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Becoming a Perfectionistic Adolescent: Perceived Parental Behaviors Involved in Developmental Trajectories of Perfectionism

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— 15,960 words (excluding title page) —

Abstract

Perfectionism is a pervasive and prevalent personality disposition with high implications for psychological maladjustment. Adolescence represents a particularly relevant period for the development of perfectionism, and perceived parental behaviors have been shown to play an important part. Yet, so far only few longitudinal studies have investigated the role of risk and protective parental behaviors in the development of perfectionism in adolescents. Examining a sample of 744 adolescents (M_{age} = 15.2 years), the present study investigated developmental trajectories of self-oriented, socially prescribed, and other-oriented perfectionism over 4 waves spaced 5-6 months apart. Results of growth mixture modeling showed that self-oriented perfectionism followed 3 developmental trajectories (low and decreasing; medium and decreasing; high and stable) as did socially prescribed perfectionism (low and stable; medium and increasing; high and stable). Other-oriented perfectionism showed 4 developmental trajectories (low and decreasing; low and stable; high and stable; high and increasing). Significant differences were observed between groups regarding all investigated perceived parental behaviors (psychological control, behavioral control, responsiveness, and autonomy support). Similarities and differences between the development of each form of perfectionism and the role of each parental behavior as well as implications of these findings for the understanding of the development of perfectionism in adolescence are discussed.

Keywords: perfectionism; adolescents; development; risk and protective parental behaviors; growth mixture modeling

Becoming a Perfectionistic Adolescent: Perceived Parental Behaviors Involved in Developmental Trajectories of Perfectionism

Perfectionism is a personality disposition characterized by exceedingly high standards that are difficult, if not impossible to meet (Stoeber, 2018b). It not only is an aspect of personality that is pervasive in most life domains (Stoeber & Stoeber, 2009), but also has been increasing in prevalence in the past decades (Curran & Hill, 2019). Perfectionism represents a timely topic for personality psychology because it is at the core of many psychological maladjustment symptoms (e.g., Hewitt et al., 2002), mental disorders such as affective disorders (e.g., Roxborough et al., 2012), and personality disorders (Ayearst, Flett, & Hewitt, 2012). Consequently, it is crucial to understand the development of perfectionism. So far, theory and research have sustained that adolescence represents a key period for the development of perfectionism and that parental behaviors play a substantial part in this process (Flett, Hewitt, Oliver, & Macdonald, 2002; Stoeber, Edbrooke-Childs, & Damian, 2018). Despite this, few longitudinal studies have examined the role of risk and protective parental behaviors in the development of adolescents' perfectionism in a comprehensive manner. Moreover, there is only one longitudinal study investigating developmental trajectories of perfectionism in adolescents that spanned over a seven-year period and found four trajectories (high, low, increasing, and decreasing; Herman, Wang, Trotter, Reinke, & Ialongo, 2013). Unfortunately, however, the study did not investigate the role of parental behaviors in distinguishing these trajectories. Therefore, the present study aimed to address these open questions in the literature by using a four-wave longitudinal design spanning two academic years, employing growth mixture modeling (integrating both variable- and person-centered approaches) in a large sample of adolescents aged 11 to 19 years by investigating all forms of perfectionism regarding both risk and protective parental behaviors. We will next describe the construct of multidimensional perfectionism, present the theoretical underpinnings regarding the role of risk and protective parental behaviors in the development of perfectionism, and critically review the research conducted on this topic so far.

Multidimensional Perfectionism

Perfectionism is a personality disposition that entails striving for flawlessness, setting exceedingly high standards, and making overly critical evaluations (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Hewitt and Flett's (1991) multidimensional model of

perfectionism is one of the most widely-used in the research literature on perfectionism in the past three decades as it is a comprehensive model considering both intrapersonal and interpersonal aspects of perfectionism. This theoretical model differentiates three forms of perfectionism: self-oriented, socially prescribed, and other-oriented perfectionism.

Self-oriented perfectionism refers to beliefs that striving for perfection and being perfect are important to oneself. Self-oriented perfectionists have exceedingly high personal standards, they strive for and expect perfection of themselves and may respond with self-criticism when failing to meet their perfectionistic expectations (Hewitt & Flett, 1991). In relation to personality traits, self-oriented perfectionism is strongly associated with high conscientiousness in diverse samples (see the meta-analyses of Smith et al., 2019, and Stricker, Buecker, Schneider, & Preckel, 2019) as well as in adolescents (Stoeber, Otto, & Dalbert, 2009). To a smaller degree, it is also associated with high levels of openness, extraversion, and neuroticism (Smith et al., 2019; Stricker et al., 2019). There is ongoing debate in the literature on the maladaptiveness of self-oriented perfectionism because it often predicts indicators of psychological adjustment in adolescents such as positive affect (e.g., Damian, Stoeber, Negru, & Băban, 2014) and adaptive emotion regulation (e.g., Vois & Damian, 2019). However, it also predicts indicators of psychological maladjustment in adolescents such as anxiety (e.g., O'Connor, Rasmussen, & Hawton, 2010) and depressive symptoms (e.g., Hewitt et al., 2002). Hence, self-oriented perfectionism is considered an ambivalent form of perfectionism because it is associated with both adaptive and maladaptive psychological adjustment indicators.

Socially prescribed perfectionism refers to the perception that others hold perfectionistic expectations of oneself that one must fulfill in order to be accepted. Individuals high in socially prescribed perfectionism perceive that others will be highly critical of them if they fail to meet others' perfectionistic expectations (Hewitt & Flett, 1991). In relation to personality traits, socially prescribed perfectionism is strongly associated with high neuroticism in diverse samples (Smith et al., 2019; Stricker et al., 2019) including adolescents (Stoeber et al., 2009). To a lesser extent, it is also associated with low levels of extraversion, agreeableness, conscientiousness, and openness (Smith et al., 2019; Stricker et al., 2019). Research with adolescents has consistently shown that socially prescribed perfectionism is the most maladaptive form of perfectionism strongly predicting indicators of psychological maladjustment such as negative affect (e.g., Damian et al., 2014), anxiety symptoms (e.g., Damian, Negru-Subtirica, Stoeber, & Băban,

2017), interpersonal distress (Stoeber, Smith, Saklofske, & Sherry, in press), and even suicide ideation (e.g., Roxborough et al., 2012).

Other-oriented perfectionism refers to perfectionistic expectations directed toward others. Other-oriented perfectionists criticize others when they fail to meet these perfectionistic expectations that they impose on others. With respect to personality traits, other-oriented perfectionism is linked to high levels of narcissism, Machiavellianism, and psychopathy as well as low levels of emotionality, agreeableness, and altruism (e.g., Stoeber, 2014). Thus, it has been suggested that it is a "dark" form of perfectionism associated with antisocial and narcissistic personality characteristics (Stoeber, 2014) as well as a prominent feature of narcissistic personality disorder (Ayearst et al., 2012). Despite these converging results, other-oriented perfectionism has received considerably less attention in the literature compared to the other two forms of perfectionism. Particularly in research with adolescents, it has been largely disregarded because the Child–Adolescent Perfectionism Scale (Flett et al., 2016), the most widely-used scale to measure perfectionism in children and adolescents, only measures self-oriented and socially prescribed perfectionism. Because there is a smaller amount of research conducted with other-oriented perfectionism, less is known about its maladaptiveness. It has been suggested that other-oriented perfectionism is not so maladaptive because of the nonsignificant associations it shows with indicators of psychological maladjustment such as depressive symptoms in university students (e.g., Enns, Cox, & Clara, 2002) or negative associations predicting low levels of negative affect in adults (e.g., Saboonchi & Lundh, 2003). Yet, a few studies found other-oriented perfectionism to be associated with higher perceived stress in university students (e.g., Chang, 2006) and with higher levels of anger (Hewitt & Flett, 2004). Because of the mixed pattern of findings and its association with interpersonal problems (Stoeber et al., in press), other-oriented perfectionism is also considered an ambivalent form of perfectionism (Stoeber, 2014).

The Role of Risk and Protective Parental Behaviors in Adolescents' Perfectionism Development: Theoretical Underpinnings

Adolescence represents a sensitive developmental period for perfectionism for a number of reasons. First, adolescents are more susceptible to others' achievement expectations and evaluative feedback (e.g., parents' and peers') because their cognitive abilities including self-consciousness and awareness of social standards are increasing (Steinberg, 2008). At the same

time, adolescents experience more frequent and more intense emotions (especially increases in negative emotional states) while the systems underlying emotion regulation are being marked by rapid developmental changes (Gullone & Taffe, 2012). Second, the environment is raising the expectations set for adolescents while emphasizing the role of performance in many domains of life (e.g., educational, vocational, social) for a successful future (Flett et al., 2002; Stoeber et al., 2018). Hence, the internal susceptibility and the external pressure are both elevated at the same time, making adolescence a key period for developing perfectionism. Third, adolescence is also marked by an increasing need for autonomy and independence from parents characterized by more negotiation of rules and decisions and not just following parents' expectations like in childhood. Thus, parents' attempts of both behavioral and psychological control may exert more intense effects on adolescents' development as they may be aspiring for more autonomy. However, parents still play important roles in adolescents' development through autonomy support and emotional responsiveness when they are needed (Steinberg, 2008). The contextual approach to personality development has proposed that—aside from biological maturation processes—environmental, contextual, and social factors (i.e., transactions with the social environment) play an important role in personality development across the life span (Fraley & Roberts, 2005; Lewis, 1999). For adolescents, an important social factor associated with their personality development is represented by perceived parental behaviors (Shiner & Caspi, 2003). In addition, it has been proposed that protective parental behaviors such as support may serve as resources for adolescents' positive personality development (Pomerantz & Thompson, 2008).

Consequently, a key social factor influencing adolescents' perfectionism development is represented by perceived parental behaviors, and there are several pathways that have been proposed in theory and research through which parents can "teach" perfectionism to their adolescent children (Flett et al., 2002; Stoeber et al., 2018). *Indirectly*, adolescents may develop perfectionism through (a) social learning (Bandura, 1977) by imitating their parents' perfectionism; (b) anxious rearing or overprotection, thus learning to direct their attention to mistakes; or (c) an opposing social reaction, namely reacting to chaotic, harsh or abusive parents. Furthermore, adolescents may develop perfectionism *directly* by conforming to high social expectations imposed by their parents. These high expectations may be used by parents as a condition for adolescents to receive approval or to avoid criticism. Also, adolescents may perceive that they are being controlled and accepted only conditionally upon meeting their

parents' expectations or requests. Specifically, parents may teach adolescents to be perfectionists through parental behaviors such as psychological control. *Psychological control* refers to parents' excessive intrusion in the child's thoughts, feelings, and aspirations. In particular, it refers to an excessive use of controlling and manipulative tactics that make use of internally pressuring forces in adolescents' functioning such as shaming, guilt induction, and love withdrawal (Soenens, Vansteenkiste, Luyckx, & Goossens, 2006). Parental psychological control has been shown in many studies to be negatively related to a secure parent–child attachment in adolescents (see Koehn & Kerns, 2018, for a meta-analysis) and to have detrimental effects on adolescents' psychosocial functioning in terms of difficulties regulating emotions and by association with a range of problem behaviors (Soenens & Vansteenkiste, 2010; Soenens, Vansteenkiste, & Van Petegem, 2015).

So far, both theory and research have focused on parental risk behaviors for adolescents' perfectionism development or maintenance. But because perfectionism in adolescents may follow not only increasing, but also decreasing trends (e.g., Herman et al., 2013), it is equally relevant to pinpoint parental protective behaviors that may help decrease or maintain low levels of adolescents' perfectionism (Domocus & Damian, 2018). Considering positive alternatives to the aforementioned parental risk behaviors, theory also points to parental protective behaviors such as behavioral control, responsiveness, and autonomy support. *Behavioral control* refers to parents actively regulating and structuring adolescents' behavior by means of communicating clear expectations for behavior and monitoring adolescents' behavior. Specifically, it refers to parents' use of active strategies directed at providing structure to their child's behavior and the extent to which parents communicate their expectations and rules for acceptable behaviors clearly, but not in a domineering or overprotective manner (Soenens et al., 2006). *Responsiveness* refers to the degree to which adolescents experience a warm and affective relationship with their parents. Responsive parents are warm, accepting, empathic, and responsive toward adolescents' interests and needs (Soenens et al., 2006). *Autonomy support* refers to the promotion of volitional functioning, encouraging adolescents to behave according to self-endorsed rather than controlled motives. Namely, it refers to the encouragement of adolescents' enactment upon their true personal interests and values such that parents are perceived as empathetic to adolescents' perspectives and providing them with choices whenever possible (Soenens et al., 2007). All these protective behaviors—parental behavioral control,

responsiveness, and autonomy support—have been shown in many studies to be related to a secure parent–child attachment in adolescents (Koehn & Kerns, 2018) and to have positive effects on adolescents' psychosocial functioning (e.g., Soenens et al., 2006; Soenens et al., 2007).

The Role of Risk and Protective Parental Behaviors in Adolescents' Perfectionism Development: Empirical Evidence

From a broader personality perspective, longitudinal research with adolescents has shown that adolescents' personality can change significantly over time (Van den Akker, Deković, Asscher, & Prinzie, 2014), even over a period as short as two years (Branje, Van Lieshout, & Gerris, 2007). Moreover, longitudinal research has been increasingly showing that parental behaviors (both risk and protective) play an important role in shaping adolescents' personality characteristics and dispositions such as self-control (Li et al., 2019), hope, and self-esteem (Heaven & Ciarocchi, 2008) as well as their personality traits (Schofield et al., 2012; Van den Akker et al., 2014).

Self-oriented perfectionism. Regarding the personality disposition of perfectionism, theory and research have so far supported the proposition that the three forms of perfectionism differentiated by Hewitt and Flett (1991)—self-oriented, socially prescribed, and other-oriented perfectionism—show both similarities and differences in their developmental pathways. In this, the social expectations pathway for developing perfectionism in children and adolescents has received most empirical support. Specifically, it has been proposed that self-oriented perfectionism develops partly through social learning, by imitating parents' perfectionism (e.g., Appleton, Hall, & Hill, 2010; Speirs Neumeister, Williams, & Cross, 2009). Regarding *risk parental behaviors* pertaining to the social expectations pathway, longitudinal studies with adolescents have found nonsignificant effects of perceived parental expectations (Damian, Stoeber, Negru, & Băban, 2013), perceived parental pressure (Domocus & Damian, 2018), and of psychological control (Soenens et al., 2008) on self-oriented perfectionism or aspects of perfectionism closely related to self-oriented perfectionism.

On the contrary, a longitudinal study with children aged 7 to 11 years following a person-centered approach (Hong et al., 2017)—and differentiating a striving facet of self-oriented perfectionism from a self-critical facet (O'Connor, Dixon, & Rasmussen, 2009)—found that parental intrusiveness (parental control exerted through instructions and commands when not

needed by the child during a task) and negative control (parental control exerted through discipline, harsh punishment, and ignoring) predicted high or increasing trajectories of the self-critical facet of self-oriented perfectionism. Also, several cross-sectional studies showed a link between self-oriented perfectionism and risk parental behaviors. For example, a cross-sectional study with adolescent musicians found a link between striving for perfection (an aspect of perfectionism closely related to self-oriented perfectionism) and high perceived parental pressure (perfectionistic expectations perceived from parents; Stoeber & Eismann, 2007). Additionally, in a cross-sectional study with adolescent athletes, McArdle and Duda (2008) found that perfectionistic personal standards (i.e., an aspect of perfectionism closely related to self-oriented perfectionism) were associated with high perceived parental expectations. Finally, in a cross-sectional study with children aged 8 to 12 years, the striving facet of self-oriented perfectionism was associated with perceived parental expectations whereas the self-critical facet was associated with perceived parental criticism (Harvey, Moore, & Koestner, 2017).

Regarding *protective parental behaviors*, parental positive support (i.e., positive parenting, rules, and autonomy) was not associated with any of the developmental trajectories of the self-critical facet of self-oriented perfectionism (Hong et al., 2017). Also, Domocus and Damian (2018) found no longitudinal effects of perceived parental support on adolescents' self-oriented perfectionism. In conclusion, the relationship between risk and protective parental behaviors and self-oriented perfectionism is still unclear, as some studies found no relationships whereas other studies found significant relationships, and some found different relationships for the two facets of self-oriented perfectionism.

Socially prescribed perfectionism. With respect to socially prescribed perfectionism, studies with adolescents have brought more straightforward evidence that parental behaviors play an important role. Regarding *risk parental behaviors*, the qualitative study of Speirs Neumeister et al. (2009) supported the view that adolescents' socially prescribed perfectionism emerged through high perceived parental expectations. Additionally, Appleton et al.'s (2010) cross-sectional study with adolescent athletes found that high perceived parental expectations, expressed through parents' other-oriented perfectionism, were positively linked to adolescents' socially prescribed perfectionism. Furthermore, three longitudinal studies provided consistent evidence that higher levels of psychological control (Soenens et al., 2008), perceived parental expectations (Damian et al., 2013), and perceived parental pressure (Domocus & Damian, 2018)

are associated with higher levels of socially prescribed perfectionism (or aspects of perfectionism closely related to socially prescribed perfectionism) over time. Finally, in a sample of academically talented adolescents and their parents, higher levels of parental psychological and behavioral control were cross-sectionally related to higher levels of perfectionistic concerns (an aspect of perfectionism closely related to socially prescribed perfectionism; McArdle, 2009). In contrast, Hong et al.'s (2017) longitudinal study conducted with children aged 7 to 11 years found no significant effects of parental control on any of the developmental trajectories of socially prescribed perfectionism.

Regarding *protective parental behaviors*, the same study also found no effects of parental support on socially prescribed perfectionism's developmental trajectories (Hong et al., 2017). Conversely, high parental involvement, acceptance, and autonomy support were associated with low perfectionistic concerns (an aspect of perfectionism closely related to socially prescribed perfectionism; McArdle, 2009). Moreover, cross-sectional research with adolescents also showed that higher levels of perceived parental support were associated with lower levels of socially prescribed perfectionism (Flett, Druckman, Hewitt, & Wekerle, 2012). Thus, cross-sectional findings have shown that protective parental behaviors may also play a role in predicting high versus low levels of adolescents' socially prescribed perfectionism, in addition to the longitudinal evidence found for the role of risk parental behaviors.

Other-oriented perfectionism. Research investigating the role of parental behaviors in *other-oriented perfectionism* in adolescents is scarce. It has been proposed by Flett et al. (2002) that other-oriented perfectionism may stem from both social learning and perceived pressure to be perfect from parents that may be exerted through parental psychological control. To our knowledge, only one cross-sectional study with adolescent athletes took other-oriented perfectionism into account, and it only investigated and supported the social learning hypothesis (Appleton et al., 2010). Regarding *risk parental behaviors*, one cross-sectional study with university students showed that other-oriented perfectionism was related neither to perceived parental lack of care nor to perceived parental overprotection, but was related to higher levels of perceived parental perfectionistic personal standards and perceived parent-prescribed perfectionism (high perfectionistic expectations perceived from parents; Enns et al., 2002). Another cross-sectional study with university students found that high other-oriented perfectionism was associated with perceived lack of parental care and perceived hostile rejection

as well as perceived overprotection (Flynn, Hewitt, Flett, & Caelian, 2001 cited in Flett et al., 2002). In sum, this suggests that parental behaviors may also be involved in the development of other-oriented perfectionism. However, there are so far only few studies, and to our knowledge there are no studies investigating the role of *protective parental behaviors* in other-oriented perfectionism.

Open Questions

Taken together, we see several limitations and open questions in the literature. First, most of the research has been cross-sectional with very few longitudinal studies, and so most of the research is in no position to provide information on the development of perfectionism in adolescents. Of the few longitudinal studies, only two studies investigated developmental trajectories of perfectionism (Herman et al., 2013; Hong et al., 2017). However, the one study focusing on adolescents did not investigate parental behaviors in relation to the perfectionism trajectories (Herman et al., 2013), and the other study investigating parental behaviors focused on children, not adolescents (Hong et al., 2017). Moreover, both studies used an abbreviated version of the CAPS resulting in self-oriented perfectionism splitting in two facets (striving, self-critical) which the researchers who developed the CAPS failed to corroborate using the original items and hence have advised against (Flett et al., 2016). Consequently, the relationship between developmental trajectories of perfectionism in adolescents and perceived parental behaviors is still underexplored. In addition, very few studies with adolescents explored the role of protective parental behaviors, and only one was longitudinal with two waves over a period of three months (Domocus & Damian, 2018). Therefore, the role of protective parental behaviors in maintaining low levels of perfectionism—or perhaps predict decreasing perfectionism—over longer periods of time in adolescents is largely unknown.

Moreover, the evidence regarding self-oriented perfectionism is mixed because some studies found relationships between self-oriented perfectionism and parental behaviors whereas others did not. Furthermore, the two longitudinal studies following a person-centered approach (Herman et al., 2013; Hong et al., 2017) focused on the self-critical facet of self-oriented perfectionism (O'Connor et al., 2009) which makes their findings difficult to interpret because self-criticism is more closely associated with socially prescribed perfectionism than self-oriented perfectionism (e.g., Dunkley & Blankstein, 2000). Thus, the evidence is inconsistent and inconclusive, and the role of parental behaviors in the development of self-oriented

perfectionism remains an open question.

Furthermore, none of the longitudinal studies investigated other-oriented perfectionism; and only one cross-sectional study explored other-oriented perfectionism in adolescents, but focusing on parental perfectionism, not parental behaviors. For this reason, the development of other-oriented perfectionism in adolescents represents the largest gap in the literature. Also, the samples examined in some of these studies were diverse or special-population samples (e.g., university students, academically-talented adolescents, adolescent athletes, adolescent musicians) which raises questions as to the generalizability of the studies' findings. Furthermore, some of the studies did not directly examine self-oriented and socially prescribed perfectionism but employed measures of perfectionism capturing aspects of perfectionism that are closely related to self-oriented perfectionism (e.g., perfectionistic personal standards, Frost et al., 1990; striving for perfection, Stoeber & Rambow, 2007), socially prescribed perfectionism (e.g., perfectionistic concerns, Frost et al., 1990), or a combination of measures (for reviews, see Flett et al., 2002, and Stoeber et al., 2018). Consequently, the specific roles that risk and protective parental behaviors play in the developmental trajectories of self-oriented, socially prescribed, and other-oriented perfectionism in adolescents still represent an underexplored question in the research literature.

The Present Study

Against this background, the aim of the present study was to investigate the development of perfectionism in a large sample of adolescents. In this, we used growth mixture modeling (GMM; see Jung & Wickrama, 2008; Mund & Neyer, 2016; Muthén & Muthén, 2000; Ram & Grimm, 2009) by examining whether the inter-individual variance in both levels and mean-level developmental trajectories of perfectionism can be attributed to several latent classes (groups) of individuals. Hence, with this approach, the development of perfectionism within persons can be studied by detecting latent classes of individuals with similar trajectories of perfectionism over time, thus combining the advantages of variable- and person-centered approaches. Thus, GMM allow us to examine (a) whether inter-individual differences in intra-individual change in perfectionism could be due to several latent classes of individuals following different developmental trajectories of perfectionism; and (b) whether perceived parental behaviors distinguish between these different trajectories of perfectionism that characterize different groups of adolescents. In other words, this approach helps us to acquire a more in depth understanding

of perfectionism's developmental dynamics and how it relates to parental behaviors by capturing the sub-groups of adolescents which are lost in a purely variable-centered approach.

For this, we used a longitudinal design with four time points spaced five to six months apart over a period of two academic years. Previous longitudinal studies with adolescents examined changes in perfectionism over periods of one month (McGrath et al., 2012), three months (Domocus & Damian, 2018), eight months (Damian et al., 2013), nine months with a space of four to five months between waves (Damian, Stoeber, Negru-Subtirica, & Baban, 2017), and one year (Soenens et al., 2008) and all found longitudinal effects. Additionally, studies investigating the specific role of perceived parental behaviors in the development of adolescents' perfectionism found significant effects on perfectionism over periods of three months (Domocus & Damian, 2018), eight months (Damian et al., 2013), and two years (Soenens et al., 2008). Consequently, we considered a total period of two years with five to six months between measurement points sufficient for capturing developmental trajectories in adolescents' perfectionism and to illustrate the role of parental behaviors in differentiating between these trajectories.

In this, the study focused on the role of risk behaviors such as perceived psychological control and protective behaviors such as perceived behavioral control, perceived responsiveness, and perceived autonomy support in differentiating the developmental trajectories of self-oriented, socially prescribed, and other-oriented perfectionism. This way, we addressed the question whether differences in levels of risk and protective parental behaviors may explain differences in the distinct developmental trajectories of perfectionism in adolescence.

The two longitudinal studies that investigated developmental trajectories of perfectionism in adolescents (Herman et al., 2013) and in children aged 7 to 11 years (Hong et al., 2017) found both increasing and decreasing as well as stable trajectories in the self-critical facet of perfectionism and in socially prescribed perfectionism. Accordingly, we expected to find increasing, decreasing, and stable trajectories in self-oriented and socially prescribed perfectionism in our study. Regarding other-oriented perfectionism, we had no expectations because no previous longitudinal studies investigated other-oriented perfectionism, so this part of our study was largely exploratory. However, based on previous findings (but taking the aforementioned limitations of the literature into account), we expected to find high levels of perceived parental psychological control (as a risk factor) and low levels of perceived behavioral

control, perceived responsiveness, and perceived autonomy support (as protective factors) in adolescents with high or increasing levels in all three forms of perfectionism, but particularly in socially prescribed perfectionism. The hypotheses were not preregistered.

Method

Participants and Procedure

Data for the present study were drawn from the four-wave longitudinal project PERSEIDA (Perfectionism in Self and Identity Development in Adolescence). Calculations using Soper's (2019) SEM sample size calculator suggested that a minimum sample size of 342 was required for our analyses to yield adequate power. For this, we specified a small-medium anticipated effect size (0.2), four latent variables, 22 observed variables, and a desired power level of 0.8 at a probability level of .05. Analyses were performed on our total sample comprising 744 adolescents at Time 1 (M_{age} = 15.2 years, *SD* = 1.9, ranging from 11-19 years; 55% girls). All adolescents were Caucasian and of Romanian ethnicity. In terms of family characteristics, the parents of 83% of the adolescents were married, and the remaining 17% of adolescents had a range of other family situations pertaining to parental divorce (8%), parental remarriage (4%), parental loss (3%), and other (2%). Most of the adolescents lived with one or both biological parents (93%) and had at least one sibling (74%). Most were fully financially supported by their parents (86%), but 12% had some personal income (e.g., state-provided student allocation, scholarship) and 2% were financially supported by relatives.

The PERSEIDA project was approved by the ethical committee of the first author's university. A written collaboration protocol was signed with three participating schools (all of which were public high schools from the North-Western part of Romania) to get access to participants. Adolescents and parents were informed about the research through a written letter distributed directly to the adolescents. Both adolescent and parental consent were obtained. Participation in the study was voluntary and confidential with no financial compensation for the participants, and parents could withdraw their child from the study at any time. Participating adolescents were involved in a four-wave longitudinal study with five- to six-month intervals between each wave throughout the span of two academic years (December 2014 to May 2016). At each measurement point, adolescents completed the same questionnaires and did this in their classrooms during school hours. No exclusion criteria were applied.

Measures

Perfectionism. We used the original 22-item Child–Adolescent Perfectionism Scale (CAPS; Flett et al., 2016; Romanian version: Damian et al., 2013) to measure self-oriented perfectionism (12 items; e.g., "I try to be perfect in everything I do") and socially prescribed perfectionism (10 items; "Other people think that I have failed if I do not do my very best all the time"). Additionally, we used the subscale of the Hewitt–Flett Multidimensional Perfectionism Scale–Short Form (Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008; see Stoeber, 2018a) to measure other-oriented perfectionism (5 items; "I have high expectations for the people who are important to me"). Participants responded to all items using the CAPS's response scale from 1 (*always false for me*) to 5 (*always true for me*).

Perceived Parental Behaviors. We used scales developed by Soenens and colleagues (Soenens, Vansteenkiste, Lens et al., 2007; Soenens, Vansteenkiste, Luyckx et al., 2006) to measure perceived psychological control (8 items; e.g., "My parents are always trying to change how I feel or think about things"), perceived behavioral control (16 items; "My parents have clear expectations for how I should behave in and outside the home"), perceived responsiveness (7 items; "My parents make me feel better after talking over my worries with them"), and perceived autonomy support (7 items; "My parents let me make my own plans for things I want to do"). Participants responded to all items using the same 5-point response scale as for perfectionism.

All scales were translated into Romanian following standard back-translation procedures as recommended by Brislin (1986) using two independent translators. A third person then finalized the Romanian version. Scale scores were computed by averaging responses across items (average item scores).

Plan of Analyses

To answer our research questions, we used M*plus* 8.4 (Muthén & Muthén, 1998-2017) and employed growth mixture modelling (GMM; Jung & Wickrama, 2008; Ram & Grimm, 2009) using the default maximum likelihood robust (MLR) estimator. All output files including syntax and results (including data needed to reproduce the results and including exact *p* values) can be found on the Open Science Framework (https://osf.io/qj5b8/?view_only=93d6cdd4bfaf46049257de425e1e8b06).

GMM allows both for differences in growth parameters across unobserved subpopulations and for different groups of individual growth trajectories to vary around different

means (Muthén & Asparaouhov, 2009). Consequently, separate growth models for each latent class with their own estimates of variances are obtained. This procedure leads to detecting latent classes of individuals with similar (but not identical) trajectories over time, thus allowing for the study of different within-person developments of variables.

To estimate these models, we followed the steps described by Jung and Wickrama (2008) for all three perfectionism dimensions. First, we specified a single-class latent growth curve model. Second, we specified an unconditional latent class model without covariates. Third, we determined the number of classes by reiterating the former step with increasing number of classes. To find the optimal number of latent classes, we considered several recommended criteria (Reinecke, 2006) but note that these represent only guidelines, rather than conditions of acceptance (Ram & Grimm, 2009): (a) the Bayesian Information Criterion (BIC) and the sample-size adjusted BIC (aBIC) which indicate relative model fit such that a solution with k classes should have a BIC that is at least 10 points smaller than the BIC of a model with k-1 classes to be considered substantially better (Kass & Raftery, 1995); (b) entropy which indicates classification accuracy where, using the calculation method used in M*plus*, values > .70 indicate accurate classification (Reinecke, 2006); (c) the Lo–Mendell–Rubin likelihood ratio test (LMR; Lo, Mendell, & Rubin, 2001) and the bootstrapped likelihood ratio test (BLRT; Asparouhov & Muthén, 2012) which test whether a model with k latent classes fits significantly better than a model with k-1 classes (Ram & Grimm, 2009) and where a significant *p* value (< .05) indicates that the model with k classes fits significantly better than the model with k-1 classes; and (d) the meaningfulness and the parsimoniousness of the solution as well as class prevalence (Muthén & Muthén, 2000) suggesting that, in the absence of theory for a particular decision, one should carefully analyze the latent classes which should be sufficiently dissimilar so not to reflect merely variations of the same class.

After choosing the optimal number of latent classes, it is recommended to compare the unconditional model with the conditional model, controlling for potential covariates. Thus, we specified a conditional latent class model with gender and age as covariates (cf. Jung & Wickrama, 2008) to see if the covariates had significant direct effects both on the growth parameters and on class membership by means of multinomial logistic regression.

Next, the following parameters were inspected (for all parameters, the variance was fixed to zero): (a) the mean of the intercept, which represents the initial level of perfectionism in the

respective class at Time 1; (b) the mean of the slope, which represents the magnitude and direction of linear growth in perfectionism across the four waves in the respective class; and (c) the mean of the quadratic parameter, which represents the magnitude and direction of non-linear growth in perfectionism across the four waves in the respective class.

Finally, we compared the probability-based latent classes of the perfectionism growth trajectories with respect to their mean levels on the perceived parental behavior correlates at each wave. For this, we used a three-step approach that estimates the means of the correlates in each latent class through weighted group analyses accounting for the misclassification of individuals in classes. To test for mean differences between the latent classes, Wald χ^2-tests with one degree of freedom are performed (Asparouhov & Muthén, 2014; Vermunt, 2010) which is conducted in M*plus* when using the AUXILIARY = (BCH) option (Muthén & Muthén, 1998-2017).

Results

Preliminary Analyses

First, we compared participants with and without missing data using Little's (1988) Missing Completely at Random (MCAR) test. The MCAR test showed a normed chi-square (χ^2/df) of 1.01 indicating a good fit between sample scores with and without imputations according to guidelines offered by Bollen (1989). Hence, there was no evidence for attrition-related bias which suggests that any missing data were likely to be missing at random. Next, we inspected the reliability of the combined scale scores by computing Cronbach's alphas. As Table 1 shows, all scores showed acceptable to excellent reliability. Means, standard deviations, and bivariate correlations presented in Table 1 were estimated in M*plus* using full information maximum likelihood (FIML) which is the recommended method for handling missing data (Graham, 2009).

Growth Mixture Modeling: Determining the Number of Classes

The unconditional models. Table 2 provides BIC, aBIC, entropy, LMR, and BLRT for the one- to five-class solutions for self-oriented and socially prescribed perfectionism and for the one- to six-class solutions for other-oriented perfectionism. Regarding *self-oriented perfectionism*—although the four-class solution provided lower BIC, aBIC, and higher entropy—the LMR was nonsignificant, indicating that the four-class solution was not better than the three-class solution. Additionally, when inspecting the four-class solution, the new class that emerged comprised only 3% of the sample (n = 24 members) and merely represented a variant of the low

self-oriented perfectionism class and so did not bring additional meaningfulness to the solution. Consequently, we chose the three-class solution as the most parsimonious one. Regarding s*ocially prescribed perfectionism*, the four-class solution had a lower BIC and aBIC, but also lower entropy (below the .70 cut-off value) and a nonsignificant LMR. Therefore, we chose the three-class solution as the best fitting one. Regarding *other-oriented perfectionism*, the four-class solution had the lowest BIC and aBIC, entropy above the cut-off value of .70, and nonsignificant LMR and BLRT. The next solutions did not provide significant improvements on BIC and aBIC, and the LMR became nonsignificant, indicating that the five- and six-class solutions did not perform better than the four-class solution. Hence, the four-class solution was chosen as the best fitting one.

The conditional models. After choosing the number of classes for the three forms of perfectionism, we specified a conditional latent class model with gender and age as covariates for each solution. Table 2 shows the BIC, aBIC, entropy, LMR, and BLRT for the conditional models for each form of perfectionism. As can be seen in Table 2, the aBIC and entropy improved for each form when including gender and age as covariates, and so gender and age were retained as covariates in all subsequent analyses.

Growth Mixture Modeling: Description of the Latent Classes

Table 3 summarizes the mean scores for the growth parameters for the perfectionism dimensions. All latent classes were reordered from low to high levels for each perfectionism dimension.

Self-oriented perfectionism. Regarding self-oriented perfectionism, the first latent class (LC1) represented adolescents with low initial levels that showed a linear decrease over time (29%), the second (LC2) represented adolescents with medium initial levels that showed a non-linear decrease (57%), and the third (LC3) represented adolescents with high initial levels that were stable across time (14%). With this, only decreasing or stable trajectories were identified for self-oriented perfectionism, but no increasing trajectories. Figure 1 shows the estimated means for each latent class across time representing the classes' different trajectories.

Socially prescribed perfectionism. As regards socially prescribed perfectionism, the first latent class (LC1) represented adolescents with low initial levels that were stable across time (23%), the second (LC2) represented adolescents with medium initial levels that showed a non-linear increase over time (57%), and the third (LC3) represented adolescents with high initial

levels that were stable across time (20%). Thus, only one class showed an increasing trajectory for socially prescribed perfectionism whereas the other two classes were stable across time. Figure 2 shows the respective trajectories.

Other-oriented perfectionism. Finally regarding other-oriented perfectionism, the first latent class (LC1) represented adolescents with low initial levels that showed a non-linear decrease over time (19%), the second (LC2) represented adolescents with medium initial levels that were stable across time (33%), and the third (LC3) represented adolescents with high initial levels that were stable across time (41%). The fourth latent class (LC4) also represented adolescents with high initial levels of OOP, but here other-oriented perfectionism showed a non-linear increase over time (7%).[1] Interestingly, other-oriented perfectionism showed considerable change, with one low and decreasing trajectory and one high and increasing trajectory, whereas the other two trajectories were stable over time. Figure 3 shows the different trajectories.

Perceived Parental Behaviors Associated with Latent Class Membership

Self-oriented perfectionism. When testing for time-specific mean differences in perceived parental behaviors between the three latent classes representing different developmental trajectories of self-oriented perfectionism (Figure 1), results showed that adolescents in the low and decreasing class (LC1) reported significantly lower levels of parental *psychological control,* than adolescents in the medium and decreasing class (LC2) and adolescents in the high and stable class (LC3) from T1 to T4 (except for T3). As regards parental *behavioral control*, adolescents in LC1 reported significantly lower levels of behavioral control than adolescents in LC2 at T1 and T2 and adolescents in LC3 at all time points. Moreover, adolescents in LC2 reported significantly lower levels of behavioral control than adolescents in LC3 at all time points. As regards parental *responsiveness*, adolescents in LC1 reported significantly lower levels of responsiveness than adolescents in LC2 at T1 and adolescents in LC3 at all time points. Moreover, adolescents in LC2 reported significantly lower levels of

[1]Although the quadratic parameter was nonsignificant with $p = .057$ in the conditional model, it was significant in the unconditional model (see Table 3). Additionally, when inspecting the figure, we found that the increase appeared to follow a non-linear trend (see Figure 3). Therefore, after careful inspection of the data, we decided that this latent class was better described as following a non-linear increase rather than a linear one.

responsiveness than adolescents in LC3. Regarding parental *autonomy support*, there were no significant differences between the three latent classes, indicating that adolescents with different levels and trajectories of self-oriented perfectionism perceived the same levels of autonomy support. In sum, adolescents with higher levels of self-oriented perfectionism perceived higher levels of parental psychological control, behavioral control, and responsiveness across time points, but not different levels of parental autonomy support.

Socially prescribed perfectionism. When conducting the same tests for the three classes representing different developmental trajectories of socially-prescribed perfectionism (Figure 2), results showed that adolescents in the low and stable class (LC1) reported significantly lower levels of parental *psychological control* compared to adolescents in the medium and increasing class (LC2) and adolescents in the high and stable class (LC3) at all time points. Moreover, adolescents in LC2 reported significantly lower levels of psychological control than adolescents in LC3 at all time points. As regards parental *behavioral control*, however, both adolescents in LC1 and adolescents in LC2 showed significantly lower levels of behavioral control than adolescents in LC3 at all time points. As regards parental *responsiveness* and *autonomy support*, adolescents in LC1 showed significantly higher levels of both responsiveness and autonomy support than adolescents in LC2 and adolescents in LC3 at all time points. Moreover, adolescents in LC2 reported significantly lower levels of autonomy support than adolescents in LC3, but only at T1. In sum, adolescents with higher levels of socially prescribed perfectionism perceived higher levels of parental psychological control and behavioral control and lower levels of parental responsiveness and autonomy support across time points.

Other-oriented perfectionism. For the four classes representing the different developmental trajectories of other-oriented perfectionism (Figure 3), the tests also found a differential pattern of time-specific mean differences. Results showed that adolescents in the low and decreasing class (LC1) reported significantly lower levels of parental *psychological control* than adolescents in the medium and stable class (LC2), adolescents in the high and stable class (LC3), and adolescents in the high and increasing class (LC4) at all time points. Moreover, adolescents in LC2 reported significantly lower levels than the adolescents in LC3 at T2 and T4 and adolescents in LC4 at all time points. Regarding parental *behavioral control*, adolescents in LC1, LC2, and LC3 all reported significant lower levels of behavioral control than adolescents in LC4 from T1 to T3. In addition, adolescents in LC1 reported significantly lower levels than

adolescents in LC3, but only at T4. As regards parental *responsiveness*, adolescents in LC1 reported significantly higher levels of responsiveness than adolescents in LC2 at T1 and T2 and adolescents in LC3 at T1, T2, and T4. Surprisingly, adolescents in LC4 also reported significantly higher levels of responsiveness than adolescents in LC2 and LC3, but only at T2. Finally, regarding parental *autonomy support*, adolescents in LC1 reported significantly lower levels of autonomy support than adolescents in LC2 at T2 and adolescents in LC3 at T2 and T4. Overall (but with the exception of reported responsiveness in LC4 at T2), the pattern of findings showed that adolescents with higher levels of other-oriented perfectionism perceived higher levels of parental psychological and behavioral control and lower levels of parental responsiveness and autonomy support across time points.

Discussion

Perfectionism represents a pervasive and increasingly prevalent personality characteristic that has high implications for adolescents' psychological maladjustment. Adolescents are living a developmental time when they are both highly susceptible to parental behaviors, but also exposed to increasing external pressures for future life success. To understand how perfectionism develops throughout adolescence, the present four-wave longitudinal study investigated the role that risk and protective perceived parental behaviors play in differentiating developmental trajectories of self-oriented, socially prescribed, and other-oriented perfectionism. In this endeavor, we found three distinct developmental trajectories for self-oriented and socially prescribed perfectionism and four distinct developmental trajectories for other-oriented perfectionism. We will next discuss the results for each form of perfectionism.

Developmental Trajectories of Self-Oriented Perfectionism

For self-oriented perfectionism, we found three distinct developmental trajectories: a low and decreasing trajectory (linear), a medium and decreasing trajectory (non-linear), and a high and stable trajectory. In this, almost a third (29%) of the adolescents had low levels of self-oriented perfectionism and followed a decreasing trend; more than half (57%) had medium levels and also followed a decreasing trend; and only 14% had high and stable levels of self-oriented perfectionism. Whereas these three trajectories were expected, no group with increasing levels of self-oriented perfectionism was identified which was contrary to our expectations. As such, our findings are different from those of Herman et al. (2013) and Hong et al. (2017) who also found a group of adolescents and children with increasing levels of self-oriented perfectionism. One

possible explanation for this difference is that both Herman et al. and Hong et al. only looked at the self-critical facet of self-oriented perfectionism. Self-critical perfectionism, however, is closely related to socially prescribed perfectionism (Dunkley & Blankstein, 2000); and for socially prescribed perfectionism, our study found increasing trajectories (see below).

Interestingly, only adolescents with low or medium levels of self-oriented perfectionism showed a decrease over time, but not adolescents with high levels of self-oriented perfectionism. This may suggest that high levels of self-oriented perfectionism develop earlier (before the age of 11) and stay relatively stable whereas those with more moderate levels of self-oriented perfectionism are more likely to see change in the level of self-oriented perfectionism, and that these changes are most likely to be decreases over time. Finally, it is noteworthy that the group of adolescents showing high levels of self-oriented perfectionism was the smallest one (representing only 14 % of the sample) which suggests that high levels of self-oriented perfectionism may not be very common in adolescents.

Perceived Parental Behaviors Associated with Developmental Trajectories of Self-Oriented Perfectionism

In line with our expectations, adolescents with medium and high levels of self-oriented perfectionism (together representing 71% of the sample) perceived significantly higher levels of parental *psychological control* than adolescents with low levels (except for Time 3). With this, the present research represents the first longitudinal study with adolescents supporting the social expectations model of development for self-oriented perfectionism (Flett et al., 2002). This finding is in line with the longitudinal results of Hong et al.'s (2017) study with children aged 7 to 11 years which also followed a person-centered approach and found that parental intrusiveness and parental negative control predicted high or increasing trajectories of self-oriented perfectionism (albeit only the self-critical facet). It is also in line with cross-sectional studies showing significant positive relationships between children's and adolescents' self-oriented perfectionism and perceived parental pressure (McArdle & Duda, 2008; Harvey et al., 2017; Stoeber & Eismann, 2007).

Although there were no groups of adolescents with increasing trajectories of self-oriented perfectionism, it is important to note that adolescents who expected perfection of themselves at a medium to a high degree (in comparison with adolescents at a lower degree) also perceive their parents as using more controlling and manipulative tactics such as shaming, guilt induction, and

love withdrawal. As we already suggested above, it may be that self-oriented perfectionism develops at an earlier age (before adolescence) when parental psychological control was already perceived as being present. In other words, it is possible that self-oriented perfectionism had already been internalized and that perceived parental psychological control had already played a contributing role. This would also explain why adolescents with medium levels of self-oriented perfectionism that showed further decreases still perceive their parents as psychologically controlling. Importantly, parental psychological control did not differentiate between adolescents with medium and high levels of self-oriented perfectionism. This may mean that even a medium level of self-oriented perfectionism is connected with perceiving parents as psychologically controlling.

Unexpectedly, adolescents with medium and high levels of self-oriented perfectionism perceived significantly higher levels of parental *behavioral control* than adolescents with low levels of self-oriented perfectionism. Also, at the first two time points, behavioral control differentiated between the groups with medium and high levels of self-oriented perfectionism, with the latter perceiving higher levels of parental behavioral control. This is the first study investigating behavioral control as a parental behavior involved in the development of self-oriented perfectionism, and the finding is noteworthy because parental behavioral control is usually considered a protective parental behavior associated with secure attachment and positive psychosocial outcomes in adolescents (Koehn & Kerns, 2018; Soenens et al., 2006).

Furthermore, our finding suggests that adolescents who expect perfection of themselves to a medium or high degree (in comparison with adolescents who report a low degree of self-oriented perfectionism) also perceive their parents as actively regulating and structuring their children's behavior by means of communicating clear expectations and rules for behavior as well as monitoring their behavior. A possible explanation is that, for perfectionistic adolescents, these clearly communicated expectations, rules, and monitoring perceived from parents are experienced subjectively as high standards of performance set by parents. As the measure of perceived behavioral control from parents does not capture the standards of expectations, but only how clearly they are communicated by parents, this factor may be confounded. Also, some researchers found self-oriented perfectionism in adolescents measured with an abbreviated version of the scale to have two facets: striving and self-criticism (O'Connor et al., 2009; but see Flett et al., 2016). Thus, it may be that behavioral control is involved in the striving facet,

whereas psychological control is involved in the self-critical facet.

Finally, adolescents with high levels of self-oriented perfectionism perceived significantly higher levels of parental *responsiveness* than adolescents with low levels of self-oriented perfectionism. This means that adolescents who expect perfection of themselves to a high degree (in comparison with adolescents who do not do this) also perceive their parents as warm, accepting, empathic, and responsive toward their interests and needs. This would explain the ambivalence of self-oriented perfectionism because adolescents high in this form of perfectionism seem to receive mixed messages from their parents: On the one hand, they perceive their parents as controlling and intrusive; and on the other, they perceive them as warm and responsive to their needs. This ambivalence of the origin of self-oriented perfectionism is then mirrored in the ambivalence of its psychosocial outcomes.

Developmental Trajectories of Socially Prescribed Perfectionism

Regarding socially prescribed perfectionism, we found again three distinct developmental trajectories: low and stable, medium and increasing (non-linear), and high and stable. In this, nearly a quarter (23%) of the adolescents had a low and stable level of socially perfectionism, more than half (57%) had medium levels of socially prescribed perfectionism and followed an increasing trend, and a fifth (20%) had high and stable levels of socially prescribed perfectionism. Whereas these three groups were expected, contrary to our expectations no group with decreasing levels of socially prescribed perfectionism was identified. This is different from the results of Herman et al. (2013) and of Hong et al. (2017) who also found a decreasing group of adolescents and children, respectively.

Notably, the majority (57%) of adolescents had medium levels of socially prescribed perfectionism that were increasing, thus showing that at this developmental stage many adolescents increasingly think that others expect them to be perfect and that their acceptance by others depends on attaining perfection. This is in line with developmental theories showing that adolescence is a period with higher susceptibility to others' expectations (Steinberg, 2008) and when external pressure put on adolescents is higher (Flett et al., 2002; Stoeber et al., 2018). This finding also dovetails with the results of the cross-temporal meta-analysis conducted by Curran and Hill (2019) which found that today's generation of youngsters shows much higher levels of socially prescribed perfectionism than previous generations. Thus, youngsters indeed perceive higher demands and judgment in social context and thus try harder and harder to comply with

these demands to get accepted. Our results underscore the fact that this is especially the case for adolescents high in socially prescribed perfectionism—the form that is highly dependent on social expectations—but not for self-oriented perfectionism and to a far lesser extent for other-oriented perfectionism (only 7% are increasing). The fact that there was no group of adolescents decreasing in their socially prescribed perfectionism supports the same idea, that at this developmental stage, with the abovementioned characteristics, most adolescents may feel they need to try hard to be perfect for others to accept them. Only few adolescents (23%) get away with staying low on this maladaptive characteristic.

Perceived Parental Behaviors Associated with Developmental Trajectories of Socially Prescribed Perfectionism

In line with our expectations, all three groups of adolescents (with low, medium, and high socially prescribed perfectionism) were differentiated according to the level of perceived parental *psychological control*: The higher the level of socially prescribed perfectionism adolescents reported, the higher they perceived to be psychologically controlled by their parents. Notably, more than half of the adolescents (57%) who were medium and increasing in socially prescribed perfectionism perceived higher parental psychological control, in comparison with adolescents low in socially prescribed perfectionism. However, they perceived lower parental psychological control in comparison with adolescents high in socially prescribed perfectionism. It comes as no surprise that adolescents who strive for perfection to be accepted by others also perceive their parents as using more controlling and manipulative tactics such as shaming, guilt induction, and love withdrawal. This finding corroborates previous longitudinal studies with adolescents showing that risk parental behaviors are involved in the development of socially prescribed perfectionism (Damian et al., 2013; Domocus & Damian, 2018; Soenens et al., 2008), in line with the social expectations model (Flett et al., 2002). This is important as it underscores our previous propositions that socially prescribed perfectionism develops (i.e., increases) in adolescence when susceptibility to others' expectations is higher than at earlier ages.

Also, adolescents with high socially prescribed perfectionism perceived significantly higher levels of *behavioral control* than adolescents with low and medium levels of socially prescribed perfectionism. This is the first study investigating behavioral control as a parental behavior involved in the development of socially prescribed perfectionism and the finding is surprising. Behavioral control is considered to be a protective parental behavior associated with

secure attachment and positive psychosocial outcomes in adolescents (Koehn & Kerns, 2018; Soenens et al., 2006). However, our finding is in line with cross-sectional findings linking high parental involvement with socially prescribed perfectionism (McArdle, 2009).

This can be interpreted as indicating that adolescents who strive for perfection to be accepted by others to a high degree (in comparison with adolescents who do this to a low degree), also perceive their parents as actively regulating and structuring adolescents' behavior by means of communicating clear expectations and rules for behavior and monitoring adolescents' behavior. The same as in the case of self-oriented perfectionism, a possible explanation may be that, for perfectionistic adolescents, these clearly communicated expectations, rules, and monitoring perceived from parents are experienced subjectively as high standards of performance set by parents. As stated above, the measure of perceived behavioral control from parents does not capture the standards of expectations, but only how clearly they are communicated by parents, hence this factor may be confounded.

Not surprisingly, both adolescents with medium (and increasing) and adolescents with high levels of socially prescribed perfectionism perceived significantly lower levels of parental *responsiveness* and *autonomy support* than adolescents with low levels of socially prescribed perfectionism. This expected finding corroborates on cross-sectional results showing that parental support, acceptance, and autonomy support are associated with low socially prescribed perfectionism (Flett et al., 2012; McArdle, 2009).

This may indicate that adolescents who strive for perfection to be accepted by others from a medium to a high degree (in comparison with adolescents with a low degree), perceive their parents as not being warm, accepting, empathic, and responsive to their interests and needs; and they perceive their parents as not listening to their perspective and not encouraging them to make their own choices. This is an important finding from the perspective of protective parental behaviors that may shield adolescents from developing socially prescribed perfectionism at the most susceptible developmental stage. The few adolescents with low and stable levels of socially prescribed perfectionism perceived higher levels of responsiveness and autonomy support from their parents, thus showing that, if parents show empathy, understanding, acceptance and support, adolescents do not think that they need to be perfect to be accepted.

Developmental Trajectories of Other-Oriented Perfectionism

Finally, other-oriented perfectionism displayed four developmental trajectories: a low and

decreasing (non-linear), a medium and stable, a high and stable, and a high and increasing (non-linear) trajectory. In this, nearly a fifth (19%) of the adolescents had a low level of other-oriented perfectionism that followed a decreasing trend, a third (33%) had a medium level of other-oriented perfectionism that was stable, and almost half (41%) had high and stable levels of other-oriented perfectionism, but only a small percentage (7%) had high levels of other-oriented perfectionism that followed an increasing trend. Because all other longitudinal studies with adolescents excluded other-oriented perfectionism, this is the first empirical evidence that we have with respect to developmental trends of other-oriented perfectionism in adolescents. Notably, it showed more variability than the other two forms of perfectionism and also showed both types of change (increasing and decreasing). This indicates that other-oriented perfectionism is highly relevant for this age group (because almost half of the adolescents had high levels of OOP) and that this period is one of important change and development (because two groups with significant change were found).

Interestingly, only adolescents who were low in other-oriented perfectionism continued to decrease in their levels (and showed no increase) whereas only adolescents who were high on other-oriented perfectionism continued to increase their levels (and showed no decrease). This may mean that other-oriented perfectionism develops earlier and only gets reinforced throughout adolescence: Adolescents with low perfectionistic expectations from others descend even lower in this characteristic, whereas adolescents with high perfectionistic expectations from others rise even higher in this characteristic. This group partially followed the same trajectory as one group showed for self-oriented perfectionism which suggests that these two forms of perfectionism—sharing the characteristic of having exceedingly high standards either for the self or for others—share a common developmental trend, but this hypothesis should be further tested in future studies.

Perceived Parental Behaviors Associated with Developmental Trajectories of Other-Oriented Perfectionism

In line with our expectations, the developmental trajectories of other-oriented perfectionism were closely linked to differences in the level of perceived parental *psychological control*: The higher the level of adolescents' other-oriented perfectionism, the higher they perceived to be psychologically controlled by their parents. Notably, there were differences even between the low and decreasing group versus the medium and stable group, with the latter group

perceiving more parental psychological control than the former. This is the first longitudinal study with adolescents examining other-oriented perfectionism in relation to the social expectations model proposed by Flett et al. (2002), positing that other-oriented perfectionism may also stem from perceived parental pressure in the form of psychological control. Our findings are in line with the one cross-sectional study with university students showing that other-oriented perfectionism was linked with perceived lack of parental care, hostile rejection and control as well as with overprotection (Flynn et al., 2001, cited in Flett et al., 2002). This finding means that adolescents who demand perfection from others also perceive their parents as using more controlling and manipulative tactics such as shaming, guilt induction, and love withdrawal. Notably, even adolescents with a medium level of other-oriented perfectionism perceive high psychological control.

Additionally, the few adolescents with high and increasing other-oriented perfectionism (7%) perceived significantly higher levels of *behavioral control* than the majority of adolescents with low and decreasing, medium and stable, and high and stable levels of other-oriented perfectionism (93%). Thus, adolescents who increasingly demand perfection from others also perceive their parents as actively regulating and structuring adolescents' behavior by means of communicating clear expectations and rules for behavior and monitoring adolescents' behavior. It is possible that these adolescents perceive the clear expectations set by parents as demanding ones (but this aspect is not captured by the measure of behavioral control we used in the present study) and, in turn, adolescents may also demand from others to follow rules and expectations set by them.

As expected, adolescents with low and decreasing levels of other-oriented perfectionism perceived significantly higher levels of parental *responsiveness* and *autonomy support* (although not at all time points) than adolescents with medium stable and high stable levels of other-oriented perfectionism. Interestingly, this contrast was not found for the group of adolescents with high and increasing levels of other-oriented perfectionism. This means that adolescents who do not demand perfection from others perceive their parents as being warm, accepting, empathic, and responsive to their interests and needs; and they also perceive their parents as listening to their perspective and encouraging them to make their own choices. This is an important finding from the perspective of protective parental behaviors that may shield adolescents from developing other-oriented perfectionism: Adolescents high in other-oriented perfectionism may

profit from parents' responsiveness to their needs and parents' warmth and support for their autonomous choices.

The Perfectionism Trio: Integrating Similarities and Differences in the Development of the Three Forms of Perfectionism in Adolescence

One commonality for all three forms of perfectionism was represented by the high levels of both perceived parental psychological control and perceived behavioral control that were found in all groups of adolescents with high levels of perfectionism. However, psychological control seemed to be perceived in higher levels even in groups of adolescents with medium levels of self-oriented, socially prescribed, and other-oriented perfectionism. In comparison, behavioral control was perceived in higher levels only in the groups with the highest levels of perfectionism for all three forms. This means that, whereas both types of control are involved in the development of the three forms of perfectionism, psychological control is more pervasive than behavioral control. Also, it is important to note that the high levels of psychological control are an important indicator that all three perfectionism forms stem from risk parental behaviors and that even medium levels of perfectionism are a sign of maladaptiveness. Another important note refers to the ambivalence of behavioral control. Although hypothesized to represent a protective parental behavior, our study found this to be the opposite in the case of perfectionism. This ambivalence is not a first, as behavioral control has been the focus of much debate regarding its operationalization and conceptualization that is still ongoing. Moreover, the question still remains whether the effects of parental behavioral control on psychosocial outcomes in adolescents are linear or rather curvilinear. In particular, it may be that only a certain amount of behavioral control is adaptive whereas too much behavioral control is maladaptive (Soenens & Beyers, 2012). Also, as proposed above, the measure of perceived parental behavioral control evaluates how clearly parental expectations are communicated, but not how high or rigid these expectations and rules are. In the case of perfectionistic adolescents, it may be that they either subjectively experience these expectations as more pressuring, or that their parents actually hold high and rigid expectations and rules for them (i.e., too much behavioral control may be maladaptive).

Another commonality was found between socially prescribed and other-oriented perfectionism, as they had the same pattern of results with respect to all perceived parental behaviors. Despite the fact that low levels of responsiveness and autonomy support were less

pervasive in differentiating the developmental trajectories of other-oriented perfectionism in comparison with socially prescribed perfectionism, the similarity represents a notable finding. This shows that socially prescribed and other-oriented perfectionism indeed share more commonalities as they are interpersonal forms of perfectionism, as opposed to self-oriented perfectionism, which is an intrapersonal form.

Also, self-oriented and other-oriented perfectionism were similar with respect to their trajectories in that they seemed to increase less compared to socially prescribed perfectionism. Although other-oriented perfectionism did follow an increasing trajectory, this only characterized a small percentage of adolescents (7%) whereas self-oriented perfectionism did not increase in this adolescent sample. Furthermore, both self- and other-oriented perfectionism followed decreasing trends, differently from socially prescribed perfectionism which did not follow such trends.

In the present study, the uniqueness of self-oriented perfectionism was represented by the high levels of perceived responsiveness associated with high levels of self-oriented perfectionism. This mirrors the ambivalence of self-oriented perfectionism, as it was associated with both risk and protective parental behaviors at the same time. However, also different from the other two forms of perfectionism, perceived parental autonomy support did not differ in the three groups of adolescents with low, medium, or high self-oriented perfectionism. This means that this protective parental behavior is less important for self-oriented perfectionism at this developmental stage. Another unique feature of self-oriented perfectionism was that the majority of adolescents (86%) was decreasing in this form of perfectionism over time, whereas no groups of adolescents were increasing. This is interesting, as self-oriented perfectionism also has positive outcomes (and as the present study showed, positive parental correlates), but it does not seem to develop further (i.e., increase) at this developmental stage and in this time frame. As proposed above, self-oriented perfectionism may develop (i.e., increase) more at earlier ages or, as Herman et al. (2013) showed, it may be that self-oriented perfectionism needs a longer period of time to develop.

The distinctiveness of socially prescribed perfectionism compared to the other forms resides in the fact that a great proportion of adolescents (57%) is increasing in this characteristic (in comparison with 0% in self-oriented and 7% in other-oriented), which is considered to be the most maladaptive one. In addition, as expected, socially prescribed perfectionism showed the

highest contrasts between all perceived parental behaviors, at all time points, in comparison with the other two forms which showed lower contrasts and not at all time points. This means that socially prescribed perfectionism presents the highest risk of developing (i.e., increasing) in adolescence and it is the form of perfectionism most susceptible to both risk and protective perceived parental behaviors.

Other-oriented perfectionism also has unique aspects that differentiate it from the other two forms. One unique aspect was that it was the only form of perfectionism that showed four distinct developmental trajectories with stable, decreasing, and increasing groups. Moreover, only adolescents with low levels were decreasing, whereas only adolescents with high scores were increasing. This may mean that, at this developmental stage, the already developed other-oriented perfectionism only gets further reinforced, but does not change direction (i.e., low getting higher or high getting lower). Another unique aspect of other-oriented perfectionism was that, although all types of perceived parental behaviors differentiated between developmental trajectories, the protective behaviors (responsiveness and autonomy support) did not show such high contrasts and showed them only at some of the four time points. This may also suggest that other-oriented perfectionism develops at earlier ages and thus is less susceptible to protective parental behaviors later on (i.e., in adolescence).

Limitations and Future Research

The findings of the present study should be interpreted in light of some limitations. First, the study relied on adolescents' perceptions of parental behaviors, which may represent adolescents' subjective experiences and not an accurate account of parents' actual behaviors. However, Appleton et al.'s (2010) findings suggested that adolescents' perceptions may be more important than parents' actual behaviors (e.g., reported by parents) in predicting adolescents' perfectionism. Additionally, we also need to take into account that the manner in which actual parental behaviors translate into adolescents' subjective experiences is partly shaped by adolescents' individual differences (Smith et al., 2017; Soenens et al., 2015). One such individual difference may be represented by perfectionism. Thus, it may be that perfectionistic adolescents are prone to interpret parents' behaviors with their perfectionistic lenses (Smith et al., 2017). Moreover, adolescents also play an active role in the parenting process which may influence parents' behaviors. Thus, future studies may profit from including self-reports from adolescents' parents or vignettes with parental behaviors in addition to adolescents' reports on

how they perceive their parents' behaviors as the former and latter might differ substantially (Smith et al., 2017; Soenens et al., 2008; Soenens et al., 2015).

Second, it has been proposed that the effects of parental behaviors on adolescents' psychosocial functioning may be influenced by culture (Soenens & Beyers, 2012). At the same time, it has been suggested that cultural orientation (e.g., individualism versus collectivism) does not strongly moderate the relationship between actual parental behaviors and adolescents' subjective experience on these parental behaviors (Soenens & Beyers, 2012). But, for example, it may be that adolescents with a collectivistic orientation might interpret psychological control as less pressuring and intrusive in comparison with adolescents with an individualistic orientation (Soenens & Beyers, 2012). With this respect, Romania is a post-socialist country and considered to be more collectivistic than Western European or North American countries. However, more recent longitudinal research showed that adolescents from post-socialist countries are very fast adopting a more individualistic orientation (Fülöp & Ross, 2005). As we did not measure adolescents' individual cultural orientations, future studies need to examine whether the findings generalize to other nationalities and cultures and whether an individualistic versus a collectivistic orientation differentiates the effects of parental behaviors on adolescents' perfectionism development.

Third, we identified no increasing group for self-oriented perfectionism as well as no decreasing group for socially prescribed perfectionism. One possible explanation for this could be that, in previous studies that found such developmental trajectories (Herman et al., 2013; Hong et al., 2017), the time lags between waves were longer (i.e., one year) and spanned over longer periods of time (i.e., 6 years and 3 years, respectively), whereas the present study focused on more rapid changes (5-6 months) over a period of two academic years. Thus, future studies may profit from longitudinal designs with a combination of shorter and longer time lags between waves to depict both rapid and slower changes in perfectionism that occur throughout adolescent years. Finally, because self-oriented and other-oriented perfectionism showed less increase than socially prescribed perfectionism, future studies should focus on younger samples of children to investigate whether these two forms of perfectionism develop (i.e., show more substantial increase) at an earlier developmental stage.

Finally, with respect to the measurement of perfectionism, the subscale of the Multidimensional Perfectionism Scale-Short Form (Hewitt et al., 2008) used for assessing other-

oriented perfectionism in the present study has not yet been validated in an adolescent population. Although the subscale scores showed good to excellent reliability in the present sample comparable to what has been found for adult samples (Stoeber, 2018a), future validation studies should confirm that it is suited for use in studies with adolescents. Additionally, we used the original 22-item version of the Child–Adolescent Perfectionism Scale (CAPS; Flett et al., 2016) that does not differentiate subfacets of self-oriented perfectionism. Future research may want to use abbreviated versions of the CAPS allowing to examine potential differences between the striving and the self-critical subfacets of self-oriented perfectionism (cf. Herman et al., 2013; Hong et al., 2017; Vicent et al., 2019).

Notwithstanding these limitations, the present study has a number of implications. From a theoretical perspective, the present findings underline the notion that perfectionism change can be examined in adolescents over a period as short as two years and that parental behaviors play an important role in differentiating distinct developmental trajectories in adolescents. And from a practical perspective, the present study provides a framework which allows for identifying adolescents who are at risk for high or increasing levels of perfectionism and which perceived parental behaviors characterize these trends. This way we can tap into the risk and protective parental behaviors and inform prevention and intervention programs aimed at decreasing adolescents' perfectionism and its associated symptoms indicative of psychological maladjustment.

Conclusions

The present four-wave study investigated developmental trajectories of self-oriented, socially prescribed, and other-oriented perfectionism in adolescence as well as the role of risk and protective parental behaviors involved in these processes. Results showed that self-oriented perfectionism followed three developmental trajectories (low and decreasing, medium and decreasing, high and stable), socially prescribed perfectionism also followed three distinct developmental trajectories (low and stable, medium and increasing, high and stable), whereas other-oriented perfectionism displayed four such trajectories (low and decreasing, medium and stable, high and stable, high and increasing). Perceived parental psychological control and perceived behavioral control were elevated in groups with high levels of all three forms of perfectionism. However, adolescents high in self-oriented perfectionism also experienced higher perceived responsiveness from their parents. On the contrary, adolescents high in socially

prescribed and other-oriented perfectionism experienced low perceived responsiveness and low perceived autonomy support from their parents. These findings are novel and noteworthy for the understanding of the development of all three forms of perfectionism in adolescents.

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Table 1

Reliabilities, Descriptive Statistics, and Correlations between Perfectionism and Perceived Parental Behaviors

			Perfectionism													
			Self-oriented perfectionism				Socially prescribed perfectionism				Other-oriented perfectionism				Gender	Age
	α	*M* (*SD*)	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T1
Perceived parental behaviors																
Psychological control T1	.83	2.30 (0.84)	.06	.07	.07	.04	.39***	.40***	.39***	.31***	.27***	.23***	.28***	.15***	–.13***	–.04
Psychological control T2	.86	2.34 (0.83)	.02	.07*	.06	.03	.31***	.44***	.36***	.37***	.26***	.30***	.31***	.21***	–.19***	.01
Psychological control T3	.86	2.38 (0.87)	–.02	.06	.07*	–.01	.28***	.35***	.41***	.36***	.23***	.21***	.27***	.20***	–.16***	–.00
Psychological control T4	.87	2.54 (0.88)	.02	.01	.09*	.05	.27***	.33***	.34***	.40***	.22***	.25***	.26***	.30***	–.19***	–.01
Behavioral control T1	.77	3.40 (0.56)	.29***	.13***	.12***	.10**	.23***	.16***	.16***	.11**	.18***	.14***	.08*	.02	–.07	–.22***
Behavioral control T2	.76	3.29 (0.53)	.18***	.17***	.16***	.08*	.11**	.18***	.14***	.09*	.15***	.16***	.13***	.07*	–.04	–.14***
Behavioral control T3	.76	3.28 (0.53)	.15***	.11**	.19***	.11**	.09*	.14***	.20***	.14***	.07*	.07	.12**	.06	.07*	–.16***
Behavioral control T4	.77	3.20 (0.52)	.15***	.13***	.18***	.16***	.11**	.16***	.19***	.19***	.11**	.07	.12**	.14***	.07*	–.06
Responsiveness T1	.89	3.87 (0.88)	.17***	.08*	.15***	.11**	–.12***	–.20***	–.09*	–.12**	–.01	.02	–.07	–.03	–.02	–.19***

Responsiveness T2	.87	3.79 (0.83)	.15***	.13***	.20***	.15***	–.16***	–.18***	–.12**	–.16***	–.03	–.00	–.08*	–.06	.10**	–.08*
Responsiveness T3	.88	3.74 (0.85)	.15***	.11**	.22***	.13***	–.12***	–.14***	–.11**	–.12**	.02	–.01	–.04	–.03	.09*	–.06
Responsiveness T4	.87	3.68 (0.82)	.11**	.13***	.19***	.17***	–.15***	–.19***	–.13***	–.18***	–.04	–.01	–.11**	–.02	.18***	–.06
Autonomy support T1	.69	3.56 (0.68)	.12**	.09*	.15***	.13***	–.24***	–.26***	–.15***	–.18***	–.05	–.01	–.10**	.02	.05	.02
Autonomy support T2	.71	3.55 (0.67)	.07*	.10**	.17***	.16***	–.20***	–.23***	–.18***	–.16***	–.10**	–.06	–.09*	–.02	.14***	.08*
Autonomy support T3	.66	3.57 (0.66)	.12**	.07*	.14***	.12***	–.15***	–.17***	–.21***	–.18***	–.03	–.00	–.07	–.02	.13***	.01
Autonomy support T4	.72	3.52 (0.68)	.04	.06	.12***	.11**	–.20***	–.24***	–.23***	–.27***	–.12***	–.07	–.13***	–.06	.16***	.00
Control variables																
Gender T1	—	—	.02	.03	.01	.07*	–.10**	–.07	–.06	–.06	–.12**	–.14***	–.06	–.06	—	.04
Age T1	—	—	–.05	.06	.09*	.06	–.00	.09*	.05	.11**	.09*	.12**	.18***	.16***	.04	—
α	—	—	.76	.80	.80	.77	.84	.83	.84	.83	.78	.80	.80	.82	—	—
M (*SD*)	—	—	3.23 (0.61)	3.14 (0.61)	3.17 (0.61)	3.16 (0.58)	2.74 (0.76)	2.67 (0.70)	2.73 (0.72)	2.78 (0.71)	2.63 (0.88)	2.65 (0.87)	2.71 (0.88)	2.75 (0.88)	—	—

Note. $N = 744$. T1 = Time 1, T2 = Time 2, T3 = Time 3, T4 = Time 4; α = Cronbach's alpha; gender was coded 0 = male, 1 = female; age was coded 0 = 12-15 years, 1 = 16-19 years.

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table 2

Fit Indices of Growth Mixture Models for the Three Forms of Perfectionism

	Model fit indices				
	BIC	aBIC	Entropy	LMR	BLRT
Self-oriented perfectionism					
1 latent class	3345.20	3303.92	—	—	—
2 latent classes	3673.87	3638.94	.689	.000	.000
3 latent classes	**3478.52**	**3430.89**	**.726**	**.001**	**.000**
3 latent classes with covariates (conditional model)	**3492.50**	**3413.12**	**.740**	**.069**	**.000**
4 latent classes	3431.72	3371.39	.761	.068	.000
5 latent classes	3426.21	3353.17	.685	.044	.000
Socially prescribed perfectionism					
1 latent class	4168.58	4127.30	—	—	—
2 latent classes	4409.63	4374.70	.749	.000	.000
3 latent classes	**4214.22**	**4166.59**	**.744**	**.000**	**.000**
3 latent classes with covariates (conditional model)	**4214.30**	**4134.91**	**.760**	**.076**	**.000**
4 latent classes	4203.19	4142.86	.658	.214	.000
5 latent classes	4201.40	4128.37	.691	.002	.000
Other-oriented perfectionism					
1 latent class	5135.93	5094.65	—	—	—
2 latent classes	5317.57	5282.64	.717	.000	.000
3 latent classes	5197.29	5149.66	.760	.003	.000
4 latent classes	**5143.11**	**5082.77**	**.701**	**.000**	**.000**
4 latent classes with covariates (conditional model)	**5153.06**	**5054.63**	**.705**	**.102**	**.000**
5 latent classes	5147.12	5074.09	.690	.092	.000
6 latent classes	5162.37	5076.63	.714	.670	.107

Note. $N = 744$. BIC = Bayesian information criterion; aBIC = sample-size adjusted BIC; LMR = p value of Lo–Mendell–Rubin likelihood ratio test; BLRT = p value of bootstrapped likelihood ratio test. Covariates were gender and age. Retained conditional and unconditional models = boldfaced.

Table 3

Mean Scores for the Growth Factors of the Unconditional and Conditional Models for the Perfectionism Dimensions

	Self-oriented perfectionism			Socially prescribed perfectionism			Other-oriented perfectionism			
Unconditional model	LC1 (34%)	LC2 (54%)	LC3 (12%)	LC1 (25%)	LC2 (55%)	LC1 (20%)	LC1 (19%)	LC2 (31%)	LC3 (43%)	LC4 (7%)
	M (*SE*)			*M* (*SE*)			*M* (*SE*)			
Intercept	2.693***	3.350***	4.028***	1.975***	2.748***	3.583***	1.776***	2.226***	3.161***	3.607***
	(0.056)	(0.059)	(0.098)	(0.047)	(0.057)	(0.069)	(0.070)	(0.059)	(0.077)	(0.138)
Slope	–0.129**	–0.088*	0.017	–0.120	–0.067	–0.060	–0.310***	0.188	–0.076	0.664***
	(0.046)	(0.040)	(0.072)	(0.071)	(0.046)	(0.070)	(0.084)	(0.104)	(0.086)	(0.161)
Quadratic	0.042**	0.021	–0.009	0.038	0.042**	0.010	0.102***	–0.023	0.020	–0.178**
	(0.014)	(0.013)	(0.024)	(0.022)	(0.014)	(0.020)	(0.028)	(0.031)	(0.024)	(0.065)
Conditional model	LC1 (29%)	LC2 (57%)	LC3 (14%)	LC1 (23%)	LC2 (57%)	LC3 (20%)	LC1 (19%)	LC2 (33%)	LC3 (41%)	LC4 (7%)
	M (*SE*)			*M* (*SE*)			*M* (*SE*)			
Intercept	2.539***	3.225***	3.858***	2.064***	2.830***	3.691***	1.784***	2.253***	3.165***	3.626***
	(0.201)	(0.177)	(0.237)	(0.075)	(0.086)	(0.090)	(0.102)	(0.099)	(0.161)	(0.197)
Slope	–0.149*	–0.160**	–0.002	–0.189	–0.118	–0.126	–0.305**	0.163	–0.085	0.634**
	(0.067)	(0.059)	(0.094)	(0.099)	(0.065)	(0.092)	(0.111)	(0.244)	(0.151)	(0.212)
Quadratic	0.041	0.038*	–0.005	0.051	0.050*	0.021	0.093**	–0.026	0.014	–0.180

	(0.021)	(0.019)	(0.030)		(0.031)	(0.021)	(0.025)		(0.034)	(0.078)	(0.046)	(0.094)

Note. $N = 744$. Self-oriented perfectionism (SOP): LC1 = low SOP & linear decrease; LC2 = medium SOP & non-linear decrease; LC3 = high SOP & stable; Socially prescribed perfectionism (SPP): LC1 = low SPP & stable; LC2 = medium SPP & non-linear increase; LC3 = high SPP & stable; Other-oriented perfectionism (OOP): LC1 = low OOP & non-linear decrease; LC2 = medium OOP & stable; LC3 = high OOP & stable; LC4 = high OOP & non-linear increase. All exact *p*-values are available in the output files openly available (please see Plan of Analyses).

Table 4

Pairwise Comparisons between Latent Classes on Perceived Parental Behaviors

	Self-oriented perfectionism			Significant comparisons	Socially prescribed perfectionism			Significant comparisons	Other-oriented perfectionism				Significant comparisons
	LC1	LC2	LC3		LC1	LC2	LC3		LC1	LC2	LC3	LC4	
Perceived Psychological control													
T1	2.04	2.38	2.41	$1 < 2^{***}, 3^{**}$	1.73	2.30	2.89	$1^{***} < 2, 3$ $2 < 3^{***}$	1.81	2.28	2.44	2.75	$1^{***} < 2, 3, 4$ $2 < 4^{*}$
T2	2.09	2.41	2.40	$1 < 2^{**}, 3^{*}$	1.63	2.43	2.80	$1^{***} < 2, 3$ $2 < 3^{**}$	1.78	2.26	2.57	2.64	$1^{***} < 2, 3, 4$ $2 < 3^{**}, 4^{*}$
T3	2.24	2.42	2.51	—	1.77	2.50	2.81	$1^{***} < 2, 3$ $2 < 3^{*}$	1.94	2.37	2.54	2.79	$1 < 2^{**}, 3^{***}, 4^{***}$ $2 < 4^{*}$
T4	2.31	2.66	2.61	$1 < 2^{**}, 3^{*}$	1.98	2.65	2.96	$1^{***} < 2, 3$ $2 < 3^{*}$	1.97	2.43	2.84	3.03	$1 < 2^{**}, 3^{***}, 4^{***}$ $2^{**} < 3, 4$
Perceived Behavioral control													
T1	3.23	3.41	3.69	$1 < 2^{**}, 3^{***}$ $2 < 3^{**}$	3.31	3.35	3.64	$1^{**}, 2^{*} < 3$	3.34	3.35	3.41	3.72	$1, 2, 3 < 4^{**}$
T2	3.15	3.29	3.49	$1 < 2^{*}, 3^{***}$ $2 < 3^{*}$	3.18	3.27	3.42	$1^{**}, 2^{*} < 3$	3.21	3.22	3.30	3.60	$1^{**}, 2^{**}, 3^{*} < 4$
T3	3.18	3.28	3.56	$1, 2 < 3^{***}$	3.21	3.28	3.46	$1^{**}, 2^{*} < 3$	3.23	3.30	3.28	3.57	$1^{**}, 2^{*}, 3^{*} < 4$
T4	3.11	3.19	3.50	$1, 2 < 3^{***}$	3.11	3.19	3.41	$1, 2 < 3^{**}$	3.10	3.18	3.27	3.34	$1 < 3^{*}$

Perceived Responsiveness													
T1	3.66	3.93	4.01	$1 < 2^{**}, 3^{*}$	4.20	3.79	3.69	$1^{***} > 2, 3$	4.09	3.73	3.85	4.01	$1^{*} > 2, 3$ $1 > 2^{*}, 3^{**}$
T2	3.72	3.82	3.96	$1 < 3^{*}$	4.16	3.72	3.68	$1^{***} > 2, 3$	4.06	3.73	3.71	4.06	$4^{*} > 2, 3$
T3	3.61	3.74	4.07	$1^{**}, 2^{*} < 3$	4.07	3.63	3.70	$1 > 2^{***}, 3^{**}$	3.85	3.71	3.73	3.81	—
T4	3.58	3.68	3.90	$1 < 3^{*}$	3.96	3.58	3.65	$1 > 2^{**}, 3^{*}$	3.91	3.73	3.54	3.72	$1 > 3^{**}$
Perceived Autonomy support													
T1	3.46	3.59	3.66	—	3.80	3.58	3.26	$1 > 2^{**}, 3^{***}$ $2 > 3^{**}$	3.72	3.49	3.56	3.54	—
T2	3.56	3.56	3.64	—	3.89	3.51	3.37	$1^{***} > 2, 3$	3.85	3.47	3.50	3.69	$1 > 2^{**}, 3^{***}$
T3	3.50	3.58	3.68	—	3.82	3.52	3.43	$1 > 2^{**}, 3^{***}$	3.69	3.48	3.59	3.56	—
T4	3.52	3.48	3.62	—	3.79	3.44	3.38	$1^{***} > 2, 3$	3.74	3.54	3.40	3.48	$1 > 3^{**}$

Note. $N = 744$. Self-oriented perfectionism (SOP): LC1 = low SOP & linear decrease; LC2 = medium SOP & non-linear decrease; LC3 = high SOP & stable; Socially prescribed perfectionism (SPP): LC1 = low SPP & stable; LC2 = medium SPP & non-linear increase; LC3 = high SPP & stable; Other-oriented perfectionism (OOP): LC1 = low OOP & non-linear decrease; LC2 = medium OOP & stable; LC3 = high OOP & stable; LC4 = high OOP & non-linear increase. T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4. All exact *p*-values are available in the output files openly available (please see Plan of Analyses).

$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

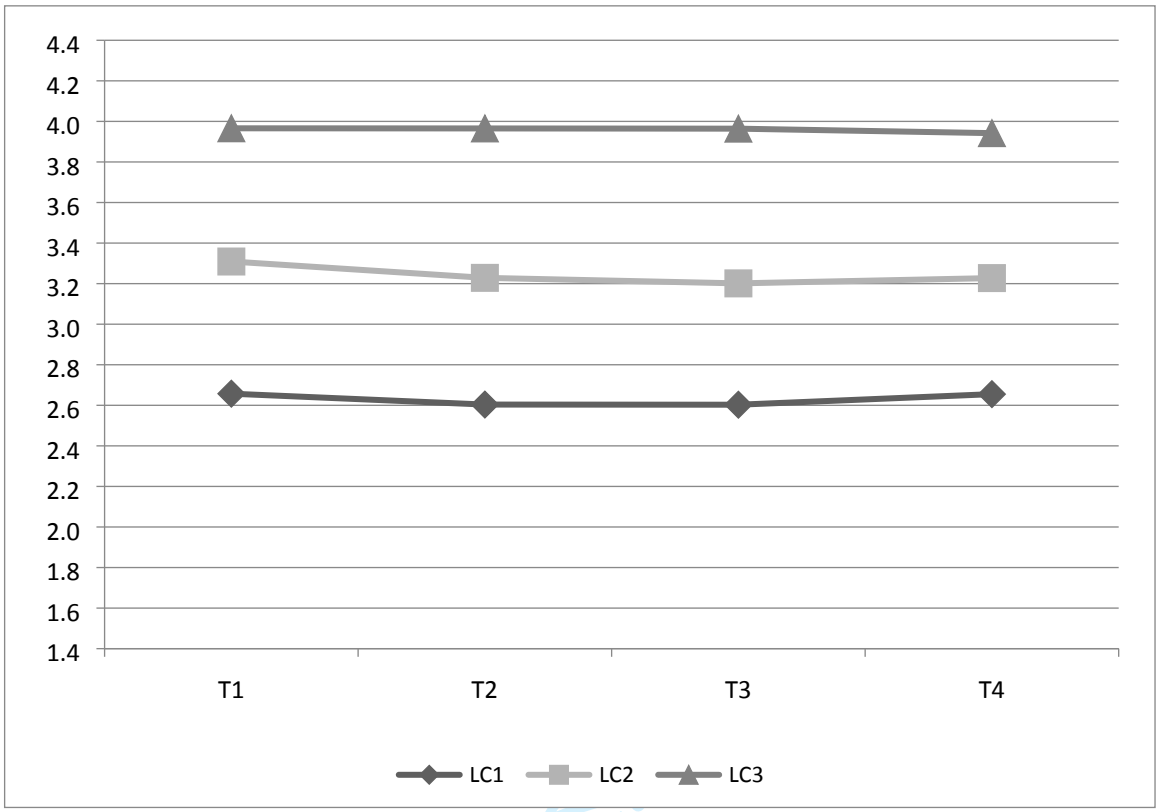

Figure 1. Estimated trajectories of latent classes for self-oriented perfectionism (SOP). LC1 = low SOP and linear decrease, LC2 = medium SOP and non-linear decrease, LC3 = high SOP and stable (see Table 3 for a description of the classes). The y axis represents average item scores on a scale from 1 to 5 (see the Measures section).

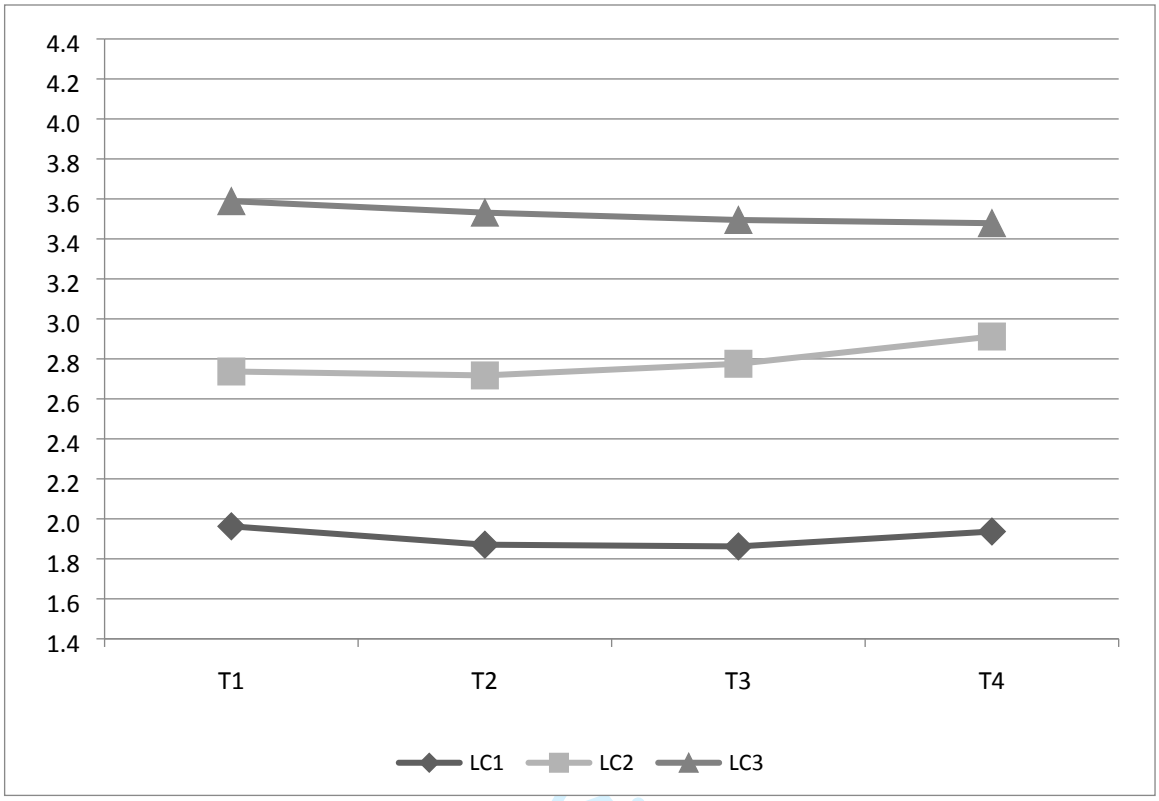

Figure 2. Estimated trajectories of latent classes for socially prescribed perfectionism (SPP). LC1 = low SPP and stable, LC2 = medium SPP and non-linear increase, LC3 = high SPP and stable (see Table 3 for a description of the classes). The y axis represents average item scores on a scale from 1 to 5 (see the Measures section).

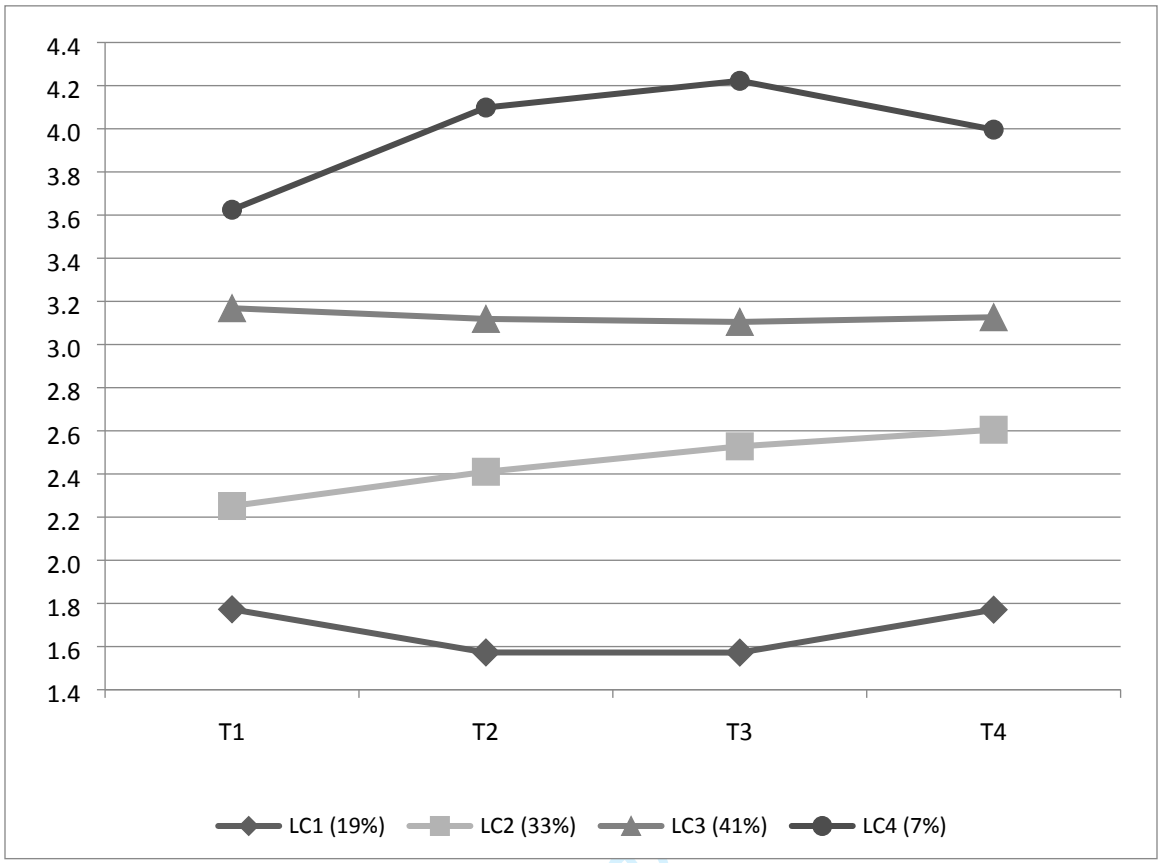

Figure 3. Estimated trajectories of latent classes for other-oriented perfectionism (OOP). LC1 = low OOP and non-linear decrease, LC2 = medium OOP and stable, LC3 = high OOP and stable, LC4 = high OOP and non-linear increase (see Table 3 for a description of the classes). The y axis represents average item scores on a scale from 1 to 5 (see the Measures section).