levels of and changes in adolescents' AIC. In turn, adolescents' AIC was expected to predict the initial levels of and changes in identification with commitment, ruminative exploration, and study choice commitment (*Hypothesis 3*). Unlike previous research, this study employed a multi-informant design: adolescents and both their mothers and fathers reported on basic autonomy support, IVD, and RAICF. This approach reduces shared method variance and enables the

examination of potential differences between maternal and paternal practices.

The present study aims to extend prior research in three important ways. First, we examine whether identity-specific autonomy-supportive parenting practices (i.e., IVD and RAICF) predict adolescents' identity processes beyond basic autonomy support. Second, we investigate adolescents' AIC as an underlying mechanism linking parenting to identity development. Third, by using a longitudinal multi-informant design, we examine both between-person differences and within-person change in the experience of having an AIC and identity processes across the transition from high school to higher education, a developmental period during which identity-related decision-making becomes especially salient.

MATERIALS AND METHODS

Participants

This study used data from a larger research project that included predominantly two-parent families with at least two children. The sample included 377 families, each consisting of one adolescent who entered the 12th grade (69.1% girls; $M_{\text{age}} = 16.87$ years, $SD = 0.47$; 97.7% Belgian nationality) together with both the mother ($M_{\text{age}} = 45.75$ years, $SD = 3.61$; 95.4% Belgian nationality) and father ($M_{\text{age}} = 47.95$ years, $SD = 4.27$; 95.9% Belgian nationality). In high school, most adolescents followed an academic track (71%), while a minority followed a technical track (27.4%) or a vocational track (1.6%). On average, adolescents attained a final grade of 72.2% ($SD = 6.97$). Further, most of them never repeated a year in primary (97.4%) or secondary school (96.8%) and expected that they would pass the current school year (99.4%).

Concerning the parents, 52.5% had two children together, and 47.5% had three or more. Nearly all were married (88.1%) or cohabiting (11.3%), and only 0.6% were separated. Most families (85.3%) reported it was easy to meet their financial obligations, and most parents held higher education degrees (mothers: 83.4%; fathers: 68.7%),

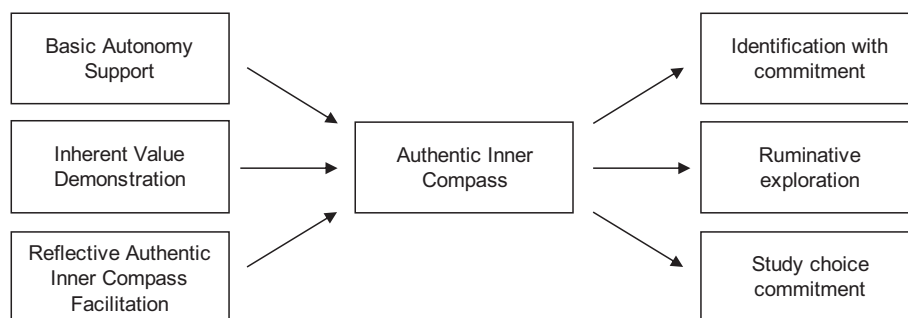


FIGURE 1 Hypothesized path model with authentic inner compass (AIC) explaining the associations between autonomy-supportive parenting practices and identity outcomes.

whereas fewer held secondary (mothers: 15.7%; fathers: 30.4%) or primary education degrees (mothers: 0.9%; fathers: 1%).

Procedure

Three-wave longitudinal data were collected over 2 years. At T1, families were recruited during the fall semester of adolescents' final year in high school (88 in 2020; 185 in 2021). After registration, parents received informed consent forms (for themselves and the adolescent) and a link to the online survey. Upon parental consent, adolescents received their own consent form and survey. Reminder emails and phone calls were used to maximize participation. During the spring semester, adolescents who took part in T1 were invited to participate in T2 (May 2021 or 2022), and additional participants (61 in 2020; 7 in 2021) were recruited to compensate for dropouts. T3 was conducted during the fall semester of participants' first year in higher education (November 2021 or 2022) using the same procedure, with additional participants recruited (29 in 2021; 7 in 2022). Participation was voluntary and not financially compensated. However, families could win one of fifteen €50 gift cards at each wave.

Preliminary analyses indicated that participants recruited in different years (2020 vs. 2021) or at different waves did not differ significantly on the primary study variables. Sample size was primarily determined by participation in the larger longitudinal project rather than by an a priori power analysis. Nonetheless, the sample size is comparable to those reported in similar longitudinal studies on parenting and psychosocial development (e.g., Assor, Benita, et al., 2020; Brenning et al., 2015). No participants were excluded from the analyses.

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

Measures

All questionnaires were administered in Dutch, with items rated on a 5-point Likert scale ranging from 1 (*totally not applicable*) to 5 (*totally applicable*), unless stated otherwise. All items are provided in the [Supplementary Materials](#).

Autonomy-supportive parenting (T1)

Adolescents and both parents reported on three dimensions of autonomy-supportive parenting using parallel items adapted to each informant.

Basic autonomy support was assessed via the 7-item subscale from the Perceptions of Parents Scale (Grolnick et al., 1991; e.g., "I allow my son or daughter to decide things

for himself or herself"). Cronbach's alphas (α s) were .85 (adolescent report—mother), .86 (adolescent report—father), .83 (mother report), and .75 (father report).

IVD was assessed using a 4-item scale (Vermote et al., 2024; Yu et al., 2014; e.g., "I show my child that I have some beliefs, values, and principles that are really important to me"). α s = .65 (adolescent report—mother), .64 (adolescent report—father), .73 (mother report), and .70 (father report).

RAICF was measured via a 12-item scale with three subscales (Assor, Soenens, et al., 2020; e.g., "My mother encourages me to think carefully about what I want to do with my life"). Subscales were strongly interrelated (r = .38–.71), supporting aggregation into a total score. α s = .88 (adolescent report—mother), .88 (adolescent report—father), .82 (mother report), and .79 (father report).

Authentic inner compass (T1–T3)

AIC was evaluated via an 8-item scale (Assor, Soenens, et al., 2020; Vermote et al., 2023; e.g., "I have aspirations that feel like they originate from inside (my true or inner self)"). α s = .77 (T1), .76 (T2), and .78 (T3).

Ruminative exploration and identification with commitment (T1–T3)

These constructs were assessed with the 5-item subscales of the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008; e.g., "I worry about what I want to do with my future" or "My future plans give me self-confidence"). α s = .79 (T1), .83 (T2), and .82 (T3) for ruminative exploration, and .80 (T1), .82 (T2), and .83 (T3) for identification with commitment.

Study choice decision-making (T1–T3)

Study choice commitment was assessed with the 5-item commitment subscale from the shortened Study Choice Task Inventory (SCTI; Demulder et al., 2019; Germeijs & Verschueren, 2006; e.g., "Are you sure about your choice for this study program?"). All items used a Likert scale from 1 (*definitely not*) to 6 (*definitely*). α s = .78 (T1), .85 (T2), and .82 (T3).

COVID-19 (T1)

To account for the possible effects of the COVID-19 pandemic, all participants reported on potential COVID-19 concerns using a scale validated by Vermote et al. (2022; e.g., "During the past week during the Corona crisis, I was worried about my health"). α s = .65 (adolescents), .80 (mothers), and .76 (fathers).

Plan of analyses

Preliminary analyses

To assess whether background variables were associated with the study variables, we performed a multivariate analysis of covariance (MANCOVA). The analysis considered personal characteristics of the adolescents (i.e., gender, age, nationality, COVID-19 concerns, educational level, grade point average, history of repeating school years in primary and secondary school, and perceived likelihood of passing the current school year), and the parents (i.e., age, nationality, COVID-19 concerns, marital status, number of children, educational level, and income). Next, we computed descriptive statistics for the main study variables. These are presented in [Tables S1–S3](#) in Supplementary Materials.

Primary analyses

Primary analyses were performed in RStudio (Version 2023.12.1.402; Posit team, 2024) using the Lavaan package (Version 0.6.17; Rosseel, 2012). A two-step modeling approach was employed. First, latent change models (LCMs; Beyers & Goossens, 2008) were estimated to obtain factor scores for the level and change of the adolescent variables (i.e., AIC, identification with commitment, ruminative exploration, and study choice commitment). Confirmatory factor analyses (CFAs) were run to estimate measurement models of the parent variables (i.e., BAS, IVD, and RAICF). Next, factor scores derived from these LCMs and CFAs were used in path models to test the study hypotheses. The analytic steps are further detailed below.

First, for each adolescent variable (i.e., AIC, identification with commitment, ruminative exploration, and study choice commitment), items were randomly clustered into parcels, serving as indicators of the latent factors. This approach yields estimation and psychometric benefits (Little et al., 2013). Next, based on a time-invariant measurement model of the repeated measures, three latent factors were estimated for each variable through LCMs: one representing the initial level (i.e., the intercept), one representing within-person change from T1 to T2, and one representing within-person change from T2 to T3. For parents' basic autonomy support and RAICF, items were also randomly clustered into parcels, whereas for IVD the four individual items were used as indicators. Subsequently, three measurement models were estimated for the parent variables, which were measured only at T1.

After establishing adequate model fit, factor scores were extracted and saved into a new dataset for use in the subsequent path models. This approach avoids unnecessary model complexity and is consistent with statistical recommendations (Hoshino & Bentler, 2011) and prior research using latent change modeling (e.g., Beyers &

Goossens, 2008). In the current study, structural equation models including all latent constructs and effects would have produced unstable parameter estimates and difficulties in obtaining adequate model fit. By first estimating latent change models and measurement models, the analyses were able to account for measurement error during factor score estimation and to derive more reliable construct estimates than would be obtained using raw scale scores. However, because the models testing the study hypotheses were estimated with extracted factor scores and not directly with latent variables, they should be interpreted as path models rather than fully latent structural equation models.

Three path models were specified to estimate the effects of adolescents' AIC on each of the outcome variables. Specifically, these models included effects of the initial level of AIC on both the initial levels and changes in identification with commitment, ruminative exploration, and study choice commitment across three time points (T1 to T2 and T2 to T3). Additionally, these models included effects of change in AIC from T1 to T2 and T2 to T3 on corresponding changes in the outcome variables.

Two sets of path models were estimated to examine the intervening role of adolescents' AIC in the associations between autonomy-supportive parenting and the outcome variables. In the first set, basic autonomy support and IVD at T1 were included as predictors of AIC and subsequent outcomes, whereas in the second set, basic autonomy support and RAICF at T1 were included. IVD and RAICF were modeled separately to avoid model overcomplexity, as including basic autonomy support, IVD, and RAICF together led to unstable parameter estimates. Each path model included three types of effects of basic autonomy support and either IVD or RAICF: (a) effects on the initial levels of AIC and the outcome variables; (b) effects on changes in AIC and the outcome variables from T1 to T2 and from T2 to T3; (c) indirect effects on the outcome variables (initial levels and changes over time) via AIC (initial level and changes over time). Path models were estimated separately for adolescents', mothers', and fathers' reports of parenting. Indirect effects were tested using 5000 bootstrap samples to obtain more accurate estimates of the standard errors (MacKinnon et al., 2004).

Transparency and openness

The study was approved by the ethics committee of the Faculty of Psychology and Educational Sciences at Ghent University (2020/96) and conducted in accordance with the faculty's General Ethical Protocol. The study was not preregistered. Data and analysis scripts are available on OSF: https://osf.io/xfqbc/?view_only=aec9d8b007f04e1b983b28f43ed8bb05.

This research was conducted within a developmental psychological framework emphasizing autonomy-supportive

parenting and identity development in a Western European context. We acknowledge that cultural and theoretical perspectives may shape the measurement and interpretation of these processes.

RESULTS

Preliminary analyses

Missing data

Among the 377 families, adolescents participated in one ($n = 160$), two ($n = 105$), or all three waves ($n = 102$). In most families ($n = 313$), both parents participated. According to Little's (1988) MCAR test, missing data (28.04%) were missing at random, normed $\chi^2 (6455.01/6254) = 1.04$ (Ullman, 2001). Attrition analyses indicated that adolescents who completed all waves did not significantly differ from those who dropped out on the primary study variables at T1, suggesting limited attrition bias. Therefore, full information maximum likelihood (FIML) was used in the primary analyses (Schafer & Graham, 2002).

Descriptives

A multivariate effect was observed for adolescents' grade point average [Wilk's $\lambda = .58$, $F(12, 38) = 2.34$, $p < .05$, $\eta^2 = .43$]. Univariate analyses showed that a higher grade point average was related to a higher AIC at T2 ($B = .03$, $p < .05$, $\eta^2 = .09$) and more ruminative exploration at T3 ($B = .04$, $p < .05$, $\eta^2 = .10$), which was therefore controlled for.

Correlational patterns (see Supplementary Materials S1–S3 for details)

AIC and identity

Across waves, adolescents' AIC related positively to identification with commitment and study choice commitment, and negatively to ruminative exploration.

Parenting and AIC

Adolescent-reported parenting (T1) showed positive associations with adolescents' AIC at T1–T3, except for paternal basic autonomy support with AIC at T2 and T3. In contrast, parent-reported parenting showed fewer links, limited to maternal basic autonomy support with AIC at T1 and T2 and paternal RAICF with AIC at T2.

Parenting and identification with commitment

Adolescent-reported parenting (T1) showed generally positive associations with identification with commitment across waves, particularly for maternal practices and both parents' IVD. Parent-reported parenting showed fewer links, limited

to maternal basic autonomy support and RAICF with identification with commitment at T2.

Parenting and ruminative exploration

Adolescent-reported IVD and maternal RAICF (T1) showed selective negative associations with ruminative exploration across waves. Parent-reported parenting showed fewer and less consistent associations.

Parenting and study choice commitment

Adolescent-reported IVD, RAICF, and maternal basic autonomy support (T1) related positively to study choice commitment across T2–T3, whereas father-reported RAICF showed a negative concurrent association.

Reporter convergence

Convergence between parent and adolescent reports on basic autonomy support, IVD, and RAICF was limited ($r_s = .16-.36$, $M = .25$).

Primary analyses

All LCMs (Table S4 in supplementary materials) showed adequate fit ($CFI \geq .90$, $RMSEA \leq .06$, $SRMR \leq .08$), although the SRMR for AIC (.09) was slightly above .08 (Hu & Bentler, 1999; Kline, 2005). For parenting assessed at T1, all 12 CFAs (3 dimensions $\times$ 2 informants $\times$ 2 parents) showed adequate fit ($CFI > .99$; $RMSEA < .03$; $SRMR < .02$).

Significant between-person differences were observed in the initial levels of adolescents' AIC, ruminative exploration, identification with commitment, and study choice commitment. From T1 to T2, adolescents showed increases in AIC, identification with commitment, and study choice commitment, alongside a decrease in ruminative exploration. From T2 to T3, AIC and identification with commitment decreased, whereas study choice commitment continued to increase. Additionally, beyond mean-level changes, nearly all change factors (except for AIC from T1 to T2) showed significant variance.

Associations between AIC and identity (Figure S1)

All three path models showed adequate fit ($CFI > .97$; $SRMR < .04$), although RMSEAs reached .08 in some models.

First, initial levels of AIC related positively to initial levels of identification with commitment and study choice commitment and negatively to initial levels of ruminative exploration. Moreover, higher initial levels of AIC predicted adaptive changes in all identity outcomes from T1 to T2 and T2 to T3.

Second, stronger increases in AIC from T1 to T2 were related to adaptive changes in all identity outcomes across both intervals, except for study choice commitment from T2 to T3.

Third, from T2 to T3, smaller decreases in AIC were associated with adaptive changes in identification with commitment and study choice commitment, whereas stronger decreases in AIC were associated with increases in ruminative exploration.

The intervening role of AIC between autonomy-supportive parenting and identity

All path models (Figures 2–7) showed adequate fit (CFI: >.95, SRMR: <.08), although a few RMSEAs slightly exceeded .06.

Models including adolescent-reported autonomy support and IVD (Figures 2–4, first two coefficients in each set)

Basic autonomy support and IVD were positively associated, regardless of parental gender. Both parents' basic autonomy support and IVD were positively associated with adolescents' initial levels of AIC. Moreover, paternal IVD predicted a smaller decrease in AIC from T2 to T3, whereas paternal basic autonomy support predicted a stronger decrease in AIC across the same interval. Additionally, both parents' basic autonomy support predicted a stronger increase in study choice commitment from T1 to T2.

Several significant indirect effects were observed (Tables S5–S8 in Supplementary Materials). Via AIC, both parents' basic autonomy support and IVD related positively to initial identification with commitment and study choice commitment and negatively to initial ruminative exploration. Moreover, through initial levels of AIC, both parenting practices predicted stronger increases in identification with

commitment and study choice commitment from T1 to T2. Similarly, paternal IVD also predicted a stronger decrease in ruminative exploration from T1 to T2, and both parents' basic autonomy support and IVD predicted a smaller decrease in identification with commitment from T2 to T3. Finally, via a smaller decrease in AIC from T2 to T3, paternal IVD related to adaptive changes in identification with commitment and study choice commitment.

Models including parent-reported autonomy support and IVD (Figures 2–4, last two coefficients in each set)

Basic autonomy support and IVD were positively associated, regardless of parental gender. However, only basic autonomy support—not IVD—related positively to adolescents' initial level of AIC. Additionally, paternal basic autonomy support was positively related to the initial level of ruminative exploration and negatively to the initial level of study choice commitment. Moreover, paternal IVD predicted a stronger increase in AIC from T1 to T2 and a decrease in ruminative exploration from T2 to T3.

Several significant indirect effects were observed (Tables S5–S8 in Supplementary Materials). Via AIC, both parents' basic autonomy support and IVD related positively to initial identification with commitment and study choice commitment and negatively to initial ruminative exploration. Moreover, through initial levels of AIC, maternal basic autonomy support predicted adaptive changes in all identity outcomes across both time intervals, except for ruminative exploration from T2 to T3. Similar indirect effects were found for paternal basic autonomy support on identification with commitment (T1–T2 and T2–T3) and study choice commitment (T1–T2). Finally, via a stronger increase in AIC

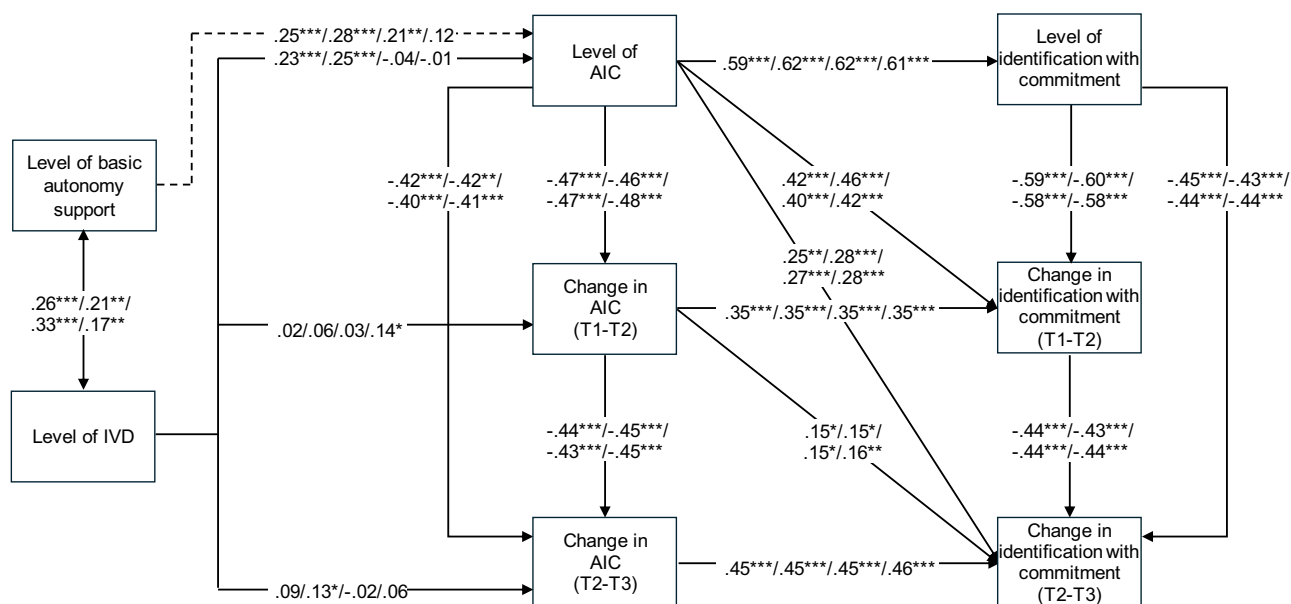


FIGURE 2 Path models for basic autonomy support, IVD, and initial level and change in AIC and identification with commitment. The coefficients, from left to right, correspond to the models with maternal parenting reported by adolescents, paternal parenting reported by adolescents, mother-reported parenting, and father-reported parenting. Model fit indices, in the same order: CFI = 1.00/.99/1.00/1.00, RMSEA = .03/.05/.03/.00, SRMR = .03/.04/.03/.03. * $p < .05$; ** $p < .01$; *** $p < .001$.

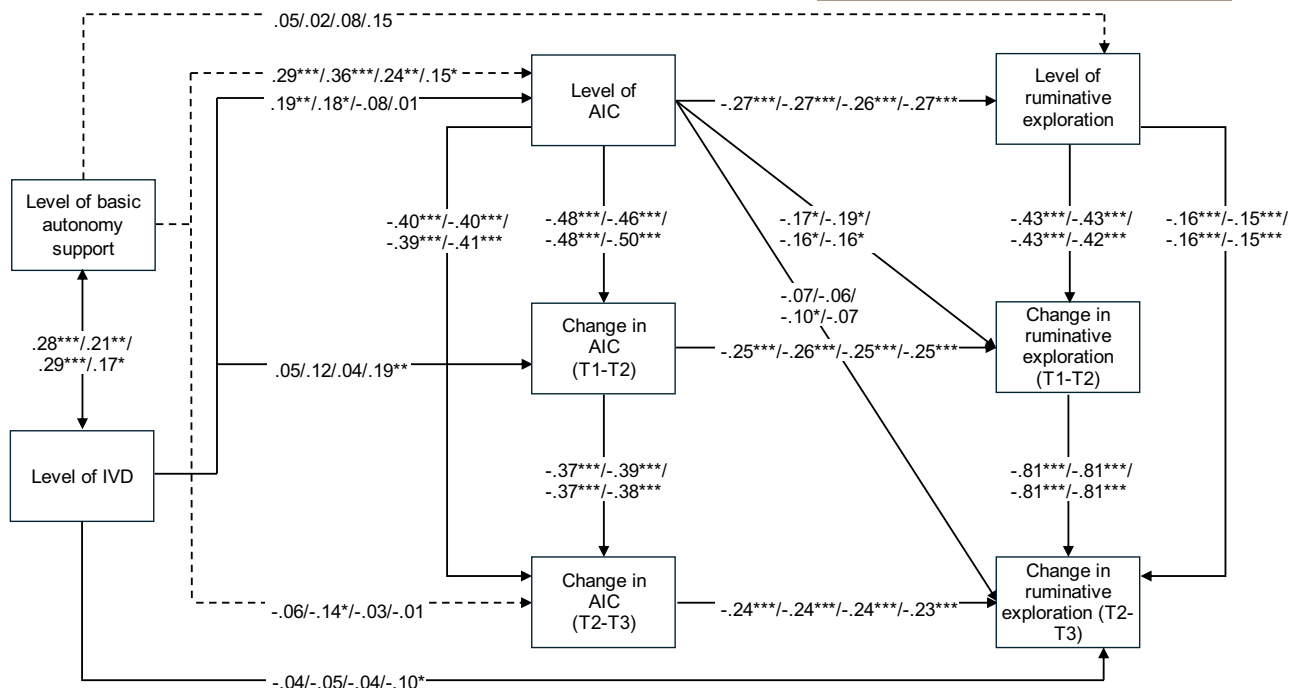


FIGURE 3 Path models for basic autonomy support, IVD, and initial level and change in AIC and ruminative exploration. The coefficients, from left to right, correspond to the models with maternal parenting reported by adolescents, paternal parenting reported by adolescents, mother-reported parenting, and father-reported parenting. Model fit indices, in the same order: CFI = .96/.97/.96/.97, RMSEA = .08/.07/.09/.07, SRMR = .06/.06/.06/.06. * $p < .05$; ** $p < .01$; *** $p < .001$.

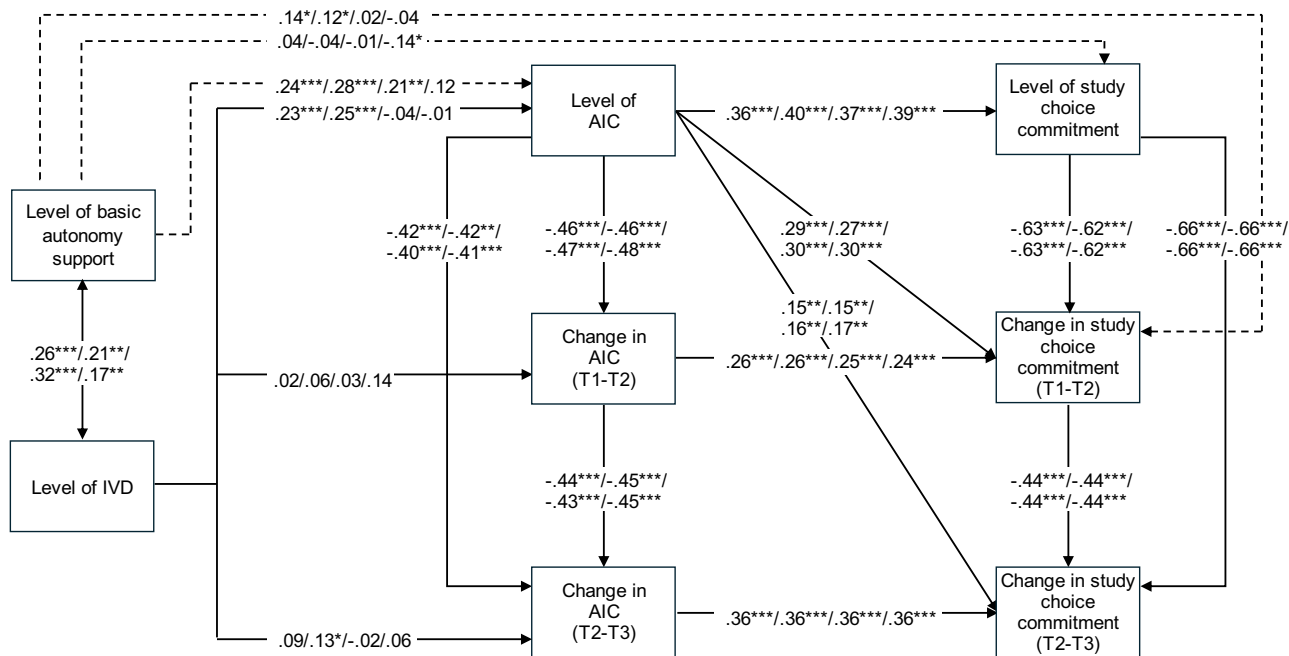


FIGURE 4 Path Models for Basic autonomy support, IVD, and Initial Level and Change in AIC and Study Choice Commitment. The coefficients, from left to right, correspond to the models with maternal parenting reported by adolescents, paternal parenting reported by adolescents, mother-reported parenting, and father-reported parenting. Model fit indices, in the same order: CFI = .99/.99/.99/.99, RMSEA = .06/.05/.03/.05, SRMR = .03/.03/.03/.03. * $p < .05$; ** $p < .01$; *** $p < .001$.

from T1 to T2, paternal IVD related to a stronger increase in identification with commitment and study choice commitment and a stronger decrease in ruminative exploration across the same period.

Models including adolescent-reported autonomy support and RAICF (Figures 5–7, first two coefficients in each set) Basic autonomy support and RAICF were positively associated, regardless of parental gender. Moreover, paternal basic

autonomy support and maternal RAICF were positively associated with adolescents' initial levels of AIC. Both parents' RAICF predicted a smaller decrease in AIC from T2 to T3, whereas paternal basic autonomy support predicted a stronger decrease in AIC across the same interval.

Several significant indirect effects were observed (Tables S9–S12 in Supplementary Materials). Via AIC,

paternal basic autonomy support and maternal RAICF were associated with higher initial study choice commitment and lower initial ruminative exploration. Additionally, paternal basic autonomy support indirectly predicted higher initial identification with commitment and adaptive changes in all identity outcomes across both intervals, except for study choice commitment from T2 to T3. Similarly, maternal

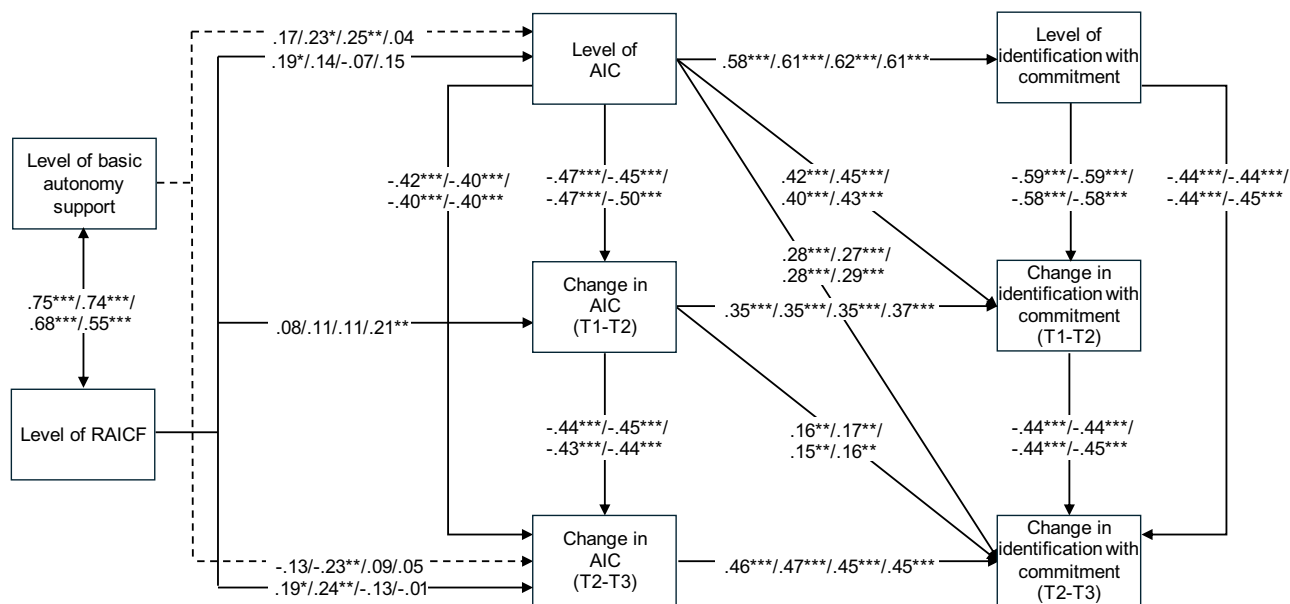


FIGURE 5 Path models for basic autonomy support, RAICF, and initial level and change in AIC and identification with commitment. The coefficients, from left to right, correspond to the models with maternal parenting reported by adolescents, paternal parenting reported by adolescents, mother-reported parenting, and father-reported parenting. Model fit indices, in the same order: CFI = 1.00/.99/1.00/1.00, RMSEA = .04/.07/.03/.04, SRMR = .03/.04/.03/.03. * $p < .05$; ** $p < .01$; *** $p < .001$.

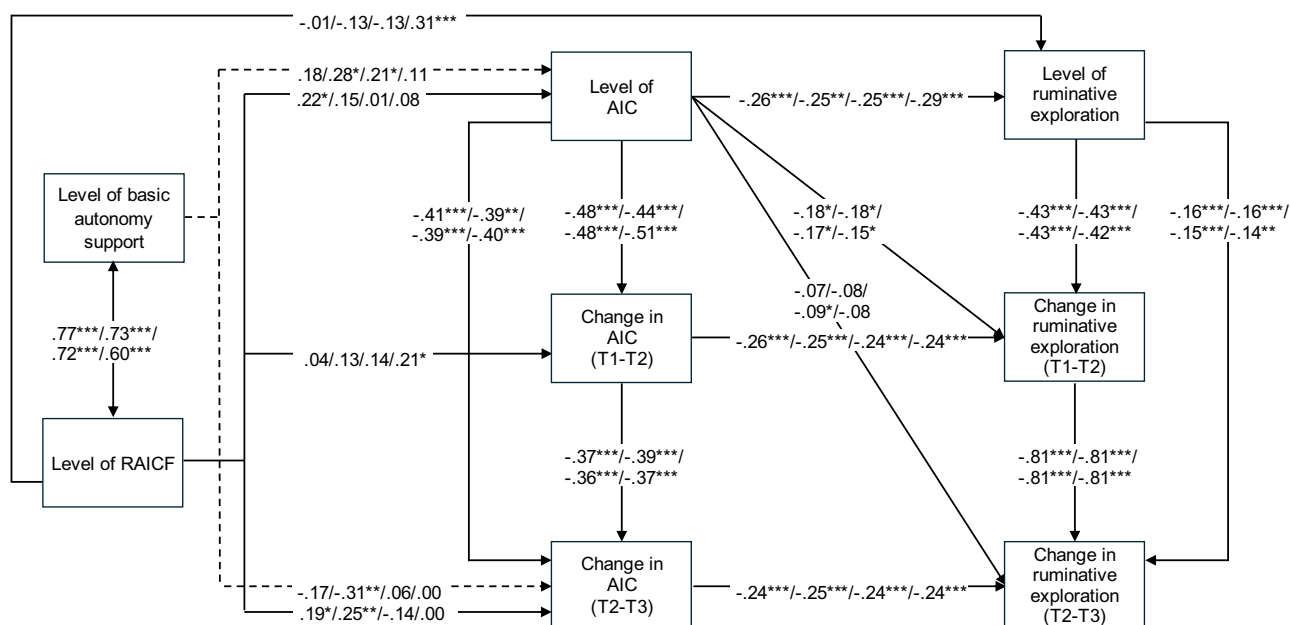


FIGURE 6 Path models for basic autonomy support, RAICF, and initial level and change in AIC and ruminative exploration. The coefficients, from left to right, correspond to the models with maternal parenting reported by adolescents, paternal parenting reported by adolescents, mother-reported parenting, and father-reported parenting. Model fit indices, in the same order: CFI = .97/.98/.98/.99, RMSEA = .08/.07/.06/.05, SRMR = .07/.06/.06/.05. * $p < .05$; ** $p < .01$; *** $p < .001$.

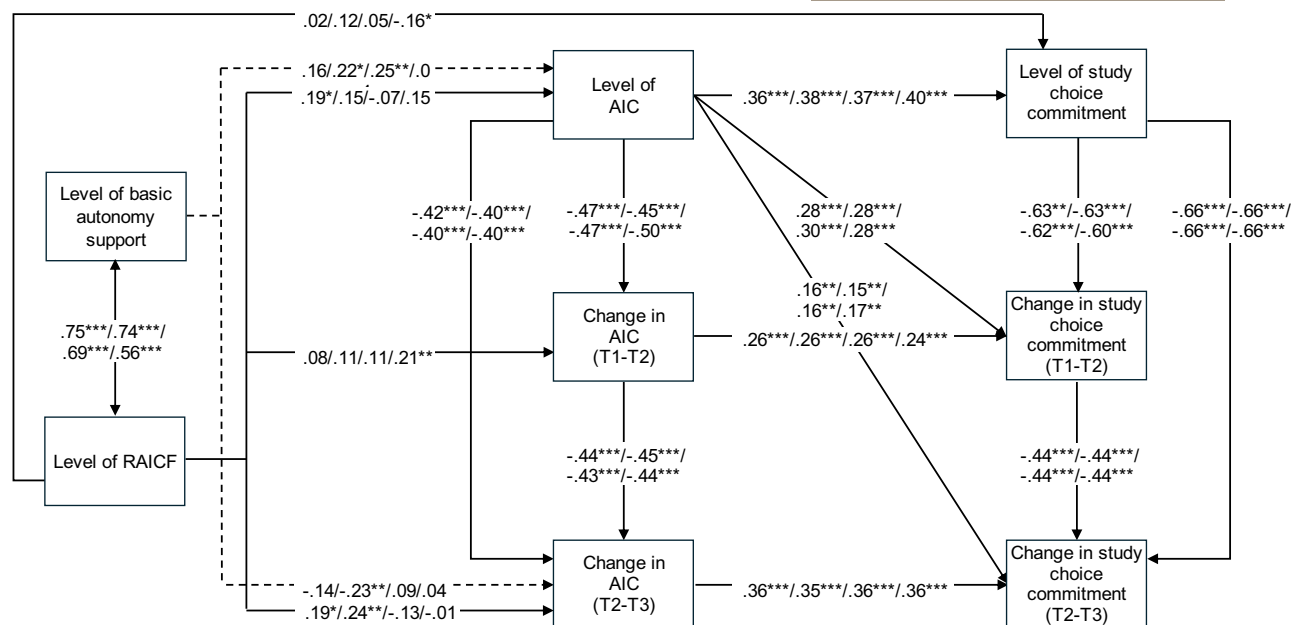


FIGURE 7 Path models for basic autonomy support, RAICF, and initial level and change in AIC and study choice commitment. The coefficients, from left to right, correspond to the models with maternal parenting reported by adolescents, paternal parenting reported by adolescents, mother-reported parenting, and father-reported parenting. Model fit indices, in the same order, were as follows: CFI = .99/.99/1.00/.99, RMSEA = .06/.06/.04/.06, SRMR = .04/.03/.03/.04. * $p < .05$; ** $p < .01$; *** $p < .001$.

RAICF predicted an increase in study choice commitment from T1 to T2. Finally, via a stronger decrease in AIC from T2 to T3, both parents' basic autonomy support related to increases in ruminative exploration. Additionally, paternal basic autonomy support related to maladaptive changes in identification with commitment and study choice commitment. In contrast, both parents' RAICF showed adaptive relationships with identification with commitment and study choice commitment, whereas only paternal RAICF showed an adaptive relationship with ruminative exploration.

Models including parent-reported autonomy support and RAICF (Figures 5–7, last two coefficients in each set)

Basic autonomy support and RAICF were positively associated, regardless of parental gender. Moreover, mother-reported basic autonomy support related positively to adolescents' initial level of AIC, whereas father-reported RAICF related positively to the initial level of ruminative exploration and negatively to the initial level of study choice commitment. Additionally, paternal RAICF predicted a stronger increase in AIC from T1 to T2.

Several significant indirect effects were observed (Tables S9–S12 in Supplementary Materials). Via AIC, maternal basic autonomy support was related to higher initial identification with commitment and study choice commitment as well as to lower initial ruminative exploration. Similarly, paternal RAICF related to higher initial levels of identification with commitment and study choice commitment. Moreover, through initial levels of AIC, maternal basic autonomy support predicted adaptive changes in identification with commitment and study choice commitment across both intervals. Similar effects emerged for paternal RAICF,

except regarding study choice commitment from T2 to T3. Finally, via a stronger increase in AIC from T1 to T2, paternal RAICF predicted adaptive changes in all three identity outcomes during the same period.

DISCUSSION

During the transition from high school to higher education, adolescents are expected to make important identity-related decisions (e.g., a study choice) from a plethora of options (Waterman, 1985). They are confronted with this developmental task amidst profound changes in their social environment, including steps in the process of home-leaving, contacts with widening peer groups, the establishment of new friendships, and adaptation to a different (more remote and less structured) educational context (Gale & Parker, 2014). Whereas the decision-making freedom during this period provides some adolescents with an opportunity to further discover who they are and who they want to be, others feel lost in an abundance of information and struggle to make meaningful decisions (Schwartz et al., 2005). Hence, although identity formation is a key developmental task throughout adolescence, the transition from high school to higher education constitutes a normative developmental context during which identity processes become particularly prominent, susceptible to change, and sometimes very challenging (Branje et al., 2021). However, longitudinal studies examining identity formation during the transition from high school to higher education are limited, despite scholars recognizing the need to focus on transitional periods that make identity processes more salient (Branje et al., 2021).

Moreover, although research highlights the importance of parental autonomy support for identity formation during transitional periods (e.g., Christiaens et al., 2021; Duineveld et al., 2017), little is known about specific practices that may facilitate identity-related decision-making. In this longitudinal study, we examined how parents can support adolescents in making identity decisions during the transition from high school to higher education by fostering an AIC. We considered how both basic and identity-specific autonomy support can contribute to the formation of an AIC. In addition, we examined how a developing AIC, in turn, predicts changes in adolescents' identity-related decision-making.

The role of an authentic inner compass in identity development

On average, throughout the 12th grade, adolescents in the current sample gained a better understanding of the values, interests, and aspirations that drive them, as reflected in a stronger sense of AIC. They also felt more confident about the identity decisions they made (i.e., identification with commitment), such as pursuing higher education (i.e., study choice commitment), while also ruminating less about those decisions (i.e., ruminative exploration). However, after transitioning to higher education, adolescents' AIC and identification with commitment declined on average, whereas study choice commitment continued to increase.

The initial increases observed during the 12th grade align with previous research suggesting that identity development generally follows a progressive trend (e.g., Branje et al., 2021; Kroger et al., 2009; Meeus et al., 2010). In contrast the subsequent decreases after entering higher education highlight the non-linear and dynamic nature of identity development, especially during transitional periods (Beyers & Goossens, 2008; Lichtwarck-Aschoff et al., 2008).

The dynamic nature of identity development is further reflected in the considerable interindividual variability in within-person changes in adolescents' AIC and identity across both time intervals. For example, by the end of high school, some adolescents had gained confidence in their identity decisions (e.g., a preliminary study choice), whereas others had lost confidence or experienced no noticeable change. Similar heterogeneity in within-person change has been reported in earlier studies on adolescent identity (e.g., Becht et al., 2016; Christiaens et al., 2021; Raemen et al., 2022). Taken together, these findings suggest that, beyond average trends and between-person differences, it is important to examine the antecedents of within-person changes in identity development, particularly during transitional periods.

In line with Hypothesis 1a, this study found that adolescents with a stronger sense of AIC in the fall semester of the 12th grade also ruminated less and felt more confident about their identity decisions and preliminary academic choices. This finding is consistent with recent research (Assor, Soenens, et al., 2020; Vermote et al., 2023) and with theoretical accounts by Assor (2012), which posit that a clear

sense of personally endorsed values facilitates the formation of identity-related commitments. The current study contributes to this body of work by providing longitudinal evidence for the hypothesized role of the sense of AIC.

In support of Hypothesis 1b, adolescents with a stronger sense of AIC in the fall semester of 12th grade showed more favorable changes in identity-related decision-making—such as a steeper increase in study choice commitment—both within the 12th grade and across the transition to higher education. Consistent with Hypothesis 1c, adolescents who developed a stronger sense of their true values and interests within the 12th grade or during the transition to higher education likewise reported improvements in their identity-related decision-making.

The effects of adolescents' AIC were most pronounced for identification with commitment, followed by study choice commitment, and weakest for ruminative exploration. This suggests that adolescents' sense of AIC is more strongly linked to global identity processes than to domain-specific outcomes. At the same time, the relatively weaker associations with ruminative exploration suggest that adolescents' sense of AIC may be more closely related to adaptive identity processes than to maladaptive ones.

Taken together, these findings highlight the importance of developing an AIC when making long-term commitments, such as pursuing higher education (Assor, Soenens, et al., 2020; Vermote et al., 2023). Meanwhile, they offer new empirical evidence for the idea that an AIC can serve as a source of resilience and persistence (Vansteenkiste & Soenens, 2015). Specifically, late adolescents with a stronger sense of AIC reported worrying less and feeling more confident about their identity decisions during the transition to higher education. Assor, Benita, et al. (2020) showed that a strong AIC was positively associated with adolescents' ability to resist peer pressure, further highlighting its resilience-promoting role.

From a practical perspective, these findings point to the value of supporting adolescents in developing a stable AIC. Parents, educators, and counselors should be aware of the pivotal role of an AIC in identity development and be prepared to guide adolescents who struggle to clarify their true interests, values, and goals. By fostering the formation of an AIC, they may help young people navigate transitional challenges more confidently and constructively.

The contribution of autonomy-supportive parenting

Assor (2012) argues that, in addition to basic autonomy support, parents can facilitate adolescents' identity development through identity-specific autonomy-supportive practices. Prior research has supported this notion mostly through cross-sectional designs (e.g., Assor, Benita, et al., 2020; Assor, Soenens, et al., 2020). Therefore, this study used a longitudinal approach to examine how parents, beyond basic autonomy support, can support adolescents in developing an AIC and making identity decisions through

inherent value demonstration (IVD) and reflective authentic inner compass facilitation (RAICF).

Across parental gender and informants, basic autonomy support related positively to both IVD and RAICF, although the correlations with RAICF were substantially higher. A possible explanation for this difference is that the parenting practice of IVD may support autonomy through a different process than basic autonomy support and RAICF. Whereas the latter practices primarily involve sensitive responsiveness to children's need-based messages and signals, IVD involves parents' visible enactment of personally endorsed values and principles in ways that convey authenticity, meaning, and fulfillment. Further, these correlations suggest it is important not to examine RAICF or IVD in isolation from basic autonomy support if one aims to observe their unique effects.

Basic autonomy support

Adolescents who perceived their father as basic autonomy-supportive were more aware of their true values and aspirations in the fall semester of high school. Adolescents also had a stronger sense of AIC in the fall semester of 12th grade when their mother perceived herself as basic autonomy-supportive. Through associations with a stronger AIC, both paternal (adolescent report) and maternal (mother report) basic autonomy support had beneficial effects on identity outcomes, not only in the fall semester of 12th grade but also over time. Additional favorable effects were observed only in models including IVD, not RAICF—likely due to a stronger conceptual overlap between basic autonomy support and RAICF. In the IVD models, adolescents reported a stronger sense of AIC in the fall semester of 12th grade when they perceived their mother as basic autonomy-supportive or when their father viewed himself as basic autonomy-supportive. Through a more solid AIC, these parental practices had beneficial effects on identity outcomes both in the fall semester of the 12th grade and across time. Further, when adolescents experienced their mother or father as basic autonomy-supportive, they showed more commitment to their preliminary study choice during 12th grade independently of their sense of AIC.

These results demonstrate that, although IVD and RAICF are more identity-specific autonomy-supportive practices than basic autonomy support, a basic autonomy-supportive environment continues to provide a solid foundation for identity development. This suggests that when parents recognize late adolescents' individual feelings and opinions and provide them with relevant choices and a meaningful rationale when appropriate, late adolescents are more likely to develop a solid AIC and make better identity-related decisions.

Nevertheless, the structural analyses also yielded a few unexpected results. Adolescents' perception of paternal basic autonomy support was related to a stronger decrease in AIC during the transition to higher education, in both IVD and RAICF models. However, in the correlational analyses (Table S2), adolescent reports of paternal basic autonomy support were not significantly related to adolescents' AIC in

the fall semester of higher education. Moreover, when the structural analyses were repeated using only basic autonomy support (excluding IVD and RAICF), the unexpected effects disappeared. This suggests a suppression effect rather than a substantive finding. Another unexpected finding was that father-reported basic autonomy support was associated with more ruminative exploration and less study choice commitment in both IVD and RAICF models. These associations were also non-significant in the correlational analyses, again pointing to a suppression effect.

Inherent value demonstration

Adolescents showed a stronger sense of AIC in the fall semester of 12th grade when they perceived that their mother or father engaged in IVD, accounting for basic autonomy support. Through this stronger AIC, both parents' IVD, in turn, was associated with more favorable identity outcomes during 12th grade and the transition to higher education. In addition, adolescents reported that when their fathers practiced IVD, they gained a stronger sense of AIC by the time they entered higher education. When fathers viewed themselves as living by strong values and principles, adolescents developed a stronger sense of AIC during 12th grade and became less ruminative about identity decisions during the transition to higher education. Further, through an increased AIC, paternal IVD (adolescent and parent reports) also had beneficial effects on identity outcomes.

The results confirm Hypotheses 2 and 3 and add to previous cross-sectional studies examining parental IVD by providing longitudinal evidence. They suggest that when parents visibly orient their lives around personally endorsed values and principles in ways that convey authenticity and fulfillment, late adolescents perceive themselves as having a clearer understanding of what they value and aspire to. Hence, autonomy-supportive parenting may involve not only sensitivity to adolescents' needs and perspectives, but also the expression of a firm AIC by parents themselves. This, in turn, may help adolescents feel more confident and less concerned about identity decisions, even over time. For counselors, these findings suggest that supporting parents in reflecting on and communicating their own values—alongside providing basic autonomy support—may help adolescents develop a stronger sense of direction when making important life decisions.

However, some questions remain. Particularly, only paternal IVD predicted an increase in late adolescents' sense of AIC, unlike maternal IVD or either parents' basic autonomy support. This may suggest that during transitional periods, when adolescents lack a clear future direction, basic autonomy support may be insufficient for fostering an AIC (Assor, 2012; Assor, Soenens, et al., 2020). Identity-specific autonomy-supportive parental practices such as IVD may then be needed. The difference between maternal and paternal IVD might reflect that, in the current sample, fathers demonstrated their values and goals more explicitly

or that adolescents found these more relatable during the transition to higher education. However, these explanations remain speculative. Moreover, although paternal IVD had significant longitudinal effects, these were relatively small. Replication is needed in future studies.

Reflective authentic inner compass facilitation

Accounting for basic autonomy support, adolescents reported a stronger sense of AIC in the fall semester of 12th grade when they perceived their mothers as encouraging them to discover their authentic ideals and goals without pressure (i.e., RAICF). A stronger AIC, in turn, predicted less concern about identity decisions and more commitment to their preliminary study choice in the fall semester of 12th grade. Additionally, father-reported RAICF was, through adolescents' AIC, associated with more identification with commitment and study choice commitment in the fall semester of 12th grade. These findings align with those of Assor, Soenens, et al. (2020), but the current study also extends them with longitudinal evidence. Particularly, via a stronger AIC, father-reported RAICF also had a positive effect on identification with commitment and study choice commitment across time. Further, adolescents who perceived their parents as practicing RAICF developed a clearer understanding of their values, interests, and goals across the transition to higher education. When reported by fathers, RAICF predicted a positive development in adolescents' AIC during the 12th grade. Additionally, paternal RAICF (adolescent and father reports) had beneficial effects on identity outcomes over time, via a firm AIC.

Overall, the findings on RAICF support Hypotheses 2 and 3. Beyond accepting late adolescents' perspective and providing meaningful choice and rationale (i.e., basic autonomy support), parents can foster late adolescents' sense of having an AIC and, in turn, identity-related decision-making by proactively encouraging and helping them to examine their true interests and values. RAICF may help adolescents translate emerging personal values into concrete identity commitments. From an applied standpoint, counselors and educators may, therefore, support parents in engaging adolescents in value-oriented reflection within a basic autonomy-supportive context.

Nonetheless, several observations warrant future research. For instance, RAICF, unlike basic autonomy support, was not only positively associated with adolescents' AIC in the fall semester of 12th grade but even more so with its development over time. As with IVD, this suggests that RAICF is especially important during transitional periods. Additionally, some subtle differences emerged between maternal and paternal RAICF: maternal RAICF had a stronger concurrent effect, whereas paternal RAICF had a stronger longitudinal effect. The reasons remain unclear and merit further investigation. Finally, father-reported RAICF was unexpectedly associated with more ruminative exploration and less study choice commitment in the fall semester of the

12th grade, findings that were also significant in the correlational analyses. Future research is necessary to determine whether these associations are replicable.

Limitations and future directions

This study has several strengths, notably the longitudinal design, the multi-informant approach, and the consideration of innovative concepts in research on identity development and autonomy-supportive parenting. Nevertheless, the present study also has some limitations.

First, we assessed parental autonomy support only at the first wave. This precludes an examination of changes in parenting and potential bidirectional effects between parenting and adolescents' identity. This is unfortunate because prior research suggests that parental practices can change over time in response to adolescents' functioning (e.g., Duineveld et al., 2017). In the current sample, parents may have adapted their autonomy-supportive practices in response to changes in adolescents' AIC and identity processes across the transition from high school to higher education. For example, when adolescents have a clearer sense of who they are and which choices they want to make, parents may find it easier to communicate in autonomy-supportive ways. In contrast, when adolescents lack a sense of AIC and ruminate about identity-related choices, parents may become more concerned and respond in less autonomy-supportive ways. Hence, parental autonomy support measured only at wave one of this study may primarily reflect relatively stable between-family differences in parenting rather than ongoing and reciprocal within-family parenting dynamics. Future research would therefore benefit from repeatedly assessing parenting as well. Such designs would allow researchers to examine whether certain autonomy-supportive practices change in frequency and impact in response to changes in adolescents' identity across time.

Second, we relied almost exclusively on self-report surveys, which may have led to shared method variance. Future research could benefit from including the perspective of significant others on adolescents' sense of AIC and identity.

Third, convergence between parent and adolescent reports was relatively limited. This aligns with prior research (Korelitz & Garber, 2016) and suggests that the perception of adolescents on parenting may be more important for examining identity development than parents' perception. However, future research may benefit from investigating whether the degree of convergence between parent and adolescent reports is related to identity outcomes.

Fourth, this study was limited in generalizability with regard to socioeconomic status, cultural and educational background, and gender because of its focus on adolescents who pursued higher education and the overrepresentation of girls in the sample. Future research may examine whether the findings can be replicated among adolescents who do not enter higher education but instead plan to directly enter a profession (cf. Rosenbaum, 2001, 'forgotten half'). Moreover,

future studies could examine whether the findings replicate in more gender-balanced samples.

Fifth, in the current study, parental IVD had a positive effect on late adolescents' sense of AIC. This indicates that, by engaging in value-driven behavior, parents can inspire late adolescents to develop a set of self-guiding values, interests, and goals. Consequently, it is conceivable that parental IVD may play an important role in intergenerational value transmission. However, because this study did not consider the content of the values underlying parents' IVD and adolescents' AIC, it was not possible to thoroughly investigate this hypothesis. Moreover, previous studies found that intrinsic values, in contrast to extrinsic values, are more likely to satisfy psychological needs (Bradshaw et al., 2023). Therefore, future research could examine whether the specific content of the values underlying parental IVD and adolescents' AIC shapes how they contribute to identity development.

CONCLUSION

Late adolescents are expected to make a multitude of identity decisions (e.g., a study choice) when transitioning from high school to higher education. The findings of this study indicate that late adolescents with a well-developed AIC are better equipped to navigate this transition, as they experience less concerns and greater confidence regarding their identity-related and academic choices, both prior to and during the transition. Moreover, by being basic autonomy-supportive and by engaging in identity-specific autonomy-supportive practices, such as inherent value demonstration (IVD) and reflective authentic inner compass facilitation (RAICF), parents can help late adolescents develop an AIC and make identity decisions. These effects were more pronounced in adolescent-reported data than in parent-reported data.

AUTHOR CONTRIBUTIONS

Wim Beyers: Resources; methodology; conceptualization; supervision. **Sam Houthuys:** Conceptualization; investigation; funding acquisition; writing – original draft; methodology; visualization; formal analysis; data curation; validation; software. **Maarten Vansteenkiste:** Conceptualization; supervision; resources; writing – review and editing; methodology. **Branko Vermote:** Conceptualization; investigation; methodology; validation; visualization; writing – review and editing; project administration; data curation; supervision; resources; software. **Peter Prinzie:** Funding acquisition; supervision; writing – review and editing; resources. **Bart Soenens:** Funding acquisition; conceptualization; investigation; methodology; visualization; writing – review and editing; resources; supervision; validation.

ACKNOWLEDGMENTS

The authors thank the participating adolescents and their parents for their contribution to this study.

FUNDING INFORMATION

This research was funded by grants from the Fonds Wetenschappelijk Onderzoek–Vlaanderen (FWO) awarded to Sam Houthuys (Grant No. 1172726N) and to Peter Prinzie (Grant No. G0DCB23N). The funding agency had no role in the study design, data collection, analysis, interpretation of the results, or writing of the manuscript.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available on the Open Science Framework at https://osf.io/xfqbc/?view_only=aec9d8b007f04e1b983b28f43ed8bb05.

ETHICS STATEMENT

Ethical approval for this study was obtained from the Ethics Committee of the Faculty of Psychology and Educational Sciences of Ghent University (approval number: 2020/96).

CONSENT STATEMENT

Informed consent was obtained electronically from the parents or legal guardians of participating adolescents. Adolescents also provided their own informed consent electronically prior to participation.

ORCID

Sam Houthuys  <https://orcid.org/0009-0009-5073-4962>

Maarten Vansteenkiste  <https://orcid.org/0000-0001-6983-3607>

Wim Beyers  <https://orcid.org/0000-0003-4721-0251>

Peter Prinzie  <https://orcid.org/0000-0003-3441-7157>

Bart Soenens  <https://orcid.org/0000-0003-1581-3656>

REFERENCES

- Arnett, J. J. (2024). *Emerging adulthood: The winding road from the late teens through the twenties* (3rd ed.). Oxford University Press. <https://doi.org/10.1093/oso/9780197695937.001.0001>
- Assor, A. (2012). Allowing choice and nurturing an inner compass: Educational practices supporting students' need for autonomy. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 421–439). Springer Science + Business Media. https://doi.org/10.1007/978-1-4614-2018-7_20
- Assor, A. (2017). The striving to develop an authentic inner compass as a key component of adolescents' need for autonomy: Parental antecedents and effects on identity, well-being, and resilience. In B. Soenens, M. Vansteenkiste, & S. Van Petegem (Eds.), *Autonomy in adolescent development: Towards conceptual clarity* (pp. 135–160). Psychology Press. <https://doi.org/10.4324/9781315636511-6>
- Assor, A., Benita, M., & Geifman, Y. (2023). The authentic inner compass as an important motivational experience and structure. In *The Oxford Handbook of Self-Determination Theory* (pp. 362–386). Oxford Academic. <https://doi.org/10.1093/oxfordhb/9780197600047.013.19>
- Assor, A., Benita, M., Shi, Y., Goren, R., Yitshaki, N., & Wang, Q. (2021). The authentic inner compass as a well-being resource: Predictive effects on vitality, and relations with self-esteem, depression and behavioral self-realization. *Journal of Happiness Studies*, 22(8), 3435–3455. <https://doi.org/10.1007/s10902-021-00373-6>

- Assor, A., Benita, M., Yitshaki, N., Geifman, Y., & Maree, W. (2020). Sense of authentic inner compass as a moral resource across cultures: Possible implications for resisting negative peer-pressure and for parenting. *Journal of Moral Education*, 49(3), 346–364. <https://doi.org/10.1080/03057240.2020.1727423>
- Assor, A., Cohen, R., Grolnick, W. S., Smetana, J. G., Sher-Censor, E., & Itshaki, N. (2025). Parents' value demonstration as a determinant of youth experiences and responses to parents' warnings following the onset of risk behavior. *Journal of Youth and Adolescence*, 54(11), 2946–2961. <https://doi.org/10.1007/s10964-025-02196-7>
- Assor, A., Soenens, B., Yitshaki, N., Ezra, O., Geifman, Y., & Olshtein, G. (2020). Towards a wider conception of autonomy support in adolescence: The contribution of reflective inner-compass facilitation to the formation of an authentic inner compass and well-being. *Motivation and Emotion*, 44(2), 159–174. <https://doi.org/10.1007/s11031-019-09809-2>
- Becht, A. I., Luyckx, K., Nelemans, S. A., Goossens, L., Branje, S., Vollebergh, W. A. M., & Meeus, W. (2019). Linking identity and depressive symptoms across adolescence: A multisample longitudinal study testing within-person effects. *Developmental Psychology*, 55(8), 1733–1742. <https://doi.org/10.1037/dev0000742>
- Becht, A. I., Nelemans, S. A., Branje, S. J. T., Vollebergh, W. A. M., Koot, H. M., Denissen, J. J. A., & Meeus, W. H. J. (2016). The quest for identity in adolescence: Heterogeneity in daily identity formation and psychosocial adjustment across 5 years. *Developmental Psychology*, 52(12), 2010–2021. <https://doi.org/10.1037/dev0000245>
- Beyers, W., & Goossens, L. (2008). Dynamics of perceived parenting and identity formation in late adolescence. *Journal of Adolescence*, 31(2), 165–184. <https://doi.org/10.1016/j.adolescence.2007.04.003>
- Bosma, H. A. (2004). Identiteitsontwikkeling. In J. De Wit, W. Slot, & M. van Aken (Eds.), *Psychologie van de Adolescentie: basisboek* (23th ed., pp. 143–164). HB.
- Bradshaw, E. L., Conigrave, J. H., Steward, B. A., Ferber, K. A., Parker, P. D., & Ryan, R. M. (2023). A meta-analysis of the dark side of the American dream: Evidence for the universal wellness costs of prioritizing extrinsic over intrinsic goals. *Journal of Personality and Social Psychology*, 124(4), 873–899. <https://doi.org/10.1037/pspp0000431>
- Brambilla, M., Assor, A., Manzi, C., & Regalia, C. (2014). Autonomous versus controlled religiosity: Family and group antecedents. *The International Journal for the Psychology of Religion*, 25(3), 193–210. <https://doi.org/10.1080/10508619.2014.888902>
- Branje, S., De Moor, E. L., Spitzer, J., & Becht, A. I. (2021). Dynamics of identity development in adolescence: A decade in review. *Journal of Research on Adolescence*, 31(4), 908–927. <https://doi.org/10.1111/jora.12678>
- Brenning, K., Soenens, B., Van Petegem, S., & Vansteenkiste, M. (2015). Perceived maternal autonomy support and early adolescent emotion regulation: A longitudinal study. *Social Development*, 24(3), 561–578. <https://doi.org/10.1111/sode.12107>
- Christiaens, A. H., Nelemans, S. A., Meeus, W. H., & Branje, S. (2021). Identity development across the transition from secondary to tertiary education: A 9-wave longitudinal study. *Journal of Adolescence*, 93(1), 245–256. <https://doi.org/10.1016/j.adolescence.2021.03.007>
- Cohen, R., Assor, A., Al-Atawna-Hoashle, H., Gueta, B., Steffgen, T., Otterpohl, N., Schwinger, M., & Kanat-Maymon, Y. (2024). Bedouin mothers' sense of authentic inner compass as a parenting resource: Relations with autonomy-supportive parenting and adolescents' well-being. *Journal of Adolescence*, 96(4), 696–709. <https://doi.org/10.1002/jad.12291>
- Demulder, L., Willems, J., Verschuere, K., Lacante, M., & Donche, V. (2019). Het studiekeuzeproces voor hoger onderwijs in kaart: validatie van de Verkorte Vragenlijst Studiekeuzetaken. *Pedagogische Studien*, 96(5), 312–328.
- Duineveld, J. J., Parker, P. D., Ryan, R. M., Ciarrochi, J., & Salmela-Aro, K. (2017). The link between perceived maternal and paternal autonomy support and adolescent well-being across three major educational transitions. *Developmental Psychology*, 53(10), 1978–1994. <https://doi.org/10.1037/dev0000364>
- Erikson, E. H. (1968). *Identity youth and crisis*. Norton.
- Gale, T., & Parker, S. (2014). Navigating change: A typology of student transition in higher education. *Studies in Higher Education*, 39(5), 734–753. <https://doi.org/10.1080/03075079.2012.721351>
- Germeijs, V., & Verschuere, K. (2006). High school students' career decision-making process: Development and validation of the study choice task inventory. *Journal of Career Assessment*, 14(4), 449–471. <https://doi.org/10.1177/1069072706286510>
- Germeijs, V., & Verschuere, K. (2007). High school students' career decision-making process: Consequences for choice implementation in higher education. *Journal of Vocational Behavior*, 70(2), 223–241. <https://doi.org/10.1016/j.jvb.2006.10.004>
- Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, 83(4), 508–517. <https://doi.org/10.1037/0022-0663.83.4.508>
- Grossmann, L., Van der Hallen, R., Smeets, G., & Prinzie, P. (2024). The interplay between identity and personality pathology in emerging adults: A 7-year cross-lagged study. *Development and Psychopathology*, 37(4), 2111–2125. <https://doi.org/10.1017/s095457942400169x>
- Hirschi, A. (2012). Vocational identity trajectories: Differences in personality and development of well-being. *European Journal of Personality*, 26(1), 2–12. <https://doi.org/10.1002/per.812>
- Hoshino, T., & Bentler, P. M. (2011). *Bias in factor score regression and a simple solution*. Department of Statistics, UCLA. <https://escholarship.org/uc/item/45h3t3t2>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Kline, T. J. (2005). *Psychological testing: A practical approach to design and evaluation*. Sage Publications.
- Korelitz, K. E., & Garber, J. (2016). Congruence of parents' and children's perceptions of parenting: A meta-analysis. *Journal of Youth and Adolescence*, 45, 1973–1995. <https://doi.org/10.1007/s10964-016-0524-0>
- Kroger, J., Martinussen, M., & Marcia, J. E. (2009). Identity status change during adolescence and young adulthood: A meta-analysis. *Journal of Adolescence*, 33(5), 683–698. <https://doi.org/10.1016/j.adolescence.2009.11.002>
- Lekes, N., Gingras, I., Philippe, F. L., Koestner, R., & Fang, J. (2009). Parental autonomy-support, intrinsic life goals, and well-being among adolescents in China and North America. *Journal of Youth and Adolescence*, 39(8), 858–869. <https://doi.org/10.1007/s10964-009-9451-7>
- Lichtwarck-Aschoff, A., Van Geert, P., Bosma, H., & Kunnen, S. (2008). Time and identity: A framework for research and theory formation. *Developmental Review*, 28(3), 370–400. <https://doi.org/10.1016/j.dr.2008.04.001>
- Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, 83(404), 1198–1202. <https://doi.org/10.1080/01621459.1988.10478722>
- Little, T. D., Rhemtulla, M., Gibson, K., & Schoemann, A. M. (2013). Why the items versus parcels controversy needn't be one. *Psychological Methods*, 18(3), 285–300. <https://doi.org/10.1037/a0033266>
- Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2005). Unpacking commitment and exploration: Preliminary validation of an integrative model of late adolescent identity formation. *Journal of Adolescence*, 29(3), 361–378. <https://doi.org/10.1016/j.adolescence.2005.03.008>
- Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality*, 42(1), 58–82. <https://doi.org/10.1016/j.jrp.2007.04.004>
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and

- resampling methods. *Multivariate Behavioral Research*, 39(1), 99–128. https://doi.org/10.1207/s15327906mbr3901_4
- Mannerström, R., Hietajärvi, L., & Salmela-Aro, K. (2021). A two-wave longitudinal study of identity profiles based on eight dimensions: Further insight into exploration and commitment quality as well as life domains central to identity. *Identity*, 21(2), 159–184. <https://doi.org/10.1080/15283488.2021.1903468>
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, 3(5), 551–558. <https://doi.org/10.1037/h0023281>
- Meeus, W., De Schoot, R. V., Keijsers, L., Schwartz, S. J., & Branje, S. (2010). On the progression and stability of adolescent identity formation: A five-wave longitudinal study in early-to-middle and middle-to-late adolescence. *Child Development*, 81(5), 1565–1581. <https://doi.org/10.1111/j.1467-8624.2010.01492.x>
- Posit team. (2024). *RStudio: Integrated development environment for R*. Posit Software, PBC. <http://www.posit.co/>
- Raemen, L., Claes, L., Palmeroni, N., Buelens, T., Vankerckhoven, L., & Luyckx, K. (2022). Identity formation and psychopathological symptoms in adolescence: Examining developmental trajectories and co-development. *Journal of Applied Developmental Psychology*, 83, 101473. <https://doi.org/10.1016/j.appdev.2022.101473>
- Rosenbaum, J. E. (2001). *Beyond college for all: Career paths for the forgotten half*. Russell Sage Foundation.
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36. <https://doi.org/10.18637/jss.v048.i02>
- Russo-Netzer, P., & Shoshani, A. (2020). Authentic inner compass, well-being, and prioritization of positivity and meaning among adolescents. *Personality and Individual Differences*, 167, 110248. <https://doi.org/10.1016/j.paid.2020.110248>
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147–177. <https://doi.org/10.1037/1082-989X.7.2.147>
- Schwartz, S. J. (2001). The evolution of Eriksonian and neo-Eriksonian identity theory and research: A review and integration. *Identity*, 1(1), 7–58. <https://doi.org/10.1207/s1532706xschwartz>
- Schwartz, S. J., Beyers, W., Luyckx, K., Soenens, B., Zamboanga, B. L., Forthun, L. F., Hardy, S. A., Vazsonyi, A. T., Ham, L. S., Kim, S. Y., Whitbourne, S. K., & Waterman, A. S. (2010). Examining the light and dark sides of emerging adults' identity: A study of identity status differences in positive and negative psychosocial functioning. *Journal of Youth and Adolescence*, 40(7), 839–859. <https://doi.org/10.1007/s10964-010-9606-6>
- Schwartz, S. J., Côté, J. E., & Arnett, J. J. (2005). Identity and agency in emerging adulthood. *Youth & Society*, 37(2), 201–229. <https://doi.org/10.1177/0044118x05275965>
- Soenens, B., Berzonsky, M. D., Dunkel, C. S., & Papini, D. R. (2011). The role of perceived parental dimensions and identification in late adolescents' identity processing styles. *Identity*, 11(3), 189–210. <https://doi.org/10.1080/15283488.2011.594781>
- Sznitman, A. G., Van Petegem, S., & Zimmermann, G. (2019). Exposing the role of coparenting and parenting for adolescent personal identity processes. *Journal of Social and Personal Relationships*, 36(4), 1233–1255. <https://doi.org/10.1177/0265407518757707>
- Ullman, J. B. (2001). Structural equation modeling. In B. G. Tabachnick & L. S. Fidell (Eds.), *Understanding multivariate statistics* (pp. 653–771). Allyn & Bacon.
- Vansteenkiste, M., & Soenens, B. (2015). *Vitamines voor groei: Ontwikkeling voeden vanuit de Zelf-Determinatie Theorie*. Acco.
- Vasquez, A. C., Patall, E. A., Fong, C. J., Corrigan, A. S., & Pine, L. (2016). Parent autonomy support, academic achievement, and psychosocial functioning: A meta-analysis of research. *Educational Psychology Review*, 28(3), 605–644. <https://doi.org/10.1007/s10648-015-9329-z>
- Vermote, B., Beyers, W., Vansteenkiste, M., & Soenens, B. (2024). *Navigating the transition to higher education: The role of identity and support for the basic psychological needs in first-year students' academic motivation*. Ghent University. Faculty of Psychology and Educational Sciences. .
- Vermote, B., Soenens, B., Vansteenkiste, M., Coenye, J., Verschueren, K., & Beyers, W. (2023). The how and the why of study choice processes in higher education: The role of parental involvement and the experience of having an authentic inner compass. *Journal of Adolescence*, 95(8), 1749–1763. <https://doi.org/10.1002/jad.12246>
- Vermote, B., Waterschoot, J., Morbée, S., Van der Kaap-Deeder, J., Schrooyen, C., Soenens, B., Ryan, R., & Vansteenkiste, M. (2022). Do psychological needs play a role in times of uncertainty? Associations with well-being during the COVID-19 crisis. *Journal of Happiness Studies*, 23, 257–283. <https://doi.org/10.1007/s10902-021-00398-x>
- Waterman, A. S. (Ed.). (1985). *Identity in adolescence: Processes and contents*. Jossey-Bass.
- Yu, S., Assor, A., & Liu, X. (2014). Perception of parents as demonstrating the inherent merit of their values: Relations with self-congruence and subjective well-being. *International Journal of Psychology*, 50(1), 70–74. <https://doi.org/10.1002/ijop.12074>
- Yu, S., Deng, Y., Yu, H., & Liu, X. (2018). Attachment avoidance moderates the effects of parenting on Chinese adolescents' having an inner compass. *Current Psychology*, 40(2), 887–894. <https://doi.org/10.1007/s12144-018-0007-4>
- Zhou, X., Ti, Y., Wei, J., & Li, T. (2025). Longitudinal associations between authentic inner compass and depressive symptoms among college students: A latent curve model with structured residuals. *Personality and Individual Differences*, 239, 113118. <https://doi.org/10.1016/j.paid.2025.113118>
- Zhou, X., Yi, C., Chan, S., & Wei, J. (2025). Trajectories of authentic inner compass in the college years: Implications for psychological functioning among Chinese students. *Journal of Happiness Studies*, 26(4), 48. <https://doi.org/10.1007/s10902-025-00890-8>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Houthuys, S., Vermote, B., Vansteenkiste, M., Beyers, W., Prinzie, P., & Soenens, B. (2026). How autonomy-supportive parenting fosters adolescent identity across the transition to higher education: The role of an authentic inner compass. *Journal of Research on Adolescence*, 36, e70233. <https://doi.org/10.1111/jora.70233>