

CHRONIC PROCRASTINATION AMONG EMERGING ADULTS: FACTOR STRUCTURE OF THE GREEK VERSION OF THE GENERAL PROCRASTINATION SCALE

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Abstract: One of the most widely used measures of chronic procrastination is Lay's *General Procrastination scale* (GP). This present study aimed to explore the factor structure of the Greek GP scale in a sample of 865 university students ($M_{age} = 21.84$ years; $SD = 4.18$). The scale's convergent validity was tested with two personality measures most closely related to chronic procrastination, namely conscientiousness and neuroticism. The effects of gender and age on GP scores were also explored. Confirmatory factor analysis yielded a two-factor structure, namely a) Delay and b) Procrastination domains. Males showed higher score in the "Procrastination domains" factor compared to females. High procrastinators also reported lower conscientiousness and higher neuroticism. Implications for clinical practice and research are discussed.

Keywords: Chronic procrastination, Conscientiousness, General Procrastination scale, Neuroticism

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INTRODUCTION

Chronic procrastination, characterized by self-regulation difficulties in the form of a purposive delay in starting or completing tasks (Ferrari, 2010; Ferrari & Tice, 2000), constitutes an integral part of everyday life. Everyday procrastination may take different forms such as *decisional procrastination* (e.g., putting off decisions) or *avoidant procrastination* (e.g., putting off in order to protect self-esteem or due to fear of failure or success: see Ferrari, Johnson, & McCown, 1995; Harriott & Ferrari, 1996). Some people experience more serious problems, such as when procrastination is the outcome of motivational conflict (state procrastination), or when they display a more general and stable tendency to procrastinate in almost every domain (trait procrastination: Schouwenburg, 2005). Researchers described these two forms of procrastination as neurotic, suggesting more serious difficulties than everyday procrastination (Rückert, 2010). Recently, procrastination was associated with much more serious conditions, such as neurobiological problems, personality disorders (borderline), depression/anxiety disorders, addictive patterns (Ferrari, 2010; Rückert, 2010), as well as with difficulties in interpersonal relationships and health problems (Sirois, 2007; Steel, 2007; Van Eerde, 2003).

Chronic procrastination is prevalent among westernized, individualistic, English-speaking countries (Ferrari, 2010). It is estimated that about 70% of college students procrastinate on academic tasks (Schouwenburg, Lay, Pychyl, & Ferrari, 2004), while 20% of normal, healthy adult men and women are classified as chronic procrastinators, namely individuals who engage in a needless delay of relevant and timely tasks across situations and settings on everyday life events (Ferrari, O'Callahan, & Newbegin, 2004; Harriott & Ferrari, 1996). However, there is a dearth of research among non-English speaking populations, partly because of the lack of reliable tools assessing procrastination in other languages (Díaz-Morales, Ferrari, Díaz, & Argumedo, 2006). In the few cross-cultural studies conducted, researchers in Australia, Peru, Spain, United Kingdom (UK), United States (US) and Venezuela have found that the prevalence of people exhibiting chronic dilatory behaviors was around 15-20 % (Ferrari et al., 2004; Ferrari, Díaz-Morales, O'Callahan, Díaz, & Argumedo, 2007; Harriott & Ferrari 1996). According to Van Eerde's (2003) review, people from Great Britain had elevated chronic procrastination scores in comparison to people from Peru, US, Spain, and Australia, while people from Venezuela tended to procrastinate to a lesser extent. However, chronic procrastination has not been previously explored in the context of the Balkan countries and cultures, such as Greece.

Measuring procrastination

There are two main research traditions in studying procrastination (Johnson & Bloom, 1995). Some researchers study procrastination as a stable personality trait (Ferrari, Wolfe, Wesley, Schoff, & Beck, 1995; Schouwenburg, 1995; Van Eerde, 2000), while others study it as a behavior closely related to the characteristics of a given situation or task (Harris & Sutton, 1983; Rothblum, 1990; Van Eerde, 2000). Elliot (2002) suggested that the tendency to procrastinate is quite stable across time so that it could be considered as a characteristic trait of an individual. In contrast, Moon and Illingworth (2005) found that the dilatory behavior of both high and low procrastinators followed the same curvilinear trend over time; that is, it increases over time and then suddenly drops off at the end of the semester. These researchers concluded that trait-based explanations may not adequately describe the causal mechanisms underlying dilatory behavior.

Researchers who conceptualize procrastination as a stable personality trait investigated its relationships to the big five personality factors described by Costa and McCrae's (1992) Five Factor model. This model is dominant in personality theory and evaluation and incorporates the basic dimensions people use worldwide to describe themselves and others in their everyday life transactions (Goldberg, 1990; John, 1990 and McCrae & John, 1992 cited in Tsaousis & Kerpelis, 2004). The most stable finding stemming from these studies (Johnson & Bloom, 1995; Lee, Kelly, & Edwards, 2006; Schouwenburg & Lay, 1995; Van Eerde, 2003; Watson, 2001) is a very strong negative relationship between procrastination and conscientiousness, and specifically with low self-discipline (Schouwenburg & Lay, 1995). In fact, Schouwenburg and Lay (1995), after assessing the relationship between procrastination and each of the Big Five factors (Costa & McCrae, 1992), concluded that trait procrastination is best interpreted as a manifestation of lack of conscientiousness. The link between procrastination and conscientiousness has been found even in children from 8 to 10 years old (Lay, Kovacs, & Danto, 1998). Another repeated finding is the moderate positive relationship between procrastination and neuroticism, and mainly with two of its subscales, namely vulnerability and impulsivity (Johnson & Bloom, 1995; Schouwenburg & Lay, 1995; Van Eerde, 2003; Watson, 2001). In Steel's (2007) meta-analysis, the correlation between neuroticism and procrastination was significant, $r = .24$. When impulsivity was included, this relationship increased to $r = .33$. Impulsivity, a facet of extraversion, was the only extraversion subscale that correlated with procrastination, $r = .44$. According to a recent study, the effect of neuroticism on procrastination is fully mediated by conscientiousness (Lee, Kelly, & Edwards, 2006). Researchers also correlated procrastination to the three personality factors of Eysenck's model and found

correlations between procrastination and all of the three factors, i.e., neuroticism, extraversion, and psychoticism. Specifically, McCown and Johnson (1991) found that although students high on neuroticism exhibited high levels of exam anxiety and lack of confidence regarding adequate studying, this was not making them to study more. Procrastination was also more prevalent among extroverts, since they placed greater emphasis on social relationships at the detriment of preparing for exams. In addition, students high on psychoticism were more likely to procrastinate because of their dislike for school courses. Finally, students high on psychoticism and on extraversion were extremely confident that they had adequately prepared for the exams and were more likely to be impulsive or lack a plan when studying.

One of the most widely used measures of chronic procrastination is the 20-item *General Procrastination* scale (GP; Lay, 1986), reliably assessing global delay tendencies across a variety of everyday situations. High scores on GP are related to personality variables such as low self-control, rebelliousness, and extraversion (see Ferrari et al., 1995), while they have also been correlated with low self-confidence and self-esteem, depression, neurosis, social anxiety, forgetfulness, disorganization, lack of competitiveness, dysfunctional impulsivity, behavioral rigidity and lack of energy (Ferrari, 2010, 2011). GP scores were also related to external attributes or excuses for delays (Ferrari, 1993) and poor performance when environmental stressors heightened arousal at task deadlines (Ferrari, 2001). According to the theoretical structure proposed by Lay, the scale is unidimensional, and this structure was confirmed in Spanish speaking samples (Bustanza, Cema, García, Díaz-Morales, & Ferrari, 2005; Díaz-Morales et al., 2006). However, a two-factor structure emerged in both Turkish (Ferrari, Özer, & Demir, 2009) and Italian (Mariani & Ferrari, 2012) versions, with emerging adults. More precisely, in the Turkish version, the results of the principal components analysis yielded a two-factor solution, namely *Negative aspects of arousal delays* (11 items), and *positive aspects of arousal delays* (9 items). In the Italian study, a Confirmatory Factor Analysis (CFA) confirmed the presence of a two-factor structure assessing the *tendency to postpone tasks* (6 items) and *getting tasks done on time* consisting of 7 items. Inspection of the content of the items revealed that in both the Italian and the Turkish versions, all or most items loading on the second factor were reversely coded according to the original instructions (e.g., “when planning a party, I make the necessary arrangements well in advance”). In contrast, items loading on the first factor represented a direct statement of procrastination tendencies with statements such as “a letter may sit for days after I write it before I mail it”. The lack of studies on the factorial structure of GP scale among English speaking samples makes it difficult to interpret these contrasting results.

Gender and age effects on procrastination

In terms of gender differences, most studies among English-speaking populations reported that the prevalence of procrastination was similar among men and women (Ferrari, 1991; Haycock, McCarty, & Skay, 1998; Hess, Sherman, & Goodman, 2000; Johnson & Bloom, 1995; Solomon & Rothblum, 1984; Watson, 2001). Still, Van Eerde's (2003) and Steel's (2007) meta-analyses suggested that men were slightly more likely to procrastinate compared to women. In general, there is little research regarding gender differences in procrastination tendencies on everyday tasks (Özer, Demir, & Ferrari, 2009). In addition, chronic procrastination is related to demographic characteristics with non-English-speaking adult samples (Díaz-Morales et al., 2006). In fact, Özer and Ferrari (2011) suggested that the relationship between gender and procrastination may be unique to collectivistic cultures and could be explained by gender roles. Gender roles are defined as social and behavioral norms such as duties, responsibilities, behaviors and personality characteristics that are widely considered to be socially appropriate for a particular gender within a specific culture (Ferdman, 1999). As a result, some tasks are classified as "feminine" and others as "masculine". In a Turkish study, for example, it was found that academic tasks such as completing homework assignments and studying for the exams are seen as feminine tasks, and may therefore be avoided by the boys (Özer, 2005). In another Turkish study it was found that gender roles had a significant main effect on the excuses students gave for procrastinating (Özer & Ferrari, 2011).

Regarding the relationship between chronic procrastination and age, most studies suggest that there is a significant negative correlation between procrastination and age (Díaz-Morales, Cohen, & Ferrari, 2008; Ferrari, Doroszko, & Joseph, 2005; Gupta, Hershey, & Gaur, 2012; Hammer & Ferrari, 2002; Steel, 2007; Van Eerde, 2003). For example, Bustinza et al., (2005) found that younger adults seem to procrastinate slightly more in comparison to older adults possibly motivated by the need to experience higher levels of activation by setting a time limit. However, other researchers have suggested that age does not influence cognitive and behavioral procrastination tendencies (see Ferrari et al., 2009). In general, the literature on age differences is inconclusive, partly due to the fact that procrastination studies are typically conducted among university undergraduate students, while few studies included adult samples (Díaz-Morales et al., 2006). Moreover, to our knowledge there are no studies investigating the reasons for possible age differences.

The present study

The present study aimed to explore the factorial structure and the psychometric properties of the Greek version of the GP scale using structural equation modeling in a sample of young, emerging adults, as in previous studies. More precisely, we performed a large scale CFA to assess the fit of the two previously tested factor structures (one factor versus two-factor solution). No hypothesis was formed due to lack of prior evidence with Greek participants. In addition we aimed to assess the scale's convergent validity by exploring its relationships with two personality measures most closely related with chronic procrastination, namely conscientiousness and neuroticism. Finally, the influences of demographic aspects (e.g., gender and age) on GP scores were explored.

Based on previous literature, we hypothesized that men's score on chronic procrastination would be higher than women's scores on the respective scale (Hypothesis 1). In so far as age is concerned, we expected that younger participants would report higher levels of procrastination in comparison to older participants (Hypothesis 2). Chronic procrastinators were also expected to report lower levels of conscientiousness and higher levels of neuroticism (Hypothesis 3). Ascertaining whether the GP scale is uni- or multi-dimensional has implications for measurement and could potentially facilitate future cross-cultural research in the field. In addition, this is the first study to explore chronic procrastination among young Greek adults enriching current procrastination literature by including participants from a different cultural context.

METHOD

Participants

A sample of 865 Greek undergraduate university students (605 women, 229 men) participated in the present study. The mean age of participants was 21.84 years old ($SD = 4.18$). As far as year of studies, 25.8% were first year students, 33.1% were second years, 12.9% third year students, 17.6% at their fourth year, 48 (5.5%) at their fifth year, while 26 students (2.94%) were at their sixth year of studies or above. Participants were studying at different institutions located(a) in Athens:118 (13.6%) students from the National Technical University of Athens;106 (12.3%) from the University of Athens; 34 (3.9%) from the Athens University of Economics and Business, and 18 (2.1%) from the Technological Educational Institution of Athens;

(b) in other Greek cities: 193 students (22.3%) from the University of Crete, 145 (16.8%) from the University of Patras, 144 (16.6%) from the Aristotle University of Thessaloniki, 48 (5.5%) from the Technical School of Larissa, and 59 students (6.9%) from other institutions. Participation was voluntary. Participants were recruited during class lectures.

Materials

The measures analyzed in the present study were included into a wider survey on procrastination, personality, and volition. For the purpose of the present study we only focused on demographic information, chronic procrastination, and personality measures.

General Procrastination scale

After completing a short demographic sheet (asking age and sex), participants rated the Greek version of Lay's (1986: see Ferrari et al., 1995 for details) 20-item *General Procrastination scale*. The original GP scale has a long history of research on its psychometric properties (see Ferrari, 2010, for details). The original scale's Cronbach's alpha was .82 (Lay, 1986) and it has demonstrated a retest reliability of .80 (Ferrari, 1989). In the present study, the GP scale was adapted in Greek, using back translation. Responses were given on a 5-point Likert scale (1 = *not at all true*; 5 = *totally true*). GP assesses general procrastination, containing items such as "*I often miss concerts, sporting events, or the like, because I don't get around to buying tickets on time*" and 10 reverse-scored items such as "*When it is time to get up in the morning, I most often get right out of bed*".

Personality measures

Participants completed the Conscientiousness and Neuroticism subscales of the 180 item *Trait Personality Questionnaire (TPQue)*: Tsaousis, 1999), a Greek questionnaire containing 180 items assessing the Big-Five personality dimensions (Neuroticism, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience) in addition to 26 statements evaluating social desirability. Responses were on 5-point scales (1 = *totally disagree*; 5 = *totally agree*). Each of the five factors comprises six facets, containing six items each. TPQue is adjusted to the Greek cultural context and has proven a reliable and valid measure of the Big Five in the Greek language (see Tsaousis, 1999). In the present study, both neuroticism and conscientiousness

showed high internal consistency (see Table 3). In addition, the reliability of the subscales of the two personality dimensions ranged from Cronbach's $\alpha = .72$ to $.80$ in the case of neuroticism, except impulsivity that had very low reliability. In the case of the subscales of conscientiousness, internal consistencies ranged from $\alpha = .63$ to $.74$, with the exception of dutifulness that demonstrated quite low reliability.

Procedure

Participants were informed that they were going to participate in a study assessing procrastination. Administration was held during the first 20 minutes of a lecture, after the informed consent from the Head of the Department, teacher and students. To protect confidentiality, questionnaires were administered to all students in a classroom, regardless of their intention to participate. Students then were asked to place the questionnaires in sealed envelopes and return them to the research assistants.

RESULTS

To investigate the factor structure of the *Greek-GP* scale, we performed a confirmatory factor analysis (CFA). Prior to CFA, the 20 separate items of the scale were subjected to principal component analysis with varimax rotation using the SPSS 22. Preliminary analyses revealed that data were suitable for factor analysis, Kaiser-Meyer-Olkin = $.91 > .60$ and statistically significant Barlett's Test of Sphericity ($p < .001$). Principal component analysis revealed the presence of four components with eigen values exceeding 1. According to a) Kaiser's criterion (eigen values larger than unity), b) the scree test, and c) the interpretability of resulting factor structures (Floyd & Widaman, 1995) we decided to retain two factors. The rotated solution indicated the presence of a simple structure (Thurstone, 1947), with both components showing a number of strong loadings, and all items' principal loading being substantially on only one component (see Table 1). The two factors explained 35.11% of the total variance. The first factor consisted of 9 items (i.e., 7, 9, 19, 1, 20, 12, 18, 15, and 4) and explained 20.70% of the total variance; it focused on "Delay" and contained items such as "I generally delay before starting work I have to do". The second factor consisted of 11 items (i.e., 14, 17, 16, 3, 2, 13, 11, 5, 8, and 10) and explained 14.41% of the variance. This factor focused on "Procrastination Domains" and comprised items such as "I always seem to end shopping for birthday gifts at the last minute". The two subscales had satisfactory internal consistency, Cronbach's $\alpha = .84$ and $.70$ for Delay and Procrastination Domains, respectively.

Table 1. The factorial structure of the Greek GP scale

Item	Factor 1: Delay	Factor 2: Procrastination Domains
7 Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days.	.75	
9 I generally delay before starting on work I have to do	.75	
19 I am continually saying, "I'll do it tomorrow."	.73	
1 I often find myself performing tasks that I had intended to do days before.	.65	
20 I usually take care of all the tasks I have to do before I settle down and relax for the evening.	-.65	
12 In preparing for some deadlines, I often waste time by doing other things	.61	
18 I usually accomplish all the things I plan to do in a day	-.60	
15 I often have a task finished sooner than necessary.	-.51	.34
4 When it is time to get up in the morning, I most often get right out of bed.	-.44	
6 I generally return phone calls promptly		.59
14 I usually return a "R.S.V.P." request very shortly after receiving it.		.57
17 I usually buy even an essential item at the last minute	.38	-.55
16 I always seem to end shopping for birthday gifts at the last minute		-.53
3 When planning a party, I make the necessary arrangements well in advance		.50
2 I often miss concerts, sporting events, or the like, because I don't get around to buying tickets on time.		-.45
13 If a bill for a small amount comes, I pay it right away.		.43
11 When preparing to go out, I am seldom caught having to do something at the last minute		.42
5 A letter may sit for days after I write it before I mail it.		-.41
8 I usually make decisions as soon as possible.		.33
10 When traveling, I usually have to rush in preparing to arrive at the airport or station at the appropriate time		-.32

Note. Principal components analysis with varimax rotation.

The adequacy of the proposed two-factor model was further evaluated using CFA on the 20 separate items. Prior to testing the model, missing data were imputed using expectation-maximization algorithm (see Muthén & Muthén, 1998). As indicators of the first latent factor, namely Delay, we used the 9 items that were loading on this

factors based on the PCA. Following the same procedure, indicators of the Procrastination Domains factor were the 11 remaining items. The testing of the fit of the proposed model was performed using maximum likelihood estimation. The following model fit indices were used: the Comparative Fit Index (CFI: Bentler, 1990), the Standardized Root Mean squared Residual (SRMR: Bentler, 1995), and the Root Mean Square Error of Approximation (RMSEA: Browne & Cudeck, 1993). Following the recommendation by Hu and Bentler (1999), in addition to the relative chi-square (χ^2/df) index, which should be less than 3, CFI greater than .95, SRMR smaller than .08, and RMSEA smaller than .06 are indicative of a good fit (Hu & Bentler, 1998).

Inspection of the results of CFA revealed that although the model had a good fit based on two fit indices, RMSEA = .05 (< .06) and SRMR = 0.04 (< .08), it demonstrated a poor fit based on the remaining indices: $\chi^2/df = 3.51$ (> 3, $df = 169$), CFI = .90 (< .95). Moreover, although all standardized regression weights were statistically significant, some were below .40. A closer look of the modification indices revealed that the error variances of many items were correlated. Data inspection also revealed that many items were highly skewed and kurtotic. For these reasons, we decided to use parcels in place of single items. Each factor was represented by four parcels that were created using the single-factor (SFA) method (Brooke, Russell, & Price, 1988; Mathieu & Farr, 1991). Specifically, we paired the 4 items that the factor analysis presented with the highest loadings with the 4 items having the lowest loadings. The procedure was repeated until all items were assigned to a parcel. This method distilled the original set of scale items to a reduced number of indicators providing empirically balanced measures of the construct. The results showed that the

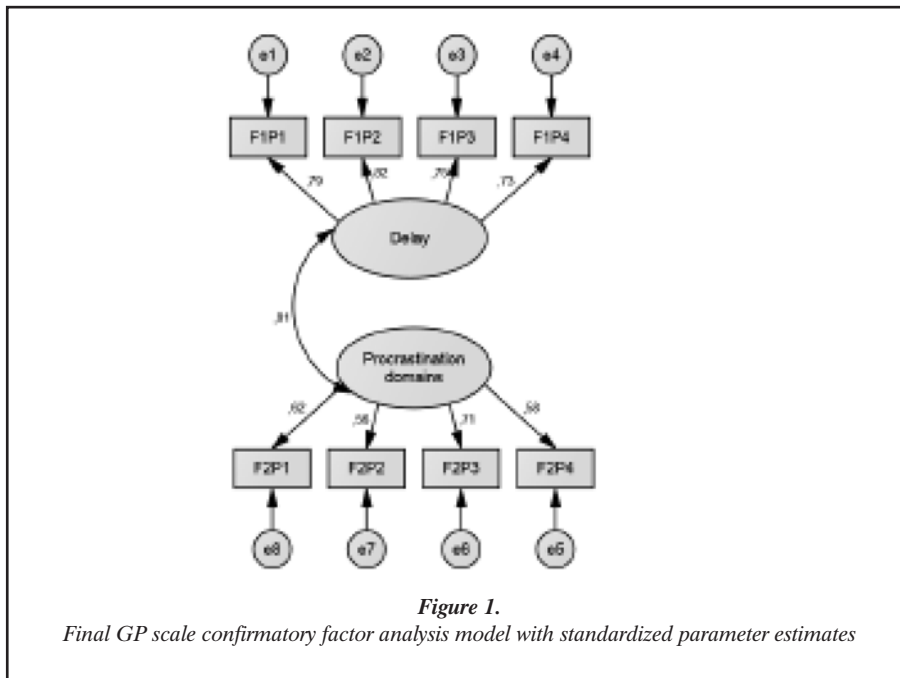
Table 2. Two-factor Confirmatory Factor Analysis: Regression weights

Factor	Estimate	SE	CR	Standardized Regression Weights
Factor 1: Parcel 1	1.00			.79
Factor 1: Parcel 2	.68	.03	24.44***	.82
Factor 1: Parcel 3	.61	.03	22.19***	.75
Factor 1: Parcel 4	.64	.03	21.79***	.74
Factor 2: Parcel 1	1.33	.10	13.21***	.62
Factor 2: Parcel 2	1.03	.08	12.42***	.56
Factor 2: Parcel 3	1.43	.10	14.30***	.71
Factor 2: Parcel 4	1.00			.58

N = 865. Note. SE = Standard error; CR = Critical ratio; ****p* < .001

relative chi-square test and all of the other fit indices indicated that the model fitted well to the data: $\chi^2/df = 2.99 (< 3, df = 19)$; CFI = .98 ($> .95$); RMSEA = .05 ($< .06$); SRMR = 0.02 (< 0.08), while all standardized regression weights were large (ranging from .56 to .82) and statistically significant (see Table 2).

We can thus conclude that the results of this CFA (see Figure 1) demonstrated superior fit than the one in which the latent variables were represented by single items.



This is also supported by *Akaike's Information Criterion* (AIC, Akaike, 1973 cited by Burnham & Anderson, 2001). According to Brown (2006), the model with the lowest AIC value represents a better fit. In fact, the value of the second model (90.87) is significantly lower than the one of the first model (675.26). The correlation between the two factors was $r = .81, p < .001$. Finally, the two-factor model was tested against a single-factor model, represented by the same 8 parcels used in the two-factor model (nested models). Results revealed that although the value of SRMR was at an acceptable range ($0.05 < 0.08$), some remaining fit indices indicated that the model did not fit well to the data, $\chi^2/df = 8.23 (> 3)$, $df = 19$, RMSEA = .09 ($> .06$), CFI = .94 ($< .95$). Based on Bandalos and Finney (2010) recommendation, we did not

further compare the two models by computing a χ^2 difference test, since only the two-factor model fitted the data well.

Means, standard deviations and correlations for all scale scores are presented in Table 3. The results showed that age was not related to the Delay dimension, but positively correlated with the Procrastination Domains dimension (although the size of the correlation was negligible). Inspection of the correlations (see Table 3) between chronic procrastination and personality traits reveals that, as hypothesized, those high on Delay scored higher on neuroticism and lower on conscientiousness. Moreover, participants who tended to procrastinate on certain domains also demonstrated elevated levels of neuroticism and lower levels of conscientiousness. The same pattern of results was also found between chronic procrastination subscales and neuroticism and conscientiousness facets (see Table 3).

Results of a 2 (gender) by 2 (Delay & Procrastination Domains) MANOVA revealed that there was a marginally statistically significant difference between males and females on the combined dependent variables, Wilks' Lambda = 4.32, $F(2, 831)$

Table 3. The Greek GP scale: Descriptive statistics, reliabilities, and correlations with age and personality factors

		<i>M</i>	<i>SD</i>	Cronbach's alpha	Delay	Procr. Domains
1	Delay	25.88	6.78		1	.62**
2	Procrastination Domains	27.91	6.37		.62**	1
3	Age	21.84	4.18		.03*	.10**
4	Anxiety	19.06	4.18	.74	.08*	.07*
5	Angry hostility	18.05	4.46	.80	.10**	.05
6	Depression	17.95	4.15	.73	.14**	.12**
7	Self-consciousness	16.88	4.20	.72	.11**	.09**
8	Impulsiveness	18.60	3.11	.40	.26**	.18**
9	Vulnerability	15.72	4.27	.75	.19**	.17**
10	Neuroticism	106.27	17.62	.89	.20**	.15**
11	Competence	21.24	3.33	.63	-.50**	-.42**
12	Order	18.35	4.67	.74	-.52**	-.47**
13	Dutifulness	20.80	3.24	.52	-.46**	-.38**
14	Achievement striving	20.59	3.53	.64	-.46**	-.31**
15	Self-discipline	19.74	3.59	.68	-.42**	-.31**
16	Deliberation	20.12	3.69	.69	-.66**	-.44**
17	Conscientiousness	120.85	16.61	.89	-.67**	-.52**

N = 865. Note. SE = Standard error; CR = Critical ratio; *** p < .001

= 20.84, $p = .057$, partial $\eta^2 = .010$. When the results for the dependent variables were considered separately, the only difference to reach statistical significance using a Bonferroni adjusted alpha level of .025 was the Procrastination Domains, $F(1, 832) = 5.49$, $p = .02$, partial $\eta^2 = .07$. Inspection of the mean scores indicated that men reported slightly higher levels at this factor ($M = 28.77$, $SD = 0.42$) compared to women ($M = 27.61$, $SD = 0.26$).

DISCUSSION

The present study investigated the factor structure of the Greek version of the General Procrastination scale (Lay, 1986) among Greek young adults. Results clarified previously mixed results regarding the dimensionality of the GP scale providing empirical evidence that the scale can be best considered as possessing two factors, namely Delay and Procrastination Domains. Our results do not confirm the unidimensional structure for the GP scale proposed by Lay or the empirical findings of the Spanish adaptation of the scale (Díaz-Morales et al., 2006). Our findings replicated the two-factor solution found in the Turkish (Ferrari et al., 2009) and Italian versions of the GP scale (Mariani & Ferrari, 2012) in the number of dimensions, although the content of the items is different from these previous studies. The lack of studies in English speaking populations on the factorial structure of the scale makes cross-cultural comparisons more problematic. In fact, Lay (1986) suggested that the items of the GP scale that reflect diligence at everyday tasks loaded together, although there was no available information regarding the statistical analysis supporting this claim. Results are further complicated by the fact that even researchers who support evidence for a two-factor solution used total scores when investigating prevalence of chronic procrastination or other relationships, to facilitate comparability of results with previous findings dominated by the use of total scores. Moreover, even though both studies among Spanish samples reported a unidimensional structure, when the GP scale was analyzed together with other procrastination scales in one of these studies, a two-factor solution emerged (Díaz-Morales et al., 2006). Specifically, the first component consisted of items related to an active avoidance to start or complete a task, while the items loading on the second factor reflected lack of planning when working on a task. The variability in the number of dimensions underlying the structure of the GP scale among different countries could be attributed to the cultural values and traditions that may determine which behaviors are characterized as procrastination within a culture. The findings also demonstrated that the scale has convergent

validity as indicated by the correlations found between chronic procrastination with neuroticism and conscientiousness.

The absence of gender differences in the Delay dimension is consistent with previous research (Díaz-Morales & Ferrari, 2015). However, men scored higher in the Procrastination Domains dimension, in comparison to women. This suggests that the adoption of the two-factor solution is useful for identifying different patterns of relationships among chronic procrastination and other related variables such as gender. The finding that age was positively related to the Procrastination Domains was unexpected, but the size of the correlation was negligible suggesting that it could be attributed to the large sample size.

A limitation of the study was that the sample consisted exclusively of undergraduate students. The inclusion of non-student participants of the same age would be a significant addition to the current research program. Future research can also replicate the present study with older, community sample adults. Moreover, since the concept of procrastination may be different across cultures, qualitative research on how Greeks perceive dilatory tendencies might be enlightening.

To sum up the results of the present study in general confirm the results from previous studies suggesting that the GP scale consists of two factors that reflect Delay and Procrastination Domains. The Greek GP proved reliable and showed convergent validity, as indicated by the correlations found between its two subscales with neuroticism and conscientiousness. In conclusion, the Greek-GP scale is a valid instrument for clinical and research purposes and can be used in future cross-cultural research to add ecological validity to current chronic procrastination research. Moreover, the adoption of a two-, instead of an one-factor, solution might be helpful in conducting more refined examinations of the relationship between chronic procrastination and other related constructs.

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Παρακαλούμε απάντησε κάθε μια από τις παραπάνω ερωτήσεις σε μια κλίμακα από το 1 (ΧΑΜΗΛΗ ΑΞΙΑ) έως το 5 (ΥΨΗΛΗ ΑΞΙΑ). Οι δηλώσεις αυτές αφορούν τις απόψεις σου σε διαφορετικές καταστάσεις. Δεν υπάρχουν 2 ακριβώς ίδιες δηλώσεις, για το λόγο αυτό σκέψου κάθε δήλωση προσεκτικά πριν απαντήσεις. Απάντησε όσο πιο ειλικρινά μπορείς. Ευχαριστούμε.

- 1 = Δεν ισχύει για μένα
 2 = Δεν ισχύει συνήθως για μένα
 3 = Κάποιες φορές ισχύει ενώ κάποιες άλλες όχι
 4 = Ισχύει για μένα τον περισσότερο καιρό
 5 = Ισχύει απόλυτα για μένα

Παράρτημα Α: Η Κλίμακα Χρόνιας Αναβλητικότητας

Πόσο ισχύει για σένα καθημιά από τις παρακάτω δηλώσεις;	1	2	3	4	5
1. Συχνά πιάνω τον εαυτό μου να κάνει εργασίες που σκόπευα να κάνω μέρες πριν					
2. Χάνω συχνά συναυλίες, αθλητικά γεγονότα ή παρόμοιες εκδηλώσεις γιατί δεν πηγαίνω να αγοράσω εισιτήρια εγκαίρως					
3. Όταν σχεδιάζω μια γιορτή, κάνω τις απαραίτητες ετοιμασίες πολύ καιρό πριν					
4. Όταν είναι η ώρα να σηκωθώ το πρωί, τις περισσότερες φορές σηκώνομαι αμέσως από το κρεβάτι					
5. Αφού έχω γράψει ένα γράμμα/ mail, μπορεί να αφήσω να περάσουν μέρες πριν το στείλω					
6. Γενικά απαντώ αμέσως στις χαμένες κλήσεις/ τηλεφωνήματα ή σε μηνύματα στον τηλεφωνητή					
7. Ακόμα και σε δουλειές που δεν απαιτούν κάτι παραπάνω από το να κάτσω και να τις κάνω, βλέπω ότι περνούν μέρες πριν τις κάνω					
8. Συνήθως παίρνω αποφάσεις όσο πιο γρήγορα γίνεται					
9. Γενικά καθυστερώ να ξεκινήσω μια δουλειά που έχω να κάνω					
10. Όταν ταξιδεύω, συνήθως πρέπει να βιαστώ για να φτάσω εγκαίρως στο αεροδρόμιο ή στο σταθμό					
11. Όταν ετοιμάζομαι να βγω έξω, σπάνια πιάνω τον εαυτό μου να πρέπει να κάνει κάτι την τελευταία στιγμή					

(συνεχίζεται)

Πόσο ισχύει για σένα καθημέρα από τις παρακάτω δηλώσεις;	1	2	3	4	5
12. Όταν κάνω κάτι που έχει προθεσμία, χάνω συχνά χρόνο κάνοντας άλλα πράγματα.					
13. Αν μου έρθει ένας λογαριασμός για κάποιο μικρό ποσό, τον πληρώνω αμέσως					
14. Όταν λαμβάνω μια πρόσκληση στην οποία καλούμαι να απαντήσω αν θα παραστώ συνήθως απαντώ πολύ σύντομα από τη στιγμή που θα τη λάβω					
15. Συνήθως τελειώνω ένα έργο πιο γρήγορα απ' ό τι είναι απαραίτητο					
16. Πάντα καταλήγω να ψωνίζω δώρα γενεθλίων την τελευταία στιγμή					
17. Συνήθως αγοράζω ακόμη και τα πιο απαραίτητα την τελευταία στιγμή					
18. Συνήθως πετυχαίνω να κάνω όλα τα πράγματα που έχω σχεδιάσει για μια μέρα					
19. Λέω συνεχώς «θα το κάνω αύριο»					
20. Συνήθως τακτοποιώ όλες τις δουλειές που έχω να κάνω πριν κάτω κάτω να χαλαρώσω για βράδυ					