

# University Students' Perfectionistic Profiles: Do They Predict Achievement Goal Orientations and Coping Strategies?

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## Abstract

The present study aimed at investigating the effect of different perfectionistic latent profiles on university students' personal goal orientation and coping strategies. Four hundred thirty nine university students (82.5% females) from various departments (38.5% freshmen) participated in the study. Students were asked to complete anonymously three self-report questionnaires in groups in their university classes: (a) the Almost Perfect Scale-Revised was used for measuring perfectionism as a multidimensional construct, (b) the Personal Achievement Goals questionnaire for measuring achievement goal orientation (mastery orientation, performance-approach orientation, and performance-avoidance orientation), and (c) the R-COPE questionnaire for measuring adaptive and maladaptive coping strategies for everyday problems. Latent class analysis was conducted in order to create categorical perfectionistic profiles. The data support the three-group model of adaptive and maladaptive perfectionists and non-perfectionists. The adaptive and maladaptive perfectionistic profiles differ in the level of discrepancy between personal standards and accomplishments and significantly predicted adaptive and maladaptive achievement motivation and coping, respectively.

**Keywords:** coping, perfectionism, personal achievement goals, strategies, university students

## 1. Introduction

Perfectionism has been studied mostly as a personality disposition to consider every outcome that deviates from perfection as not acceptable. Although initially it was conceptualized as a unidimensional negative characteristic of the "neurotic" personality, now there is consensus among researchers that it is a multidimensional personality construct with positive as well as negative effects on performance and behavior (Stoeber & Otto, 2006). Setting high standards and striving to achieve them represent its adaptive dimension, while excessive evaluative concerns and self-criticism as to whether one is able to meet those standards represent its maladaptive dimension (Stoeber, 2018). Most empirical evidence supports the above distinction between adaptive and maladaptive dimensions of perfectionism, which have been found to be significant predictors of aspects of physical and mental health, life satisfaction and general well-being, mainly in adult samples (Ashby, Noble, & Gnilka, 2012; Sirois & Molnar, 2016).

A well-established underlying mechanism of perfectionism effects on well-being involves the activation of anxiety (for a meta-analysis see Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018). Two of the significant mediators of this perfectionism - anxiety relation are coping strategies (Ashby et al., 2012; Dunkley & Blankstein, 2000; Gnilka, Ashby, & Noble, 2012) and achievement goal orientations, at least in academic settings (Eum & Rice, 2011). Adopting the view that perfectionism is not a unidimensional negative personality construct, the present study is an attempt to examine how maladaptive and adaptive profiles of perfectionism predict the above mentioned mediators of the perfectionism - anxiety relation in university students. Research evidence is either correlational or group-based. Correlational evidence focuses on the effects of perfectionism dimensions (perfectionistic strivings and perfectionistic concerns) on various aspects of academic life (achievement outcomes and motivation) (e.g., Bong, Hwang, Noh, & Kim, 2014; Kljajic, Gaudreau, & Franche, 2017), while in the group-based approach cluster analysis is used to classify students' into groups of perfectionists and non-perfectionists and to compare these groups as regards their academic adjustment and outcomes (e.g., Rice & Ashby, 2007; Rice & Slaney, 2002; Ståhlberg, Tuominen, Pulkka, & Niemivirta, 2019). The group-based approach has been adopted in the present

study. According to the most common tripartite model, three clusters of combinations between strivings and concerns have been identified, although there is evidence for more or mixed clusters: the adaptive perfectionists (high levels of personal standards and low discrepancy between standards and accomplishments), the maladaptive ones (high levels of personal standards and high self-criticism and discrepancy), and the non-perfectionists (low or moderate level of personal standards and of discrepancy) (Ashby & Gnilka, 2017; Rice & Ashby, 2007).

The present study is, also, in line with recent studies that emphasize the need to examine the relatively neglected adaptive aspects of perfectionism (Stoeber, 2018; Stoeber & Gaudreau, 2017), especially in achievement-oriented contexts, such as the academic. In academic contexts perfectionism in the form of setting high standards of excellence is considered a positive and socially desirable individual characteristic, which may also motivate students to continue working hard (Rice, Richardson, & Ray, 2016), even though it can sometimes function as self-imposed hindrance that prevents them from completing very demanding academic tasks in higher education, such as a PhD thesis (Kearns, Gardiner, & Marshall, 2008).

In the introduction section of this paper we will first very briefly present the concept of achievement goal orientations and research on the relation between perfectionism and achievement goal orientations. We will, then, address in the same manner the concept of coping strategies and research on the relation between coping strategies and perfectionism. At the end of the introduction we will describe the rationale and hypotheses of the present study.

### *1.1 Perfectionism and Achievement Goal Orientations*

Achievement goal orientations represent the reasons students' strive to succeed in academic settings (Elliot & Harackiewicz, 1996). Personal achievement goals can take different forms depending on students' motive either to attain success (approach goals) or to avoid failure (avoidance goals). Approaching an achievement situation may be motivated either by genuine interest in order to learn, understand the learning material and foster personal skills (mastery goal) or by a desire to surpass others and be the best according to normative standards of social comparison (performance-approach goals). Avoiding an achievement situation is motivated mainly by fear of failure and of demonstrating lack of competence (performance-avoidance goals) (see the trichotomous framework of personal achievement goals in Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997). There is consistent evidence as regards the links of mastery goals with adaptive learning patterns (e.g., the use of deep level cognitive strategies, intrinsic motivation, persistence and effort investment) and the links of performance-avoidance goals with maladaptive learning patterns (e.g., the use of rote memory strategies, low interest, self-handicapping behavior and low performance). Performance-approach goals, however, do not display a consistent pattern of relations between performance and motivation, whether positive or negative (Church, Elliot, & Gable, 2001; Gonida, Voulala, & Kiosseoglou, 2009; Middleton & Midgley, 1997; Tuominen-Soini, Salmela-Aro, & Niemivirta, 2012).

Perfectionism has been found to be a significant predictor of individual differences in achievement goal orientation in academic contexts. Self-oriented perfectionism (striving to meet standards being set by the self) is considered an adaptive type of perfectionism and is positively linked with mastery and performance-approach goals, since they share a common antecedent, the high level of motivation to achieve. Socially prescribed perfectionism (striving to meet the standards that are being set by significant others), however, is a source of anxiety, as the person strives to avoid failure and, thus, it is consistently linked to performance approach and avoidance goals, which are intricately linked with fear of failure (Damian, Stoeber, Negru, & Băban, 2014; Speirs Neumeister, 2004; Verner-Filion, & Vallerand, 2010). Stoeber, Feast, and Hayward (2009) stated, however, that self-oriented perfectionism as compared to socially-prescribed perfectionism is an "ambivalent" form of perfectionism. They found that it is related with higher worry and lower interference and lack of confidence in exams. Having high standards set by the self does not mean that the person does not worry about the performance outcome, especially if the context is too competitive. It is important to notice, though, that the pattern of relations depends on the measure that is used and the approach (dimensional or group-based) that is adopted. Evidence within the group-based approach suggests that maladaptive perfectionists tend to endorse comparable mastery goals to those of the adaptive perfectionists (Hanchon, 2010) or various dimensions of perfectionism positively related to all types of personal achievement goals (Fletcher, Shim, & Wang, 2012). Recent evidence suggests that perfectionistic concerns make the difference in students' motivational tendencies. High perfectionistic strivings with low concerns were found to be associated with a mastery orientation, while high strivings with high concerns associated with performance approach orientation. A non-perfectionistic profile (namely, relatively low strivings and concerns), however, has been found to represent students with relatively low levels of both mastery and performance goals, although the emphasis on these students' orientation was on performance avoidance goals (Ståhlberg et al., 2019). In conclusion, the

evidence concerning the effect of different aspects of self-oriented perfectionism on personal achievement goals is inconclusive, mainly due to different conceptualizations and measures of perfectionism. The present study is an attempt to investigate the effect of different perfectionistic profiles as regards the level of perceived discrepancy between personal standards and accomplishments on university students' personal achievement goals.

### *1.2 Perfectionism and Coping Strategies*

The way of coping with stress is another significant mediator of the perfectionism - anxiety relation (Ashby et al., 2012; Dunkley & Blankstein, 2000; Gnilka et al., 2012; Sirois & Molnar, 2016). Most researchers agree on a general distinction between problem-focused strategies, that involve an active attitude towards the solution of the problem, and emotion-focused strategies, which either involve adaptive coping through emotional processing and emotional support seeking or maladaptive coping via avoidance, denial, other-blame or self-blame and self-focused rumination. Irrespective of the conceptualization of perfectionism and/or coping, maladaptive perfectionism consistently predicted avoidance coping (O' Connor & O' Connor, 2003; Van der Kaap-Deeder, Soenens, Boone, Vandenkerckhove, Stengée, & Vansteenkiste, 2016; Weiner & Carton, 2012), and negative emotion-focused coping strategies (Ashby & Gnilka, 2017). Further, adaptive perfectionism consistently related to more frequent use of problem-focused coping strategies (Ashby & Gnilka, 2017; O' Connor & O' Connor, 2003) as compared to the use of these strategies by non-perfectionists and, mainly, by maladaptive perfectionists. In fact, the types of coping strategies university students tend to use predict the tendency to perceive various events as stressful (Ashby & Gnilka, 2017; Weiner & Carton, 2012). Further, self-focused rumination and self-blame in case of failure is consistently related to maladaptive perfectionism (James, Verplanken, & Rimes, 2015; van der Kaap-Deeder et al., 2016). On the contrary, acceptance of the problem or the situation seems to be a more active and constructive strategy, as the person tries to adjust and see the situation from a different perspective. Maladaptive perfectionists, though, do not accept the negative events and failures easily, as those are perceived as threats for their self-worth (van der Kaap-Deeder et al., 2016). It is worth mentioning that university students who are perfectionists were found to prefer problem-oriented strategies in pre-exam coping, irrespective of the level of discrepancy between their strivings and accomplishments (Arana & Furlan, 2016). In general, even though the evidence is consistent as regards the coping style of adaptive and maladaptive perfectionists, there is only little evidence as regards the non-perfectionists' coping style (e.g., Arana & Furlan, 2016; Ashby & Gnilka, 2017). In the present study different categories of coping strategies are included in an attempt to provide evidence for the effect of perfectionistic and non-perfectionistic profiles on distinct coping strategies (namely, problem-focused strategies, emotion-support seeking strategies, avoidance, other-blame or self-blame and self-focused rumination).

### *1.3 The Rationale of the Present Study*

The present study is an attempt to provide empirical evidence for the effect of different perfectionistic latent profiles on university students' personal goal orientation and coping strategies. A critical point in defining and measuring the adaptive and maladaptive aspects of perfectionism is the level of perceived discrepancy between personal standards and accomplishments. Relatively fewer studies have examined whether achievement goal orientation and ways of coping differ among university students with different profiles in the above core dimensions of perfectionism, namely personal standards and discrepancy (e.g., Ashby & Gnilka, 2017; Ståhlberg et al., 2019). The present study is an attempt to measure these dimensions via "The Almost Perfect Scale-Revised" (ASP-R, Slaney, Rice, Mobley, Trippi, & Ashby, 2001). The main advantage of the scale is the provision of scores for dimensions that are clearly distinct (namely perfectionistic strivings and discrepancy between strivings and accomplishments) and are used to identify different perfectionistic profiles (adaptive, maladaptive and non-perfectionists).

Based on previous evidence, it was hypothesized that the data would support the tripartite model of adaptive, maladaptive and non-perfectionists (Hypothesis 1). Further, the three perfectionistic profiles are expected to have a differential impact on self-reported achievement-goal orientations. Specifically, only the adaptive perfectionistic profile would be expected to predict the mastery goals positively (Hypothesis 2a), while, only the maladaptive profile would be expected to positively predict the performance avoidance goals (Hypothesis 2b). Both the adaptive and maladaptive perfectionistic profiles would be expected to positively predict the performance approach goals (Hypothesis 2c). Finally, a non-perfectionistic profile would be expected to relate to low levels of all goal orientations (Hypothesis 2d).

As regards coping strategies, the maladaptive perfectionistic profile would be expected to predict the selection of maladaptive coping strategies, namely self-focused rumination and self-punishment as well as avoidance of the problem (Hypothesis 3). The adaptive perfectionistic group would be expected to predict adaptive coping (mainly an approach problem-focused strategy) as compared to the non-perfectionist group and mainly to the group of

maladaptive perfectionists (Hypothesis 4).

## 2. Method

### 2.1 Participants

The sample consisted of 439 Greek university students (82.5% females and 17.5% males; mean age: 20.0, SD=2.1). The participants (38.5% freshmen) were majoring in psychology (29.6%), education (42.6%), physics (23.5%), economy (1.8%) and fashion (2.5%).

### 2.2 Measures

The participants were asked to complete anonymously three self-report questionnaires in groups in university classes 20 minutes before the end of their regular lesson, after obtaining permission by the instructor and informed consent by the students.

#### 2.2.1 Perfectionism

In the present study a translated version of the Almost Perfect Scale-Revised (APS-R, Slaney et al., 2001) was used (adapted by Diamantopoulou & Platsidou, 2014). The APS-R is developed to measure perfectionism as a multidimensional construct via three subscales: (a) the Standards subscale (7 items), which measures the person's high expectations and standards of excellence (e.g., *"I set very high standards for myself"*), (b) the Order subscale (4 items), which measures the person's need for order (e.g., *"I am an orderly person"*), and the Discrepancy subscale (12 items), which measures the distress caused by the perceived gap between the person's expectations and her/his accomplishments (e.g., *"I am never satisfied with my accomplishments"*). The participants are classified according to their scores on the Standards and the Discrepancy subscales into three classes: adaptive, maladaptive and non-perfectionists, while the Order subscale is not used for the classification (see Ashby & Gnilka, 2017; Rice & Ashby, 2007). Factor analysis in the present study supported the three theoretically defined factors with high reliability (based on their Cronbach  $\alpha$  values): (a) discrepancy (eigenvalue: 5.91, 25.70%,  $\alpha = .90$ ), (b) high standards (eigenvalue: 4.31, 18.73%,  $\alpha = .77$ ), and (c) order (eigenvalue: 1.61, 7.01%,  $\alpha = .81$ ).

#### 2.2.2 Personal Achievement Goals

In the present study, a translated version of the Personal Achievement Goals questionnaire developed by Midgley et al. (1998, adapted by Gonida, Kiosseoglou, & Voulala, 2007) was used. The instrument consisted of three subscales: (a) Mastery orientation which measures the need for learning in order to understand the learning material and foster personal skills (6 items e.g., *"An important reason why I do my work in class is because I want to get better at it."*), (b) Performance-approach orientation, which measures the need to surpass others and be the best (6 items e.g., *"I would feel successful in class if I did better than most of the other students."*), and (c) Performance-avoidance orientation, which measures the need to avoid looking incompetent (5 items e.g., *"The reason I do my work is so others won't think I'm dumb"*). Factorial validity and reliability of the Greek version has been demonstrated in previous studies (e.g., Gonida et al., 2007, 2009). Factor analysis in the present study also resulted in the three theoretically defined factors with satisfactory reliability: (a) performance-achievement goals (eigenvalue: 4.67, 27.47%,  $\alpha = .85$ ), (b) mastery goals (eigenvalue: 3.07, 18.73%,  $\alpha = .80$ ), and (c) performance-avoidance goals (eigenvalue: 1.26, 7.39%,  $\alpha = .68$ ).

#### 2.2.3 Coping Strategies

A translated version of the R-COPE (Zuckerman & Gagne, 2003) was used in the present study. It is a 5-subscale 40-item questionnaire which involves five coping strategies (8 times each) for everyday problems: (a) *self-help coping*, that is, coping through emotional processing (e.g., *"I try to let out my feelings"* -expressing emotion, *"I try to get emotional support from friends and relatives"* -emotional support seeking) (b) *approach coping*, that is, active coping (e.g., *"I concentrate my efforts on doing something about it"* and planning (e.g., *"I make a plan of action"*), (c) *accommodation*, that is, compromising and accepting the situation (e.g., *"I get used to the idea that it happened"*), maintaining optimism (e.g., *"I work on feeling positive no matter what"*), and positive reframing (e.g., *"I try to see it in a different light, to make it seem more positive"*) (d) *avoidance coping*, that is denial (e.g., *"I refuse to believe that it has happened"*), other-blame (e.g., *"I blame someone or something for what happened to me"*) and disengagement (e.g., *"I try to forget the whole thing"*), and (e) *self-punishment*, that is, self-blame (e.g., *"I blame myself"*) and self-focused rumination (e.g., *"I brood over my problem nonstop"*). The above 5 subscales, consist of two general coping categories: the adaptive coping (self-help, approach and accommodation) and the maladaptive coping (avoidance and self-punishment). Participants were asked to answer on a four-point scale. Factor analysis resulted in the five theoretically defined coping strategies with high reliability: (a) self-help (eigenvalue: 6.53, 16.32%,  $\alpha = .87$ ), (b) accommodation (eigenvalue: 4.99, 12.47%,  $\alpha = .81$ ), (c) self-punishment

(eigenvalue: 3.31, 8.28%,  $\alpha = .82$ ), (d) approach coping (eigenvalue: 2.49, 6.22%,  $\alpha = .81$ ), and (e) avoidance coping (eigenvalue: 1.71, 4.27%,  $\alpha = .76$ ).

### 3. Results

#### 3.1 Descriptive Statistics and Correlations Among Variables

Descriptive statistics and correlations among variables are presented in Table 1.

Table 1. Means, standard deviations, and correlations among variables

		Mean	SD	1	2	3	4	5	6	7	8	9
Perfectionism	1. Standards	3.90	.61	1								
	2. Discrepancy	2.77	.78	.05	1							
	3. Mastery	3.73	.70	.41**	-.06	1						
	4. Performance	2.23	.91	.22**	.19**	-.03	1					
	5. Performance	2.18	.73	.04	.34**	-.11*	.55**	1				
	6. Help-Seeking	2.60	.70	.11*	-.14**	.07	-.03	-.02	1			
	7. Accommodation	2.87	.57	.15**	-.28**	.23**	-.10*	-.08	.17**	1		
	8. Approach	2.83	.54	.35**	-.14**	.40**	.04	-.04	.24**	.45**	1	
	9. Avoidance	1.73	.52	-.11*	.32**	-.19**	.23**	.38**	.02	-.15**	-.15**	1
	10. Self-Punishing	2.57	.64	-.01	.46**	-.07	.17**	.29**	.04	-.23**	.00	.38**

Note. \*  $p < .05$ , \*\*  $p < .01$ .

#### 3.2 Latent Clusters Profiles and Effects on Achievement Goal Orientations and Coping Strategies

A step-wise Latent class analysis (LCA) was conducted via LatentGold5.1 (Vermunt & Magidson, 2003) using a robust maximum likelihood estimator (MLR). In the first step, the underlying latent clusters were identified using the two dimensions of perfectionism, APS-R Standards and Discrepancy as input variables, which were the composite variables calculated from the corresponding interval-scale indicators. The resulting cluster-membership (LCs) consisted of different profiles which reflected different score-levels on these two dimensions. The choice of the most parsimonious latent class solution is based on a number of indicators, such as the number of parameters (Npar), likelihood ratio statistic (L2), Bayesian Information Criterion (BIC), entropy  $R^2$ , classification-errors, degrees of freedom (df) and bootstrapped  $p$ -values. Table 2 shows that the three-class and four-class solution were the best candidates. Conditional bootstrap test of L2 (4-class) - L2 (3-class) showed that the four-class solution did not provide any significant improvement, so the three-class solution was chosen. Moreover, the interpretability of the resulting profiles was taken under consideration.

Table 2. Results from LCA. Cluster solutions and model fit indices

	LL	BIC(LL)	Npar	L <sup>2</sup>	BIC(L <sup>2</sup> )	Df	p-value	Class. Err.	Entropy $R^2$
1-Cluster	-2723.26	5846.25	66	692.348	-1494.15	361	0.000	0.000	-
2-Cluster	-2720.77	5859.46	69	687.386	-1480.94	358	0.005	0.0666	0.65
3-Cluster*	-2718.67	5873.42	72	683.168	-1466.99	355	0.052	0.1955	0.78
4-Cluster	-2717.58	5889.42	75	681.003	-1450.98	352	0.041	0.2535	0.77
5-Cluster	-2716.5	5905.42	78	678.833	-1434.98	349	0.038	0.2966	0.77

In the second step individuals were assigned to LCs. The *modal* assignment and the maximum likelihood (ML)

bias correction methods were used (see Bakk et al., 2013). In the third step resulting cluster-memberships were associated with distal outcomes testing hypotheses related to the effects of such profiles on certain dependent variables (Bakk et al., 2013).

The three identified latent classes (profiles) were as follows: The first profile corresponded to *Adaptive Perfectionist* (high Standards:  $M = 4.41$  and low Discrepancy:  $M = 2.73$ ), the second profile corresponded to *Maladaptive Perfectionist* (high Standards:  $M = 4.41$  and high Discrepancy:  $M = 3.72$ ) and the third profile corresponded to *Non-Perfectionists* (Medium Standards:  $M = 3.55$  and low Discrepancy:  $M = 2.73$ ). They corresponded to 30.3%, 11.5% and 58.2% of the sample respectively.

The effects of the above class-memberships as independent variables to external variables such as achievement goal orientations and coping strategies were estimated using Wald tests. The results are presented in Table 3. Note that simulation studies on the effect size of the above LCA estimations show that for a power of 0.80 the present sample is by far adequate (Gudicha, Tekle, & Vermunt, 2016).

Table 3. Effects of perfectionistic profiles on achievement goal orientation and coping strategies

	Adaptive Perfectionists	Non Perfectionists	Maladaptive Perfectionists
Performance Approach	0.33**	-1.10**	0.77***
Performance Avoidance	-0.36**	-0.66***	1.02***
Mastery Approach	1.71***	-1.64***	n.s.
<i>Coping Strategies</i>			
Self-helping	0.64***	-0.56***	n.s.
Accommodation	1.29***	n.s.	-1.46***
Approach	2.23***	-1.59***	-0.64**
Avoid	-1.36**	n.s.	1.49***
Self-punish	n.s.	n.s.	n.s.

Note: \*\*\*  $p < .001$ , \*\*  $p < .01$ , n.s. = non-significant.)

Specifically, Adaptive Perfectionism has a positive effect mainly on mastery approach goal orientation and on performance approach goal orientation, and a negative effect on performance avoidance approach goal orientation. Moreover, Adaptive Perfectionism has a positive effect on self-helping, on accommodation, and mainly on approach strategies, while it has a negative effect on the avoidance strategy and no effect on self-punishment. Maladaptive Perfectionism has a positive effect on performance approach goal orientation and on performance avoidance goal orientation and no effect on mastery goal orientation. Moreover, Maladaptive Perfectionism has a positive effect on avoidance strategy, negative effects on accommodation and on approach strategies, while it has no effects on self-helping and on self-punishment strategies. Non-Perfectionism has a negative effect on all the types of achievement goals. Further, Non-Perfectionism has a negative effect on self-helping and on approach strategies, and no effects on accommodation, avoidance and self-punishment strategies.

#### 4. Discussion

The present study examined the effects of perfectionistic latent profiles on achievement goal orientations and coping strategies in a sample of university students. Goal orientation and coping strategies were chosen as two of the most significant mediators of the perfectionism - anxiety relation in academic settings (e.g., Eum & Rice, 2011; Gnllka et al., 2012). Students' motive either to attain success (mastery and performance approach goals) or to avoid failure (performance avoidance goals) was measured within the trichotomous framework of personal achievement goals. As regards coping strategies, self-reported adaptive and maladaptive types of problem-focused and emotion-focused strategies were measured. Different perfectionistic profiles were defined according to the level of perceived discrepancy between personal standards of performance and accomplishments, which, according to previous evidence, is critical in defining and measuring the adaptive and maladaptive aspects of perfectionism. Latent class analysis was applied to create categorical perfectionistic profiles and, then, to examine the effects of these latent profiles on students' achievement goals and coping strategies.

The data support the tripartite model of adaptive and maladaptive perfectionism and non-perfectionism

(Hypothesis 1) (see also, Ashby, & Gnilka, 2017; Rice & Ashby, 2007; Rice & Mirzadeh, 2000). Namely, three profiles were identified: the adaptive perfectionists (high standards and low discrepancy), the maladaptive perfectionists (high standards and high discrepancy) and the non-perfectionists (medium standards and low discrepancy). Almost half of the students (41.8%) in the present sample report high expectations of academic success, which is rather expected given their previous successful entrance in university departments through the highly competitive Greek educational system. However, 11.5% of them express excessive evaluative concerns and a high level of perceived discrepancy between personal standards and accomplishments. This group of students could be considered a group at risk since, according to the results, they tend to adopt maladaptive goals and coping strategies when they face obstacles in their academic and/or personal life. Further, it is noteworthy that 58.2% of the students are classified as non-perfectionists, with medium level personal standards and low evaluative concerns, who nevertheless, do not show an adaptive motivational and coping profile.

The above results are also consistent with Hamachek's (1978) initial theoretical assumption that perfectionism is multidimensional (see also Stoeber, 2018). Namely, setting high personal standards and striving to succeed is adaptive. It is the high level of self-criticism and perceived discrepancy between one's achievement expectations of excellence and actual achievement that represents the maladaptive aspect of perfectionism. This self-doubt is reflected in the adoption of a maladaptive motivational profile. In the present study about 10% of the students reported high standards and at the same time a high level of perceived discrepancy between their standards and their accomplishments. Future studies should examine the actual accomplishments of those students in order to point out if they are incapable of feeling satisfaction from their accomplishments. Namely, no matter how high goals they may reach, they may feel insecure and no accomplishment is considered good enough for them.

In line with previous evidence, adaptive perfectionists show a clear preference to master the goal (Hypothesis 2a) and are less likely to avoid pursuing a goal, while maladaptive perfectionists show a clear preference to avoid goals in which they believe that may fail (Hypothesis 2b). Performance approach goals are more likely to be adopted by the maladaptive perfectionists as well as by the adaptive perfectionists (Hypothesis 2c). Finally, all types of goals are less likely to be adopted by the non-perfectionists (Hypothesis 2d). The above finding supports previous evidence from the learning research tradition according to which performance approach goals are associated with either adaptive or maladaptive functioning in academic settings (e.g., Church et al., 2001; Gonida et al., 2007). They seem to facilitate or hinder personal strivings in academic settings depending on what motive prevails, that is, their desire to build their competence or their motive to avoid demonstrating incompetency to others. It is important, though, to have in mind that most of the previous studies in the area have examined the relations between goal orientations and perfectionism conceptualized as self-oriented or socially prescribed. Self-oriented perfectionism is considered an adaptive type of perfectionism and has been found to associate positively with mastery and performance-approach goals, like in the present findings, since they share a common antecedent, the high level of motivation to achieve. Socially prescribed perfectionism (striving to meet the standards that are being set by significant others), however, is a source of anxiety as the person strives to avoid failure and, thus, has been consistently found to associate with performance approach and avoidance goals, which are tightly linked with fear of failure (Bong, Hwang, Noh, & Kim, 2014; Damian et al., 2014; Speirs Neumeister, 2004; Verner-Filion, & Vallerand, 2010). This resembles the maladaptive aspect of perfectionism in the present study. Given that self-oriented perfectionism has been characterized as an "ambivalent" form of perfectionism (Stoeber et al., 2009), future studies should emphasize on the factors that affect the adoption of an adaptive or a maladaptive self-oriented perfectionism. It is important to know how the person builds a "healthy" or an "unhealthy" disposition towards personal outcomes and how important the role of socially imposed standards of excellence is in that process. Recent empirical evidence from a meta-analysis of birth cohort differences in perfectionism from 1989 to 2016 in university students from the United States, Canada, and the United Kingdom indicates the importance of examining the role of perfectionism in academic settings (Curran & Hill, 2017). The results revealed that perfectionism increases over time. Namely, the younger generations seem to perceive the academic environment as increasingly demanding and competitive, as they were found to have higher expectations of themselves (self-oriented perfectionism), to believe that others criticize them more and demand more of them (socially prescribed perfectionism) and, at the same time, to demand more from others (other-oriented perfectionism).

Further, in line with previous evidence, various dimensions of perfectionism related to all types of personal achievement goals (see also Fletcher et al., 2012). It is important to notice the negative associations between non-perfectionists and all types of achievement goals, especially with the mastery and next the performance approach orientation. Future studies should examine whether this evidence is systematic or not. Nevertheless, previous findings support the endorsement of comparable mastery goals by adaptive and maladaptive perfectionists (Hanchon, 2010). Future research should take into consideration measurement issues in order to delimit constant

patterns of relations in various perfectionistic profiles and academic functioning.

In regards to the effect of different perfectionistic profiles on coping strategies, as expected, the maladaptive perfectionism positively predicted the avoidance coping strategy (see also O'Conor & O'Conor, 2003; Van der Kaap-Deeder et al., 2016; Weiner & Carton, 2012) and negatively the adaptive coping strategies of approaching the problem and of accepting the situation and compromising. Maladaptive perfectionists do not seem to accept the negative events and failures easily as those constitute threats for their self-worth (van der Kaap-Deeder et al., 2016). The direction of the above relations was the opposite in the case of adaptive perfectionism. All the three adaptive coping strategies are more likely to be activated by adaptive perfectionists, while avoiding the problem is less likely to be activated (see Hypotheses 3 and 4) (see also Arana & Furlan, 2016; Ashby & Gnika, 2017; O'Conor & O'Conor, 2003). Adaptive perfectionists tend to use all the necessary cognitive and emotional resources to handle difficulties effectively. The groups of adaptive and maladaptive perfectionists seem to present clear-cut differences in coping profiles, as compared to the group of non-perfectionists. The non-perfectionists, though, present a maladaptive coping profile as they are less likely to activate the two out of three adaptive coping strategies, namely self-helping and approaching the problem in order to solve it. Finally, it is interesting that the maladaptive emotion-focused strategy of self-focused rumination is not predicted by any of the perfectionistic profiles, contrary to previous evidence which support positive links with maladaptive perfectionists (see James et al., 2015; van der Kaap-Deeder et al., 2016). It may be due to sample specific characteristics or measurement issues, since the emphasis in previous evidence was on coping with failure and not coping in everyday problems in general.

The present study has several limitations which must be taken into consideration when interpreting the data. Two main limitations are the correlational, cross sectional design and the use of self-ratings. Social desirability controls in self-reported measures as well as the use of experimental designs, which will set specific achievement goals or access coping reactions to actual failure and success conditions, would permit us to measure the above variables at a behavioral level (e.g., van der Kaap-Deeder et al., 2016). In addition, the specific characteristics of the sample (e.g., the majority is female students from psychology and educational departments) limit the generalizability of the findings. Preliminary analyses of variance showed no significant gender differences in the standards and discrepancy measures of perfectionism ( $F(1,428) = .01, p < .05$  for the discrepancy and  $F(1,431) = .23, p < .05$  for the high standards). Moreover, using gender as covariate in LCA, no effect was found on cluster-memberships, a fact that denotes that there are no gender differences. Since the participants were predominantly women, the conclusion is drawn with caution, that is, there is still a limitation in generalizing the above results to male students.

#### 4.1 Conclusion

Given the limitations that are mentioned above, the present study sheds light on the role of different aspects of perfectionism in university students' motivational and coping profile. The results show that there are two clear perfectionist profiles (adaptive and maladaptive) which differ in the level of discrepancy between personal standards and accomplishments and support, in turn, adaptive and maladaptive motivational and coping profiles, respectively. Future studies should examine the impact of socially imposed standards of excellence on the formation of personal standards in order to uncover the source of the above discrepancy. Further, the results stress the need to examine a large, although "neglected" group of students, the non-perfectionists. While they stand in the middle, they seem to have a rather maladaptive motivational and coping profile. Future intervention studies in academic settings should focus on teaching the maladaptive perfectionists and the non-perfectionists adaptive ways of coping with failure and on boosting their motivation to enhance competence through personal strivings to reach challenging yet attainable goals in their academic life.

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