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RESILIENCE OF GREEK YOUTH AT AN EDUCATIONAL  
TRANSITION POINT: THE ROLE OF LOCUS OF CONTROL  
AND COPING STRATEGIES AS RESOURCES

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**ABSTRACT.** Variable- and person-focused approaches were applied to study the resilient outcomes of 326 Greek male and female 1st year university students at a major educational transition point. Results indicated that resilience was related to both cognitive and behavioural psychosocial resources in late adolescence. Locus of control emerged as an important resource which affected adaptation in the face of difficulties. Active and avoidance coping strategies significantly influenced adaptation, as did adversity. Under low adversity, avoidance coping was used; under high adversity, however, both active and avoidance coping were used equally. Resilient and adapted young people utilised more resources than the maladaptive youths, and demonstrated significantly higher levels of positive adaptation. Excelling-resilient adolescents utilised coping resources expertly.

**KEY WORDS:** coping strategies, locus of control, resilience, well-being, youth

## 1. INTRODUCTION

Research on resilience seems to be coming of age, leaving behind over 30 years of fruitful illustration of the individual and environmental factors and processes that promote positive psychosocial functioning in the face of adversity (see, e.g., Rutter, 1985; Felshman and Vaillant, 1987; Cowen et al., 1990; Werner and Smith, 1992, 2001; Egeland et al., 1993; Werner, 1993; Fonagy et al., 1994; Compas et al., 1995; Luthar et al., 2000; Masten, 2001). In the light of recent theoretical and methodological advances, the concept of resilience is becoming increasingly prominent in the area of positive psychology. The latter signifies a shift towards the recognition that it is in the broadest interest of societal and economic progress to promote individual adaptive patterns, and prevention rather than treatment of psychopathology (Seligman, 2002; Hammen, 2003; Luthar and Zelazo, 2003).

This study set out to examine two main complementary questions in a sample of Greek adolescents undergoing an educational transition: (a) How

are locus of control and coping strategies related to multiple dimensions of positive adaptation during a normative educational transition in late adolescence? (b) How do resilient adolescents differ from their adapted peers, who demonstrate successful adaptation but have never been tried by adversity, and also from maladaptive young people, who have been unable to adapt positively in the face of adversity? The above questions were explored cross-sectionally and analysed with the aid of a dual methodological-analytical approach, both variable-focused and person-focused, as instigated by Masten et al. (1999). The utilisation of both types of analysis facilitates the formation of conceptual bridges between the main correlates of resilience. It also provides a holistic picture of interrelation patterns among factors promoting resilience, while at the same time helping to uncover some of the connections between psychosocial resources and positive adaptation.

### *1.1. A Stress-Process Model: Operationalising the Dimensions of Resilience*

Few models, employed over the years to explore the pathways leading from stress and adversity to resilience, have been as productive as the stress-process models (Zautra et al., 1988). This study was guided by a three-dimensional stress-process model, which suggested that individual cognitive and behavioural resources available to young people, such as locus of control and coping strategies, mediate the adverse effects of stress and adversity on resilience. The model also indicated that the more resources young people have to draw on at times of stress, the better their chances of dealing with difficulties more effectively. Relevant research findings have confirmed the above proposition and have offered strong evidence that resources are more important under high rather than low stress conditions (Luthar and Zelazo, 2003).

The mediating effects of psychosocial resources, both cognitive and behavioural in nature, have been explored in numerous studies of resilience. In this study, locus of control was chosen to indicate the former; while coping strategies, active and avoidant in nature were selected to represent the latter. A wealth of literature exists to justify the treatment of both variables as resources whose availability and use by adolescents in the face of adversity can lead to positive adaptation<sup>1</sup>, as indicated below.

The first of the individual resources studied here – i.e., control beliefs – have been found to influence resilient outcomes for children and adolescents exposed to various types of adversity (Grob et al., 1995). Dimensions of control, e.g., internal and external, have been shown to be associated with

mental health problems, such as depression, for children of divorce (Weisz et al., 1989). Perceptions of internal control over stressful life events have been found to be protective against the development of mental health problems in children experiencing parental divorce, possibly by reducing the likelihood of interpreting events in negative ways (e.g., Sandler et al., 2000). In the case of maltreated children, perceived control has been repeatedly found to both mediate and moderate the development of internalising problems (Werner and Smith, 1992). In a similar vein, Bolger and Patterson (2001) have suggested that internal control was protective against the development of internalising problems among maltreated children. In an effort to capture the developmental significance of the above finding the authors found that early onset of maltreatment reduces the chances of resilience in children by altering their beliefs about their ability to control their successes and failures. Furthermore, Wyman (2003) reported a number of research efforts which sought to apply the concept of control attributions to coping and resilience in young people. The Rochester Child Resilience Project studies (Cowen et al., 1990) suggested that children's realistic expectations to control family and personal problems were more adaptive than undifferentiated beliefs of internal control. In particular, resilient children, vs. their maladaptive peers, tended to report that children of their age were less able to change family processes (e.g., parental alcohol abuse, family arguments), but were better able to affect different types of events, such as arguments with others or substance use.

Coping strategies were the second of the individual resources explored in this study. Coping has been conceptualised in the literature as consisting of cognitive and/or behavioural efforts to deal with adversity (Lazarus and Folkman, 1984; Stanton et al., 1994). Coping has formed an integral part of the theory and research of resilience, to the extent that coping has been understood as a function of both the (stressful) situation and the resource characteristics of the individual, such as coping intentions and cognitive appraisals of the success of coping efforts (Frydenberg, 2004). Seligman et al. (1995) emphasised that the promotion of resilience depends on building up self-confidence and competence through successful coping in previous stressful encounters. In consequence, researchers, and practitioners alike, conjecture that children and adolescents can be taught cognitive-type coping skills, which can facilitate the use of interpersonal and intrapersonal resources by young people leading, in turn, to more positive resilient outcomes (Frydenberg, 2004).

The effects of coping on children and adolescents' mental health have long been studied with groups facing particularly stressful situations, such as

parental divorce or bereavement, as well as with normative samples. Certain dimensions of coping, such as active and avoidance coping strategies, have been repeatedly demonstrated to be crucial in the resilience paradigm (Folkman, 1984; Holahan and Moos, 1994; Sandler et al., 2003). Studies of coping and resilience have rendered evidence that active coping strategies lead to more adaptive outcomes. For instance, Sandler et al. (2003) suggested that for children of divorce aged 8–12 years, stressful events led to higher avoidance coping, which in turn led to higher levels of mental health problems such as depression, anxiety and conduct disorders. On the other hand, active coping was found to be protective against conduct problems both cross-sectionally and longitudinally. One of the purposes of this study was to evaluate the circumstances in which each type of strategy was more effective.

Yet another indicator included in this study and treated as a resource variable was academic achievement. Academic achievement has also been treated as an outcome variable in previous resilience studies (Gorman-Smith and Tolman, 2003; Owens and Shaw, 2003). The boundaries between what constitutes a stressor, a resource and an outcome variable in research on adaptation have not always been clear. The rationale for using academic achievement as a resource here was that, at the particular transitional period examined, academic achievement may reinforce feelings of success on the major challenge of university entry, rather than mirror adaptation itself.

The second dimension of the stress-process model of resilience examined in this study centred on adversity. Adversity was operationally defined with respect to normative stressors occurring at an educational transition point in late adolescence, namely the transition from high school to university. A large body of literature pointed to the developmental importance of normative transitions in adolescence; indeed, many researchers have argued for resilient outcomes to be more appropriately assessed by developmentally relevant tasks which take place at crucial times, such as transitional phases (Simmons and Blyth, 1987; Bell et al., 1996; Graber et al., 1996). It is worth mentioning that the consequences of transitions during adolescence were not found to be equivalent across individuals (Graber et al., 1996). Stewart (1982) suggested that individuals initially responded to a transition with some lowering of adjustment before they adapted to the new situation. For example, self-evaluations tended to be lower for early adolescent girls, who were overwhelmed by the requirements of the transition from childhood to adolescence; but levels of self-esteem bounced up again at a later stage when some adaptation to the novel situation had been achieved. Furthering this line of research, Simmons and Blyth (1987) proposed that adolescents

simultaneously undergoing multiple transitions were more at risk of behavioural and affective problems than those who experienced sequential changes. As a turning point at which many more changes take place as a consequence of the transition from secondary to tertiary education, entry into higher education has been generally found to be particularly stressful for some young people. Late adolescents (or young adults, depending on how this age group is regarded and defined) were usually called upon to face different types of challenges, mostly connected to processes of autonomy and relatedness with parents (Steinberg and Silverberg, 1986).

Two further indices of adversity were included in this study, namely, exposure to threatening life events over the past year, a well-used indicator of stress (Seifer and Sameroff, 1987; Goodyer, 1990; Seidlitz and Diener, 1993), and studying away from home for the first time. The latter variable was examined for the first time in relation to resilience. It was judged to be crucial for its multiple implications on the perception of life stressors on the part of individuals undergoing the transition, and the mobilisation of psychosocial resources to overcome them.

The third dimension of the stress-process model, namely adaptation under stress, was indexed using a double criterion in this study. The first criterion involved positive psychological outcomes, such as self-esteem and well-being, which have been well documented in the literature as correlates of resilience (Schwarz and Clore, 1983; Diener, 1984; Harter, 1988b; Ryff, 1989; Block and Robins, 1993). More specifically, Garmezy (1984) was among the first to suggest that self-esteem was one of the key attributes of the individuals often associated with resilience. Project competence enriched our understanding of the protective role of self-esteem, especially when the individual underwent risk or adversity (Masten, 2001). Bolger and Patterson (2003) have found significantly lower levels of self-esteem among children who have been maltreated than those who have not.

Well-being has been found to correlate with a number of mental health outcomes, such as self-efficacy and self-esteem (Gorman-Smith and Tolan, 2003). Reynolds and Ou (2003) demonstrated that early childhood experiences favour the development of positive psychological well-being later in life. Well-being was also found to affect the development of psychopathological symptoms indirectly: in the case of urban poverty, when other types of stressors co-exist, the sense of well-being of parents and children may drop, thus leading to depression and feelings of desperation (Owens and Shaw, 2003).

In the present study, adaptation was also indexed in terms of absence of psychopathological symptoms. The practice of using both positive and

negative indices of resilience follows a number of research efforts, one of which is the Zucker et al. (2003) study. The authors tracked a sample of children of alcoholic parents from early childhood to late adolescence, and found fluctuations of both levels of self-esteem and behavioural problems in young people over the years. Convincing arguments for using the absence of mental health problems, either in isolation or in combination with more positive adjustment measures, in the definition of resilience have been discussed in many studies (Holahan and Moos, 1994). For instance, Fergusson and Horwood (2003) chose to index resilience to childhood adversity in late adolescence by assessing symptoms such as depression, anxiety, conduct disorders, alcohol and drug dependence, suicidal behaviour and criminal offending.

In the context of the broader stress-process model used to guide the present study, the effects on resilience of socio-demographic factors, such as gender and socio-economic status (SES), were also examined. Gender has been frequently confirmed as a correlate of resilience, assuming a protection role against maladaptation in the face of adversity. For instance, Fergusson and Horwood (2003) found evidence of gender-specific strengths and vulnerabilities that may buffer or heighten the effects of family-level adversity in adolescence; in particular, females tended to demonstrate fewer externalising problems when faced with family problems, while males showed fewer internalising ones. In the same vein, researchers such as Bru et al. (2001), and Blyth and Foster-Clark (1987) reported that males showed lower levels of adversity, lower satisfaction with social support, and fewer mental health problems than females. In children of divorce, some interesting gender differences were recently reported in the literature (Hetherington and Kelly, 2002). Some females living with supportive and caring mothers after divorce appeared to be exceptionally resilient, possibly empowered by having successfully handled the challenges following parental divorce.

As far as SES differences are concerned, it has been well established that low parental socio-economic status can impair successful child and adolescent adaptation (Rutter, 1979; Masten et al., 1999). Socio-economic status has also been shown to be a strong correlate of multiple risk factors leading, in turn, to poor adaptation; children, who live in extreme or long-term poverty, may show very poor adaptational outcomes later in life (Sameroff, 2000; Yates et al., 2003). This study sought to outline the effects of gender and SES on processes of resilience involving stress, resources and outcome; and also to establish whether any such effects could extend to particular subgroups of resilience, as defined by the use of person-focused analyses.

### 1.2. *Variable-focused and Person-focused Approaches to the Study of Resilience*

In the context of resilience process models, the various studies have traditionally used one of the two analytical approaches, either variable-focused or person-focused (see Achenbach, 1985; Cairns and Magnusson, 1996; Masten and Powell, 2003). *Variable-focused* approaches aim at determining specific interconnections between stress indices and adaptation; they employ regression analysis tools in an effort to account for covariance among the variables (Luthar, 1991; Conrad and Hammen, 1993; Gest et al., 1993). *Person-focused* approaches, on the other hand, aim at identifying young people who are resilient, adapted, vulnerable or maladapted, according to a pre-determined set of criteria. In this effort cluster and discriminant analyses are usually performed on the data with the expressed aim of determining the role of the psychosocial resources available to young people and their effect on positive adaptation.

### 1.3. *Hypotheses*

The present study sought to explore the interconnections between the three dimensions of the stress-process model of resilience delineated above, that is, the interplay between stress and adversity, individual cognitive and behavioural resources, and positive adaptive outcomes. A Greek sample of males and females undergoing the transition from high school to university was used to answer the three complementary research questions guiding the study. The first question centred on the interrelations of locus of control and coping strategies with multiple indicators of successful adaptation, positive and negative in nature. The second research question evolved around the differences between *resilient* (i.e., high adversity, high adaptation), *adapted* (i.e., low adversity, high adaptation) and *maladaptive* adolescents (i.e., high adversity, low adaptation); not many young people characterised as *vulnerable* (i.e., low adversity, low adaptation) were expected to be found in the study sample, in accordance with previous studies (Masten et al., 1999). The final question involved the exploration of possible gender and SES differences on resilience in general, as well as on the main subgroups of resilience (i.e., resilient, adapted, vulnerable, and maladaptive), as identified in the study.

The following hypotheses were tested using variable-focused analyses:

1. Locus of control and coping strategies would be associated with successful adaptation.

2. Active and avoidance coping would buffer the effects of adversity. In particular, both active and avoidance coping strategies were expected to aid young people to deal with high levels of adversity, since high levels of resources may be required for challenged adolescents to adapt to them successfully.
3. Academic achievement would function as a resource in the process of resilience.

The hypotheses below were explored using person-focused analyses:

1. Only a few highly vulnerable individuals (low adversity, low competence) would be found in this study.
2. Resilient adolescents (high adversity, high adaptation) would have more resources readily available to them (such as high locus of control, expert use of coping strategies) than either the adapted group (low adversity, high adaptation), or the maladaptive group (high adversity, low adaptation).
3. Coping skills would be more important under high rather than low adversity in this sample, as many stressors outside the adolescents' control may arise in important contexts, such as the family or the new academic community the person enters.

## 2. METHOD

### 2.1. *Sample – Procedure*

The study sample consisted of 326 Greek male and female adolescents (56 males and 270 females) in their late teens (mean age = 18.7 years,  $SD = 1.06$  years). The British Standard Occupational Classification (Office for National Statistics, 2000) was used to determine the socio-economic status of participants. It allowed for a seven-way classification of SES based on educational attainment and occupation, including the following categories: professional, intermediate, skilled non-manual, skilled manual, partly-skilled, unskilled, and other. This particular classification system was selected in order to allow for data comparisons with a similar study carried out in the UK.<sup>2</sup> According to this classification, about half the sample originated from lower-middle or working class families (for convenience, it was termed *lower* in this study and included partly-skilled or unskilled categories), while 25% came from upper SES families (*upper*, including professional and intermediate categories), and a further 20% from middle class families (*middle*, including skilled non-manual and the skilled manual categories).



Participants were 1st year undergraduate students at the Panteion University of Athens (48%), the Democritus University of Thrace in Komotini (45%) and the University of Piraeus (7%). Seven different academic departments were selected to reflect participants' diverse educational interests, thus broadening the range of possible approaches to dealing with life stress sampled. Hence, around 14% of the sample was enrolled in the humanities, such as Greek Literature, History and Ethnology; 16% studied law and social administration; 40% studied sociology; a further 23% studied physical education; and another 7% studied economics. Of the sample, 61% studied away from home, while 36% studied in their hometown. Studying away from home could have repercussions on the definition of resilience in late adolescents.

The study was carried out during the summer term of the first year of study, after the first examination period at the university. Once access was agreed with the chair of each academic department and course tutors, questionnaires were handed out during lectures while the lecturers were present. Completion was not obligatory, but students who did not wish to participate were asked not to leave the classroom before everyone else had finished. This procedure rendered a return rate of 99%. Most questionnaires were completed comprehensively, minimising any missing data. Average completion time was 1 hour. No financial rewards were offered to students; nevertheless, in the spirit of reciprocity, the results of the study, including separate analyses for each department, were sent to each attending tutor to discuss with students.

## 2.2. *Measures*

Before the presentation of the questionnaires used in the study it should be mentioned that no Greek translations were available for The Life Experiences Survey (LES), The Adolescent Coping Orientation for Problem Experiences Questionnaire (A-COPE) and The Psychological Well-Being Scales (PWBS). Translations of the above measures were provided by the author, following established international procedures. Permissions to translate and use the questionnaires with Greek samples were obtained from the authors. The author of this study and an independent researcher each provided a translation for each questionnaire from English into Greek. Two bilingual psychologists back-translated the questionnaires into English. Any loss of meaning was thus identified and any modifications were incorporated into the original Greek translations. The translated questionnaires were

given to three Greek Literature students to check for clarity, errors, omissions, and fluency. The final versions were administered to the sample.

The measures used are given Table I.

With respect to *adversity*, a certain level of adversity was assumed to stem from the transitional nature of advancement to a higher education institution, accompanied by financial, emotional, social and practical difficulties. Another variable hypothesised to index adversity was studying away from one's home town for the first time. Nevertheless, adversity was mainly measured as the number of negative events indicated by The Life Experiences Survey (LES; Sarason et al., 1978). This 60-item measure asked young people to indicate whether (a) they had experienced any of the indexed events during the past year; and (b) they thought the event had any impact on their lives, either 'positive' or 'negative' on a 7-point Likert-type scale. The response range was: "extremely negative", "moderately negative", "somewhat negative", "no impact", "slightly positive", "moderately positive", "extremely positive". Two scores were calculated for the LES, one for positive and one for negative events. Sarason et al. (1978) reported significant

TABLE I  
Measures of adversity, psychological resources and adaptation

Construct	Measure	Items	Sample items <sup>a</sup>
Adversity	1. LES (number of life events)	60	"Parents divorce, death of a family member, new boyfriend/girlfriend"
	2. Studying away from home	1	Question
Resources	3. Locus of control	58	"People's misfortunes come from their own mistakes"
	4. A-COPE (Coping strategies)	54	"Try to be funny and make light of it all"
	5. Academic success	1	Question
	6. Academic excellence	1	Question
Adaptation	7. GHQ (Absence of psychopathology)	28	"Lately, have you stayed awake because you felt uneasy"
	8. SPPA (Self-esteem)	55	"Some adolescents often do things they know they should not be doing"
	9. PWBS (Subjective well-being)	84	"Sometimes I change the way I act or think to be more like those around me"

*Note:* LES, The Life Experiences Survey; A-COPE, The Adolescent Coping Orientation for Problem Experiences Questionnaire; GHQ, General Health Questionnaire; PWBS, The Psychological Well-Being Scales. <sup>a</sup>Items of the Locus of Control, GHQ, and SPPA scales are translated into English from the Greek versions of the questionnaires.

correlations between the LES subscales and the Locus of Control Scale (Rotter, 1966),  $r = -0.22$  for positive events and  $r = 0.21$  for negative events. A high score on the number of negative events subscale of the LES indicates many negative events. A high score on the number of positive events subscale of the LES indicates many positive events during the past year. The structure of LES was confirmed in the Greek sample and Cronbach's  $\alpha$  was 0.77.

*Resources* included cognitive and behavioural aspects of dealing with adversity, such as locus of control and coping strategies.<sup>3</sup> The Locus of Control Questionnaire (Rotter, 1966) was used in the present study. This well-known measure assesses individuals' general perceptions of control over events (internal vs. external control) and comprises 23 items scored on a 5-point agree–disagree Likert scale. The response ranged from “completely disagree” to “completely agree”.

*Coping strategies* were assessed using The Adolescent Coping Orientation for Problem Experiences questionnaire (A-COPE; McCubbin and Patterson, 1983). The A-COPE questionnaire was designed to identify those behaviours adolescents find helpful in managing problems or difficult situations. The responses to the 54 items included in this questionnaire were on a 5-point Likert-type scale, the range of which was from “never” to “most of the time” The questionnaire comprises the following 12 subscales, each of them indicating preference for a particular type of strategy used to handle stress and difficulties: ventilating feelings, diversification, self-reliance, social support, solving family problems, avoidance, spiritual support, talking to friends, professional support, demanding activity, humour, and relaxing. Specifically, McCubbin and Patterson (1983) reported good reliability and validity properties for their instrument: the reliability coefficients Cronbach's  $\alpha$  ranged from 0.50 to 0.76 for the 12 above mentioned subscales. The reliability of the whole scale in the Greek sample was high, Cronbach's  $\alpha = 0.73$ . For the subscales it ranged from 0.69 to 0.76. A high score on any subscale of the A-COPE indicated increased use of the coping strategy measured by the subscale.

The structure of the scale was confirmed in the Greek sample. Factor analysis was performed on the 12 A-COPE subscales. This procedure rendered two main factors, which together accounted for 41.39% of the variance. The first factor included the subscales of demanding activity, self-reliance, social support, friends, professional support diversification, and humour, and was thus termed *active coping*; the second factor included avoidance, ventilation of feelings, spiritual support, solving family problems and relaxing subscales, and was termed *avoidance coping* These two factors were used for all subsequent analyses (with only two exceptions, see below).

*Academic achievement*, conceived as a resource here, was measured with two variables: (a) academic success (number of exams passed successfully at the end of the autumn term), and (b) academic excellence (number of exams passed with a grade of at least 7/10).

The *psychological outcomes* of the process of resilience (i.e., overall evaluation of the quality and levels of adaptation of participants in the face of adversity) were assessed with the three measures described below. The first of these measures, namely, the Harter Self-Perception Profile for Adolescents (SPPA; Harter, 1988a), adapted into Greek by Makri-Botsari (2001), was used to measure levels of *self-esteem* in young people aged 16–18 years. The 65-item questionnaire evaluates one's general level of self-esteem as well as 11 aspects of self-concept. Each item is phrased in two different ways, each of which is either "really true for me" (i.e., of the respondent) or "sort of true for me". Only one answer out of the four possible is required per item. Makri-Botsari (2001) reported good construct and concurrent validity of the Greek version of the SPPA, ranging from  $r=0.30$  to  $r=0.83$ , and high levels of test–retest reliability, from  $r=0.70$  to  $r=0.85$ . A high score on the SPPA indicates high self-esteem.

The Psychological Well-Being Scales (PWBS – Short Scales; Ryff, 1989) were chosen to assess levels of *well-being* in young people. The short version of the PWBS used in this study included 86 items and answers were on a 6-point agree–disagree Likert-type scale. The response range was from "strongly disagree" to "strongly agree". The six subscales of the PWBS were reported to have good internal consistency, Cronbach's  $\alpha$  ranging from 0.87 to 0.93, good test–retest reliability,  $r=0.81$  to  $r=0.88$ , and good validity. Cronbach's  $\alpha$  in the Greek sample for the subscales ranged from 0.86 to 0.89. Cronbach's  $\alpha$  for the whole scale was high,  $\alpha=0.89$ . A high score on the PWBS indicates a high sense of subjective well-being. The structure of the scale was confirmed in the Greek sample.

The General Health Questionnaire (GHQ-28; Goldberg, 1978), adapted into Greek by Garyfallos et al. (1991), was used to screen *mental health problems*. It comprises four dimensions: somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. The respondents were asked to rate whether they had recently experienced any of the 28 measured symptoms and to what degree. Four options are available, ranging from "not at all" to "much more/less than usual", with small variations in the wording of the responses depending on the phrasing of the actual symptom measured. The scale correlated well with clinical interview schedules,  $r=0.76$ . A high score on the GHQ indicates poor mental health.

### 3. RESULTS

#### 3.1. *Variable-Focused Analyses: The Effects of Psychosocial Resources*

Means, standard deviations and intercorrelations among the adversity scores, cognitive and behavioural psychosocial resources, and adaptation indicators are presented in Table II. Biserial correlations were calculated for nominal variables such as gender, SES and studying away from home. Pearson correlations were estimated for all ordinal variables.

First order correlations indicated that positive adaptation in late adolescence was generally related to increased use of coping strategies ( $r=0.24$  for active coping and well-being) and lower levels of adversity ( $r=0.30$  for negative events and psychopathology;  $r=-0.16$  for negative events and well-being). Studying away from home for the first time was not related to adversity; it was related, however, to coping strategies ( $r=0.15$  for avoidance coping), to individuals' perception of positive events ( $r=-0.24$ ), and to negative life events ( $r=-0.29$ ). Academic achievement and locus of control were not related to adaptation directly either; rather, they correlated with active and avoidance coping strategies ( $r=0.15$  for active coping and  $r=0.17$  for avoidance coping), which in turn correlated with absence of psychopathology ( $r=-0.24$ ) and presence of well-being ( $r=0.30$ ). Locus of control only correlated with academic excellence ( $r=0.17$ ) and active coping ( $r=0.22$ ), and was thus not included in further regression analyses that attempted to decipher the relations among adversity, resources, and adaptation. Similarly, it was interesting that self-esteem, as measured in this study, correlated highly only with the other two measures of adaptation, that is, negatively with psychopathology ( $r=-.044$ ) and positively with subjective well-being ( $r=0.60$ ). On the basis of this finding, self-esteem was also dropped from further regression analyses. The significance of the above findings will be discussed later on in the text.

A set of multiple hierarchical regression analyses was conducted to test the hypothesised links between adversity, cognitive and behavioural resources, and positive adaptation in older adolescents. Each of the two adaptation criteria (absence of psychopathology and well-being) was regressed on an ordered sequence of predictors. Dummy variables were created for the ordinal variables of gender, SES and studying away from home in order to be entered into the regression equation. The rationale for the entry order was as follows: Step 1 was gender, to control for gender differences in the criteria. SES, a potential correlate of both adolescent adaptation and resources, was entered at Step 2 as a control variable – so that any significant effect of resource variables would not be due to shared

TABLE II  
Means, standard deviations, Pearson (and biserial) correlations for predictors and adaptation criteria ( $n = 326$ )

Name	<i>M</i>	<i>SD</i>	Gender	Class	Academic Success	Academic Excellence	Active coping	Avoidance coping	Locus of control	Away from home	Positive events	Negative events	Psycho pathology	Self-esteem
Gender	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Class	—	—	0.00	—	—	—	—	—	—	—	—	—	—	—
Acad.	0.78	0.18	-0.05	0.06	—	—	—	—	—	—	—	—	—	—
Success	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acad.	0.57	0.27	-0.03	-0.07	0.23**	—	—	—	—	—	—	—	—	—
Excellence	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Active coping	3.15	0.52	-0.00	0.04	0.05	0.01	—	—	—	—	—	—	—	—
Avoidance coping	3.27	0.39	0.18*	0.11	0.15**	0.05	0.39**	—	—	—	—	—	—	—
Locus of control	3.04	0.99	0.7	0.05	-0.04	0.17*	0.22**	0.11	—	—	—	—	—	—
Away home	—	—	-0.21*	-0.03	0.12	0.06	-0.15*	-0.15*	0.04	—	—	—	—	—
Positive events	5.06	3.39	21*	-0.00	00	-0.00	0.07	-0.00	-0.00	-0.24**	—	—	—	—
Negative events	3.67	3.58	0.10	-0.00	-0.08	0.06	0.06	-0.11	0.08	-0.29**	0.10	—	—	—
Psychopathology	4.78	4.97	00	-0.03	-0.08	0.10	-0.06	-0.24**	.00	04	0.07	0.30**	—	—
Self-esteem	3.02	0.52	-0.12	0.05	0.06	0.04	-0.03	0.10	-0.06	04	-0.03	-0.10	-0.44**	—
Well-being	4.52	0.58	0.15	-0.06	0.06	0.09	0.24**	0.30**	0.05	-0.02	0.13	-0.16*	-0.46**	0.60**

Note: \* $p < 0.01$ ; \*\* $p < 0.001$ .

variance with SES. Steps 3 and 4 included the hypothesised effects of individual resources, namely, academic achievement (success and excellence) and coping strategies. Adversity was entered at Step 5 after other main effects. Once main effects were controlled, interactions of adversity by coping were entered at Step 6. For results of the regressions analyses with adaptation indicators as dependent variables, see Table III.

The increment in  $R^2$  (i.e.,  $\Delta R^2$ ) for each step is indicated for each criterion. Psychopathology was predicted by academic achievement. The adversity appeared to contribute unique variance, since at Step 5, and after all other variables were entered, it was still significant. Most  $\beta$  weights at Step 6 ranged from 0.13 to 0.22, indicating that adversity was a stable unique predictor of mental health problems. A significant interaction of adversity by coping strategies was found at Step 6 indicating that coping may moderate the effects of adversity. Well-being was predicted by gender and adversity. Gender remained a significant unique predictor even at Step 6 ( $\beta = -0.18$ ). Females reported higher well-being scores than males. Adversity proved to be a strong predictor of well-being even at Step 6, with most  $\beta$  weights ranging from 0.09 to 0.83. Of the three adversity variables, the number of negative events stopped being a significant predictor only at Step 6, possibly because of shared variance with the significant interaction term, i.e. coping by adversity.

Although locus of control was not entered in the regression equation above, a composite score of locus of control by adversity was calculated (by way of multiplying Control $\times$ Adversity scores, following similar procedures with the Masten et al. (1999)) in an effort to examine whether it would predict adaptation in any way. Figure 1 plots the regression lines for representative high (top 25%) and low (bottom 25%) levels of locus of control, and high (top 25%) and low (bottom 25%) levels of adversity. According to the terminology recommended by Luthar et al. (2000), this figure was consistent with a *protective-enhancing* role for locus of control: a sense of internal control seemed to allow adolescents to “actively deal” with stressful situations so that their adaptation increased with adversity. It also suggested that adaptation was a strong correlate of locus of internal control at high levels of adversity. On the other hand, low levels of internal control may have been more functional at low levels of adversity, but at high adversity the ability to adapt well was drastically reduced.

To assess the effects of all coping strategies on adaptation, a composite score based on the original 12 subscales of the A-COPE was calculated and used in Figure 2. This demonstrated a protective effect of overall coping, since it seemed to operate under both high- and low-adversity conditions. Subsequently, the potentially differential effects on adaptation of the two

TABLE III  
 Hierarchical regression analyses with GHQ and PWBS as dependent variables and individual attributes, individual resources, and adversity as independent variables

Step	Adaptation criterion											
	Psychopathology						Well-being $\Delta R^2$					
	$\beta$	<i>T</i>	SigT	$R^2$	$\Delta R^2$	$\Delta F$	$\beta$	<i>T</i>	SigT	$R^2$	$\Delta R^2$	$\Delta F$
1. Gender	-0.00	-0.06	0.94	0.00	0.00	0.00	-0.20	-3.63	0.00	0.04	0.04***	13.17
2. SES	-0.00	-0.14	0.88	0.00	0.00	0.49	0.07	1.20	0.23	0.04	0.00	0.90
	0.05	0.88	0.37				0.05	0.96	0.33			
3. Academic success and academic excellence	-0.13	-2.18	0.03	0.03	0.2**	4.02	0.07	1.22	0.22	0.06	0.01	1.74
	0.13	2.26	0.02				0.06	1.07	0.28			
4. Coping (active and avoidance)	0.05	0.86	0.38	0.08	0.09***	8.54	0.16	2.75	0.00	0.14	0.08***	13.79
	-0.26	-4.02	0.00				0.18	2.88	0.00			
5. Adversity (- and + events, studying away from home)	0.13	2.33	0.02	0.20	0.11***	13.68	0.10	1.94	0.05	0.20	0.05***	6.82
	0.34	6.01	0.00				-0.22	-3.88	0.00			
	0.15	2.55	0.01				0.01	0.30	0.76			
6. Adversity×Coping (active and avoidance)	-0.79	-2.37	0.01	0.22	0.01*	2.87	0.70	2.08	0.03	0.22	0.01	2.84
	0.22	0.48	0.62				-0.83	-1.75	0.08			
Total $R^2$					21							0.21

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .



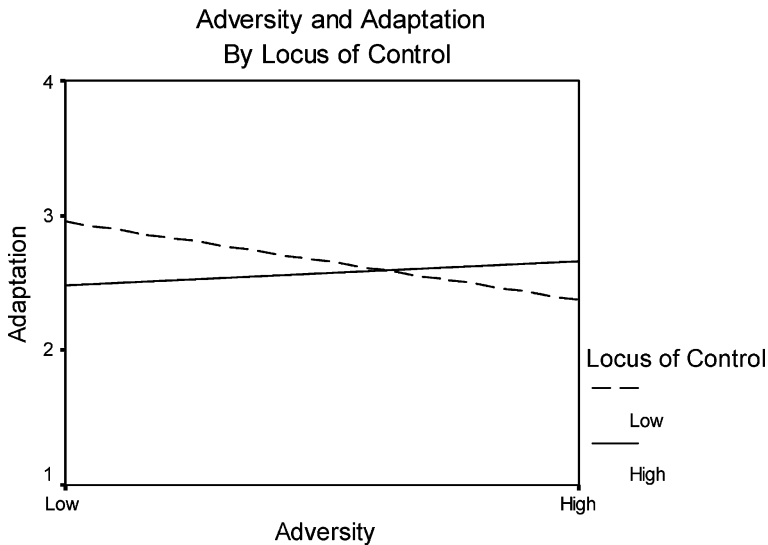


Fig. 1. Interaction effects of Adversity with Locus of Control in the prediction of Adaptation in late adolescence.

factors of active and avoidance coping found earlier were also explored. Figure 3 suggests a *protective-enhancing role* for active coping strategies. Under low adversity, even lower levels of active coping seemed to lead to successful adaptation. Under high adversity, however, higher levels of active coping were required in order for the individual to adapt well; inversely, lower levels of active coping appeared to be conducive to lower adaptation levels. A *protective-stabilising* effect was found for avoidance coping strategies, according to which such strategies seemed to confer adaptation stability despite increasing adversity.

### 3.2. Person-Focused Analyses: Comparing Resilient, Adapted, and Maladaptive Adolescents

A different approach involving multiple comparisons was subsequently used to identify and compare the profiles of resilient (high adversity, high adaptation), adapted (low adversity, high adaptation) and maladaptive individuals (high adversity, low adaptation) in terms of levels of adversity, psychosocial resources and successful adaptation. Cut-off scores were used to identify the three groups. High and low adaptation were defined as half a standard deviation above and below, respectively the sample mean on *all*

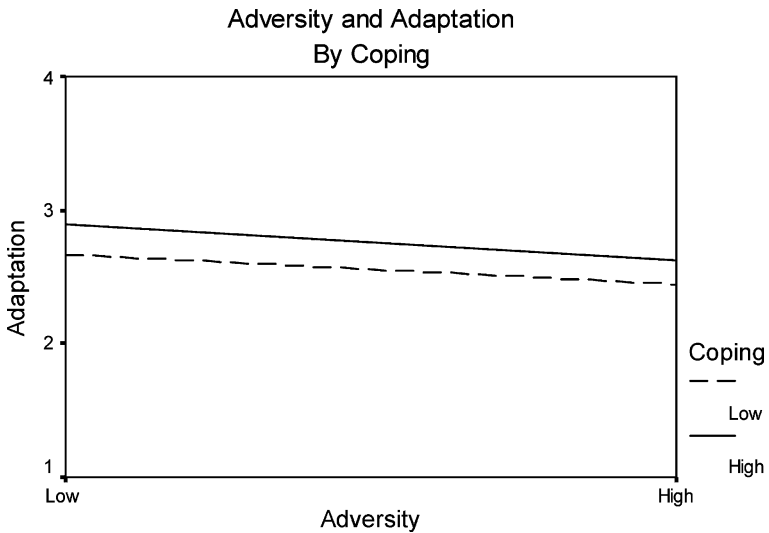


Fig. 2. Interaction effects of Adversity with Coping Strategies in the prediction of Adaptation in late adolescence.

three composite indicators of adaptation (i.e.,  $-0.50 < zscore < 0.50$ ). Definition of high and low adversity followed a similar rationale and was based on the number of negative events<sup>4</sup> faced by the individual during the past year. Individuals who fell outside the criteria for high or low levels of adversity and adaptation (middle range groups) were not included in the main analyses. This procedure yielded 56 resilient individuals (12 males, 44 females); 56 adapted individuals (8 males, 48 females); and 24 maladaptive individuals (2 males, 22 females). A cluster analysis was performed to validate the classification of individuals into the three groups. Using the same variables as with the cut-off scores approach, three groups highly comparable to the initial three, albeit larger, were identified. The analysis following was limited to the groups yielded by the cut-off scores procedure, which were better matched to the operational definition of the adaptation and adversity criteria.

Table IV shows the mean scores for the three groups of resilience on adversity, adaptation, and resource variables. Since the cut-off scores procedure runs the risk of yielding groups with unequal variances, the Levene test was used to test each dependent variable for homogeneity of variance. Adversity, active coping, psychopathology and well-being were found to have unequal variances; hence, the non-parametric Kruskal–Wallis test was used to analyse group differences. Planned comparisons were performed

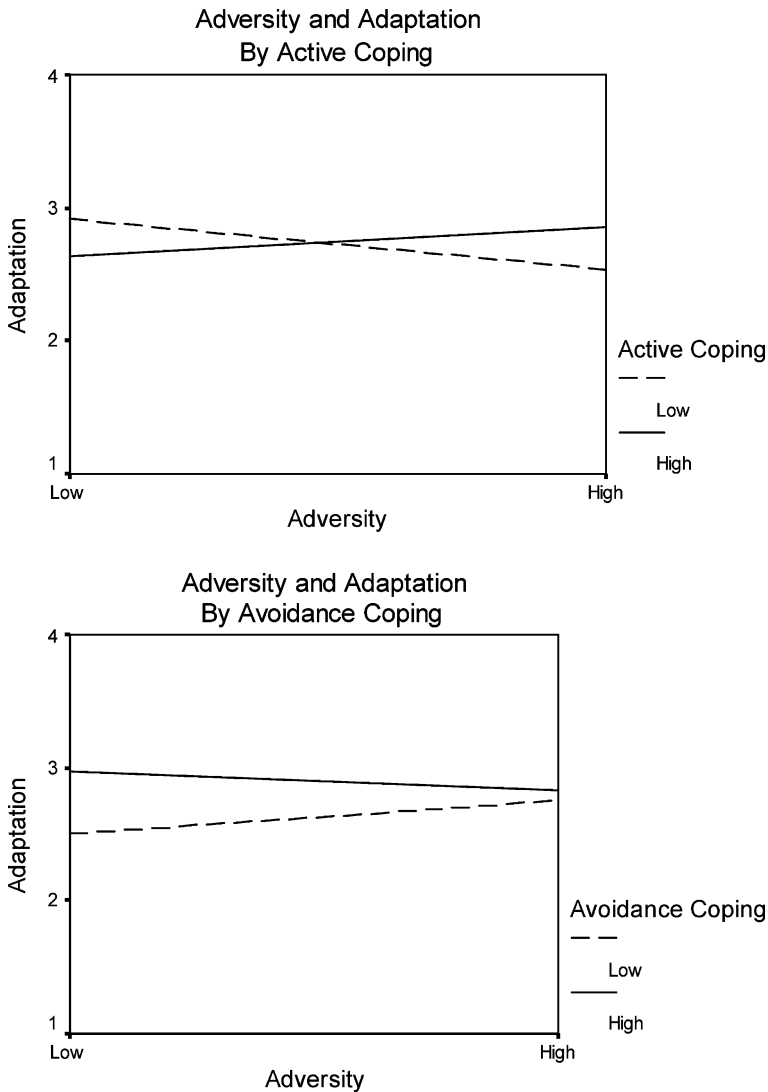


Fig. 3. Interaction effects of Adversity with Active and Avoidance Coping Strategies in the prediction of Adaptation in late adolescence.

when groups were found to differ significantly. For all other variables, 2(gender) by 3(resilience groups) ANOVAs were carried out first, followed by 3(SES) by 3(resilience groups) and 2(study away from home) by 3(resilience groups) ANOVAs. One-way ANOVAs were performed to

TABLE IV  
Means (and standard deviations) for resilient, adapted, and maladaptive adolescent

	Resilient	Adapted	Maladaptive	One-way $F$ for group ( $\chi^2$ ) <sup>d</sup>
	Planned Comparisons			
<i>Adversity</i>				
Negative events <sup>d</sup>	4.64 <sup>a</sup> (3.20)	0.46 <sup>b</sup> (50)	5.92 <sup>a</sup> (2.84)	(102.42***)
<i>Resources</i>				
Locus of control	33 <sup>a</sup> (0.93)	-0.16 <sup>b</sup> (0.71)	-0.05 <sup>ab</sup> (1.04)	9.07**
Active coping <sup>d</sup>	0.06 (0.92)	0.29 (1.03)	-0.11 (0.80)	(ns)
Avoidance coping	05 <sup>a</sup> (0.90)	0.52 <sup>b</sup> (0.96)	-0.33 <sup>a</sup> (1.14)	6.46*
<i>Adaptation</i>				
Psychopathology <sup>d</sup>	-0.77 <sup>a</sup> (0.16)	-0.83 <sup>a</sup> (0.15)	1.33 <sup>b</sup> (1.00)	(66.01***)
Self-esteem	0.65 (0.71)	0.64 (0.69)	-1.55 (0.64)	ns
Well-being <sup>d</sup>	0.47 <sup>a</sup> (0.58)	0.89 <sup>b</sup> (0.50)	-1.57 <sup>c</sup> (0.75)	(67.67***)

*Note:* Adversity means are reported in raw score averages, but all other scores are reported in full sample-based  $z$  scores. <sup>a,b,c</sup>Groups differ significantly. <sup>d</sup>The non-parametric Kruskal–Wallis test was performed; in these cases the  $\chi^2$  value is provided in parentheses rather than the  $F$  value. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

clarify group differences when main effects were significant; the conservative Scheffe procedure was used as the number of comparisons was high.

While the resilient and maladaptive groups did not differ in terms of adversity, they both experienced significantly more adversity than the adapted group, possibly as the result of the cut-off method. In terms of adaptation, the maladaptive group experienced more mental health problems than either the resilient or the adapted group, and lower levels of self-esteem and well-being. The adapted group reported higher levels of well-being than the resilient group. This finding may indicate that adapted Greek adolescents were more prone to cognitively evaluate the course of their lives when no particular demands were imposed on them to handle higher levels of adversity. It is also worth mentioning that all three groups differed on the well-being criterion. This suggested that the latter, more positive adaptation criterion is qualitatively distinct from the more negative one of absence of psychopathology. The above findings will be discussed later in the text.

Comparisons of cognitive and behavioural resources revealed some differences among the three groups. Resilient and adapted young people differed in terms of locus of control, as did resilient and maladaptive youths. More specifically, resilient adolescents appeared to have a healthier, more

internal locus of control than either the adapted or the maladaptive adolescents. In terms of coping strategies, no clear differences were found between the three groups in active coping; nevertheless, avoidance coping seemed to differentiate between resilient and adapted adolescents, and adapted and maladaptive adolescents. In particular, adapted youths seemed to depend more on avoidance coping strategies than either of the other groups, followed by the resilient group.

Table V portrays significant interactions of the three resilience groups by demographic variables, such as gender and SES, as well as studying away from home for the first time. With respect to gender differences, three significant interactions were found. The first involved negative events. Resilient females reported fewer negative events than males, while the opposite pattern was revealed in the maladaptive group. In the adapted group, both males and females reported few negative events. The second significant gender by group interaction was in avoidance coping. In the maladaptive group, males scored much lower in the use of avoidance coping strategies than females. Finally, there were significant gender differences by group in terms of psychopathology. Resilient males reported higher levels of mental health problems than females in this group, but females in the maladaptive group showed significantly higher levels of psychopathology than males. However, these results should be treated with caution due to the low number of males in each of the resilience groups.

Significant Class by Group interaction patterns were also revealed. In particular, a significant interaction was found for well-being, indicating that maladaptive adolescents from the upper SES group demonstrated lower levels of well-being than individuals from either the middle or lower SES groups. The same pattern of results was observed for self-esteem.

Finally, the differential effects of studying away from home were studied for the three resilience groups. Significant interactions regarding resources included one for avoidance coping. In the maladaptive group, individuals who studied away from home reported higher levels of avoidance coping than others who studied close to home. In addition, a significant interaction was found for locus of control, with resilient and maladaptive adolescents studying away from home reporting lower levels of locus of control than their peers who stayed at home, while this picture was reversed for the adapted group.

Significant Away from Home by Group interaction was found for all adaptation measures, including psychopathology. In all three groups, people studying away from home for the first time reported lower levels of mental health problems than people studying in their home city. It is worth pointing

TABLE V  
 Significant interactions of demographic variables by resiliency groups for dependent variables and means (and standard deviations)

	Resilient			Adapted			Maladaptive		
	Males	Females		Males	Females		Males	Females	
Gender									
Negative events ( $F(2, 130) = 6.41$ , $p < 0.01$ ; partial $\eta^2 = 0.09$ )	6.16 (4.80)	4.22 (2.53)	0.54 (00)	0.00 (0.50)	6.27 (00)	2.00 (2.69)			
Avoidance coping ( $F(2, 130) = 4.00$ , $p < 0.05$ ; partial $\eta^2 = 0.05$ )	3.25(0.45)	3.31 (0.33)	3.56 (0.34)	3.48 (0.39)	2.38 (0.00)	3.21 (0.40)			
Psychopathology ( $F(2, 130) = 4.82$ , $p < 0.01$ ; partial $\eta^2 = 0.06$ )	1.33 (0.49)	0.81 (0.84)	0.75 (0.88)	0.62 (0.76)	7.00 (0.00)	11.81 (5.04)			
SES									
Self-esteem ( $F(4, 127) = 3.84$ , $p < 0.01$ ; partial $\eta^2 = 0.1$ )	Upper 3.57 (0.40)	Middle 3.25 (0.39)	Lower 3.36 (0.35)	Upper 3.28 (0.32)	Middle 3.47 (0.35)	Lower 3.36 (0.39)	Upper 1.70 (0.11)	Middle 2.30 (0.15)	Lower 2.32 (0.29)
Well-being ( $F(4, 127) = 5.8$ , $p < 0.001$ ; partial $\eta^2 = 0.15$ )	4.97 (13)	4.74 (34)	4.78 (36)	5.05 (31)	5.21 (28)	4.96 (26)	3.00 (0.40)	3.78 (25)	3.71 (37)
Studying away from home	Yes	No	Yes	No	Yes	No			
Locus of control ( $F(2, 124) = 7.27$ , $p < 0.001$ ; partial $\eta^2 = 0.1$ )	4.50 (4.42)	7.66 (9.44)	3.60 (5.87)	-0.09 (2.28)	1.30 (7.19)	9.50 (1.73)			
Avoidance coping ( $F(2, 126) = 7.64$ , $p < 0.001$ ; partial $\eta^2 = 0.1$ )	3.26 (0.37)	3.34 (0.35)	3.57 (0.38)	3.39 (0.35)	3.27 (0.36)	2.47 (0.09)			
Psychopathology ( $F(2, 126) = 22.46$ , $p < 0.001$ ; partial $\eta^2 = 0.26$ )	0.77 (0.79)	1.22 (0.80)	0.87 (0.79)	0.36 (0.65)	10.2 (4.29)	17.5 (4.04)			
Self-esteem ( $F(2, 126) = 11.96$ , $p < 0.001$ ; partial $\eta^2 = 0.1$ )	3.38 (0.37)	3.28 (0.36)	3.18 (0.32)	3.62 (0.27)	2.27 (0.30)	1.91 (0.35)			
Well-being ( $F(2, 126) = 4.74$ , $p < 0.01$ ; partial $\eta^2 = 0.07$ )	4.82 (0.31)	4.69 (0.34)	4.95 (0.26)	5.17 (0.30)	3.65 (0.32)	3.38 (0.83)			

out that the maladaptive group reported significantly higher levels of psychopathology than either of the other groups. In terms of self-esteem, maladaptive students away from home reported higher levels of the attribute than those staying at home, while this pattern was reversed for the adapted group. With respect to well-being, and for the resilient and the maladaptive groups, adolescents studying away from home reported higher levels of well-being than those studying in their home cities.

Discriminant function analyses were carried out as a further test of the overall pattern of the above results. The three groups were clearly differentiated from each other on the basis of adversity, resources, and adaptation criteria. A total of 92.5% of the cases were correctly classified into the three groups. In particular, 85.7% was correctly classified as belonging to the resilient group, 96.3% as belonging to the adapted group, while 100% of the cases were correctly classified as belonging to the maladaptive group.

To explore the long-standing debate in the prominence of active vs. avoidance coping strategies in adaptation, further analyses were carried out. A subset of the resilient adolescents was identified using more stringent criteria – similar to those applied by Luthar (1991) and Masten et al. (1999) – adolescents scoring 1 SD above the mean on all three adaptation criteria. Those individuals were examined as to their preference of active vs. avoidance coping strategies.

Six adolescents were identified as belonging to the Excelling Resilient group, while the other 50 individuals belonged to the Moderate Resilient group. Initially, results were calculated for the active and avoidance coping strategies, as defined by the factor analysis. Although the variable means differed, they did not do significantly so. Hence, further analyses were carried out using the initial 12 A-COPE subscales. According to the results of the Levene test, all coping variables had equal variances, apart from the professional support variable, for which the non-parametric Mann–Whitney test was used. Significant differences were observed for certain active and avoidance coping strategies, indicating that the excelling resilient adolescents exhibited higher usage of the strategies than their average resilient peers. Specifically, with respect to Solving Family Problems,  $F(1, 54) = 8.12$ ,  $p < 0.001$ , the means for excelling and moderate resilient individuals were 4.05 and 3.26, respectively; in the case of Seeking Professional Support,  $z$  score =  $-2.16$ , the mean ranks were 41.17 and 26.98, respectively. In terms of avoidance coping strategies, Relaxing significantly differed between excelling and moderate resilient groups,  $F(1, 54) = 4.08$ ,  $p < 0.05$ , and group means were 3.61 and 3.23, respectively.

#### 4. DISCUSSION

This section will focus on the three main dimensions of the stress-process model of resilience, i.e., adversity, resources, and adaptation. The hypotheses stated in the introduction will inform the discussion of psychosocial resources in the resilience process. Issues arising from the dual analytical approaches used – variable-focused and person-focused – will be incorporated in the discussion of the above model when addressing the adaptive outcomes of the resilience process. The effects of socio-demographic variables on resilience will be elucidated last.

Overall, three main conclusions can be drawn from the analysis of the results: (a) positive adaptation (resilience) was related to both cognitive and behavioural psychosocial resources; (b) satisfactory cognitive and behavioural resources were less common among adolescents facing adversity than those not facing, corroborating Masten et al.'s (1999) results; (c) when satisfactory resources were present, adaptation was generally positive, even in the presence of multiple sources of stress; (d) compared to the resilient group, the maladaptive group suffered significantly higher levels of adversity, utilised resources to a lesser degree and exhibited much lower levels of adaptation. These findings add to the growing evidence suggesting that cognitive and behavioural skills facilitate positive adaptation at periods of normative transitions in late adolescence.

##### *4.1. The Definition of Adversity in the Context of Normative Transitions*

In this study normative stressors, such as those met at educational transition points, had the potential to induce enough adversity to the lives of late adolescents, as suggested by a number of studies (Zautra et al., 1988; Eccles et al., 1996).

Studying away from home proved a good predictor of adversity, mainly affecting the individual's perception of life events as negative. Furthermore, it influenced the use of cognitive and behavioural resources, and also the adaptational outcomes of the process of resilience. This finding goes some way towards explaining how resilient adolescents differed from their adapted and maladaptive peers: in order to overcome the increased difficulties imposed by studying away from home, resilient youths seemed to mobilise the resources available to them. It is proposed here that adolescent perception of such difficulties may be culturally determined to a degree: Greek society favours connectedness among family members, and parents can be protective towards their offspring, attempting to shelter them from



difficulties. When young people are faced with the challenges of living alone for the first time, they may need to activate dormant resources, in order to deal with increased demands on their part.

#### *4.2. Locus of Control, Coping Strategies, and Academic Achievement as Resources for Resilience*

Findings from both variable- and person-focused analyses consistently indicated that locus of control and coping strategies were significant predictors of adaptation in adolescence. Locus of control was assigned a protective role, especially in high adversity. This result is in line with other research findings emphasising the significance of other cognitive resources, such as IQ, and general intellectual functioning on the development and maintenance of good adaptation in adversity (e.g. Luthar, 1999; Masten et al., 1999; Ripple and Luthar, 2000). Moreover, resilient adolescents were shown to exhibit higher levels of cognitive resources than adapted or maladaptive adolescents. This result suggests that in challenging conditions for adaptation, resilient adolescents managed to draw more on their cognitive resources in order to counterbalance the threat to their positive adaptation.

Coping strategies appeared to be strongly associated with all three predictors of positive adaptation in adversity in adolescence, as indicated by a large body of research (Rutter, 1987). Although both active and avoidance coping appeared to be conducive towards more positive adaptational outcomes in late adolescence to a degree, this study highlighted the effects of avoidance coping on the resilience process. While all young people reported equally high levels of use of active and avoidance strategies, group differences emerged in terms of avoidance coping. More specifically, adapted adolescents made use of avoidance coping to a much greater extent than maladaptive ones. This was corroborated by a recent study, whose findings suggested that Greeks tend to avoid elaborating the problems they face both cognitively and emotionally; rather, they seem to prefer denial over planning and acceptance (Roussi, 2001).

In congruence with the above point, resilient youths seemed to possess a wider repertoire of behavioural resources than their maladaptive peers. Adolescents excelling in resilience, nonetheless, tended to use more active and avoidance coping strategies than adolescents with average resilience scores. Within the resilient group, then, the distinction between the two types of coping strategy may not be as meaningful as originally thought. The critical issue seems to be availability of strategies from which young people

can draw as they see fit, in order to deal with the stressful encounter. Some studies have shown similar findings (Sandler et al., 2000).

Academic achievement did not seem to play an important role as a resource in the interplay between adversity and adaptation, not even as outcome measure. This finding may be the result of the measurement method used in this study. A more comprehensive way to measure achievement, such as grade history and tutor or peer evaluations of performance might yield more valid results, as has been the case with many other studies of resilience (Cowen et al., 1984; Patterson et al., 1990; Ripple and Luthar, 2000).

#### *4.3. Resilient, Adapted, and Maladaptive Youths*

In line with Masten et al. (1999; see also, Cowen et al., 1984; Luthar, 1991), only 3.7% of participants were found to be highly vulnerable, that is, overwhelmed by normative challenges. This phenomenon may be indicative of an evolutionary tendency towards positive adaptation when the environment is favourable (Waddington, 1966). Encouraging as the low number of such individuals may be, interventions by, e.g., a university counselling centre need be targeted towards such young people, in order to aid them in their effort to adapt to the challenges posed by the transition to university.

Resilient young people differed from their adapted or maladaptive peers in terms of the resources available to them in times of stress. They seemed to enjoy higher levels of control, and slightly lower, but still high, levels of active and avoidance coping than the adapted individuals – and yet, this combination of resources seemed to allow them to adapt adequately under stress. With respect to adaptation, resilient youths did not differ dramatically from adapted individuals in terms of psychopathology; however, they differed significantly in levels of well-being, with the adapted group scoring higher. This finding possibly reflects the fact that, not being particularly tried by adversity, the adapted individuals' subjective sense of well-being (a largely cognitive measure, encompassing constructs such as satisfaction with life in general, absence of negative affect and presence of positive affect, potential for growth etc.) remained unchallenged and largely left intact by external environmental threats.

On the whole, the resilient group seemed to adapt well under transition stress and other adversities. Examination of a subsample of excelling resilient individuals indicated very high adaptation levels, and suggested more expert use of coping strategies on their part. Both active and avoidance coping were used interchangeably and at high levels. This finding was consistent with the initial study hypothesis.

The maladaptive group in this study, as with the Masten et al. (1999) study, appeared to lack the necessary resources to handle the normative changes they were going through. Having said that, the level of stress they were facing was significantly higher than that of the resilient group. Maladaptive individuals also differed significantly from both their resilient and adapted peers in terms of level of adaptation: they exhibited significantly lower levels of adaptation with respect to all three determinants of positive psychological functioning, i.e., psychopathology, self-esteem and well-being.

#### *4.4. Gender and SES in Adolescent Resilience*

In line with a series of studies on the effects of demographic factors on adaptation (Frydenberg and Lewis, 1993; Feldman et al., 1995), in this study gender consistently affected individuals' perceptions of adversity. However, and contrary to expectations, males in all three groups reported significantly more negative events than females in this study. Perhaps this was a particularity having to do with the sample used in the present study. The males who participated in the study differed from males who failed to attend lectures and were, therefore, omitted from the sampling procedures. In terms of resources, males tended to use avoidance coping more than females, especially in the maladaptive group. Moreover, gender was a significant indicator of psychopathology: resilient males appeared to experience more mental health problems than resilient females, while the opposite was true for maladaptive youths. In any case, the above results need to be replicated with larger Greek samples.

Results of this study with respect to SES were consistent with well-documented reports of the relation of SES to adaptation (Rutter, 1979; Patterson et al., 1990; Masten et al., 1999). Upper class maladaptive youths seemed to enjoy less self-esteem and well-being than youths from different SES backgrounds. This is consistent with a growing body of research suggesting that affluent youths suffer from the effects of family-level adversity, possibly to an extent similar or even greater than individuals coming from poorer socio-economic environments (Luthar, 2003; Luthar and Latendresse, 2005).

#### *4.5. Limitations and Directions for Future Research*

Some of the limitations of the study included the cross-sectional design, retrospective adversity data, with potential cognitive and emotional distortions

of the meaning and effect of stressful life events for adolescents, and sampling, precluding finer analyses of Resource by Resilience Group interactions.

Early recognition of people at risk of poor adaptation is crucial. The study showed that people likely to manage stress successfully are those who actively exhibit positive aspects of mental health, not just those who do not show signs of a disorder. It is important for teachers to be sensitive to the needs of students who, when faced with adversity especially around transitions, may not seem to have obvious behavioural problems, but might be finding transitions stressful.

Finally, cross-cultural comparisons of adolescents will add a new dimension to the study of resilience. Similarity in methodology and statistical analyses will aid effective comparison of the concomitants of adversity, resources and adaptation at transitional points in adolescence.

#### ACKNOWLEDGEMENT

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#### NOTES

<sup>1</sup> Most resilience investigators converge in stating that resilience itself is never measured directly; rather, resilience is inferred on the basis of its two component constructs, namely stress or adversity and positive adaptation. In this study, the term adaptation is used in the above sense

<sup>2</sup> The results of the comparative study are discussed in a separate paper.

<sup>3</sup> Measures of family relations and social support were also administered to students. These results are discussed in a separate paper.

<sup>4</sup> Negative life events were selected to index adversity, as it was by far the most powerful variable in predicting adversity, as demonstrated by correlations and regression analyses.

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