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PROCRASTINATION, PERFECTIONISM, AND LOCUS-OF-CONTROL IN ACADEMIC SETTINGS

The present study examines the relationships between procrastination, perfectionism, and locus-of-control (LOC) in an academic setting. Empirical data are drawn from self-report questionnaires completed by 95 randomly sampled students in institutions of higher education in Israel. We differentiate between subjects displaying adaptive and non-adaptive perfectionism and those who are not perfectionists. Similarly, we differentiate between internal and external LOC. The impact of each variable on procrastination is assessed independently, as is the combined effect of perfectionism and LOC. Findings partially uphold the study hypotheses. A significant positive correlation is found between adaptive perfectionism and internal LOC. The degree of procrastination exhibited by non-adaptive perfectionists is higher than that of non-perfectionists. Subjects displaying adaptive perfectionism and internal LOC have lower degrees of academic procrastination than those with non-adaptive perfectionism and external LOC. Findings are discussed in the context of the complexity of the variables and research limitations.

Keywords: procrastination, perfectionism, locus-of-control, academia

Introduction

Procrastination

The tendency to procrastinate is well-known in many countries and cultures and across various professions (Ferrari, 1992; Steel, 2007; Yerdelen, McCaffrey, & Klassen, 2016). Procrastination may be described as lack of self-regulation in working towards goals, leading individuals to “voluntarily delay an intended course of action despite expecting to be worse off for the delay” (Steel, 2007, p. 66). Procrastination may be determined by an individual’s perception that he/she is unnecessarily delaying tasks, or by objective measures of compliance with commitments (Deniz, Tras, & Aydogan, 2009). Subjective perception of a situation and its psychological significance may also contribute to the tendency to procrastinate.

In recent years, there has been growing interest in identifying factors linked to procrastination. Some researchers emphasize aspects of cognitive and executive functions such as poor time management, lack of self-control, behavior that is not goal-oriented, and patterns of avoidance (Ellis & Knaus, 1977). Others stress personality traits such as

low self-confidence, low self-esteem, high levels of self-doubt, fear of failure, locus-of-control (LOC), and perfectionism (Ferrari, 1992; Solomon & Rothblum, 1984).

The current article considers two variables linked with procrastination: perfectionism and LOC. We explore how adaptive vs. non-adaptive perfectionism and internal vs. external LOC relate to the tendency to procrastinate in an academic setting. We also consider the combined influence of perfectionism and LOC on academic procrastination.

Academic procrastination

Academic procrastination pertains to delay in or suspended completion of academic tasks in school and academia (Jayakumar, Sudhir, & Mariamma, 2016; O'Brien, 2002; Pychyl et al., 2000; Sirin, 2011; Steel, 2007). Students face deadlines, stressful time frames, and seemingly endless tasks, which may result in significant anxiety. However, a critical part of this anxiety stems not from the number or difficulty of tasks, but rather the need to emotionally regulate and plan correctly in order to complete projects on time.

Procrastination is widespread in academic settings around the world. It is estimated that up to 70% of university students display procrastinating behaviors, compared with only 20% of the general population (Ellis & Knaus, 1977). While many studies are conducted in English-speaking universities (Bishop, Gallagher, & Cohen, 2000; Onwuegbuzie & Collins, 2001; Schourwenburg et al., 2004), a recent study conducted in a university in Pakistan also finds that 87% of students procrastinate in preparing assignments and a majority of professors procrastinate in preparing presentations (Hussain & Sultan, 2010). Ozer, Demir, and Ferrari (2009) demonstrate that 52% of their total sample of Turkish students procrastinate, whereas 48% do not. Students procrastinate more when studying for exams (33%), reading assignments (30%), and writing term papers (30%) than in the other three academic areas: academic administrative tasks (10%), attendance tasks (8%), and school activities in general (5%).

Interestingly, the tendency to delay completion of assignments becomes more common the longer an individual stays in an academic environment (Ferrari, 2004; Solomon & Rothblum, 1984). Procrastination may be an avoidance technique students use to cope with high levels of anxiety.

Personality traits associated with academic procrastination

Research among various populations of students finds that procrastination is associated with certain personality traits and emotional states such as depression (Solomon & Rothblum, 1984), generalized and social anxiety (Häfner, Oberst, & Stock, 2014; Onwuegbuzie, 2004; Rothblum, Solomon, & Murakami, 1986), guilt (Pychyl et al., 2000), low grades (Wesley, 1994), irrational thinking (Bridges & Roig, 1997), and low self-esteem (Ferrari, 2000). However, some recent studies indicate that alongside its negative connotations, procrastination may have short-term benefits (Knaus, 2000). Beginning a task long before or closer to the deadline does not necessarily impact the quality of task performance (Tice & Baumeister, 1997). Delays resulting from planning and collection of information may yield a better end product. Some students report that when they approach a task at the last moment, they work more efficiently, generate more creative ideas, and still meet their deadline (Knaus, 2000).

Yerdelen, McCaffrey, and Klassen (2016) find that while procrastination increases during the academic semester, anxiety decreases. That is, the close relationship between procrastination and anxiety noted at the beginning of a semester does not predict the same relationship later in the semester. Furthermore, procrastination and anxiety linked to low levels of self-regulation of self-efficacy at the beginning of the semester do not predict later levels of self-regulation of self-efficacy. Moreover, the tendency to procrastinate is not a fixed trait; according to Steel (2007), current procrastination is not a good predictor of future procrastination.

The current article focuses on two personality traits linked to procrastination: perfectionism and LOC.

Perfectionism

Individuals with a high need for achievement tend to avoid procrastinating because it is inefficient and may jeopardize realization of their goals (Milgram, 1988; Milgram, Sroloff, & Rosenbaum, 1988). However, *perfectionism* may lead to procrastination (Flett & Hewitt, 2002). Perfectionism is a broad term referring to cognitive and behavioral patterns reflecting an individual's need to be – or appear to be – perfect (Burns & Fedewa, 2005; Frost et al., 1990; Rhéaume et al., 2000). Beck (1979) describes perfectionism as a uni-dimensional structure, a pathological pattern characterized by dichotomous thinking which results in damage to functioning. Perfectionists set high standards which are difficult or even impossible to achieve (Weissman, 1980; Burns, 1980; Rice et al., 2003). They tend towards excessive self-criticism and fear making mistakes or failing (Stoeber, Hutchfield, & Wood, 2008). Perfectionists often display high levels of anxiety stemming from a perceived gap between “the real self” (what I am) and the “ideal self” (what I would like to be) (Saboonchi & Lundh, 1997). As a typical reaction to anxiety is avoidance, perfectionists may procrastinate to prevent anxiety and potential failure (Rothblum, Solomon, & Murakami, 1986). According to Shafran and Mansell (2001), perfectionists act obsessively towards realization of impossible goals, and their self-image is based on and driven by achievement.

However, it is necessary to distinguish between people who set high standards but display no pathological pattern, and those displaying patterns of perfectionism that have negative consequences (Frost et al., 1990). Hamachek (1978) describes perfectionism as a two-dimensional structure, differentiating between “adaptive” and “non-adaptive” perfectionism. Parker (1997) differentiates between three types of students: non-perfectionists, healthy perfectionists, and dysfunctional perfectionists. Hewitt and Flett (1991) offer a three-dimensional model of perfectionism according to objects of reference: (1) self-oriented perfectionism – setting unrealistic standards, intense self-examination, and fear of making mistakes or failure in various domains; (2) other-oriented perfectionism – an interpersonal perspective in which an individual judges significant others in a severe manner; and (3) socially prescribed perfectionism – the need to comply with high expectations an individual perceives that other people set, based on an irrational belief that others have unrealistic expectations, and that one must comply with them for approval and acceptance.

The current study considers non-perfectionists, adaptive perfectionists, and non-adaptive perfectionists, who differ in their ways of thinking about and coping with challenges (Rhéaume et al., 2000).

Adaptive and non-adaptive perfectionism

Adaptive perfectionism is a desire for accomplishment and ambitiousness leading to goal-directed behavior. An adaptive perfectionist feels satisfied when faced with challenges and has a flexible approach. Adaptive perfectionists tend to engage actively to solve problems.

Non-adaptive perfectionists tend to respond to tension and stress in a neurotic way, thinking obsessively about problems but not taking concrete actions to solve them (Burns & Fedewa, 2005). They feel continually tested, criticized, and judged, and need to prove themselves (Blatt, 1995). Non-adaptive perfectionism leads to dysfunction in performance and high levels of anxiety resulting from fear of failure. Non-adaptive perfectionists perceive themselves as not meeting expectations even when they succeed, and seldom feel satisfaction from their efforts.

Moreover, a study on self-esteem among perfectionists finds a positive relationship between adaptive perfectionism and positive self-esteem, and a negative correlation between non-adaptive perfectionism and positive self-esteem (Ashby & Rice, 2002). Another study finds a positive correlation between adaptive perfectionism and pride, and a positive correlation between non-adaptive perfectionism and shame (Fedewa, Burns, & Gomez, 2005). Other studies focus on the relative ability of adaptive and non-adaptive perfectionists to estimate the degree of control they have over the consequences of their actions. Halgin and Leahy (1989) find that non-adaptive perfectionists lack understanding of their ability to control the realities of life.

Locus-of-Control (LOC)

Another variable associated with procrastination is locus-of-control (LOC) (Carden, Bryant, & Moss, 2004; Ferrari, Parker, & Ware, 1992). LOC refers to the degree to which people think they can control the external environment and their perception of causality between actions and consequences. Generalized learning based on past experience, expectations, and reinforcements affect individuals' perception of whether outcomes result from their behavior. Rotter's (1954) classic definition of LOC, based on Social Learning Theory, differentiates between internal and external LOC. Individuals with an external LOC take a fatalistic view. Those with an internal LOC believe people have more control over the consequences of their actions.

Internal and external LOC is related to a wide range of personality traits (self-esteem and intelligence) and demographic variables (age, sex, and socioeconomic status). It is influenced by the environment, and thus can change and evolve (MacDonald, 1971). Levenson (1974) claims therapists can encourage patients to adopt a more internal LOC, improving their experiences of life events.

LOC in the academic environment

Internal LOC has been linked to academic achievement (Gifford, Briceno-Perriott, & Mianzo, 2006). Students with an internal LOC expend greater effort to reach their goals than students with an external LOC (Anderson & Hamilton, 2005). People with an internal LOC tend to approach tasks earlier, manage their time more efficiently, and finish them sooner than people with an external LOC (Janssen & Carton, 1999). Students with an internal LOC are prouder of their achievements but feel a greater sense of shame when they fail (Arslan & Akin,

2014). However, a study by Ferrari, Parker, and Ware (1992) finds no correlation between LOC and academic achievement.

Research hypotheses

The present study examines the impact of perfectionism and LOC on the tendency to procrastinate among students. The dependent variable in the study is academic procrastination. The first independent variable, perfectionism, is divided into two types: adaptive and non-adaptive. The purpose of the division between adaptive and non-adaptive perfectionism is to verify the theoretical basis for differentiating between them. We also consider non-perfectionism as a trait.

The second independent variable, LOC, is also divided into two types: internal and external. Within the 'external LOC' type, we further differentiate between those who attribute control to fate and those who contribute it to others. The purpose of the division is to verify the theoretical basis for the distinction.

The influence of each independent variable on procrastination is tested, as is their combined influence on it. We hypothesize the following:

Hypothesis 1: A significant negative correlation will be found between academic procrastination and adaptive perfectionism, so that the higher the adaptive perfectionism, the lower the degree of procrastination.

Hypothesis 2: A significant positive correlation will be found between academic procrastination and external LOC, so that the higher the external LOC, the higher the degree of procrastination.

Hypothesis 3: A significant positive correlation will be found between adaptive perfectionism and internal LOC, so that the higher the adaptive perfectionism, the higher the degree of internal LOC.

Hypothesis 4: Participants displaying non-adaptive perfectionism will show a higher degree of procrastination than non-perfectionists.

Hypothesis 5: There will be a combined effect of the types of perfectionism (adaptive/non-adaptive) and LOC (internal/external) on the degree of procrastination. Subjects displaying adaptive perfectionism and internal LOC are expected to show the smallest degree of academic procrastination; those displaying non-adaptive perfectionism and external LOC are expected to show the greatest degree of procrastination.

Methods

Research process

Following a brief explanation regarding the general purpose of the study, students completed four questionnaires (described below). Anonymity was guaranteed, participation was voluntary, and students received no compensation for participation.

Research population

Data were collected from a preliminary convenience sample of 95 undergraduate students in higher education institutions in Israel (mostly Tel Chai Academic College). Participants with missing data are omitted. Further, 11 subjects

who show a high score on both the internal and external LOC scales are excluded from the study. A final population of 70 students is considered in the final testing of the hypotheses. The average age of the participants is 26.04 years, with a standard deviation of 2.815 (range 21–33). There are 18 men (25.7%) and 52 women (74.3%). All identify as Jewish. Sixty describe themselves as secular (85.7%), eight as traditional (11.4%), and two as religious (2.9%). The majority have an average socioeconomic status ($N = 44$, 62.9%), and the rest are equally divided between above average and below average socioeconomic status.

Research tools

The study is quantitative, based on statistical analysis of self-report questionnaires. Four tools are used: (1) an academic procrastination questionnaire; (2) a perfectionism questionnaire, (3) a LOC questionnaire; and (4) a demographic questionnaire.

Academic procrastination questionnaire

This includes sections of Milgram, Sroloff, and Rosenbaum's (1988) procrastination questionnaire which pertain to academic procrastination. The current study uses 27 items concerning test preparation, class preparation, and writing papers. The Hebrew version is taken from Tenne (1997). Each participant indicates the frequency of displaying various actions or the accuracy of statements pertaining to guilt. Scores are ranked on a five-point Likert scale from 1 (low procrastination/low guilt) to 5 (high procrastination/high guilt).

Perfectionism questionnaire

The Frost Multidimensional Perfectionism Scale (FMPS) (Frost et al., 1990) is a 35-item measure of perfectionism. Responses are rated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Each participant indicates the frequency of displaying various actions or how accurately statements on perfectionism pertain to him/her. The FMPS includes five sub-scales: Concern over Mistakes (CM), Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC), Doubts about Actions (D), and Organization (O). Sample items include: "I hate being less than the best at things" and "People will probably think less of me if I make a mistake." The FMPS has adequate reliability and validity since all the sub-scales, with the exception of Organization, correlate with other perfectionism measures (Frost et al., 1990).

This perfectionism scale measures adaptive and non-adaptive perfectionism. Adaptive perfectionism is correlated with PS and O, while non-adaptive perfectionism is correlated with PC, PE, CM, and D (Rice, Ashby, & Slaney, 1998). This questionnaire has a high internal reliability for both the adaptive perfectionism scale ($\alpha = 0.88$) and the non-adaptive perfectionism scale ($\alpha = 0.91$) (Zeigler-Hill & Terry, 2007).

A dichotomous two-dimensional division is made based on the original research tools (Hamachek, 1978) based on the scores on each scale (adaptive/non-adaptive). A low score on both scales indicates the subject is a perfectionist in general. This calculation is conducted in response to a perceived limitation of a widely used research method in which linear trends between personality patterns of perfectionists are examined, without considering the absolute differences between perfectionists and non-perfectionists.

Locus-of-Control questionnaire

This questionnaire is based on Levenson's (1973) 24-item scale. Levenson's scale further distinguishes between multiple dimensions within the external LOC continuum, investigating whether externality is attributed to chance or to powerful others (political leaders, parents, God). The final scale distinguishes between three factors: Internality and Externality (I); Powerful Others (P), and Chance (C). Sample items include: "Whether or not I get to be a leader depends mostly on my ability" and "I feel like what happens in my life is mostly determined by powerful people." The Hebrew version of the LOC scale is taken from Markowitzki (2011), with six additional items equally divided between the three factors (I, P, and C).

Participants rank items on a Likert scale from 1 ("not true at all") to 5 ("very true") indicating the extent to which each statement is true about them or characterizes their perception and behavior. High internal reliability is found for the Internality (I) scale ($\alpha = 0.72$); the Powerful Others (P) scale ($\alpha = 0.74$), and the Chance (C) scale ($\alpha = 0.80$), based on the present 30-item version. Three values are calculated for each participant, based on the average in each of the three factors, I, P, and C.

The LOC questionnaire is based on two axes: a range of statements describing internal LOC and an axis of statements describing external LOC. The selection of the control focus that describes the subject is based on the axis presenting a higher weighted average.

Demographic questionnaire

In a basic demographic questionnaire, participants provide personal information relevant to the current study, such as: gender, age, religiosity, name of academic institution, department of studies, year of study, and grade average.

Data analysis

Collected data are processed using SPSS for the purpose of statistical analysis. The first analysis considers the full data set ($N = 95$). However, the hypotheses are tested only on the basis of subjects who fully completed the questionnaires, and who are classified as adaptive/non-adaptive perfectionists with an internal or external LOC ($N = 70$). Data analysis methods include Pearson Correlations, T-test, and one-way ANOVA.

Results*Relationships between research variables*

The first three hypotheses predict correlations between the variables: academic procrastination, perfectionism, and LOC. Table 1 shows the correlations between these variables, including the types considered for each variable.

The first hypothesis is disproved by the Pearson test (Table 1), which shows no significant negative correlation between adaptive perfectionism and the degree of academic procrastination ($R_p = -0.26, p > 0.05$). The second hypothesis is also refuted, as the Pearson test shows no significant positive correlation between external LOC and the degree of academic procrastination ($R_p = 0.09, p > 0.05$). The third hypothesis is confirmed, as the Pearson test finds a significant positive correlation between adaptive perfectionism and internal LOC ($R_p = 0.44, p < 0.01$).

Table 1. Pearson Correlation Matrix between Research Variables, Averages, and Standard Deviations of Entire Sample ($N = 95$)

Variable	<i>M</i>	<i>S</i>	1	2	3	4	5	6	7	8
1. Academic procrastination	2.63	0.38	–	–	–	–	–	–	–	–
2. Adaptive perfectionism	2.61	0.39	0.44**	–	–	–	–	–	–	–
3. Non-adaptive perfectionism	2.71	0.37	0.20	0.28	–	–	–	–	–	–
4. Non-perfectionism	2.35	0.30	0.5788	0.68**	0.50**	–	–	–	–	–
5. Internal LOC	2.60	0.39	–0.10	0.44**	0.20	0.5788	–	–	–	–
6. External LOC	2.74	0.33	0.09	0.26	0.28	0.68**	0.54**	–	–	–
7. External LOC – fate	2.85	0.47	0.02	0.30	0.14	0.50**	0.42**	0.80**	–	–
8. External LOC – others	2.63	0.56	0.13	0.14	0.34	0.63**	0.48**	0.86**	0.40**	–

$p < 0.01^{**}$

Procrastination among non-adaptive perfectionists and non-perfectionists

To test the fourth hypothesis, that non-adaptive perfectionists would display a higher degree of procrastination than non-perfectionists, a T-test is conducted for independent samples (Table 2).

This yields a significant result: $T(39) = 1.978; p < 0.05$. The subjects who are non-adaptive perfectionists ($M = 2.74, SD = 0.35$) display a higher average degree of procrastination than is found among the non-perfectionists ($M = 2.56, SD = 0.39$). Thus the fourth hypothesis is confirmed.

Table 2. Average and Distribution Indices of Non-Adaptive Perfectionism and Non-Perfectionism ($N = 41$)

Variable	<i>M</i>	<i>N</i>	<i>S</i>	<i>SE</i>
Non-adaptive perfectionism	2.74	16.00	0.35	0.06
Non-perfectionism	2.56	25.00	0.40	0.06

Combined effect of LOC and the type of perfectionism on procrastination

A one-way ANOVA analysis is conducted to test the fifth hypothesis predicting a combined effect of the type of perfectionism and LOC on the degree of academic procrastination, i.e., subjects exhibiting adaptive perfectionism and an internal LOC will display lower degrees of academic procrastination than non-adaptive perfectionists with an external LOC. Results are presented in Table 3.

Subjects' perfectionism type (adaptive/non-adaptive) does not have a significant effect on procrastination ($F(1.66) = 0.65, p > 0.05; \eta^2 = 0.01$). The average degree of academic procrastination in subjects characterized by adaptive perfectionism ($M = 2.6$) is lower than that in subjects characterized by non-adaptive perfectionism ($M = 2.7$), but the difference is not significant.

Table 3. Two-way ANOVA, Combined Effect of the Type of Perfectionism and LOC on Academic Procrastination (Averages, Standard Deviations, F-values, and Effect Size)

	LOC				Perfectionism				LOC Effect		Perfectionism Effect		LOC Perfectionism	
	Internal N = 54		External N = 16		Adaptive N = 54		Non-adaptive N = 16		F (1.66)	Eta ²	F (1.66)	Eta ²	F (1.66)	Eta ²
	M	SD	M	SD	M	SD	M	SD						
Degree of procrastination (Total)	2.6	0.4	2.7	0.4	2.6	0.4	2.7	0.4	1.34	0.02	0.65	0.01	0.08	0.001
Adaptive perfectionism	2.6	0.4	2.7	0.3										
Non-adaptive perfectionism	2.7	0.4	2.8	0.4										

There is no significant effect of the subjects' LOC type (internal/external) on the degree of procrastination ($F(1.66) = 1.34, p > 0.05; \eta^2 = 0.02$). The mean degree of procrastination among subjects with an internal LOC ($M = 2.6$) is lower than among those with an external LOC ($M = 2.7$), but the difference is not significant.

Finally, the interaction between subjects' perfectionism type, LOC type, and their degree of academic procrastination only approached the required level of significance ($P = 0.05, 0.08, p > 0.05; \eta^2 = 0.001, 0.07$). Subjects displaying adaptive perfectionism and an internal LOC have lower degrees of academic procrastination ($M = 2.7; SD = 0.3$) than those with non-adaptive perfectionism and an external LOC ($M = 2.8; SD = 0.4$). The hypothesis that there will be a significant positive correlation between these independent variables is supported, as the correlation approaches the required level of significance.

Figure 1 graphically presents the degree of procrastination in four groups of subjects (from high to low): (1) non-adaptive perfectionism and an external LOC ($M = 2.83$); (2) adaptive perfectionism and an external LOC ($M = 2.70$); (3) non-adaptive perfectionism and an internal LOC ($M = 2.65$); and (4) adaptive perfectionism and an internal LOC ($M = 2.59$).

In contrast to previous research findings that people with an internal LOC tend to begin and finish tasks faster than those with an external LOC (Janssen & Carton, 1999), the current study finds no positive correlation between academic procrastination and external LOC among this study population.

One reason for the lack of significant correlation between these variables may be that the LOC Questionnaire does not adequately distinguish between internal and external LOC, and this affected the data analysis. Since internal LOC is positively correlated with external LOC, the subjects in the current study may have high scores on both internal and external LOC. Examination of the statements describing the content of the questionnaire raises difficulties in clear separation between the two axes of the LOC variable, which impedes the ability to unequivocally determine the LOC style. For example, the item in the questionnaire: "If I am or am not involved as a driver in a car accident depends mainly on whether I am a good

driver” could be rated as “very true” by a person with an internal or external LOC. It may be that empirically and theoretically, the attempt to characterize a uniform personality pattern that is higher on one scale than another (internal and external LOC) is flawed because there are many events that even those expressing the highest degree of internal LOC will see as completely outside their control.

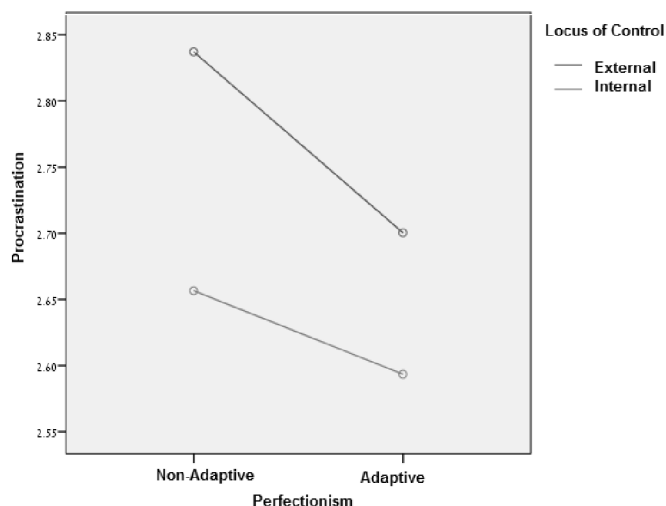


Figure 1

No significant negative correlation is found between adaptive perfectionism and academic procrastination. As discussed in the literature review, there are previous studies linking the tendency to procrastinate with positive results. Therefore it is necessary to consider adaptive perfectionists who set themselves a high bar yet who engage in conscious and even “healthy” procrastination. This type of procrastination may lead to improved performance and high achievements, without negative aspects of the phenomenon such as indecision and low self-esteem. Adaptive perfectionists often display high levels of self-sufficiency and self-esteem (Knaus, 2000), enabling them to postpone tasks without becoming preoccupied with the unproductive thoughts and worries often seen among non-adaptive perfectionists (Burns & Fedewa, 2005). Adaptive perfectionists are also likely to spend more time preparing their academic assignments, so they may be delayed when multitasking, such as during exams.

This may be compared with non-adaptive perfectionists who procrastinate in the “traditional” way, often accompanied by negative repercussions (Chun Chu & Choi, 2005). In this regard, it is necessary to consider other variables that may predict or mediate the relationship between perfectionism and procrastination, such as failure to prioritize tasks, indecision, and anxiety not associated with perfectionism (Rothblum et al., 1986).

There is a significant positive correlation between adaptive perfectionism and internal LOC. As discussed earlier, many common characteristics of adaptive perfectionists are also noted among people with an internal LOC, such as the positive

correlation between adaptive perfectionism and high self-esteem (Ashby & Rice, 2002). Similarly, as mentioned, adaptive perfectionists tend to try to actively solve problems, as do people with a high degree of self-control (Burns & Fedewa, 2005).

In the present study, a typology of four personality patterns is created using perfectionism and LOC scales: (1) adaptive perfectionism and internal LOC; (2) non-adaptive perfectionism and internal LOC; (3) adaptive perfectionism and external LOC; and (4) non-adaptive perfectionism and external LOC. Although non-perfectionists are considered in the study, the typology concentrates on the types of perfectionists. Despite the failed attempt to identify differences between the LOC types due to the limitations of the questionnaire, the relationship between adaptive perfectionism and internal LOC is verified.

The fifth hypothesis develops from various studies correlating adaptive perfectionism and internal LOC, while contrasting the common characteristics of non-adaptive perfectionism and external LOC. Indeed, we find that a combination of the types of perfectionism and LOC influences the degree of procrastination. The average direction of the degree of procrastination matched the ranking order of the personality patterns as predicted in the research hypothesis. The present findings point to the importance of further investigation of the combined effect of perfectionism and LOC on procrastination among students. The study also highlights the need for a clearer separation between the two axes of the LOC variable.

The inclusion of a non-perfectionist personality type is an important addition of the present study, which expands the concept of procrastination as measured with the original tool, which quantitatively assesses the degree of perfectionism according to the sub-scales of adaptive and non-adaptive perfectionism (Frost et al., 1990). We find a marginal but significant difference in the degree of procrastination among subjects identified as non-adaptive perfectionists and those classified as perfectionists in general.

Conclusions

Theoretical and practical implications of the findings

The primary finding of this study is the link between adaptive perfectionism and internal LOC, i.e., the greater the degree of adaptive perfectionism, the higher the level of internal LOC. This finding may shed light on the distinction between the two types of perfectionism and the ability of adaptive and non-adaptive perfectionists to assess their degree of control over the results of their actions. In this sense, the present finding may help change the negative connotations associated with perfectionism and to describe positive aspects of this concept. Thus, procrastination may be interpreted as a positive and adaptive behavior, not necessarily accompanied by negative consequences. For example, some "active procrastinators" postpone tasks until the last moment because they thrive on tension, drama, and excitement (Chun Chu & Choi, 2005). There is a need for an empirical tool which distinguishes between "positive" and "negative" procrastination, measuring and assessing positive and negative psychological effort invested in academic tasks and the level of academic performance achieved despite a student's procrastination.

Hyatt and Prawitt (2001) propose dichotomous distribution of the independent variable LOC. However, numerous other researchers oppose this absolute division between internal and external LOC because this variable is, above all, a state-dependent variable. Often people realize that even if they have significant influence over or involvement in a particular situation, they are not able to control it completely or to avoid the unexpected. Therefore, a prevailing argument is that the LOC variable should be measured on a continuous scale, because conclusions drawn from dichotomies are limited, and it is difficult to generalize or derive conclusions from them (Chubb, Fertman, & Ross, 1997).

The research findings suggest several ways to improve the tool measuring the theoretical variable of LOC. First, it is recommended to examine the variable on a single axis to ascertain the extent to which individuals perceive their ability to control various situations. A person with an internal LOC will have a high score along this axis and a person with an external LOC – a low score. The second recommendation is to formulate vague statements in which it is not entirely clear whether the situations described depend on the individual or the environment (e.g., “If I am or am not involved as a driver in a car accident depends mainly on how well I drive”). Finally, future studies should explore whether procrastination behavior originates in people who attribute certain consequences to external events or circumstances, and if so, what motivates “typical” procrastinators to make efforts to finish their tasks and not simply wait, doing nothing.

The interaction between the independent variables – perfectionism and LOC – only approximates the required level of significance, yet this indicates that our hypothesis regarding the combined influence of these two variables on procrastination should be further explored. We characterize four personality patterns according to their degree of procrastination. It seems that examining the degree of procrastination as a multi-dimensional feature is insufficient, to do the difficulty in controlling for variables leading to its occurrence (Hussain & Sultan, 2010). There is empirical support for the relationship between adaptive perfectionism and internal LOC, and even between a pattern of non-adaptive perfectionism and external LOC (Blatt, 1995). The combination of perfectionism and LOC requires further research in the context of procrastination.

Research limitations

One of the salient limitations of this study is the use of tools that measure the LOC variable using a scale that does not create an unequivocal distinction between external and internal LOC. This necessitates the exclusion of some subjects who scored high on both the internal and external LOC scales. In addition, some statements in the Procrastination Questionnaire are phrased in a way that suggests that the trait has negative connotations, which leaves no room for procrastination of a positive nature. This should be amended. Furthermore, the study sample of randomly selected undergraduate students in Israeli colleges may limit the ability to generalize the findings. It is possible that the initial tendency for perfectionism and excellence in other populations (for example, from diverse academic environments) may be a yardstick for examining other relevant variables for the relationship between the variables.

In any case, the combination of perfectionism and LOC requires further investigation in the context of procrastination among a larger sample.

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PROKRASYNACJA, PERFEKCYJONIZM ORAZ POCZUCIE UMIEJSCOWIENIA KONTROLI W KONTEKŚCIE AKADEMICKIM

Abstrakt

W prezentowanych badaniach rozpatrujemy zależności między prokrastynacją, perfekcjonizmem a poczuciem umiejscowienia kontroli w kontekście akademickim. Dane empiryczne pochodzą z kwestionariuszy wypełnionych samodzielnie przez 95 losowo wybranych studentów izraelskich uczelni. Rozróżniamy badanych wykazujących się perfekcjonizmem przystosowalnym i nieprzystosowalnym oraz badanych niebędących perfekcjonistami. Ponadto rozróżniamy wewnętrzne oraz zewnętrzne umiejscowienie kontroli. Wpływ każdej zmiennej na prokrastynację oceniany jest osobno, podobnie jak połączone oddziaływanie perfekcjonizmu i poczucia umiejscowienia kontroli. Wyniki badań częściowo potwierdzają hipotezy badawcze. Silna korelacja pozytywna występuje między perfekcjonizmem przystosowalnym a wewnętrznym umiejscowieniem kontroli. Stopień prokrastynacji widoczny u perfekcjonistów nieprzystosowalnych jest wyższy niż u badanych niebędących perfekcjonistami. Studenci wykazujący perfekcjonizm przystosowalny oraz wewnętrzne umiejscowienie kontroli charakteryzują się niższym stopniem prokrastynacji akademickiej niż perfekcyjniści nieprzystosowalni z zewnętrznym umiejscowieniem kontroli. Wyniki omawiamy w kontekście złożoności zmiennych oraz ograniczeń badań.

Słowa kluczowe: prokrastynacja, perfekcjonizm, poczucie umiejscowienia kontroli, środowisko akademickie