Cognitive Errors in Adolescence: The Linkages between Negative Cognitive Errors and Anxious and Depressive Symptoms

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To my family

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LIST OF ABBREVIATIONS

CNCEQ	Children's Negative Cognitive Error Questionnaire
CNCEQ-OG	Children's Negative Cognitive Error Questionnaire - Overgeneralisation
CNCEQ-CT	Children's Negative Cognitive Error Questionnaire - Catastrophising
CNCEQ-PS	Children's Negative Cognitive Error Questionnaire - Personalisation
CNCEQ-SA	Children's Negative Cognitive Error Questionnaire - Selective Abstraction
STAI	State -Trait Anxiety Inventory
STAI-S	State -Trait Anxiety Inventory - State Subscale
STAI-T	State -Trait Anxiety Inventory -Trait Subscale
CES-D	Center for Epidemiological Studies - Depression Scale

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DECLARATION

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ABSTRACT

The present study investigated the relationships between negative cognitive errors and self-reported symptoms of anxiety and depression in a community sample of Greek adolescents, aged 12 to 18 years (N = 883). The Children's Negative Cognitive Error Questionnaire was used to measure four types of cognitive errors, namely, catastrophising, overgeneralisation, personalisation, and selective abstraction, and two self-report scales of anxiety and depression (i.e., the STAI and the CES-D) were used to assess anxious and depressive symptoms. As hypothesised, results indicated that high levels of negative cognitive errors correlated positively with greater frequency and intensity of anxious and depressive symptoms among adolescents. Hierarchical regression analyses indicated that the cognitive errors of overgeneralisation and catastrophising, as well as, overall cognitive distortion scores predicted a change in adolescents' self-reported anxious and depressive symptoms. Furthermore, overgeneralisation and catastrophising were both strong predictors of anxiety and depression, indicating that the two emotional disorders probably share the same types of cognitive distortions. A decrease on scores of overall cognitive distortion over the age groups from early adolescence to late adolescence was found, suggesting that cognitive errors during early adolescence may reflect normal developmental trends, and that with increasing age, adolescents are less likely to adopt a negative cognitive bias. Finally, late adolescents reported more anxious and depressive symptoms than younger ones, highlighting the contention that the transitional years from middle to late adolescence tend to mark a major increase in risk for psychopathology. Consistent with previous studies, the findings from this investigation confirmed that cognitive distortions are a common and pervasive attribute of adolescents who reported depressive and / or anxious symptoms and demonstrated the generalisability of the association between cognitive distortions and depression and anxiety in Greek adolescents. The role of dysfunctional cognitive processing in anxiety and depression during adolescence, implications for Beck's cognitive therapy, the limitations of the current study, and suggestions for further research are discussed.

Keywords: cognitive errors/distortions; anxiety; depression; adolescence.

SECTION A INTRODUCTION

INTRODUCTION

> "By exposing yourself to reading, research, continuing professional education, supervision and reflection on your work and on the counselling profession, you inevitably seek to make sense of contradictions and to hone your practice to serve each of your clients more effectively"
>
> (Dryden and Feltham, 1994, p. 108)

The Doctor of Psychology (DPsych) is a professional doctorate, which provides an alternative route for a doctoral qualification, not only focusing on applied research at an advanced level, but also on the enhancement of teaching, supervisory and consultancy skills and on the extension of understanding of psychological theories (Research Studies Handbook, City University, 2005). By engaging in this research programme, my overriding goal was to develop the skills and knowledge one requires in order to make a contribution to research and clinical practice as a chartered psychologist.

In 1998, Michael Rutter wrote that "research is the lifeblood of clinical practice in all fields of medicine, including child psychiatry", highlighting the need for professionals to bridge the gap between research and clinical practice. Research, in addition to related academic and clinical work, provided a framework within which a climate of learning was established, bringing together different but fundamental aspects of the expertise required by a counselling psychologist. This process required a significant amount of work, determination and commitment, while at the same time encouraging continuous personal and professional development.

The research itself triggered a rich and fruitful exploration on a wide variety of issues. It facilitated an in-depth examination and clarification of

psychological theory; the ability to critically reflect and evaluate ideas; creativity; flexibility of thinking and professional competence. Research seminars on a range of professional issues were also a source of invaluable critical thinking and group discussion, which not only contributed to the attainment of knowledge but also enhanced judgement, critical reflection and confidence. On the other hand, clinical practice involved linking theory to practice, utilizing a variety of theories to techniques, and developing a personal and professional style of working effectively with clients, staff members and other professionals. Working with clients, which included engaging in intense encounters and processing powerful feelings, fostered the development of professional skills and led to increased introspection, personal reassessment, change and growth.

The practitioner doctorate in psychology has proven to be a demanding and challenging experience. Johns (1996) argues that: "all counselling training involves both a task -becoming a competent worker- and a process -a journey of personal learning for individuals" (p. 14). It is essential to recognise that, during training, individuals learn and change, and that any change, in knowledge, skills, attitudes or awareness, will influence the whole person. In particular, any learning, almost inevitably, involves both excitement and anxiety, with its accompanying need for both support and challenge (Clark, 1991). Being a DPsych research student was like being on a journey allowing oneself to trace the roots of one's own counselling role back to its earliest experiences and make sense of the different territories and obstacles encountered on the way (McLeod, 1998). When it is viewed from the perspective of a unique, personal journey, the doctorate in psychology has proven to be full of challenges, anxieties and opportunities for learning, as well as an opportunity for professional development, self-exploration and change.

The present thesis comprises of three sections: an empirical research study, two case studies, and a critical review of literature. Section B forms the main part of the thesis and consists of a report on an original piece of

research. The present study investigated the relationships between negative cognitive errors and self-reported symptoms of anxiety and depression in a large community sample of Greek adolescents, aged 12 to 18 years (N = 883). Although there is evidence of the existence of cognitive errors in anxiety and depression in childhood and adolescence in the United States, the existence of dysfunctional cognitive processing in Greek adolescents is less certain. A primary purpose of the present study was to evaluate the linkage between negative cognitive errors, as described by Aaron T. Beck (1976; Beck, Rush, Shaw, & Emery, 1979), and anxious and depressive symptoms among adolescents in a way similar to that which has been used to examine these errors in children. A major emphasis was to further increase knowledge about cognitive distortions and emotional disturbances, an issue that is quite prevalent among adolescents.

Section C consists of two case studies, which indicate appropriate professional practice. The therapeutic approaches used in the aforementioned case studies were based on person-centred therapy and cognitive behavioural therapy, respectively. Both clients were referred to the Hornchurch Community Mental Health Team, North East London Mental Health NHS Trust by the Consultant Psychiatrist, where I was employed as a counselling psychologist. The present case studies were chosen because they represented a good balance of process and content, demonstrating the skills and knowledge required to be a reflexive scientist – practitioner.

Section D comprises of a critical literature review on personal construct theory relating to marriage and marital therapy. In the first part of the review, one of the most important changes in marriage, namely, the shift towards the companionship type of marriage is briefly discussed. In the main part of the review, the personal construct theory and research relating to marriage and marital therapy is critically evaluated. In such a way, a number of theoretical assumptions and therapeutic principles are defined, as well as, the goals and implications of the personal construct

approach to marital therapy. In conclusion, some basic issues of personal construct therapy as applied to working with couples are examined.

Over the course of the last ten years, I have been encouraged to travel along the long and arduous road to becoming a competent and effective counselling psychologist, with the capacity to accept others; belief in the potential for change; and sensitivity to the values held dear by the client and self. It is now my responsibility to continue this journey, no matter how difficult, painful or challenging it may appear at times. To date, I have struggled and faced crises of confidence, persevering through periods of confusion and debilitating self-doubt. However, these struggles pale in comparison to the joy and excitement I feel when therapy proves to be successful for a client. Such a rewarding experience gives me the determination, strength and motivation to strive for my ongoing personal and professional development in order to be an effective counselling psychologist. Ultimately, I must concur with Aveline (1996), who states that: "training may occur in phases, but is a lifelong process" (p. 391).

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SECTION B RESEARCH

CHAPTER 1
INTRODUCTION

A basic premise of cognitive models of psychopathology is that faulty or negatively biased thinking styles are significant features in the development and maintenance of emotional disturbances such as anxiety and depression (Beck, 1976; Ellis, 1962). The maladaptive cognitive patterns that characterise these emotional disturbances have been referred to as *cognitive errors* (Beck, Rush, Shaw & Emery, 1979). Cognitive errors are defined as systematic errors in processing through which perceptions and interpretations of experience are distorted, in response to ambiguous or negative life events (Beck et al., 1979). Various types of cognitive errors have been described, including *catastrophising* (i.e., anticipating the worst possible scenario), *overgeneralisation* (i.e., taking one single incident as representative of all others), *personalisation* (i.e., attributing to oneself excessive, unfounded responsibility for external events) and *selective abstraction* (i.e., forming conclusions based on an isolated detail of an event).

Over the past two decades, evidence has emerged supporting linkages between dysfunctional cognitive processing and various forms of psychopathology during childhood and adolescence. Consistent with most adult studies (Lefebvre, 1981; Smith, O'Keeffe, & Christensen, 1994; Butler & Mathews, 1983; Muran & Motta, 1993), findings from studies with children and adolescents have provided confirmation of the association between negative cognitive errors and depression and anxiety in children and adolescents (Leitenberg, Yost, & Carroll-Wilson, 1986; Leung & Poon, 2001; Leung and Wong, 1998; Kempton, Van Hasselt, Bukstein, & Null,

1994; Stewart, Kennard, Lee, Hughes, Mayes, Emslie, & Lewinsohn, 2004; Tems, Stewart, Skinner, Hughes, & Emslie, 1993; Thurber, Crow, Thurber, & Woffington, 1990; Weems, Berman, Silverman, & Saavedra, 2001). For instance, Leitenberg and his associates (1986) were the first ones who specifically evaluated certain negative cognitive errors (via the Children's Negative Cognitive Error Questionnaire, CNCEQ), as well as, the relations between cognitive distortions and self-reported symptoms of depression and anxiety in school children. Results indicated that children with self-reported symptoms of depression and those with evaluation anxiety endorsed all four types of cognitive errors significantly more than did their non-depressed and non-evaluation-anxious counterparts. Although the theoretical basis of the reported association over time has been questioned (Coyne & Gotlib, 1983), such findings have contributed in extending applications of cognitive therapy with children and adolescents (Kendall, 1993).

Despite evidence for the existence of cognitive errors in anxiety in childhood and adolescence in the United States (Leitenberg et al., 1986; Weems et al., 2001), there is less certainty, however, as to the existence of dysfunctional cognitive processing in Greek adolescents, as well as, whether negative cognitive errors, and specifically which of the four types of cognitive errors, are related to self-reported symptoms of anxiety and depression. A primary purpose of the present study was to evaluate the linkages between negative cognitive errors, as described by Aaron T. Beck (1976; Beck et al., 1979), and anxious and depressive symptoms among adolescents in a way similar to that which has been used to examine these errors in children. More specifically, it aimed to investigate which types of cognitive errors are associated with self-reported symptoms of anxiety and depression in an adolescent community sample, whether endorsement of negative cognitive errors and anxious and depressive symptoms change over the course of adolescence and whether any gender differences exist.

There are several important reasons for examining the linkages between cognitive errors and anxiety and depression in adolescents. One reason is that testing the cognitive theories in a younger sample with consequently different cognitive, social and emotional development to an adult population will demonstrate the degree to which cognitive theories (Beck, 1976; Ellis, 1962) can be generalised to a younger population. Evidence of generalisability would strengthen the validity of the cognitive theories, indicating possible future research into the preventative and therapeutic interventions of emotional disturbances in adolescents. On the other hand, failure to replicate would highlight the limits of the cognitive theories and provide a potential focus on different cognitive processes, which might be more related to this younger client group as well as on other specific cognitive techniques.

Another reason for examining the specific linkages among adolescents' cognitive errors and anxiety and depression is the paucity of empirical information about whether age or gender influences the relation between anxiety and depression and cognitive errors. The target of the present study was adolescence, which is considered a critical developmental period, in light of the numerous normative transitions and the significant cognitive development that unfolds during these years (Santrock, 2003). Children and adolescents are in the process of developing ways to view the world. Logically, this implies that in cognitive models of childhood, cognitive dysfunction is conceptualised as being a normal part of the developmental process (Kendall, 1993; Kendall & Lochman, 1994). However, the influence of developmental factors on the endorsement of cognitive errors has not been sufficiently well examined (Garber, Weiss, & Shanley, 1993; Nolen-Hoeksema, Girgus, & Seligman, 1992). An appreciation of the effect of developmental stage on cognitive processes is required for adolescents. Also, in terms of gender, with the exception of Leitenberg et al.'s (1986) and Weems et al.'s (2001) investigations, none of the existing studies examined the effect of gender on cognitive distortions.

Finally, it is important further to assess the relation between cognitive distortions and anxious and depressive symptoms in a community sample of adolescents as an attempt to detect vulnerability factors, before a clinical presentation is apparent. There is more point to finding predictors in what could be a pre-clinical population (i.e., a school population) than in a clinical population, which has already been diagnosed and thus has some known underlying pathology.

The present research paper comprises of eight chapters. The first two chapters deal with the theoretical frameworks, namely, Beck's cognitive theory and the developmental period of adolescence, within which the work was conducted. In particular, the chapter on cognitive theory provides a critical overview of Beck's cognitive theory, focusing on the cognitive models of depression and anxiety. Next, the transitional period of adolescence is discussed, including biological, psychological, and social dimensions with specific attention on the influence of developmental factors on the evolution of cognitive processes. Jean Piaget's theory of cognitive development is reviewed at length due to the importance of cognitive components as the keystones to understanding much of adolescence and to its relevance to the present study. In addition, the psychological disorders of anxiety and depression during adolescence are briefly considered, together with some epidemiological aspects. In chapter four, an evaluative review of existing work is presented along with identifying aspects, which have been somewhat overlooked. Furthermore, the specific research focus of the current study is elaborated and the major research questions are delineated. The fifth chapter describes the methodology of the present research study, providing information on the design of the research, the sample, the measures used and the procedure for recording the data. The results chapter consists of a full record of the statistical analyses of the data. In the discussion, the results and their significance are interpreted, while noting their relation to previous studies. Finally, in the conclusion chapter, the author draws together and summarises the main findings of the current study, and poses questions for future research efforts.

CHAPTER 2
COGNITIVE THEORY: THEORETICAL CONSIDERATIONS AND RESEARCH

"Men are disturbed not by things but by the views which they take on them."
EPICTETUS, Enchiridion

This chapter is divided into five sections. The first three sections deal respectively with the evolution of cognitive theories, a brief synopsis of Ellis's rational emotive theory, and a detailed overview of Beck's cognitive theory, since it is the underlying psychological theory of the present study. Moreover, the cognitive models of depression and anxiety are further elaborated. In the fourth section, cognitive theory is critically evaluated from the perspective of a number of studies, which have investigated the relations between cognitive errors and anxiety and depression. Finally, the variety of psychological disorders to which cognitive therapy has been applied is reviewed and there follows a brief discussion on the efficacy of cognitive therapy for depression and anxiety disorders.

2.1 THE EVOLUTION OF COGNITIVE THEORIES

Cognitive theories have evolved out of behavioural psychology, which was primarily oriented towards the study of observable events and phenomena. Behaviourists, like Guthrie, Spence and Skinner proposed that "all the habits and beliefs which people exhibit must be learned and so the most important task for psychology is to find out how people learn"

(McLeod, 1993, p. 46). Behavioural theories were firmly rooted in empirical research and had an immense influence in the study of psychology. Pavlov's classical conditioning explained how people acquire emotional responses and Skinner's (1953) model of operant conditioning demonstrated how consequences, such as reinforcement, extinction and punishment, shape behaviour. However, later on, within the behaviourist movement, it was acknowledged that a stimulus-response analysis of all human action is insufficient, which resulted in the study of inner mental events, or cognitive processes (Hawton, Salkovskis, Kirk, & Clark, 1989). McLeod (1993) asserts that this new interest in cognition can be reflected in the work of Piaget, who studied the development of thinking in children and of Bartlett, who examined the ways in which individuals reconstruct the events they recall from long-term memory.

Cognitive theories, therefore, emerged out of behaviourism in order to focus on the cognitive processes through which people perceive and control their behaviour. In agreement with the general movement within psychology towards a more cognitivist approach, Beck's (1976) cognitive therapy and Ellis's (1962) rational emotive therapy have made an important contribution to these developments and promoted an expanded and clearer understanding of human behaviour.

2.2 ELLIS'S RATIONAL EMOTIVE THEORY

The rational-emotive therapy (RET) model (Ellis, 1962; Ellis & Grieger, 1977) emphasises cognitive mediation[1] as an explanation of emotional disorders. The ABC model, the central tenet underlying Ellis's RET, suggests that C, the emotional consequence of A, the activating event, is mediated by B, the person's belief about the event rather than the event

[1] A mediational model postulates that the effect of the first variable (i.e., A) on the outcome variable (i.e., C) is translated through a mediator variable (i.e., B). According to Baron and Kenny (1986, as cited in Cole & Turner, 1993), the mediator variable is jointly perceived as being a consequence of the first variable and a cause of the outcome variable.

itself. It therefore postulates that people's emotional reactions to life events result mainly from their beliefs about events. In Ellis's theory, irrational thinking, which is characterised by irrational beliefs, is seen as the core of much emotional disturbance (Ellis, 1962).

Ellis (1962) identified a number of irrational beliefs[2], which most people hold unconsciously, such as "I must have approval of everyone" and "I must do well at all times", generating catastrophic thinking and emotional disturbance. The rational emotive model of therapy proposes a strong correlation and even a causal relationship between irrational beliefs and emotional response. For instance, RET suggests that depressive symptoms are initiated by types of events that can be related to loss or rejection and that irrational or non-empirical interpretation of these events perpetuates the depressive state (Walen, DiGiuseppe, & Wessler, 1980). Consequently, rational emotive therapy maintains that altering a person's patterns of irrational thinking can help him or her to reduce maladaptive emotions and behaviour.

Aaron T. Beck's cognitive therapy has a number of similarities to RET. Both therapeutic approaches are active, directive, time-limited, collaborative and structured approaches, which focus on recognising and altering negative thoughts and maladaptive beliefs (Beck et al., 1979).

2.3 BECK'S COGNITIVE THEORY

Aaron Beck, who was originally trained in psychoanalysis, developed cognitive theory as a result of his research on depression. Beck initially explored the dreams and thoughts of depressed patients, attempting to gather empirical evidence to support the psychoanalytic hypothesis of depression as repressed hostility. Instead, he discovered a systematic

[2] Beck (1976) and Ellis (1962) have described independently a wide variety of cognitive contents, which were referred to by the former as dysfunctional or automatic thoughts and by the latter as irrational beliefs.

negative bias in depressed individuals' cognitive processing (Beck, 1967). Beck (1967) suggested that the pervasive negative thinking, which he frequently observed in depression, is not just a symptom, but plays a fundamental role in the maintenance and the development of the disorder. Beck's cognitive theory (1967, 1976) focused on patients' automatic thoughts and resulted in the reformulation of concepts of depression, anxiety, phobias and obsessive-compulsive disorders in terms of cognitive distortions. With continued clinical observations and research, Beck developed his cognitive theory as well as a relatively effective treatment for unipolar depression and extended the application of cognitive therapy to a variety of emotional disorders (Beck et al., 1979; Beck, 1993). Hawton and his colleagues (1989) reflect on the value of cognitive therapy, "the more sophisticated cognitive therapy described by Beck, which is similar in many respects to Ellis's rational emotive therapy..., has now become the most important of the cognitive approaches." (p. 11).

Beck (1967, 1976; Beck et al., 1979) proposes that cognitive therapy is based on a theory of personality which maintains that how one thinks largely determines how one feels and behaves. At the heart of cognitive therapy is the theoretical rationale that "an individual's affect and behaviour are largely determined by the way in which he structures the world" (Beck et al., 1979, p. 3). The emotional and behavioural difficulties that people experience are not caused by events but by the way they interpret these events. Therefore cognitive therapy is based on the view that cognitive processing influences and may play an aetiological role in mental health problems such as anxiety and depressive disorders. This is in accord with Ellis' (1962) rational emotive therapy, which maintains that there is a strong correlation between irrational beliefs and emotional response. Beck (1976) points out that psychological problems:

> may result from commonplace processes such as faulty learning, making incorrect inferences on the basis of inadequate or incorrect information, and not distinguishing adequately between imagination and reality. Moreover, thinking can be unrealistic because it is derived from erroneous premises; behaviour can be self-defeating because it is based on unreasonable attitudes. (p. 19-20)

Consequently, cognitive models of psychological disorders focus on the way people think about themselves, others and the world (Beck et al., 1979; Ellis, 1962) and on the effect of distorted thought processes that result in psychopathology.

It is worth making two general points about the cognitive model. Firstly, the cognitive distortion model of cognitive processing corresponds, in part, to the Freudian notion of primary processing (Beck, 1993). McLeod (1993) points out this similarity and explains that Freud regarded individuals as capable of engaging in rational, logical thought, which was termed secondary processing, but also as highly prone to reverting to the developmentally less mature primary processing, in which thought is dominated by emotional needs. He writes "the crucial difference between the primary process and cognitive distortion models is that in the former emotion controls thought, whereas in the latter thought controls emotion" (McLeod, 1993, p. 55).

Secondly, several factors are important in explaining dysfunction from a cognitive perspective. Beck (1991) in his article "Cognitive therapy: A 30-year retrospective" has noted that cognitive theory has been frequently misunderstood, mistakenly assuming that cognitions cause psychological disturbance. However, psychological disorders are ultimately caused by a range of biological, developmental, environmental, social and psychological predisposing and precipitating factors (Beck and Weishaar, 1995; Hawton et al., 1989). Cognitions and negative thinking influence mood but they do not cause depression. This is in agreement with Robins and Hayes (1993), who have argued "the cognitive model recognises that mood influences cognition, as well as the reverse, and that cognitions also influence behaviour in ways that may generate stressful situations about which individuals, in turn, will have upsetting cognitions. Thus, cognition plays just one role in an interwoven, dynamic sequence of influences" (p. 206). In accordance with their influence in cognitive theory, maladaptive thoughts, dysfunctional beliefs and cognitive distortions are a primary

focus of treatment in cognitive therapy. They form a prime target of intervention because cognitive theory proposes that they have some temporal priority in the development of mood disturbance and they can act to activate and maintain other symptoms (Beck and Weishaar, 1995; Beck, Butler, Brown, Dahlsgaard, Newman, & Beck, 2001; Hawton et al., 1989; Robins & Hayes, 1993).

2.3.1 Cognitive Model of Depression

The cognitive model of depression postulates three specific concepts (Beck, 1967; Beck et al., 1979): (1) the cognitive triad, (2) schemas, and (3) cognitive errors. While the cognitive model was first developed for depression, it is relevant and has been applied to a range of psychological disorders (Beck, 1993).

The cognitive triad refers to the notion that the individual views the self, current experiences and the future in an idiosyncratic way (Beck, 1967; Beck et al., 1979). This cognitive triad is reflected in the content of depressive thinking in distorted negative views of the self (e.g. "I am worthless"), current circumstances (e.g. "It is my entire fault") and the future (e.g. "I will be alone forever").

The second concept of the cognitive model refers to schemas, which can be considered stable, enduring, cognitive structures that consist of a person's fundamental beliefs and assumptions. Schemas, which may be adaptive or dysfunctional, develop early in life from personal experiences and are used to organise perception and to evaluate behaviour. Schemas may lay dormant for long periods of time (for example, nonstressful periods) but can be triggered by specific circumstances, such as stressful situations or negative life events. Beck and his associates (1979) maintain that "the schemas activated in a specific situation directly determine how the person responds. In psychopathological states such as depression,

patients' conceptualizations of specific situations are distorted to fit the prepotent dysfunctional schemas" (p. 13).

The third concept of the Beck's cognitive model refers to cognitive errors, collectively referred to as cognitive distortions. Cognitive errors are defined as systematic errors in processing through which perceptions and interpretations of experience are distorted (Beck et al., 1979). Beck, Rush, Shaw and Emery (1979) originally identified seven typical cognitive errors:

> *Arbitrary inference* refers to the process of drawing a specific conclusion in the absence of evidence to support the conclusion or when the evidence is contrary to the conclusion.
>
> *Selective abstraction* consists of focusing on a detail taken out of context, ignoring other more salient features of the situation and conceptualizing the whole experience on the basis of this fragment.
>
> *Overgeneralisation* refers to the pattern of drawing a general rule or conclusion on the basis of one or more isolated incidents and applying the concept across the board to related and unrelated situations.
>
> *Magnification and minimization* are reflected in errors in evaluating the significance or magnitude of an event that are so gross as to constitute a distortion.
>
> *Personalisation* refers to the patient's proclivity to relate external events to himself when there is no basis for making such a connection.
>
> *Absolutistic, dichotomous thinking* is manifested in the tendency to place all experiences in one of two opposite categories; for example, flawless or defective, immaculate or filthy, saint or sinner. In describing himself, the patient selects the extreme negative categorization.
> (Beck et al., 1979, p. 14).

Ellis's (1962) irrational beliefs also reflect the operation of a number of distorted cognitive processes, such as overgeneralisation. Other cognitive distortions, such as dichotomous thinking, arbitrary inference, and personalisation are also evident in irrational beliefs. Cognitive theory utilises the concept of dysfunctional attitudes and cognitive errors as vulnerability factors to depression that are activated by negative life events.

In summary, Beck (1967, 1976) and his colleagues (Beck et al., 1979) proposed that depressed individuals endorse specific cognitive errors, which result in systematic misinterpretation of the meaning of events. This is reflected in the observation that the depressed person tends to have a negative view of himself, make sense of events and experiences in a negative way and have a pessimistic view of the future (i.e., negative cognitive triad). These negative cognitive patterns once activated, lead on to the other behavioural, motivational, and physical symptoms of depression.

2.3.2 Cognitive Model of Anxiety

The behavioural models of anxiety suggest that fear and anxiety are acquired by conditioning or other learning processes, and that these acquired fear responses in turn bring about escape and or avoidance behaviour (Rachman, 1998). Both Eysenck (1957) and Wolpe (1958) developed theories of anxiety and although their interpretations of anxiety differ in detail, they shared a common belief that anxiety is essentially learned. These ideas were later revised and expanded in order to include important cognitive components, which resulted in the cognitive theory of anxiety.

The theoretical analyses set out originally by Beck and Emery (1985), and subsequently by Clark (1986), Barlow (1988) and Salkovskis (1985) have promoted an expanded and clearer understanding of anxiety. Cognitive theory accounts of anxiety agree with the assumption that anxiety is a product of learning but they emphasise on the affected person's interpretation of the events. Beck's work has been particularly influential in the way anxiety is currently construed:

> It is hypothesised that a precipitating event (or series of events) elicits or magnifies an underlying attitude of fear. These events may impinge on the patient's specific vulnerabilities to elicit such danger-related ideation. Subsequently, the patient is overtly vigilant of danger. He scans internal and external stimuli for "dangerous" properties. When

> new situations with possibilities of unpleasant outcomes are encountered, they are construed as dangerous. That is, the patient magnifies the possibility and intensity of unpleasant outcomes in his cognition of the situation (Beck & Rush, 1985, p. 365).

It is maintained that anxiety reactions persist mainly as a result of the enduring maladaptive cognitions. Beck (1976) suggests that an individual suffering from an anxiety disorder systematically overestimates the danger inherent in a given situation, which, in turn, activates a set of physiological responses that prepare the body for escape or self-defence. Danger is thus exaggerated, with a bias to apprehend events as catastrophic and hypothetical threats are equated with actual ones. Since the perception of danger arises from false or excessive assumptions, the responses activated are inappropriate for the situation and they are interpreted as further sources of threat. Thus, cognitive distortions prevent normal affective or behavioural responses (Klein, 1994). This reaction results in a series of vicious circles which tend to maintain or exacerbate the person's anxiety state. Hence, anxiety disorders are associated with viewing the world as dangerous and uncontrollable and viewing the self as helpless (Beck & Emery, 1985). Moreover, Beck, Laude and Bohnert (1974) reported that some of the negative cognitive errors, which were described in relation to depression - most notably catastrophising- are associated with anxiety disorders in adults.

In sum, a prominent feature of the cognitive theory of psychopathology is that emotional disturbances such as anxiety and depression are associated with distorted and maladaptive cognitions (Beck, 1976; Beck et al., 1979; Beck & Emery, 1985; Ellis, 1962).

2.4 Evaluation of Beck's Cognitive Theory

Cognitive theory is based on the fundamental idea that the way people structure situations determines how they behave or feel (Beck, 1987).

Salkovskis (1996) promoted and refined Beck's ideas:

> The fundamental idea is that emotions are experienced as a result of the way in which events are interpreted or appraised. It is the meaning of events that triggers emotions rather than the events themselves. The particular appraisal made will depend on the context in which an event occurs, the mood the person is in at the time it occurs, and the person's past experiences. Particular types of emotions depend upon this specific interpretation. Effectively this means that the same event can evoke a different emotion in different people, or even different emotions in the same person on different occasions (Salkovskis, 1996, p. 48).

A central theme of Beck's (1967, 1976) cognitive theory is the salience of maladaptive cognitive patterns, and in particular cognitive distortions as significant features in the development and maintenance of emotional disturbances, such as depression and anxiety. In particular, it is proposed that there exists a negative systematic bias in the cognitive processing of information that is critical in the symptomatology of the various psychological disorders (Beck & Weishaar, 1995). Thus, the theory suggests that individuals who are either depressed or anxious will make more negative information processing errors and that those individuals who tend to endorse more cognitive distortions should tend to experience more negative affect when encountering a negative situation (Beck, 1967, 1976; Beck & Rush, 1985; Henriques & Leitenberg, 2002). It is also postulated that cognition may have causal priority over emotions and thus, may predispose and place one at risk for depression (Beck, 1967). For instance, Beck (1967) has promoted the notion that the depression-prone individual is a person who makes logical errors in interpreting reality. Beck and Weishaar (1995) explain further that "...an individual whose thinking selectively synthesises themes of loss or defeat is likely to be depressed...in anxiety there is a systematic shift toward selectively interpreting themes of danger..." (p. 230). Hence, according to Beck's model (1967, 1976) and to other leading cognitive theories (Abramson, Metalsky, & Alloy, 1989; Abramson, Seligman, & Teasdale, 1979; Ellis, 1962), dysfunctional thoughts and cognitive distortions tend to contribute to a number of common disorders (Beck, 1967, 1976, 1993; Kovacs & Beck, 1978).

Over the past three decades, the cognitive distortion model elaborated by Beck (1967) has received considerable clinical and investigative attention and has generated extensive laboratory and clinical studies (see reviews by Beck, 1991, 1993). Many studies have reported significant relationships between measures of cognitive dysfunction and a wide array of psychological problems including depression (Cook & Peterson, 1986; Hyer, Jacobsen, & Harrington, 1985; Rohsenow & Smith, 1982; Van Den Bout, 1986; Vestre, 1984), anxiety (Butler & Mathews, 1983; Malouf, Schutte, & McClelland, 1992; Tobacyk & Downs, 1986; Vandervoort, Divers, & Madrid, 1999; Warren, Zgourides, & Jones, 1989; Zwemer & Deffenbacher, 1984), social phobia (Foa, Franklin, Perry, & Herbert, 1996), agoraphobia (McNally & Foa, 1987), posttraumatic stress disorder (Warda & Bryant, 1998), low self-esteem (Nielsen, Horan, Keen, Peter, Ceperich, & Ostlund, 1996), anger (Rohsenow & Smith, 1982; Zwemer & Deffenbacher, 1984), poor problem-solving (Heppner, Reeder, & Larson, 1983; Tobacyk & Milford, 1982), personality disorders (Beck et al., 2001) and even schizophrenia (Newmark & Whitt,1983). The presumption that dysfunctional cognitive processing plays a prominent role in the aetiology of these psychological problems is implicit in most of the reported correlations. However, it should be noted that the cross-sectional, correlational design of most of the above mentioned studies precluded causal interpretations.

On the other hand, Silverman and his colleagues (1984) conducted a longitudinal study of depressed patients to examine the relation between maladaptive attitudes, as measured by the Dysfunctional Attitude Scale (Weissman, 1979) and depression. Results indicated that maladaptive thinking was more prominent during depression and thus appeared to be a symptom or an effect of the depressed persons' illness rather than a character trait (Silverman, Silverman, & Eardley, 1984). However, this finding should be treated with caution because it involved a rather small sample (N=35), and the decrease in the depressed patients' dysfunctional

thinking could be a consequence of the supportive psychotherapy which they received between assessments.

In an attempt to clarify the role of cognitive distortions in the aetiology and maintenance of dysphoric mood, Henriques and Leitenberg (2002) conducted an experimental analysis of the role of cognitive errors in the development of depressed affect following negative social feedback in a non-clinical population. Results indicated that negative cognitive errors significantly predicted a change in depressed mood following a negative event. Hence, it was demonstrated that individuals who tended to endorse more cognitive distortions experienced an increased depressed mood after receiving negative social feedback.

Generally, although doubts have been raised about the etiologic role hypothesised for cognitive variables in depression (Coyne & Gotlib, 1983), there is evidence from the literature that depressed individuals show greater pessimism, more negative thoughts, more dysfunctional attitudes, greater attributional biases and more cognitive distortions than do nondepressed individuals (Dobson & Breiter, 1983; Eaves & Rush, 1984; Hamilton & Abramson, 1983; Hollon, Kendall, & Lumry, 1986; Krantz & Hammen, 1979).

In an attempt to provide further empirical support for Beck' s proposition of the impact of faulty cognitive processing (e.g., distortions) on behaviour and affect, a emerging body of research[3] has focused specifically on the association between cognitive distortions (i.e., catastrophising, overgeneralisation, personalisation, and selective abstraction) and depression and anxiety disorders in adults. There is strong evidence for a significant positive relationship between cognitive errors and depression (Krantz & Hammen, 1979; Lefebvre, 1981; Smith et al., 1994), even

[3] This increase is related to the development of specific measures of cognitive processes associated with affective distress (e.g., CEQ by Lefebvre, 1981; ASI by Seligman, Abramson, Semmel, & von Baeyer, 1979; CNCEQ by Leitenberg at al., 1986).

though the theoretical basis and nature of this association has been questioned.

One of the earliest studies to measure cognitive bias was conducted by Krantz and Hammen (1979), who reported that depressed individuals endorse more depressed cognitive alternatives than non-depressed individuals. Lefebvre (1981), who developed the first cognitive error questionnaire that reliably measured specific cognitive distortions, showed that, compared with non-depressed patients with or without low back pain, all depressed patients endorsed significantly more strongly all cognitive errors. In another study, Smith and his associates (1994) found that depressed chronic pain and depressed non-pain patients reported significantly more cognitive distortion than did non-depressed pain patients and normal controls.

Similar results have been obtained with a wide range of anxiety disorders (Butler & Mathews, 1983; Foa et al., 1996; Muran & Motta, 1993; McNally & Foa, 1987; Warda & Bryant, 1998; Warren et al., 1989). More specifically, Butler and Mathews (1983) found that anxious patients endorsed cognitive distortion in that these patients interpreted ambiguous events as more threatening and estimated the probability of these events as more likely to happen to them than did non-psychiatric controls. McNally and Foa (1987) compared patients with untreated agoraphobia and those with agoraphobia treated with cognitive behaviour therapy and non-psychiatric controls. As expected, results indicated the presence of cognitive distortions in agoraphobic individuals. In particular, it was shown that patients with untreated agoraphobia exaggerated the probability and interpreted events related to physiological arousal as more threatening and dangerous. In another study, which compared anxiety disordered clients, clinic outpatients and controls, Warren and his associates (1989) reported evidence suggesting that cognitive factors and in particular catastrophic cognitions and irrational beliefs are associated with agoraphobic avoidance. Muran and Motta (1993) conducted a study, which compared the dysfunctional cognitions (including cognitive errors)

found in a PTSD group, a clinical group (anxiety or depression) and a non-clinical group. Results revealed that individuals in the clinical group endorsed significantly more cognitive distortions and more irrational beliefs than individuals in the non-clinical group and in particular, the clinical group demonstrated more selective abstraction than the non-clinical group. However, in this study findings also indicated that although there was a strong positive relationship between dysfunctional cognitions and negative emotions, cognitions did not appear to be antecedents of emotional disturbance (Lewinsohn, Steinmetz, Larson, & Franklin, 1981).

Overall these studies have supported the proposition of Beck's cognitive theory that cognitive variables play an important role in the development and maintenance of depression and anxiety disorders (Beck, 1967, 1976; Beck et al., 1974; Beck et al., 1979). In addition, these results offer strong support for the association of cognitive errors and although their precise role is still ambiguous, they provide impetus for continued evaluation of cognitive distortions associated with depression and anxiety disorders in adults.

2.5 Applications of Cognitive Therapy

Cognitive therapy has been applied to a wide range of adult disorders including depression, anxiety, panic disorder, personality disorders, substance abuse (see review by Beck, 1993). As already mentioned, cognitive therapy has been one of the most extensively researched models of psychotherapy and outcome trials have demonstrated its efficacy in a number of common disorders (Beck, 1991; Beck, 1993; Dattilio, 2000; Robins & Hayes, 1993). Although cognitive therapy initially gained recognition for the treatment of depression (see review by Haaga, Dyck, & Ernst, 1991), extensive research has also been devoted to the study and treatment of anxiety disorders, as well as, recently to a wide variety of other disorders, including eating disorders, drug abuse, obsessive-compulsive disorder, schizophrenia, delusional disorders,

bipolar disorder and various personality disorders (Beck, 1993; Leahy, 2002). Beck (1991) has argued with regard to the application of cognitive therapy to the field of psychotherapy, "each disorder has its own specific cognitive conceptualisation and relevant strategies that are embraced under the general principles of cognitive therapy" (p. 368). The focus of the present study is on the application of cognitive therapy for depression and anxiety. Consequently these disorders alone are further elaborated in the following outcome literature.

Most of the earlier studies have been concerned with unipolar depression (e.g., Rush, Beck, Kovacs, & Hollon, 1977; Shaw, 1977). Dobson's (1989) meta-analysis of 27 different studies of the treatment of depression showed that cognitive therapy was significantly more effective than other forms of therapies, including behaviour therapy, psychodynamic therapy, pharmacotherapy and other psychotherapies. However, Hollon, Shelton and Loosen (1991) have pointed out that some of these studies did not include a control group and that the pharmacotherapy in some studies may have actually been inadequate. Thus, it would be more appropriate to propose that cognitive therapy is at least equivalent to pharmacotherapy.

Since its initial development, cognitive therapy has been successfully applied to anxiety disorders, including generalised anxiety disorder and panic disorder (Beck, 1991, 1993). Findings from a number of studies have provided support for the efficacy of cognitive therapy in generalised anxiety disorder (Butler, Fennell, Robson, & Gelder, 1991; Lindsay, Gamsu, McLaughlin, Hood, & Elpsie, 1984; Power, Jerrom, Simpson, Mitchell, & Swanson, 1989; Power, Simpson, Swanson, Wallace, Feistner, & Sharp, 1990; Sanderson & Beck, 1990) and panic disorder (Sokol, Beck, Greenberg, Wright, & Berchick, 1989; Clark, 1997). In summary, a body of clinical and empirical data significantly support the efficacy of cognitive therapy to both depression and anxiety disorders, as well as to a variety of frequently occurring disorders (see review by Beck, 1993). Beck (1993) writes with regard to the value of the cognitive approach:

> I conclude that cognitive therapy has fulfilled the criteria of a system of psychotherapy by providing a coherent, testable theory of personality, psychopathology, and therapeutic change; a teachable, testable set of therapeutic principles, strategies and techniques that articulate with the theory; and a body of clinical and empirical data that support the theory and efficacy of the theory (p. 194).

The cognitive model, which was originally developed for psychotherapy with adult patients, has been extended to child and adolescent psychopathology (see Kendall, 1993). In adolescence, however, theoretical assumptions are complicated by developmental issues (Cicchetti, 2001). The transitional period of adolescence is discussed further, including biological, psychological, and social dimensions with specific focusing on the effect of developmental factors on the evolution of cognitive processes.

CHAPTER 3
ADOLESCENT TO ADULT: THE TRANSITION PERIOD

In this chapter the focus is on the nature of adolescent development, and in particular, on the biological, cognitive, socioemotional and psychological processes. Our objectives are to provide some information about the many facets of development and to refer to theories that attempt to explain adolescent development. Jean Piaget's theory of cognitive development is discussed at length due to the importance of cognitive components as the keystones to understanding much of adolescence and to its relevance to the present study. Finally, the psychological disorders of anxiety and depression during adolescence are briefly considered, together with some epidemiological aspects.

3.1 THE NATURE OF ADOLESCENT DEVELOPMENT

Adolescence as a stage in development is a period of great biological changes and emotional development together with social, psychological and intellectual transformations. The term *adolescence* comes from the Latin verb *adolescere,* which means "to grow up" or "to grow to maturity". By exploring the nature of adolescent development and the forces that shape it, a better insight into the developmental period bridging childhood and adult self-realisation can be gained.

Important aspects of adolescent development may be seen in the writings of some of the early philosophers and scientists who wrote about adolescents, even though their ideas were largely based on subjective

opinion rather than on objective data. Plato (fourth century B.C.) emphasised the emergence of rational and logical thought during the years we now call adolescence, perhaps a precursor to Piaget's view of adolescence as a time of increased cognitive competence. He believed that the change in thinking signalled the time to teach science and mathematics as opposed to music and art. Aristotle (fourth century B.C.), who called the years from 14 to 21 *manhood*, emphasised the adolescent's ability to make choices and recognised that this self-determination becomes a hallmark of maturity. Aristotle also acknowledged adolescents' egocentrism, noting that adolescents believe they know everything and are positive about it. Finally, G. Stanley Hall[4] (1904 as cited in Santrock, 2003) viewed adolescence as a turbulent period charged with conflict and mood swings and explained adolescent behaviour as reflecting the emotional difficulty of this stage of development.

Adolescence is the one developmental period that is formally known as a transition, specifically, between childhood and adulthood. Adolescent development is determined by biological, cognitive and socioemotional processes (see Santrock, 2003). Biological processes involve physical changes in an individual's body, cognitive processes involve changes in an individual's thinking and intelligence and socioemotional processes refer to changes in an individual's relationships with other people, emotions, personality, and social contexts. All these processes are intricately interwoven as the adolescent develops.

The onset of adolescence is signalled by two significant changes in physical development (Santrock, 2003). The first change refers to the growth spurt, that is, the rapid increase in height and weight that marks the beginning of adolescence. The second significant change refers to the attainment of reproductive capability. *Puberty* is defined as a period of

[4] Historians label G. Stanley Hall (1844-1924) the father of the scientific study of adolescence. Hall's ideas were first published in the two-volume set *Adolescence* in 1904.

rapid physical maturation involving hormonal and bodily changes that take place primarily in early adolescence[5]. It is the point in life at which a person enters sexual maturity and progressively becomes physically capable of fathering or conceiving a child. Both these biological changes represent developmental markers signalling the onset of adolescence. Girls typically enter puberty earlier than boys at around 10 to 12 ½ years of age. Boys typically begin their growth spurt by age 12 ½ to 13. Hence, on average, the peak of the growth spurt that characterises pubertal change occurs 2 years earlier for girls than for boys. There is clear evidence that these boundaries are not absolute and there may be wide individual variations in the onset and progression of puberty, with recent developmental researchers supporting an even earlier onset for both girls and boys (i.e., 8-14 for girls, 10-16 for boys) (Santrock, 2003).

In a similar vein, it is difficult to ascribe an exact age range to adolescence, as both boundaries are dependent to individual variation as well as to socio-cultural factors[6]. Hence, adolescence is broadly defined as a time of transition between childhood and adulthood, acknowledging that the timing and pace of development will vary from individual to individual (Durkin, 1995). It is important to note that adolescence also is increasingly described by many developmentalists in terms of early and late periods (Santrock, 2003). Early adolescence refers to the developmental period that corresponds roughly to the middle school or junior high school years and includes most pubertal change (i.e., 10-15 years of age), whereas late adolescence corresponds roughly to the latter half of the second decade of life (i.e., 15-20 years of age).

Adolescence is a time when the child can acquire the cognitive, social, emotional and personal skills necessary to enter the adult world of the society. According to Coleman (1989) and Hamburg and Takashini (1989),

[5] At the start of puberty, a combined neural and hormonal signal, sent to the hypothalamus causes the body to become more sensitive to certain hormones, resulting in increased physical growth and sexual development (Santrock, 2003).

it is an especially important transition because, with the exception of infancy, biological changes occur more rapidly than at any other point in the life span. As a result of these biological changes, others' expectations for the individual's behaviour change and the individual's views of the self change. Moreover, the biological changes themselves (e.g., hormonal balances) may exert an almost direct influence on behaviour, resulting in mood fluctuations and other psychological states (Petersen, 1988). Therefore, the biological changes that occur in adolescence influence psychological, social and personal development (Brooks-Gunn & Paikoff, 1992; Durkin, 1995).

Adolescence also evolves within a social and cultural context and, therefore, the society in which the adolescent grows up has a very significant impact on individual development. The nature of the social structure defines what is expected of adolescents and in a way, the tasks of adolescence (Havighurst, 1951). According to the developmental theory of Havighurst (1951), there are a number of developmental tasks that adolescents have to overcome. Examples of the developmental tasks with respect to adolescence, include accepting one's physical makeup and achieving a masculine or feminine sex role; establishing appropriate relationships with peers; acquiring emotional independence of parents; developing cognitive skills important for social competence and achieving socially responsible behaviour; selecting and preparing for an occupation. Successful achievement of these tasks produces a well-adjusted individual, who should be competent and capable of dealing with future levels of development, whereas failure to acquire these developmental skills can often result in maladjustment and increased anxiety. Similarly, the nature of the transition depends on the natures of childhood and adulthood, which vary across cultures (Rogoff, 1990). As culture changes, the nature of adolescence will change. For example, industrialisation and mandated public education in most of the Western societies are two of the

[6] Santrock (2003) acknowledges that in most cultures, adolescence begins at approximately 10 to 13 years of age and ends between the age of 18 and 22 for most individuals.

several factors that have influenced the type of adolescence. Furthermore, in many Western societies, adolescence has been extended into the early adulthood years (i.e., post-adolescence) as a result of the continuing university education (Santrock, 2003). More than any other developmental stage, adolescence is socially and culturally determined, which is reflected in the postulation that it constitutes a socio-cultural construct (Zilikis, 2003).

As mentioned previously, adolescent development is determined not only by biological processes but also by cognitive and socioemotional processes (see Santrock, 2003). Cognitive processes refer to changes in a person's thinking and socioemotional processes refer to changes in one's relationships with others, emotions, personality, and social contexts. Hence, a number of qualitative changes occur during the adolescent years, such as significant changes in cognition, peer relations, moral thinking, self-concept and decision-making. The study of adolescence development is, thus, critical to understanding development during the adult years since these qualitative changes are viewed as significant indicators of adulthood (Coleman, 1989; Hamburg & Takashini, 1989).

It is evident that to understand the nature of the developmental changes that occur in adolescence, it is necessary to study the biological, cognitive, psychological, social and cultural factors that influence it. There is a diversity of theories that attempt to explain the complex and multifaceted subject of adolescent development. However, the intention here is not to explore all aspects of adolescent development, but rather to gain some understanding on the various important influences on adolescence, that appear to directly bear on the adolescent's way of thinking. Psychodynamic theories of adolescent development, which focus on personality development in general and identity issues in particular and Piaget's cognitive-developmental theory, which attempts to answer some important questions on the evolution of thinking patterns are of particular relevance to the present study. For example, how is a child's thinking different from that of an adolescent? What does adolescents' thinking look

like? Finally, is adolescence a particularly sensitive period, which could justify the establishment of faulty reasoning patterns which may then make individuals vulnerable to cognitive errors?

3.2 Theories of Adolescence

3.2.1 Psychodynamic Theories

Freud's psychosexual theory (1905) specifies that three components of personality – the id, ego and superego – develop and gradually become integrated in a series of five psychosexual stages (i.e., oral, anal, phallic, latency and genital). The period of adolescence corresponds to Freud's fifth and final stage of psychosexual development, the genital stage (age 12 onward). During the genital stage, puberty triggers a reawakening of sexual urges and of oedipal feelings, which threaten to cause damage to the established *defences*. Although Freud referred to the general tasks of adolescence, the greater one being the individual's endeavour of independence, it was his daughter, Anna Freud (1948), who made many of the first contributions to the psychoanalytic study of adolescence.

According to Anna Freud's view (1948), adolescents experience a recurrence of oedipal feelings and conflicts (due to the increase of sexuality which is due to the biological changes that occur at this time), which once again must be resolved but with the difference now that the resolution is through attraction to opposite-sex peers. Both Anna Freud (1948) and Peter Blos (1962) acknowledge that defense mechanisms provide considerable insight into adolescent development, since the upsurge of sexuality that adolescents experience produces stress and anxiety, which, in turn, must be defended against. According to Anna Freud, the most important defence mechanisms for understanding adolescent behaviour are *asceticism* and *intellectualization*. The former refers to efforts to reject all physical pleasure, whereas the latter refers to

attempts to transfer the issues of sex and aggression onto an abstract, intellectual level as a way to deal with painful personal conflicts.

Although a detailed discussion of psychodynamic theories of adolescence is inappropriate here, it is worth noting Blos's view of adolescence. Blos (1962) concentrated on adolescence as adjustment to sexual and biological maturation and proposed that it occurs in a series of stages, with each stage having a unique emphasis. Thus, he divided adolescence into the preadolescent stage, in which there is a quantitative increase in drive; early adolescent stage, which starts with puberty and there is an emphasis on same-sex friendships and on attitudes and values that are exactly the opposite of those of the parents; adolescent stage, in which the major focus is on intimate relationships and on the self; late adolescent stage, with an emphasis on identity and self-esteem issues; and finally the post-adolescent stage, which includes entrance into the adulthood roles of marriage and parenthood.

Finally, Erikson's (1963, 1968) psychosocial theory revises and extends Freud's theory by placing less emphasis on the sex instinct and more emphasis on important social and cultural determinants of human development. According to Erikson, at each stage of life, people must cope with social realities in order to adapt successfully to their environments and to display a normal pattern of development. Erikson (1963) asserts that individuals face eight major crises or conflicts during their life span. Each conflict emerges at a distinct time dictated by both biological maturation and social demands and it must be resolved successfully in order to prepare for a satisfactory resolution of the next life crisis. *Identity versus identity confusion* is Erikson's fifth developmental stage, which individuals experience during the adolescent years. At this time adolescents are faced with finding out who they are, what they are all about, and where they are going in life. They must establish basic social and occupational identities, or they will remain confused about the roles they should play as adults. Therefore, the construction of a clear and stable sense of identity is the focal task of adolescence. The adolescent

has to meet crisis-like situations in which choices have to be made in order to resolve the identity issue and to defeat identity diffusion. Although Erikson's theory has captured many of the central issues of life, it has been criticised for being vague about the causes of development.

This brief presentation of these psychodynamic theories of adolescence is intended to point out aspects of personality development in general and identity issues in particular. They all, to a degree, are historical in nature, that is, adolescents' behaviour can be explained through reference to early experiences. In this perspective, psychoanalytically oriented authors consider the latency period, preceding adolescence and characterised by the strengthening of the ego and the defense mechanisms, as a prerequisite for a successful adolescent passage (Blos, 1962; Zilikis, 2003). These theories also stress the value of unconscious thoughts and consider adolescence as a period of adjustment guiding the individual into adulthood roles and responsibilities. On the other hand, cognitive-developmental theories place great emphasis on adolescents' conscious thoughts and on the potential importance of cognitive components in the understanding of adolescent development. Piaget's cognitive-developmental theory is discussed next by describing its basic nature and the cognitive processes involved, as well as, the cognitive stages, concentrating on the concrete operational and formal operational periods of cognitive development, which span the adolescent years.

3.2.2 Piaget's Cognitive-Developmental Theory

Jean Piaget (1896-1980) created a detailed theoretical model that guided and continues to guide much cognitive-developmental research. Piaget viewed human cognition as a specific form of biological adaptation of a complex organism to a complex environment (Flavell, 1963). His model provides a valuable general conception of how children's cognitive systems might interact with their external environments, as well as, how

their cognitive systems gradually evolve with maturation and experience (Piaget, 1952, 1970).

In Piaget's (1970) theory, the cognitive system actively selects and interprets environmental information as it constructs its own knowledge. According to Flavell (1963), the Piagetian mind builds its knowledge structures by taking external data and interpreting them, transforming them, and reorganising them. Knowledge, thus, arises through an individual's actions on objects. Piaget (1972) provided understanding of cognitive development through the mechanism of equilibration, by which children balance assimilation and accommodation in understanding new concepts. Equilibration is the central construct in Piaget's theory (1970, 1971, 1985), and enables a child to progress through levels of knowing or of mental organisation, broadly those of infancy (based on action), childhood (based on representational thought), and adolescence (based on formal understanding). Assimilation refers to the process of adapting external stimuli to one's own internal mental structures, whereas accommodation refers to the converse or complementary process of adapting these mental structures to the structure of the same stimuli (Flavell, 1963). In other words, assimilation essentially means applying what one already knows, whereas accommodation roughly means adjusting one's knowledge in response to the special characteristics of an object or event. Through the assimilation and accommodation mechanisms the individual forms schemas, or cognitive structures, which are in continual states of change. These changes define the level of cognitive development of the individual. Moreover, changes in cognitive structures reflect qualitative differences in the modes of thinking, and it is these differences that define stages or periods of development (Flavell, 1963, 1977; Kessen, 1970; Wohlwill, 1970). Piaget (1970) supported that the stages of cognitive development are not genetically determined, and that they simply represent increasingly comprehensive ways of thinking. Children are constantly exploring, manipulating and trying to make sense out of the environment, and in this process they actively construct new and more elaborate structures for dealing with it (Kohlberg, 1968).

Development, then, is an active construction process, in which individuals, through their own activities, build increasingly differentiated and comprehensive cognitive structures.

Piaget's theory (1952) postulates four general periods or stages of cognitive development. Before briefly outlining the basic characteristics of each developmental stage, it is worth noting two important theoretical points. First, Piaget believed that children pass through the stages at different rates, and he therefore attached little importance to the ages associated with them (Flavell, 1963). Age is not a good representation of stage (Kessen, 1970; Wohlwill, 1970) as individuals progress through various stages of development at different rates. This basically means that one might find two individuals of the same chronological age whose competencies reflect different structural development (stages). Second, Piaget maintained that children move through the stages in an invariant sequence. This implies that all individuals progress through the same sequence of stages in the same order (Flavell, 1963).

Piaget's theoretical model (1952) of cognitive development consists of the following four stages:

Period I. ***The sensorimotor period (birth to two years).***
Infants understand the world by overtly acting on it. Their motor actions reflect sensorimotor schemes-generalised action patterns for understanding the world, such as a sucking scheme. Schemes gradually become more differentiated and integrated, and at the end of the period infants can form mental representations of reality.

Period II. ***The preoperational period (two to seven years).***
Children can use representations (mental images, drawings, words, gestures) rather than just motor actions to think about objects and events. Thinking now is faster, more flexible and efficient, and more socially shared. Thinking is limited by egocentrism, a focus on perceptual states, reliance on appearances rather than underlying realities, and rigidity (lack

of reversibility). The preoperational period is conceived as a period of preparation for concrete operations.

Period III. ***The concrete operational period (seven to 11 years).***
Children acquire operations-systems of internal mental actions that underlie logical thinking. These reversible, organised operations allow children to overcome the limitations of preoperational thought. Conservation, class-inclusion, perspective taking, and other concepts are acquired. Operations can be applied only to concrete objects-present or mentally represented.

Period IV. ***The formal operational period (11 to adulthood).***
Mental operations can be applied to the possible and hypothetical as well as the real, the future, and the present, and to purely verbal or logical statements. Adolescents acquire scientific thinking, with its hypothetico-deductive reasoning, and logical reasoning with its interpropositional reasoning. They can understand highly abstract concepts.

Although the above age norms are only rough indicators of developmental level, it is postulated that the periods of concrete and formal operational thinking span the late childhood and adolescent years of development. Operational thinking, the use of logical thought processes, is epitomised by an integral cognitive system by which the individual organises and cognitively manipulates the world around him or her. Operations are defined as mental actions, which are applied first to concrete, present objects and events and later to mental operations themselves, the thoughts about thoughts of formal operations (Piaget & Inhelder, 1966). There are, thus, two stages of operational thinking: concrete and formal. As mentioned previously, the former covers the later childhood and pre-adolescent years and the latter the adolescent years.

According to Piaget (1964), during the concrete-operational period, children develop logical thought processes (logical operations), that can be applied to concrete problems. Concrete refers to problems that are tied

to reality. In other words, children can think logically and systematically in terms of "mental actions", as long as they refer to tangible objects that can be subjected to real activity. Their thinking is attached to the reality of the here and now, as personally experienced and have difficulty dealing with hypothetical situations, that is about the possible as well as the real. Moreover, children at the concrete operational level are unable to deal with problems with more than two dimensions (Elkind, 1968). Although children's thinking makes significant advances during the concrete operational period, their thinking is still limited because of their inability for abstract reasoning. In other words, children are not yet competent to think in the abstract and to think of hypothetical situations with several dimensions.

The period of formal operations is characterised by the ability to use both abstract and concrete thinking skills (Inhelder & Piaget, 1958). Formal understanding is defined as the construction of abstract objects whose contextualisation is not restricted to the actual world which is merely one part of reality (Piaget, 1970). Adolescents are capable for abstract reasoning, and can order their thoughts in their minds alone (Piaget, 1964). Formal operational thought enables the adolescent to conceptualize all of the possible combinations in a system, which, in turn, allows him or her to construct contrary-to-fact hypotheses and to reason about such propositions "as if" they were true (Inhelder & Piaget, 1958; Elkind, 1967).

Inhelder and Piaget (1958) have pointed out the critical features of formal operations. These refer to the individual's ability to deal with the possible and hypothetical, as well as, the real, to reason with respect to hypothetical possibilities, acknowledging that many factors might influence a particular situation and to acquire scientific thinking, with its hypothetico-deductive reasoning. Piaget attempts to explain the logical thinking abilities of the adolescent by relying on concepts from formal logic theory (Flavell, 1963; Inhelder & Piaget, 1958). Hypothetico-deductive reasoning was used as a term by Piaget to reflect the fact that formal operations

allow adolescents to conceive of different propositions about the same set of factors and to work out means of testing them to achieve a resolution. Formal-operational thinkers, for example, can test the effects of varying a factor while holding other factors constant keeping track of the different manipulations and possibilities. They can contemplate the range of possible combinations, formulate hypotheses, and test them sequentially (see Inhelder & Piaget, 1958). They are able to formulate abstract hypotheses about possible outcomes.

In sum, considering that formal operational thinking is content-free, that is, it is a way of thinking about any given concern, it represents a way of perceiving all aspects of the world. It influences adolescents' perception and evaluation of all that happens to and around them. Adolescence is, therefore, a time during which cognitive functioning reaches a peak in the sense of becoming competent in abstract thinking ability[7]. Furthermore, it is characterised by a qualitative change in cognitive development, which relates to the way in which the individual perceives both the self and the social environment (Kohlberg, 1969).

The implications of Piaget's theory on the relationship between cognitive structures that are distinct at a specific level of development, and the dynamics of personality peculiar to that particular stage are examined in more detail below.

3.3 Implications of Piaget's theory for adolescent development

Piaget's cognitive-developmental theory has a number of implications for understanding all aspects of adolescent development. Elkind (1967) acknowledges that cognitive development and in particular, formal

[7] Piaget (1950) maintained that at each period there is a general correspondence between scientific and social thinking. For example, this is reflected in the observation of concrete-operational thinkers, who are able to consider two aspects of a problem simultaneously, and in their social interactions, they consider both their own and others' perspective.

operational thinking can provide insights with respect to the personality characteristics of adolescence. Firstly, the change from concrete to formal operational thinking results in the adolescent viewing the social world in new and different ways that were not previously possible. As adolescents become capable of formal operational thinking, their cognitive abilities, as well as, their views about the external world change. They can deal with many aspects of the world more profoundly and have now access to more abstract ideas and principles. In contrast to children at the concrete-operational level, who are bound to the here and now, adolescents begin to think about their futures and the nature of the society they will enter. For the first time adolescents become adept at generating ideas about the world as it could be. It becomes clear that adolescents' formal operational thinking is characterised by possibilities and an ideal view of the world. In other words, adolescents begin to consider ideal qualities they desire in themselves, others and the world and they often compare themselves and others in regard to such ideal standards.

Secondly, as cognitive changes allow new conceptualisations of the self, adolescents are capable of not only asking, but also of coming up with vital answers to such abstract questions as "Who am I?" and forming a stable identity. Erikson (1963) theorised that the major developmental difficulty that adolescents face is establishing a firm and coherent sense of who they are. Erikson's term of identity crisis reflects adolescents' uncertainty and confusion about their present and future roles in life. Cognitive development appears to strongly influence identity achievement. Adolescent self-descriptions become more abstract and adolescents appear able to describe the self in more substantive ways than children (Montemayor & Eisen, 1977). On the other hand, adolescents are also realising that they may use different selves in different situations, which initially may puzzle them. Harter and Monsour (1992) investigated the oppositional attributes reported by 13-, 15-, and 17-year-olds and whether they felt confused by these inconsistencies in their self-portraits. Results indicated that 13-year-olds reported few inconsistencies while 15-year-olds listed many inconsistencies in their self-portraits and were often

confused about them and concerned about finding their "real self". In contrast, 17-year-old adolescents appeared to have a more coherent view of themselves and were not bothered by oppositional attributes, which they had integrated into a higher-order. Thus, formal operations may pave the way for comparing abstract traits and for ultimately integrating them into a coherent self-concept. Consequently, adolescents who have achieved a consolidation of formal operational thought appear more likely to raise and resolve identity issues than peers who are less cognitively mature.

Finally, the role of formal operations in the adolescent's social life is also reflected in adolescent egocentrism. Elkind (1967) postulated that adolescent egocentrism, which is defined as the tendency to view the world from one's own perspective while failing to separate one's thoughts from the thoughts of others, is brought about by early formal operational thought. According to Elkind (1967), "one consequence of adolescent egocentrism is that, in actual or impending social situations, the young person anticipates the reactions of other people to himself. These anticipations, however, are based on the premise that others are as admiring or as critical of him as he is of himself" (p. 1030). Adolescent egocentrism, thus, refers to the heightened self-consciousness of adolescents and to the attribution of unlimited power to their own thoughts, without attempting to test them out in reality. Subsequently, during early adolescence, when social perception becomes again egocentric, adolescents may be somewhat more likely to endorse cognitive errors in their thinking. For instance, younger adolescents may be more likely to blame themselves for bad outcomes (personalisation). Adolescent egocentrism tends to decline by approximately the age of 15 or older, when formal operational thought becomes firmly established. More specifically, it is overcome as the young person starts gradually to differentiate between his own preoccupations and the thoughts of other people due to the conflict among the reactions that he expects and those that actually occur (Elkind, 1967).

It is crucial to note that there is evidence of considerable individual variation in the development of formal operational thought (Neimark, 1982). Piaget (1972) himself revised his theory and suggested that formal operations are not completely achieved until later in adolescence, between approximately 15 and 20 years of age. Broughton (1983) proposed a division of formal operational period into an early and late sub-period. According to this perspective, although early formal operational thought enables adolescents to think in hypothetical ways, which produces unconstrained thoughts with unlimited possibilities, abstract thinking is still cumbersome. This type of thought submerges reality, as the world is perceived too subjectively and idealistically. During late formal operational thought, which is expected to appear during the middle adolescent years, the difficulty is overcome and adolescents check out their reasoning against experience and accommodate to the cognitive development that has occurred. If we accept the division of formal operational thinking into two sub-periods, we may assume that the younger adolescents will be more prone to cognitive distortions than older adolescents. This hypothesis is based on the assumption that during early formal operations (i.e., from 11 to 15 years), young adolescents still have difficulty with abstract thinking and may stubbornly cling to ideas that already have been discounted, a possible characteristic of adolescent egocentrism. On the other hand, late formal operational thought, which is postulated to emerge during the middle of adolescent years, makes older adolescents' thought processes more flexible, realistic and applicable to a range of novel situations. It is therefore hypothesised in the present study that older adolescents will be less vulnerable to cognitive errors.

Piaget created a detailed theoretical model that guided and continues to guide much cognitive developmental research. However, there are many criticisms of Piaget's theory. Although Piaget seems to have adequately described general sequences of intellectual development, his tendency to infer underlying competencies from intellectual performances often led him to underestimate children's cognitive capabilities. Some investigators have challenged Piaget's assumption that development occurs in stages

(Flavell, 1977; Gelman & Baillargeon, 1983), and others have criticised his theory for underestimating social and cultural influences on intellectual development (Rogoff, 1990). Furthermore, a number of psychologists have reported findings which demonstrate that a large proportion of adolescents and most adults do not regularly demonstrate the highest stage of formal operational thinking on Piaget's standard tasks (Neimark, 1975; Kuhn, Langer, Kohlberg, & Haan, 1977). However, these findings do not necessarily challenge Piaget's theory since there is no theoretical reason why all individuals should reach his highest stage. Piaget (1972) conceded that most people acquire some level of formal operational thinking, but this is evident primarily in their areas of strongest interest or ability.

3.4 Depression and anxiety during adolescence

Adolescence is a period of transformation and change in many spheres of development. The changes in biological, cognitive, psychological and social development, as well as, the changes in parent and peer relationships produce a degree of stress on the adolescent. Adjusting and coping with these developmental challenges can sometimes be a struggle for adolescents (Weisz & Hawley, 2002). Although most adolescents are able to cope with the stressful events related to adolescence, some face great degrees of difficulty which may lead to behavioural and emotional disorders.

Results from epidemiological studies report that depression and anxiety disorders represent two of the most prevalent mental health problems in adolescents (Graham, 1993; Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993; Madianos, 1997). Summary reviews of epidemiology findings show higher psychopathology rates for adolescent samples compared to those of child samples (Dopheide, 2006; Harrington, 1994; Roberts, Attkinson, & Rosenblatt, 1998). By and large, depressive symptoms and disorders increase sharply in adolescence, particularly in

girls, with prevalence rates among girls doubling those for boys (Angold, Costello, & Erkanli, 1999; Costello, Mustillo, & Erkanli, 2003; Dopheide, 2006; Graham, 1993; Harrington, 1994; Kazdin, 1993; Madianos, Madianou, & Stefanis, 1993). According to Harrington (1994), the increased frequency of depression in female adolescents may be possibly explained by "an increase in risk factors (e.g. hormonal changes, genetic factors, increased adverse life events), a decline in protective factors (e.g. loss of social support, changes in the ability to experience depressive cognitions) and measurement artefacts" (p. 332).

In adolescence, both anxious and depressive symptoms appear to be rather common and persistent, and they are also found to be highly interrelated (Ollendick, & Yule, 1990; Ollendick, Yule, & Ollier, 1991). With reference to depression, it has been estimated that about 5-10 % of adolescents may at some point show symptoms of primary depression, including depressed mood, reduced interest or pleasure, fatigue or loss of energy, problems in thinking, lack of concentration, crying spells and suicidal thoughts (Costello et al., 2003; Weiner, 1980). It has been theorised that during adolescence there are some other symptoms of depression such as extreme fatigue, extreme preoccupation with physical development, and alienation from others (Dopheide, 2006; Weiner, 1980). The reasons for this may be related to the specific developmental tasks faced by adolescents, such as accepting one's physical makeup, establishing appropriate relationships with peers, developing cognitive skills important for social competence and achieving socially responsible behaviour (Havighurst, 1951).

Of note is that depressive disorders are rather difficult to diagnose in adolescents, due to the fact that they often show mood swings, ruminate in introspective ways, express boredom with life and indicate a sense of hopelessness (Angold, 1988). It is a possibility that some of these behaviours might simply be normal transitory phenomena, which reflect normal adolescent behaviours and thoughts rather than dysfunctional personality traits (Santrock, 2003). For instance, during puberty

adolescents are faced with the developmental task of integrating distinct components of identity to achieve a balance between self definition and the role expectation by their family and society (Erikson, 1963). More specifically, adolescents around the age of 14, feel divided into different selves (Harter, 1983), which results in a loss of familiarity with both the environment and the self and produces feelings of identity diffusion (Rosenberg, 1987). Noonan (1983) nicely parallels the active and emotionally energetic process of mourning to the adolescent transition since both can be viewed as attempts to achieve a sense of personal continuity out of the confusion of drastic disruption. However, reasonable caution is required in defining what is "normal" as it can be rather broad and inclusive. Kendall (1993) argues that adolescence is a period filled with opportunities for a diversity of thoughts, feelings and actions, which may be defined as abnormal only when they are maladaptive for the individual or interfering or destructive for others.

On the other hand, anxiety is considered to be a normal and adaptive response to a wide range of situations, but it is thought to be maladaptive when it is excessive, occurring often and with great severity and disrupts the individual's life (Herbert, 1994; Kendall & Lochman, 1994; Klein, 1994). Anxiety states in adolescence have many similarities to those seen in childhood, with some important differences[8] (Graham, 1993). Anxiety adolescent states are more likely to include *social anxiety*, *free-floating anxiety* (i.e., a general sense of mental unease without being attached to a particular object or situation), *existential anxiety* (i.e., an acute sense of uncertainty about personal identity and an unusual distress for the reality of his or her own personal existence, and about the meaning of life) and *hypochondriasis* (i.e., unusual worry over bodily health and over personal appearance) (Graham, 1993; Klein, 1994).

[8] According to Klein (1994), Piaget's theory of cognitive development has been invoked as explanatory of the reported age-related differences in anxiety states. As cognitive development proceeds, anxiety-provoking situations appear to change from undifferentiated to specific, on to abstract sources.

The aetiology and occurrence of emotional disturbances in adolescence is beyond the scope of this discussion. However, clinicians and researchers explain depression and anxiety as resulting from an interaction between many different factors, including biological, environmental, psychosocial and cognitive variables (Graham, 1993; Weisz & Hawley, 2002). With reference to cognitive models of anxiety and depressive disorders, dysfunctional cognitive processing, and particularly cognitive distortion, is associated with various forms of psychopathology in children and adolescents (Kendall, 1993; Kendall & Lochman, 1994). According to Klein (1994), "...cognitive distortions prevent normal affective or behavioural responses. Ensuing dysfunction causes inaccurate and relatively rigid schema that, in turn, induce a variety of symptoms..." (p. 352). The nature of cognitive dysfunction in anxious youth includes thoughts of being scared or hurt, self-critical thoughts, thoughts of excessive danger and social and evaluation fears (Barrios & Hartmann, 1988; Kendall, 1993), while depressed adolescents have been found to exhibit distortions in attributions, self-evaluation, and perception of past and present events (Curry & Craighead, 1990). Growing evidence has also emerged linking distorted thinking to anxiety and depression in adolescents (see Chapter 4 for a review of relevant studies). Therefore, an overriding goal of the present study was to examine the linkages between negative cognitive errors and self-reported anxious and depressive symptoms in a general population sample of Greek adolescents, including an estimate of the prevalence and incidence of anxiety and depression in adolescence.

In sum, depression and anxiety disorders are significant problems among adolescents, being neither uncommon nor necessarily harmless. Thus, clinicians and researchers are faced with the major task of how to best intervene to reduce the cognitive, behavioural and emotional difficulties in adolescence that are associated with emotional disturbance and psychopathology.

CHAPTER 4
COGNITIVE ERRORS IN ADOLESCENCE: RELATED LITERATURE

4.1 Overview

The basic premise of cognitive models of emotional disturbances, such as anxiety and depression, is the idea that it is not events *per se* but rather individuals' expectations and interpretations of events, which are accountable for the formation of negative emotions (Beck, 1976; Beck et al., 1979; Beck & Emery, 1985; Ellis, 1962). Thus, initially depression and later anxiety disorders have been associated with faulty or negative ways of thinking, in response to ambiguous or negative life experiences (Beck et al., 1979). The patterns of faulty or negative thinking that characterise these emotional disturbances have been referred to as "cognitive errors" (Beck et al., 1979). Major types of cognitive distortions include catastrophising (i.e., anticipating the worst possible scenario), overgeneralisation (i.e., taking one single incident as representative of all others), personalisation (i.e., attributing to oneself excessive, unfounded responsibility for external events) and selective abstraction (i.e., forming conclusions based on an isolated detail of an event).

Negative life events and stressful experiences over the course of development may also have a significant impact on the cognitive processing in childhood and adolescence, particularly if these experiences are pervasive and severe (Abramson et al., 1978; Abramson et al., 1989; Cole & Turner, 1993). Chronically aversive life circumstances, (e.g., abuse, poverty, parental discord) or traumatic life events (e.g., parental loss, physical assault) are likely to influence adolescents' sense of themselves, their world and their future and can provide the foundation for

the formulation of negative beliefs, increasing the risk of a wide range of emotional and behavioural difficulties (Garber & Flynn, 2001; Spence, Sheffield, & Donovan, 2002). Thus, adolescents who have experienced negative life stress recently may have a more negative view of their world, based on their real-life experiences. According to cognitive models (e.g., Beck, 1972; Abramson et al., 1978), dysfunctional schemas reside in almost latent form within depression-prone individuals, which may then be activated by later negative life events. For instance, in a 5-year longitudinal study of children, Nolen-Hoeksema et al. (1992) found that children who had experienced stressful life events had a more negative view of themselves, the world, and the future.

Over the past two decades, Beck's theory has prompted research for investigating the association between forms of cognitive distortions and psychopathology. Although the majority of the studies have been conducted with adults[9], empirical investigations of cognitive distortions and psychological disturbances with children and adolescents in both community (Cole & Turner, 1993; Leitenberg et al., 1986; Leung & Wong, 1998; Stewart et al., 2004) and clinic samples (Kempton et al., 1994; Tems et al., 1993; Thurber et al., 1990; Weems et al., 2001)[10] have recently increased. The aforementioned studies generally have been consistent with adult studies and appear to support the association between negative cognitive errors and anxious and depressive symptoms in children and adolescents. Although the theoretical basis and nature of this association over time remains to be answered (Coyne & Gotlib, 1983), such findings have extended applications of cognitive therapy with children and adolescents (Kendall, 1993; Kendall & Lochman, 1994).

[9] See discussion and review of relevant studies in Chapter 2.

[10] The aforementioned studies have all assessed cognitive errors via the Children's Negative Cognitive Error Questionnaire (CNCEQ; Leitenberg et al., 1986) (see Chapter 5 for a detailed description of the development and psychometrics of the CNCEQ), which is a downscaled version of the adult Cognitive Error Questionnaire (CEQ; Lefebvre, 1981). Leitenberg, Yost and Carroll-Wilson (1986) developed the CNCEQ in accordance to cognitive theory in that items of the CNCEQ reflect the four cognitive errors.

However, the work to date has not thoroughly considered four important issues. First, as far as the author is aware, no studies on negative cognitive errors and anxious and depressive symptoms in Greek populations have appeared in the international literature. It is a possibility that culture may influence the frequency of cognitive processing distortions and may also play a role in differences in exhibition of anxious and depressive symptoms in different groups. A primary purpose of this research study was to investigate Beck et al.'s (1979) set of cognitive errors in Greek adolescents in a way similar to that which has been used to examine these errors in children (Leitenberg et al., 1986) and adults (Lefebvre, 1981). Thus, the first question of concern in the present study was to determine the extent to which these negative cognitive errors were endorsed by adolescents from 12 to 18 years old from a relatively large community sample. In addition, were certain cognitive errors endorsed more frequently than others and how is this affected by the context (i.e., social vs. athletic vs. academic) in which these errors were endorsed?

Second, some evidence, although not conclusive, has emerged suggesting that negative cognitions predict both depressive symptoms (Nolen-Hoeksema, Girgus, & Seligman, 1986; Nolen-Hoeksema et al., 1992; Stewart et al., 2004) and anxious symptoms (Weems et al., 2001) in children and adolescents. Thus, the second question of concern in this study was to determine whether negative cognitive errors were associated with subsequent increases in signs of anxious and / or depressive symptoms and the extent to which adolescents' cognitive distortion predicted change in the levels of self-reported symptoms of anxiety and depression.

Third, despite increasing evidence for the existence of cognitive errors in anxiety and depression in youth, it remains unclear whether certain cognitive errors are endorsed more than others and whether different and separate types of cognitive distortions are related to anxiety and depression. Thus, the third question of concern in this study was whether

certain types of cognitive errors are specific and may differentiate the symptomatology of anxiety and depression.

Fourth, cognitive development in adolescence is marked by salient changes in the way adolescents process information (Kendall, 1993). However, the effect of age, as adolescents' cognitive capabilities increase, on the endorsement of cognitive errors in youth has not been sufficiently well examined. Thus, the fourth question of concern in this study was whether different developmental periods (i.e., early vs. late adolescence), as determined by age group, influence the extent to which adolescents endorse cognitive errors. Finally, we were interested to examine whether any gender differences exist.

To address these questions, the present study investigated the interrelationships among negative cognitive errors and levels of self-reported symptoms of anxiety and depression in a relatively large sample of Greek adolescents in the general population.

4.2 COGNITIVE ERRORS IN ADOLESCENCE

The first question of concern was to determine the extent to which negative cognitive errors, as described by Beck (1976), were exhibited by adolescents from a community sample. Our first hypothesis is related to this question. Despite growing evidence for the existence of cognitive errors in anxious and depressed children and adolescents from both community and clinic samples in the United States (e.g., Leitenberg et al., 1986; Weems et al., 2001), there is less certainty, however, as to the endorsement of dysfunctional cognitive processing in Greek adolescents, as well as, whether negative cognitive errors (and specifically which of the four types of cognitive errors) are related to self-reported symptoms of anxiety and depression. A review of the research revealed a significant gap, since none of the existing studies have used a Greek sample of adolescents to examine cognitive errors and self-reported symptoms of

anxiety and depression concurrently. Thus, an overriding goal was to provide some of the first empirical data concerning cognitive distortions in a relatively large community sample of Greek adolescents.

Leitenberg and his colleagues (1986) constructed the first self-report questionnaire (CNCEQ) to measure in children four types of cognitive errors as derived by Beck's cognitive theory (1967, 1976). After administration of this questionnaire to a normative sample of 637 children, results indicated that in general these children did not endorse any of the four types of negative distortions to any large extent. As expected, most children did not appear to frequently endorse the types of cognitions assessed by the CNCEQ, which reflect a negative bias on interpreting events. From this initial report, it was predicted that Greek adolescents from a general population would similarly not exhibit any of the four types of cognitive errors to any large extent in their thoughts. Furthermore, would certain cognitive errors be endorsed more frequently than others and would the area (i.e., social vs. athletic vs. academic) in which these errors were endorsed be significant? In Leitenberg's study, it was found that selective abstraction was endorsed most and catastrophising was endorsed least, while total distortion score was significantly higher in the social context than in either the academic or athletic contexts.

4.3 Linkages between cognitive errors and anxious and depressive symptoms

The second question of concern in this study was to determine the extent to which adolescents' negative cognitive errors are associated with subsequent increases in signs of anxious and / or depressive symptoms, as well as, whether total cognitive distortion would predict change in the levels of self-reported symptoms of anxiety and / or depression. The second and third hypotheses in this study relate to this question.

As already mentioned, the cognitive theory asserts that dysfunctional schemas, negative automatic thoughts and cognitive distortions are central to the development and maintenance of emotional disturbances, such as depression and anxiety (Beck, 1976; Beck et al., 1979). The cognitive model, initially developed with adult patients, has been extended to child and adolescent psychopathology (Kendall, 1993). An important next step toward understanding adolescent emotional disturbances is to verify that processes related with anxious and depressive symptoms in adults are also found in adolescents. Investigating the cognitive theories in a younger sample with consequently different cognitive, social and emotional development to an adult population will demonstrate the degree to which cognitive theories (Beck, 1976; Ellis, 1962) can be generalised to a younger population.

Findings from studies with children and adolescents generally have been consistent with adult studies. They have provided confirmation of the association between dysfunctional cognitive processing (i.e., negative cognitive errors, maladaptive attitudes, explanatory style) and depression (Garber et al., 1993; Haley, Fine, Marriage, Moretti, & Freeman, 1985; Leitenberg et al., 1986; Stewart et al., 2004; Thurber et al., 1990), and dysfunctional cognitive processing and anxiety (Canterbury, Golden, Taghavi, Neshat-Doost, Moradi, & Yule, 2004; Leung & Poon, 2001; Ostrander, Nay, Anderson, & Jensen, 1995; Weems et al., 2001) in children and adolescents. For instance, Garber and her associates (1993) conducted a study, which examined the validity and generalisability of cognitive models of depression to a nonclinical sample of adolescents and explored developmental differences with regard to depressotypic cognitions (i.e., automatic thoughts, attributions, dysfunctional attitudes). Results indicated that negative cognitions were strongly associated with self-report measures of both depressive and anxious symptoms in adolescents. In particular, greater levels of depressive symptoms were significantly associated with more negative automatic thoughts, dysfunctional attitudes, hopelessness, and a more helpless attributional style.

Leitenberg et al.'s (1986) study was the first one that specifically investigated certain negative cognitive errors with the Children Negative Cognitive Error Questionnaire (CNCEQ), as well as, the relations between cognitive distortions and self-reported symptoms of depression and anxiety in school children. As already mentioned above, results from an administration of the CNCEQ to a normative sample of children, indicated that in general these children did not endorse any of the four types of negative distortions to any large extent. However, results from two subsequent studies indicated that children with self-reported symptoms of depression and those with evaluation anxiety endorsed all four types of cognitive errors significantly more than did their non-depressed and non-evaluation-anxious counterparts.

Since Leitenberg et al.'s (1986) initial report, a number of studies have provided confirmation of the association between anxiety and / or depression and negative cognitive errors in youth using the CNCEQ (Kempton et al., 1994; Leung and Wong, 1998; Stewart et al., 2004; Tems et al., 1993; Thurber et al., 1990; Weems et al., 2001). More specifically, Weems and his colleagues (2001) investigated the relationships between three measures of anxiety and a measure of depression and negative cognitive errors in a clinical sample of children and adolescents. They found that all four types of cognitive errors were significantly correlated with the self-report measures of anxiety and depression. Kempton et al. (1994) compared inpatient adolescents with depression to adolescents with conduct disorder, and reported that the former exhibited greater levels of cognitive distorting. In another study, Beck's cognitive distortion model of depression was investigated with 110 psychiatrically hospitalised adolescents (Thurber et al., 1990). Results provided support for Beck's model since cognitive distortions, as measured by the CNCEQ, were found to be significant concomitants of depression. Leung and Wong (1998) investigated the association between negative cognitive errors and internalising and externalising syndromes in a large community sample of adolescents (N=405). They found that the various types of cognitive

errors, as evaluated via the CNCEQ, were specifically associated with internalising (i.e., anxiety and depression) but not externalising (i.e., conduct disorder) problems.

Review of the literature reveals considerable support for a cognitive model of psychopathology in youth, which asserts that emotional disturbances, such as anxiety and depression, are characterised by faulty or negative ways of thinking. Thus, our second hypothesis in this study was that adolescents who showed cognitive errors in their cognitive processing would exhibit more depressive and / or anxious symptoms concurrently than adolescents who took a more realistic approach in interpreting negative events.

Our third hypothesis about the predictors of anxiety and depression comes from Beck's (1967, 1976) theoretical position that negative cognitive processing distortions may predispose individuals toward a depressive disorder should they later experience negative stressful events. More specifically, Beck's cognitive theory of depression postulates that cognition may have causal priority over emotions and thus, individuals who endorse cognitive errors in their thinking may be at increased risk for depression (Beck, 1967). From this theory, it was predicted that adolescents' cognitive distortion would predict change in the levels of self-reported symptoms of anxiety and / or depression.

Empirical investigations of the aetiological role of cognitive variables in youth have reported at best conflicting results. On the one hand, there is some support from longitudinal studies that the cognitions that have been proposed to underlie depressive symptoms may in fact be reflective of depression (Cole, Martin, Peeke, Seroczynski, & Hoffman, 1998; McGrath & Repetti, 2002). For instance, Cole and his colleagues (1998) examined schoolchildren's negative self-evaluation errors and symptoms of depression over 3 years. Results indicated that negative self-distortions appeared to be more reflective than predictive of depression. In another longitudinal study with a non-clinical sample of children, McGrath and

Repetti (2002) reported that self-reported symptoms of depression predicted future negative views of the self, whereas negative self-perceptions were much less effective at predicting increases in depressed affect over time.

On the other hand, at least two studies have provided some support that negative cognitions predict depressive symptoms (Nolen-Hoeksema et al., 1986; Nolen-Hoeksema et al., 1992) in children and adolescents. For instance, in a 5-year longitudinal study of children in the general population, Nolen-Hoeksema and her associates (1992) investigated the relationship among levels of depressive symptoms and negative life events and explanatory style. They found that a pessimistic explanatory style significantly predicted depressive symptoms, alone and in conjunction with negative events. In an earlier investigation by Nolen-Hoeksema et al. (1986), cross-sectional correlations revealed that children exhibiting a pessimistic explanatory style had higher levels of concurrent depression than children with an optimistic explanatory style. In the study reported here, our third hypothesis was that adolescents' cognitive distortion would predict change in the levels of self-reported symptoms of anxiety and / or depression. This seems appropriate for the reason that that all of the studies cited above have not examined the specific types of negative cognitive errors, as measured by the CNCEQ. It is also a possibility that they have provided mixed results due to methodological constrains such as the many different measures that have been used.

Consistent with the adult literature, the aetiological role of cognitive patterns over time remains to be answered. However, the author decided to test the hypothesis that adolescents' cognitive distortion would predict change in the levels of self-reported symptoms of anxiety and / or depression through a cross-sectional design as an initial step. The phenomena under investigation develop over time and longitudinal studies are required to clarify whether cognitive distortions constitute risk factors for future episodes of clinical depression and / or anxiety. Nevertheless, cross-sectional studies can be highly informative especially in the early

stages of investigation (e.g., Nolen-Hoeksema et al., 1986), since inferences based on cross-sectional data can reflect longitudinal phenomena.

4.4 THE GENERAL SPECIFICITY HYPOTHESIS

The third question of concern in this study was whether certain types of cognitive errors are specific and may differentiate the symptomatology of anxiety and depression. The fourth hypothesis relates to this question. A growing body of research on cognitive theory has further developed the model by examining the content-specificity hypothesis. According to the cognitive content-specificity hypothesis, anxiety and depression can be distinguished by the content and form of dysfunctional schemas and processes related with these disorders (Beck, 1967, 1976). In particular, it is postulated that failure and loss dominate the contents of depression schemas (Beck et al., 1979), whereas fear of physical or psychological harm and danger control the contents of anxiety schemas (Beck & Emery, 1985). Depressive and anxious thinking can be differentiated in that the former is characterised by pervasive, absolute statements about personal loss or failure (Clark & Beck, 1989), while the latter tends to be more situational and future-oriented to the perception of anticipated threat and danger (Beck & Clark, 1988). Therefore, according to the content-specificity hypothesis, anxiety and depression have each a specific cognitive profile (Clark, Beck, & Stewart, 1990).

Empirical evidence with respect to the content-specificity hypothesis between anxiety and depression has been somewhat inconsistent to be considered as conclusive. A number of studies have provided positive support (Beck, Brown, Steer, Eidelson, & Riskind, 1987; Clark, Beck, & Brown, 1989; Clark et al., 1990; Hollon et al., 1986; Joiner, Metalsky, Lew, & Klocek, 1999; Jolly & Dykman, 1994; Ohrt, Sjodin, & Thorell, 1999). For instance, in an investigation of 470 psychiatric outpatients, Clark, Beck and Stewart (1990) found that specific cognitive content was apparent in

anxiety and depression. Particularly, results showed that the depressed sub-sample reported significantly more hopelessness, lower self-worth and negative thoughts involving loss and failure, whereas anxious patients endorsed more thoughts of anticipated harm and danger. On the other hand, some studies provided only partial support because anxiety cognitions failed to differentiate between depression and anxiety[11] (Epkins, 1996; Greenberg & Beck, 1989; Jolly, 1993; Laurent & Stark, 1993; Lerner, Safren, Henin, Warman, Heimberg, & Kendall, 1999). Further research is thus needed to draw a firm conclusion on the content-specificity hypothesis, taking also into consideration the issue of high correlation between measures of anxiety and depression.

Moreover, little empirical or theoretical work has been conducted on the possibility that cognitive errors, in addition to dysfunctional schemas, may also be disorder specific, and thus extending the content-specificity hypothesis to become a general specificity hypothesis. For instance, it has been postulated that personalisation may be specific to depression while external attribution may be specific to aggression (Leung & Poon, 2001). Only a few studies have investigated the general specificity hypothesis and, with one exception (Leung & Poon, 2001), they failed to provide clear evidence that different and separate types of cognitive distortions are apparent in depression and anxiety (Epkins, 1996; Johnson, Johnson, & Petzel, 1992; Leitenberg et al., 1986; Leung & Wong, 1998). Nevertheless, the author attempted to examine the general specificity hypothesis in relation to adolescents' self-reports of depression and anxiety. Thus, in the present study, a fourth hypothesis, that is, that different types of cognitive errors would be related to anxiety and depression and would differentiate the symptomatology of anxiety and depression was tested.

[11] It is worth noting that, in the above-mentioned studies, the depression cognitions could differentiate between depression and anxiety.

4.5 THE EFFECT OF AGE AND GENDER ON NEGATIVE COGNITIVE ERRORS

The fourth question of concern in this study was whether different developmental periods (i.e., early vs. late adolescence), as determined by age, influence the extent to which adolescents endorse cognitive errors and whether any gender differences exist. The fifth hypothesis relates to this question. At the heart of cognitive-behavioural theory is the assumption that people perceive and make sense of the world through their cognitive structures, which in turn have a direct influence on what is perceived and how it is processed and understood (Beck, 1976; Kendall, 1993; Kendall & Lochman, 1994). Children and adolescents are in the process of developing ways to view the world. Logically, this implies that in cognitive models of childhood, cognitive dysfunction is conceptualised as being a normal part of the developmental process. However, the existence of cognitive errors and their evolution over the course of adolescence is an area that has not been sufficiently investigated.

Few studies that examined endorsement of cognitive errors in children and adolescents have explored whether age has an effect on negative cognitive distortions and have yielded conflicting results. Cole and Turner (1993), who compared schoolchildren attending the fourth, sixth and eighth grades, found that children's inclination to make cognitive errors increased between the sixth and eight grades. In contrast, Leitenberg et al. (1986), in a similar sample of children (i.e., fourth, sixth and eighth graders) found that younger children (i.e., fourth graders) had a higher total distortion score than older children (i.e., sixth and eight graders) and sixth and eighth graders did not differ from each other. The closest comparison group available to the present study consisted of a sample of adolescents investigated by Garber et al. (1993), where no relation was found between age and any of the cognitive measures. In the absence of conclusive evidence, the question of whether age influences cognitive errors remains to be answered.

Possibly, it can be postulated that while cognitive errors may be developmentally appropriate in childhood and early adolescence, they are expected to gradually decrease as adolescents grow older, giving way to rational thinking processes. More specifically, cognitive dysfunctional processes are expected to be influenced by the maturational thinking process of formal operational thought, which is hypothesised to be consolidated during the middle of adolescence (Inhelder & Piaget, 1958; Piaget, 1964, 1972).

Although Piaget believed that formal operational thought is the best description of how adolescents think, some theorists have proposed a division of formal operational period into an early and late subperiod to make a distinction of the numerous cognitive structures of this specific level of development (Broughton, 1983). According to this perspective, early formal operational thought enables adolescents to think in hypothetical ways, which produces unconstrained thoughts with unlimited possibilities. This type of thought submerges reality, as the world is perceived too subjectively and idealistically. On the other hand, during late formal operational thought -which is expected to emerge during the middle adolescent years (Lapsley, 1990)- intellectual balance is restored, as adolescents check out their reasoning against experience and accommodate to the cognitive development that has occurred. Similarly, Elkind (1967) suggested that adolescents' egocentrism (i.e., the belief that one is the centre of others' attention and that his/her experiences are essentially unlike anyone else's) re-emerges during early adolescence and then diminishes with increasing cognitive maturity. Hence, there is reason to assume that the re-emergence of egocentrism may affect a person's cognitive style and may even explain an increased tendency to commit to specific kinds of cognitive errors.

Consistent with these theories, the fifth hypothesis was that adolescents, during early adolescence period (i.e., from 11 to 15 years) would show higher levels of cognitive errors in interpreting events than older adolescents (i.e., during late adolescence period, from 16 years and over)

who took a more realistic approach. Therefore, it was predicted that during the middle of adolescence, a consolidation of formal operational thought would take place, making older adolescents (i.e., >15 years old) less vulnerable to cognitive distortions.

Finally, a review of the literature revealed a gap in that, with the exception of two studies (Leitenberg et al., 1986; Weems et al., 2001), which indicated that gender did not have a significant effect on cognitive distortions, none of the existing studies that investigated the linkages between cognitive errors and emotional disturbances in youth reported whether there were any gender differences. Thus, in the present study the effect of gender on cognitive distortions was examined.

4.6 Present Study

The primary purpose of this study was to provide some of the first empirical data concerning cognitive distortions in a relatively large community sample of Greek adolescents. In particular, the author examined in the same sample of adolescents the degree of endorsement of cognitive errors, namely, catastrophising, overgeneralisation, personalisation and selective abstraction, and the contribution of the overall cognitive distortion and the four types of cognitive errors to the prediction of adolescents' self-reported anxious and depressive symptoms.

The target of the present study was adolescence, which is considered a critical developmental period, in light of the numerous normative transitions and the significant cognitive development that unfolds during these years. The influence of developmental factors on the endorsement of cognitive errors has not been sufficiently well examined (Garber et al., 1993; Nolen-Hoeksema et al., 1992). An appreciation of the effect of developmental stage on cognitive processes is required for adolescents.

Four major questions were addressed:

1. To what extent do adolescents from a Greek community sample endorse negative cognitive errors in their thinking processes and are negative cognitive errors associated with subsequent increases in signs of anxious and / or depressive symptoms?
2. To what extent are adolescents' self-reported symptoms of anxiety and depression predicted by their cognitive distortions?
3. To what extent are adolescents' self-reported symptoms of anxiety and depression differentiated by different types of cognitive errors?
4. To what extent does endorsement of negative cognitive errors and anxious and depressive symptoms change over the course of adolescence and do any gender differences exist?

This study adds to present literature by expanding investigation of cognitive theories to Greek adolescents, examining the linkages of negative cognitive errors and anxious and depressive symptoms, as well as, assessing the effect of age and gender on cognitive errors and including epidemiological data on self-reported symptoms of anxiety and depression.

CHAPTER 5
METHOD

This chapter describes the methodology of the present study and is divided into three sections: (1) participants, (2) measures used, and (3) procedure.

5.1 PARTICIPANTS

The sample comprised of 883 Greek adolescents recruited from twelve schools in Thessaloniki. The age range of the participants was 12 to 18 years. The mean age was 14.7 (*SD* = 1.692). The sex distribution was representative of the school population with 398 boys (45.1%) and 485 girls (54.9%).

The schools included were four public secondary schools, four public high schools, two private secondary schools and two private high schools. The age range of Greek students attending a secondary school is from 12 to around 14 – 15 years, whereas the age range of students in a Greek high school is from 15 to 17 – 18 years. The recruitment of participants was limited by the availability of schools willing to participate. However, the spread of schools involved in the study yielded a representative cross section of the local adolescent population.

5.2 MEASURES

The availability of reliable and valid cognitive measures is central to the testing of cognitive models of anxiety and depression in children and adolescents. There are a variety of ways to assess cognition in children such as think-aloud procedures, thought-listing procedures, structured interviews, inventories or self-statement measures (see, for reviews, Kendall & Chansky, 1991; Spence, 1994). The two most frequently used methods of cognitive assessment in children are the thought listing and the questionnaire approaches. When thought listing is used, the child is asked to verbalise his or her thoughts and these thoughts are then scored for certain categories of response. On the other hand, self-statement measures or questionnaires have preformulated thoughts which children read and then report the frequency of a particular thought over a period of time. Kendall and Chansky (1991) provided a detailed account of differences between these two basic methods of cognitive assessment with children. Their review was based in part on empirical data from child participants and in part on inferences from the literature with adults. They raised concerns about the validity of the thought-listing procedure and concluded that the questionnaire approach, despite its limitations, is the best method available to assess cognition, since it appeared to have greater construct validity. In another study on cognitive assessment, Prins and Hanewald (1997) also suggested that the questionnaire method should be favoured over the thought-listing method because of higher validity and easier administration and scoring. In particular, these findings indicated that the questionnaire approach proved to be more powerful to the thought listing in predicting task performance.

Since there is evidence from the literature that the benefits of self-statement inventories outweigh their limitations, it was decided, in the current study to use the questionnaire approach, in order to measure cognition, anxiety and depression in adolescents.

Test materials consisted of:

1. Children's Negative Cognitive Error Questionnaire (CNCEQ) (Leitenberg et al., 1986).
2. State-Trait Anxiety Inventory (Form Y) (STAI) (Spielberger, 1983).
3. Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) (see also Appendix I).

5.2.1 Children's Negative Cognitive Error Questionnaire (CNCEQ)

The Children's Negative Cognitive Error Questionnaire (Leitenberg, 2002; Leitenberg et al., 1986) was developed by Leitenberg, Yost and Carroll-Wilson (1986) to measure cognitive distortions. This questionnaire was modelled after Lefebvre's Adult Cognitive Error Questionnaire (1981). Lefebvre (1981) initially devised a measure with separate subscales for the specific seven cognitive errors identified by Beck et al. (1979). This measure was then revised to a scale with four reliably discriminative negative cognitive error categories, because considerable overlap between the seven-error categories was discovered.
The four resulting categories are:

a. ***Catastrophising:*** predicting that the outcome of an experience will be catastrophic or misinterpreting an event as a catastrophe.
b. ***Overgeneralisation:*** anticipating that the outcome of one experience will apply to slightly similar experiences in the future,
c. ***Personalisation:*** assuming personal responsibility for negative events or interpreting such events as having a personal meaning and
d. ***Selective abstraction:*** selectively attending to the negative aspects of an event.

The CNCEQ (Leitenberg et al., 1986) is composed of 24 vignettes (2 to 3-line descriptions of hypothetical situations or events), that reflect different examples of each of the four types of cognitive errors in three areas of

children's life- social, academic and athletic. The hypothetical situations are followed by statements, namely automatic negative thoughts that represent one of the four negative cognitive errors. Participants are asked to rate on a five-point scale from *not at all like I would think* (1) to *almost exactly like I would think* (5) the similarity of each statement to their own thought when they imagine being in that situation or experiencing that event.

Examples of some of these vignettes follow:

> You invite one of your friends to stay overnight at your house. Another one of your friends finds out about it. You think, "He/She will be real mad at me for not asking them and never want to be friends again." (catastrophising related to a social situation)
>
> Some of your friends have asked you if you're going to try out for the school soccer team. You tried out last year but did not make it. You think, "What's the use of trying out, I couldn't make it last year." (overgeneralisation related to an athletic situation)
>
> You play basketball and score 5 baskets but missed two real easy shots. After the game, you think, "I played poorly".
> (selective abstraction related to an athletic situation)
>
> Last week you had a history test and forgot some of the things you had read. Today you are having a math test and the teacher is passing out the test. You think, "I will probably forget what I studied just like last week." (overgeneralisation related to an academic situation)
>
> You are with two of your friends. You ask if they would like to go to a movie this week-end. They both say they can't. You think, "They probably just don't want to go with me."
> (personalisation related to a social situation)

The first draft of the CNCEQ (Leitenberg et al., 1986) initially generated 49 items that reflected different examples of each of the four types of cognitive errors. These items were reduced to 24, which had the best inter-rater agreement and range of scores. Hence the final form of the questionnaire produced is a 24-item scale which can be split into four subscales that correspond to each of the four types of cognitive errors. Each error type subscale is 6 items in length. The CNCEQ can thus

produce a total cognitive distortion score ranging from a minimum score of 24 to a maximum score of 120, (the five possible responses are scored from 1 to 5) and four sub-scores for each type of cognitive errors (i.e., Catastrophising; Overgeneralisation; Personalisation; Selective abstraction) ranging from a minimum score of 6 to a maximum score of 30. According to Leitenberg and his associates (1986), the CNCEQ can also be split into three content area subscales that reflect different cognitive distortion scores in three distinct areas of children's life. In such a way, it would be possible to explore whether a child tends to endorse more cognitive errors in situations related to his or her school life rather than in situations related to his or her social life. In sum, the CNCEQ was developed for children and adolescents to assess cognitive errors in the areas of academics, social relations and athletics.

The CNCEQ has shown good psychometric properties, particularly for the total scale (Robins & Hinkley, 1989). Leitenberg and his associates (1986) have reported test-retest reliability of .69 and internal consistency of .89. Hence the CNCEQ has demonstrated acceptable internal consistency, test-retest reliability and construct validity estimates. Further studies indicate that it reliably predicts depression, test anxiety and low self-esteem (Kempton et al., 1994; Messer, Kempton, Hasselt, Null, & Bukstein, 1994; Thurber et al., 1990; Weems et al., 2001).

In the present study, Cronbach's alpha coefficient of internal consistency was calculated for the total score, for each error type subscale and for each content area subscale. The alpha for the total score was .84, the alphas for the four error types ranged from .45 to .66 (i.e., .45 selective abstraction, .57 catastrophising, .65 personalisation and .67 overgeneralisation) and the alphas for the three content areas ranged from .62 to .72 (i.e., .62 athletics, .65 academic and .72 social). The internal consistency of the four error types and three content areas subscales can be considered adequate for research purposes, although it is far from optimal. However, the CNCEQ would be limited as a clinical instrument.

5.2.2 State-Trait Anxiety Inventory (Form Y) (STAI)

The State-Trait Anxiety Inventory (STAI) (Spielberger, 1983) is a well-used scale designed to measure a general tendency to experience anxiety, and in particular, state and trait anxiety. Spielberger (1972, 1983) identified the need to distinguish between state and trait anxiety, noting the practical implications of the concept of anxiety proneness. Anxiety states are viewed as transitory, recur when evoked by threatening stimuli and generally persist for a limited period of time after the disappearance of the threat. Trait anxiety is viewed as a relatively stable, individual difference between individuals in anxiousness or anxiety proneness. According to Spielberger (1983), trait anxiety may be perceived as a latent disposition to respond anxiously.

The STAI consists of two subscales -a state and a trait scale-, which reflect Spielberger's distinction between state and trait anxiety. Each scale is 20 items in length. On the state scale, respondents rate how they feel at the very moment of completing the questionnaire, using statements such as "I feel upset" and "I feel nervous". These items are ranked from one (Not at all) to four (Very much so). On the trait scale, respondents rate the intensity of more typical feelings of tension, apprehension and nervousness. It contains statements such as "I lack self-confidence" and the respondent is asked to endorse one of four degrees of agreement ranging from "Almost never" which scores one, to "Almost always" which scores four.

The STAI has been used extensively with high school and college students, working adults and psychiatric patients. It has also been administered to twelve- to fifteen year-olds since the key words in most of the items are at the sixth grade reading level or below (Spielberger, 1983). It is a widely used, well-researched measure with satisfactory reliability and validity estimates (Speilberger, 1983). The internal consistency (Cronbach's alpha) of the two anxiety subscales was found to be good, .87

for the trait anxiety subscale and .88 for the state anxiety subscale, respectively.

5.2.3 Center for Epidemiological Studies - Depression Scale (CES-D)

The Center for Epidemiological Studies-Depression Scale (CES-D) was developed as part of a National Institute of Mental Health study to measure depressive symptoms in the general population (Radloff, 1977). A study by Gotlib and Cane (1989), which compared eight widely used self-report measures of depression using DSM-III criteria, concluded that the BDI and CES-D should be the scales of choice. The CES-D is a 20-item self-report scale designed to measure depressive symptoms among adults and adolescents. The CES-D has been used with adolescent populations (Radloff, 1977; 1991; Schoenbach, Kaplan, Grimpson, & Wagner, 1982).

The CES-D has four separate factors, which are depressive affect, somatic symptoms, positive affect, and interpersonal relations (Radloff, 1977). The 20 items include depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, loss of energy, and sleep and appetite disturbances. Respondents rate the frequency of symptoms (over the past week), ranging from rarely or none of the time (0) to most or all of the time (3). Total scores on the CES-D (Radloff, 1977) can range from 0 to 60. High scores on the CES-D indicate higher levels of depression. The CES-D has been standardized for high school populations (Radloff, 1991), with a score of 19 or higher indicating depressed mood. It has demonstrated adequate test-retest reliability, internal consistency, and concurrent validity (Radloff, 1977, 1991; Schoenbach, Kaplan, Wagner, Grimpson, & Miller, 1983; Wells, Klerman, & Deykin, 1987). In the present study, Cronbach's alpha coefficient of internal consistency for the total score was .88.

5.3 PROCEDURE

The present study was conducted after obtaining approval from the Ministry of Education in Greece. Following the approval, all participating schools were sent letters introducing the aims of the study and requesting permission to include their students in the study. Thus, the schools' and/or teachers informed consent was obtained. In the next phase, the researcher arranged a convenient date and time to conduct the study with each school director. All necessary steps were taken to protect the privacy of participants and the need for anonymity.

It was agreed to gather participants in small groups (<30) in a classroom situation at their respective institutions to complete the questionnaires. Participants did not receive an information sheet describing the aims of the study as this could affect their responses. It was essential that participants remain naive when answering the questions. Participants then completed the questionnaires, which were presented in random order. In addition, they were requested to fill out two demographic questions on sex and age. Completion of the entire battery took approximately one hour. After completion of questionnaires, participants were de-briefed. The researcher was present during the study.

The questionnaires were administered with standardised verbal instructions, as well as, sample items, which were read and demonstrated, to the participants by the researcher, in addition to the original written instructions on the questionnaires. All questionnaires were in Greek. The STAI and the CES-D had already been translated and checked for reliability and validity. Both Greek versions of these questionnaires were found to be suitable for clinical and research use with satisfactory properties (Fountoulakis, Iacovides, Kleanthous, Samolis, Kaprinis, Sitzoglou, Kaprinis, & Bech, 2001; Fountoulakis, Papadopoulou, Kleanthous, Papadopoulou, Bizeli, Agori, Nimatoudis, Iacovides, & Kaprinis, 2003). The CNCEQ had not previously been used with Greek participants. After obtaining permission from H. Leitenberg, first author of

the scale, it was translated from English by Tairi and Zilikis and its Greek version was cross-checked by back-translation. It was also considered necessary to modify a few of the wordings to ensure the scale's adjustment and appropriateness for distribution to a Greek population (e.g., softball was replaced by basketball).

CHAPTER 6
RESULTS

6. 1 Outline of Analytic Strategy

Firstly, the internal consistency of all measures was examined since some were being used for the first time with a Greek adolescent population[12]. Secondly, the responses on the CNCEQ were examined, including the four types of errors and the three different content areas, as well as the responses on the anxiety and depression measures for the total sample, for boys and girls separately, and for two age groups (i.e., 12-15-year olds; and 16-18-year olds) separately. Pearson product-moment correlations were computed between the CNCEQ subscale scores and the symptom measures to evaluate the relative associations of all variables. Thirdly, a series of hierarchical regressions were conducted to determine whether overall scores on the CNCEQ would predict change in levels of adolescents' self-reported anxious and depressive symptoms. Fourthly, hierarchical regression analyses were conducted to determine whether different types of cognitive errors would predict change in levels of anxiety and depression. Finally, one-way analyses of variance (ANOVAs) were conducted to evaluate the effect of age and gender separately for the CNCEQ subscale scores and for the anxiety and depression measures.

[12] The results regarding the internal consistency of all measures (i.e., CNCEQ; STAI-S; STAI-T; CES-D) have already been discussed in Chapter 5, and thus have been excluded from this chapter.

6.2 Descriptive Results

A total of 883 participants were included in the analysis. Nine participants were excluded from the analyses due to incomplete questionnaires. The sample consisted of 398 boys (45.1%) and 485 girls (54.9%). The age range of the participants was 12 to 18 years. The mean age was 14.7 (*SD* = 1.692). Depending on the statistical analyses, age was either used as a continuous or as a categorical variable. When used as a categorical variable, age was divided in two groups. In particular, the first group included all adolescents from 12 to 15 years old (*N*= 558) and the second from 16 to 18 years old (*N*= 325). The two age groups reflected the early adolescence period and the late adolescence period, respectively, since adolescence is often described by many developmentalists in terms of early and late periods (Elkind, 1967; Santrock, 2003).

Table 6.1 summarises the responses on the CNCEQ, including the four types of errors and the three different content areas, as well as the responses on the STAI-S, STAI-T and CES-D for the total sample, for boys and girls separately, and for the two age groups (i.e., 12-15-year olds; and 16-18-year olds) separately. The mean cognitive distortion score for the total sample was 55 (Range of total cognitive distortion score: min=24, max=120), which is consistent with those reported elsewhere in the literature (Leitenberg et al., 1986). More specifically, after obtaining normative data, Leitenberg and his associates reported a mean cognitive distortion score of 57. This finding is in agreement with the assumption that the types of cognitive distortions, which are assessed by the CNCEQ, are thoughts that would not be commonly endorsed by adolescents from a community sample.

Table 6.1
Data for CNCEQ and Symptom Measures

Measure	Total sample						12 to15 years old	16 to18 years old
	M	SD	Min	Max	Boys	Girls		
CNCEQ	55.32	13.684	24	110	54.48	55.29	55.85	53.44
CNCEQ-CT	14.12	4.085	6	29	13.77	14.23	14.28	13.62
CNCEQ-OG	13.50	4.684	6	30	12.62	13.98	13.40	13.30
CNCEQ-PS	13.96	4.499	6	30	14.35	13.43	14.41	12.95
CNCEQ-SA	13.79	3.817	6	27	13.74	13.58	13.77	13.47
CNCEQ-SOC	19.15	5.943	8	39	18.71	19.18	19.58	18.00
CNCEQ-ATH	17.90	5.076	8	39	17.13	18.23	17.74	17.72
CNCEQ-ACA	18.31	5.323	8	37	18.64	17.81	18.54	17.63
STAI-S	37.76	10.526	20	74	35.80	39.22	36.54	39.46
STAI-T	43.89	10.305	20	80	40.78	46.35	42.72	45.61
CES-D	17.17	10.539	0	59	14.52	19.11	16.13	18.48

Note. N = 883. CNCEQ, Children's Negative Cognitive Error Questionnaire; CT, Catastrophising; OG, Overgeneralisation; PS, Personalisation; SA, Selective abstraction; SOC, Social content; ATH, Athletic content; ACA, Academic content; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.

Intercorrelations among the CNCEQ, including the four types of errors and the STAI-S, STAI-T and CES-D and age are presented in Table 6.2. Throughout this chapter p values are indicated as follows:

- $p>0.05$ ns
- $0.01<p<0.05$ *
- $0.001<p<0.01$ **
- $p<0.001$ ***

Table 6.2
Pearson Intercorrelations of the Cognitive and Symptom Measures and Age

Measure	Age	CNCEQ	CNCEQ-CT	CNCEQ-OG	CNCEQ-PS	CNCEQ-SA	STAI-S	STAI-T	CES-D
Age									
CNCEQ	-.133***								
CNCEQ-CT	-.150***	.799***							
CNCEQ-OG	-.025	.816***	.575***						
CNCEQ-PS	-.210***	.800***	.523***	.495***					
CNCEQ-SA	-.055	.773***	.483***	.507***	.536***				
STAI-S	.153***	.350***	.263***	.409***	.224***	.213***			
STAI-T	.151***	.405***	.327***	.452***	.225***	.269***	.629***		
CES-D	.109**	.389***	.309***	.420***	.235***	.270***	.602***	.720***	

Note. CNCEQ, Children's Negative Cognitive Error Questionnaire; CT, Catastrophising; OG, Overgeneralisation; PS, Personalisation; SA, Selective abstraction; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.
$^{**}p < .01$. $^{***}p < .001$.

Results indicated that the CNCEQ, as well as, each of the four types of cognitive errors were significantly correlated at the $p < .001$ level with each of the self-report measures of anxiety and depression and in the expected directions providing empirical support to a general cognitive model of psychopathology. Consistent with previous findings, as cognitive errors increased, reported anxious and depressive symptoms also increased. The range of the correlations was from .21 to .45. Intercorrelations among the four types of errors (range of *r*s = .48 to .58) were consistent with Leitenberg's study, which reported almost an exact same range of intercorrelations (range of *r*s = .49 to .56) (Leitenberg et al., 1986). Of note was that the measure of depression was also significantly correlated with both the state and trait anxiety measures (range of *r*s = .60 to .72). This was somewhat expected due to the limitations of the self-report questionnaires for anxiety and depression in children and adolescents, in that the questions included are not often those with good discriminatory power (Brady & Kendall, 1992). On the other hand, another possible explanation is that, consistent with previous findings where depression

and anxiety were highly interrelated (Ollendick & Yule, 1990; Ollendick et al., 1991), children who report high levels of depression also report high levels of anxiety, reflecting their possible contribution to the more global construct of negative affectivity (Watson & Clark, 1984).

Adolescents' age was negatively and significantly associated to the total cognitive distortion score (r = -.133***), and to the type of errors of catastrophising (r = -.150***) and personalisation (r = -.210***). Despite being significant, these correlations were low. No significant age difference was found in relation to the other two types of errors of overgeneralisation (r = $-.025^{ns}$) and selective abstraction (r = $-.055^{ns}$). Hence, these results indicate a possible inclination that the youngest adolescents endorsed more cognitive errors than did older adolescents. In particular, they appeared to endorse catastrophising and personalising cognitions more strongly. This finding provides some support for our hypothesis that cognitive errors are expected to be endorsed more frequently during early adolescence than during middle and late adolescence. More specifically, it was anticipated that the maturational thinking process of formal operational thought would somewhat influence older adolescents' cognitive style (Inhelder & Piaget, 1958; Piaget, 1964, 1972).

Similarly, Pearson product-moment correlations were conducted to examine the effects of age on the symptom measures of anxiety (STAI-S; STAI-T) and depression (CES-D). The correlations between age and state anxiety, trait anxiety and depression are also presented in Table 6.2. Age was generally related to all dependent variables. There was a small but significant tendency for both types of self-reported anxiety and depression to increase with increasing age.

It should be emphasized that when drawing conclusions from a correlation matrix where there are large numbers of correlations, one should be aware of the fact that, at the 0.05 level of significance, these may not be valid since one in twenty would be significant just by chance. However, the

reported correlations of the current study (see Table 6.2) are significant at the 0.001 level, meaning that it is very unlikely that they have occurred simply as a product of chance.

6.3 LINKAGES BETWEEN TOTAL COGNITIVE DISTORTION SCORES AND ANXIOUS AND DEPRESSIVE SYMPTOMS

A primary purpose of this study was to test the degree to which overall scores on the CNCEQ would predict an increase in participants' anxious and depressive symptoms, as measured by the STAI-S, STAI-T and CES-D. A series of hierarchical regressions were used to examine the assumed relationships, in which the total cognitive distortion score (CNCEQ) was the independent variable, while STAI-S, STAI-T and CES-D were the criterion variables. The three hierarchical regression analyses results are summarized in Table 6.3 and 6.4.

Table 6.3
Hierarchical Regression Analyses Using CNCEQ as Independent Variable: Change in R^2, F Change Values and Overall Ratios

Criterion Variable	CNCEQ		Overall	
	R^2 Change	$F_{1,796}$ Change	R^2	$F_{5,796}$
STAI-S	.008	12.145***	.457	133.942***
STAI-T	.016	33.069***	.614	253.256***
CES-D	.004	8.073**	.561	203.731***

Note. Every time one of the three symptom measures was used as the criterion variable, the remaining two symptom measures were entered in the first step along with gender and age to serve as control variables in all analyses.
CNCEQ, Children's Negative Cognitive Error Questionnaire; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.
**$p < .01$. ***$p < .001$.

Table 6.4
Hierarchical Regression Analyses Using CNCEQ as Independent Variable: Beta Values of Standardised Regression Coefficients and *t* Values

Criterion Variable	CNCEQ	
	Beta	*t*
STAI-S	.103	3.485**
STAI-T	.142	5.751***
CES-D	.076	2.841**

Note. CNCEQ, Children's Negative Cognitive Error Questionnaire; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.
**$p < .01$. ***$p < .001$.

For the application of hierarchical regressions the following procedure was used. Every time one of the three symptom measures was used as the criterion variable, the remaining two symptom measures were entered in the first step along with gender and age to remove their influence. This was done because significant, high correlations were found between the three symptom measures (i.e., STAI-S, STAI-T and CES-D) (See Table 6.2). Therefore, when STAI-S was the criterion variable, STAI-T and CES-D scores were entered in the first step with gender and age serving as control variables. In the next step, CNCEQ total score was entered to assess the proportion of variance attributable to it (R^2 change) after removing influence of the STAI-T, the CES-D and all control variables.

The first regression analysis on the CNCEQ, estimating its contribution to the prediction of the STAI-S scores was significant, F (5,796) = 133.942, R^2 change = .008, $p < .001$. It is important to highlight that all regression analyses were rather conservative, that is, in all analyses the remaining two symptom measures and gender and age were entered as control variables in the first step in order to remove their influence. Thus, in the first regression analysis, in the first step, the contribution of the four control variables to the prediction of STAI-S scores was highly significant, F (4,797) = 162.124, R^2 = .449, $p < .001$ (see Appendix IV). In the second step, the remaining contribution of the total distortion score (CNCEQ) to the prediction of the STAI-S scores (i.e., F (5,796) = 133.942, change =

.008, $p < .001$), despite being low[13], was significant, indicating that the tendency to make negative cognitive errors was associated with a tendency toward a more anxious state (see summary of results in Table 6.3).

Next, two hierarchical regression analyses similar to the one conducted with STAI-S scores as the criterion variable were conducted using STAI-T scores and CES-D scores as criterion variables, respectively. Every time the remaining two dependent variables were entered in the first step. Hence, when STAI-T was the criterion variable, STAI-S and CES-D were entered in the first step with gender and age and when CES-D was the criterion variable, STAI-S and STAI-T were entered in the first step. The second regression analysis with the CNCEQ and the contribution of the CNCEQ to the prediction of the STAI-T scores, F (5,796) = 253.256, R^2 change = .016, $p < .001$, and the third regression analysis with the CNCEQ and the contribution of the CNCEQ to the prediction of the CES-D scores F (5,796) = 203.731, R^2 change = .004, $p < .01$, all were significant in the prediction of the dependent variables scores (see summary of results in Table 6.3 and 6.4). Of note is that these results indicate that the contribution of the total cognitive distortion score (i.e., CNCEQ) to the prediction of both anxiety measures appeared to be stronger than to the prediction of depression.

6.4 LINKAGES BETWEEN THE FOUR TYPES OF COGNITIVE ERRORS AND ANXIOUS AND DEPRESSIVE SYMPTOMS

Another goal of this study was to determine which of the four types of cognitive errors (i.e., CNCEQ-CT; CNCEQ-OG; CNCEQ-PS; CNCEQ-SA) were the strongest predictors of each of the measures of anxiety (STAI-S;

[13] In a review of psychological research of the last few decades, Rutter (1999) pointed out that such a problem (i.e., low R^2) was frequently encountered, concluding that each variable individually had small contribution to the prediction of psychopathology, while only the combined effect of many factors could account for a larger proportion of variance.

STAI-T) and depression (CES-D), as well as, to analyze their predictive power. In the first phase, preliminary analyses included three stepwise multiple linear regression analyses which indicated which of the four types of cognitive errors were related to each of the symptom measures, and which should be excluded. Following the preliminary analyses, a series of hierarchical regressions were used to examine the assumed relationships, in which each time one type of cognitive error separately was the independent variable, while STAI-S, STAI-T and CES-D were the criterion variables, respectively.

In the first stepwise regression, STAI-S scores were used as the criterion variable and overgeneralisation (CNCEQ-OG), catastrophising (CNCEQ-CT), personalisation (CNCEQ-PS) and selective abstraction (CNCEQ-SA) were entered in the equation. Overgeneralisation was the only predictor retained in this first analysis with STAI-S scores as the criterion variable. Next, two stepwise multiple regression analyses similar to the one conducted with STAI-S scores as the criterion variable were conducted using STAI-T scores and CES-D scores as criterion variables, respectively. In the second regression, STAI-T scores were used as the criterion variable and overgeneralisation and catastrophising were the two predictors retained. In the final regression, CES-D scores were used as the criterion variable. Overgeneralisation and catastrophising were the two predictors retained in this final stepwise regression analysis. In summary, the results of the stepwise regression analyses indicated that overgeneralisation was the strongest predictor of state anxiety; overgeneralisation and catastrophising were the strongest predictors of trait anxiety and depression (see summary of results in Table 6.5). Hence, only these types of cognitive errors were used in the following hierarchical regression analyses.

Table 6.5
Summary of Stepwise Regression Analyses.

Predictor variable	R^2	Beta	t
	Dependent variable = STAI-S		
1 CNCEQ-OG	.163[a]	.403	12.915***
	Dependent variable = STAI-T		
1 CNCEQ-OG	.205	.392	10.515***
2 CNCEQ-CT	.212[b]	.105	2.829**
	Dependent variable = CES-D		
1 CNCEQ-OG	.174	.356	9.185***
2 CNCEQ-CT	.182[c]	.106	2.743**

Note. Beta = Values of Standardised Regression Coefficients. CNCEQ, Children's Negative Cognitive Error Questionnaire; CT, Catastrophising; OG, Overgeneralisation; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale. [a]F (1,858) = 166.788***. [b]F (2,851) = 114.760***. [c]F (2,815) = 90.453***. **$p < .01$. ***$p < .001$.

As already explained, a series of hierarchical regressions were used to examine the assumed relationships, in which specific types of cognitive errors were the independent variable, while STAI-S, STAI-T and CES-D were the criterion variables. The results of the stepwise regression analyses indicated which types of cognitive errors would be used as the independent variables for each of the measures of anxiety (STAI-S; STAI-T) and depression (CES-D). Therefore, five hierarchical regression analyses were conducted and the results are summarized in Table 6.6 and 6.7.

Table 6.6
Hierarchical Regression Analyses: Change in R^2, *F* Change Values and Overall Ratios

Predictor Variable	R^2 change	*df*	*F* change	Overall R^2	*df*	*F*
			Dependent variable = STAI-S			
1 CNCEQ-OG	.014	1,806	21.236***	.463	5,806	138.710***
			Dependent variable = STAI-T			
1 CNCEQ-OG	.016	1,806	33.739***	.613	5,806	254.969***
2 CNCEQ-CT	.011	1,809	23.253***	.608	5,809	250.705***
			Dependent variable = CES-D			
1 CNCEQ-OG	.003	1,806	5.515*	.561	5,806	205.993***
2 CNCEQ-CT	.002	1,809	4.487*	.556	5,809	202.936***

Note. Every time one of the three symptom measures was used as the criterion variable, the remaining two symptom measures were entered in the first step along with gender and age to serve as control variables in all analyses.
CNCEQ, Children's Negative Cognitive Error Questionnaire; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.
*$p < .05$.***$p < .001$.

Table 6.7
Hierarchical Regression Analyses: Beta Values of Standardised Regression Coefficients and *t* Values

Predictor Variable	*Beta*	*t*
	Dependent variable = STAI-S	
1 CNCEQ-OG	.136	4.608***
	Dependent variable = STAI-T	
1 CNCEQ-OG	.145	5.808***
2 CNCEQ-CT	.114	4.822***
	Dependent variable = CES-D	
1 CNCEQ-OG	.063	2.348*
2 CNCEQ-CT	.054	2.118*`

Note. Every time one of the three symptom measures was used as the criterion variable, the remaining two symptom measures were entered in the first step along with gender and age to serve as control variables in all analyses.
CNCEQ, Children's Negative Cognitive Error Questionnaire; CT, Catastrophising; OG, Overgeneralisation; STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.
*$p < .05$. ***$p < .001$.

For the application of hierarchical regressions the following procedure was used. Each time one of the three symptom measures was used as the criterion variable, the other two were entered in the first step with gender and age to remove their influence. This was done because significant high correlations were found between the three symptom measures (i.e., STAI-

S, STAI-T and CES-D). In the first regression, when STAI-S was the criterion variable, STAI-T score and CES-D scores were entered in the first step with gender and age serving as control variables. In the next step, CNCEQ-OG was entered to assess the proportion of variance attributable to it (R^2 change) after removing influence of the STAI-T, the CES-D and all control variables. We ran the first regression analysis on the CNCEQ-OG, and its contribution to the prediction of the STAI-S scores was significant, F (5,806) = 138.710, R^2 change = .014, $p < .001$. No other hierarchical regression analysis was ran with STAI-S as the criterion variable, since CNCEQ-OG was the only predictor retained in the preliminary stepwise regression analysis. The same format was used repeatedly with the other dependent variables as well.

In the second and third hierarchical regression analyses, STAI-T was the criterion variable and overgeneralisation (CNCEQ-OG) and catastrophising (CNCEQ-CT) were entered as independent variables separately, since they were the only significant predictors retained in the preliminary analyses. Both the second regression analysis with the CNCEQ-OG and the contribution of the CNCEQ-OG to the prediction of the STAI-T scores, F (5,806) = 254.969, R^2 change = .016, $p < .001$, and the third regression analysis with the CNCEQ-CT and the contribution of the CNCEQ-CT to the prediction of the STAI-T scores F (5,809) = 250.705, R^2 change = .011, $p < .001$, were significant in the prediction of STAI-T scores.

In the fourth and fifth hierarchical regression analyses, CES-D was the criterion variable and overgeneralisation (CNCEQ-OG) and catastrophising (CNCEQ-CT) were again entered as independent variables separately. Both the third regression analysis with the CNCEQ-OG and the contribution of the CNCEQ-OG to the prediction of the CES-D scores, F (5,806) = 205.993, R^2 change = .003, $p < .001$, and the fifth regression analysis with the CNCEQ-CT and the contribution of the CNCEQ-CT to the prediction of the CES-D scores F (5,809) = 202.936, R^2 change = .002, $p < .001$, were significant in the prediction of CES-D

scores (see summary of results in Table 6.6 and 6.7). However these results indicate that the contribution of overgeneralisation (CNCEQ-OG) and catastrophising (CNCEQ-CT) to the prediction of both anxiety (STAI-S and STAI-T) subscales was stronger than to the prediction of depression scores. This finding suggests that the tendency to endorse overgeneralisation (CNCEQ-OG) and catastrophising (CNCEQ-CT) was more associated with a tendency toward a more anxious rather than depressed state.

6.5 Differences on the cognitive measures and anxiety and depression measures as a function of Age

Participants were divided by age into two groups on the basis of early adolescence period and late adolescence period (Elkind, 1967; Santrock, 2003), to investigate differences between early and late period adolescents. In particular, group composition was as follows: early adolescence, 12 to 15 years old (*N*= 558) and late adolescence, 16 to 18 years old (*N*= 325).

To determine whether the two age groups differed with regard to all relevant cognitive variables, that is, to total distortion score, to four types of cognitive errors and to three content areas, a one-way analysis of variance (ANOVA) was conducted. After application of the Bonferroni alpha correction procedure, the alpha level was adjusted to .0045 in interpreting significance (.05/11 = .0045). The results for these cognitive measures are presented in Table 6.8.

Table 6.8
One-way Analysis of Variance (ANOVA) on Cognitive Variables and Adolescents' Age

Criterion Variable	Early Adolescence 12 to 15 years old	Late Adolescence 16 to 18 years old	*df*	*F*	Eta^2
	M	*M*			
CNCEQ	56.44	53.42	1,865	10.001****	.011
CNCEQ-CT	14.44	13.57	1,878	9.460****	.011
CNCEQ-OG	13.61	13.31	1,877	.831	.001
CNCEQ-PS	14.52	13.00	1,879	24.002****	.027
CNCEQ-SA	13.94	13.54	1,874	2.260	.003
CNCEQ-SOC	19.78	18.08	1,873	17.143****	.019
CNCEQ-ATH	18.01	17.71	1,878	.731	.001
CNCEQ-ACA	18.72	17.61	1,876	8.835****	.010

Note. **** The alpha level was adjusted to .0045 in interpreting significance, after application of the Bonferroni alpha correction procedure (.05/11 = .0045).
CNCEQ, Children's Negative Cognitive Error Questionnaire; CT, Catastrophising; OG, Overgeneralisation; PS, Personalisation; SA, Selective abstraction; SOC, Social content; ATH, Athletic content; ACA, Academic content.

No significant differences between groups were found for the types of errors of overgeneralisation and of selective abstraction and for the athletic area. However, significant differences were found between groups for total distortion score (CNCEQ), F (1,865) = 10.00, $p < .0045$, for the types of errors of catastrophising, F (1,878) = 9.46, $p < .0045$ and personalisation, F (1,879) = 24.00, $p < .0045$, and for both the social and academic areas, F (1,873) = 17.14, $p < .0045$ and F (1,868) = 13.36, $p < .0045$, respectively. Thus, these results indicate a possible inclination that the youngest adolescents endorsed more cognitive errors than did older adolescents. In particular, they endorsed catastrophising and personalising cognitions more strongly. This finding provides some support for our hypothesis that cognitive errors are expected to be endorsed more frequently during early adolescence than during late adolescence because they may be influenced by the maturational thinking process of formal operational thought (Inhelder & Piaget, 1958; Piaget, 1964, 1972). In addition, the finding that adolescents endorsed more

strongly the cognitive error of personalisation during the developmental period of early adolescence is consistent with Elkind's (1967) postulation that during early adolescence, young persons' egocentrism re-emerges, affecting their cognitive style.

The two age groups were also compared on the STAI-S, STAI-T and CES-D, with analysis of variance (ANOVA). The alpha level was again adjusted to .0045, after application of the Bonferroni alpha correction procedure. The results for these symptom measures are presented in Table 6.9. No significant difference between early and late period adolescents was found for the depression measure (CES-D). For the anxiety measures, the ANOVA indicated significant group differences (p < .0045). More specifically, adolescents aged 12 to 15 years reported significantly less anxious symptoms and less (but not significant) depressive symptoms compared to adolescents aged 16 to 18 years. This finding confirms previous findings (e.g., Angold, 1988; Kashani, Carlson, Beck, Hoeper, Corcoran, McAllister, Fallahi, Rosenberg, & Reid, 1987; Rutter, Taylor, & Hersov, 1994) of an increased prevalence of anxious and depressive symptoms in older adolescents.

Table 6.9
One-way Analysis of Variance (ANOVA) on all Symptom Measures and Adolescents' Age

Criterion Variable	Early Adolescence 12 to 15 years old	Late Adolescence 16 to 18 years old	*df*	*F*	Eta^2
	M	*M*			
STAI-S	36.77	39.43	1,873	13.120****	.015
STAI-T	42.91	45.54	1,868	13.366****	.015
CES-D	16.39	18.43	1,831	7.374	.009

Note. **** The alpha level was adjusted to .0045 in interpreting significance, after application of the Bonferroni alpha correction procedure (.05/11 = .0045).
STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.

6.6 Differences on the cognitive measures and anxiety and depression measures as a function of Gender

The effect of gender on each of the CNCEQ subscale scores was examined by a one-way analysis of variance (ANOVA) (Table 6.10), similarly with the previous analyses. The alpha level was again adjusted to .0045, after application of the Bonferroni alpha correction procedure.

Table 6.10
One-way Analysis of Variance (ANOVA) on Cognitive Variables and Adolescents' Gender

Criterion Variable	Boys	Girls	*df*	*F*	Eta^2
	M	*M*			
CNCEQ	55.16	55.45	1,865	.091	.000
CNCEQ-CT	13.98	14.23	1,878	.789	.001
CNCEQ-OG	12.85	14.03	1,877	14.069****	.016
CNCEQ-PS	14.47	13.53	1,879	9.668****	.011
CNCEQ-SA	13.99	13.62	1,874	2.077	.002
CNCEQ-SOC	19.02	19.26	1,873	.354	.000
CNCEQ-ATH	17.35	18.35	1,878	8.525****	.010
CNCEQ-ACA	18.93	17.81	1,876	9.738****	.011

Note. **** The alpha level was adjusted to .0045 in interpreting significance, after application of the Bonferroni alpha correction procedure (i.e., a = .05/11 = .0045). CNCEQ, Children's Negative Cognitive Error Questionnaire; CT, Catastrophising; OG, Overgeneralisation; PS, Personalisation; SA, Selective abstraction; SOC, Social content; ATH, Athletic content; ACA, Academic content.

There were no significant gender differences in relation to total cognitive distortion scores, catastrophising and selective abstraction and social area. Results indicated a significant main effect for the cognitive errors of overgeneralisation (F (1,877) = 14.06, p < .0045), personalisation (F (1,879) = 9.66, p < .0045) and for the athletic (F (1,878) = 8.52, p < .0045) and academic (F (1,876) = 9.73, p < .0045) areas. Hence, these results indicate that female participants endorsed overgeneralisation significantly

more often than male participants did and they appeared to make more cognitive errors in relation to the athletic areas. On the other hand, boys reported personalising cognitions more strongly than girls and they endorsed more cognitive distortions in relation to the academic area (see summary of results in Table 6.10). Although it is rather difficult to explain these differences, this finding could reflect a tendency for adolescents to manifest cognitive errors in areas where they may be experiencing more stressful events and in circumstances where they feel less confident. Nonetheless, it is noteworthy that the observed gender differences may have significant implications for monitoring and treatment.

Finally, a one-way analysis of variance (ANOVA) was conducted to determine the effect of gender on all symptom measures, that is, to STAI-S, STAI-T, and CES-D (Table 6.11). There was a significant main effect for state anxiety (F (1,873) = 20.68, p < .0045), trait anxiety (F (1,868) = 57.77, p < .0045) and depression (F (1,831) = 40.17, p < .0045). More specifically, results indicated that girls scored significantly higher on all symptom measures than did boys (see summary of results in Table 6.11). Consistent with previous findings, girls showed greater levels of anxious and depressive symptoms than boys did.

Table 6.11
One-way Analysis of Variance (ANOVA) on Symptom Measures and Adolescents' Gender

Criterion Variable	Boys	Girls	*df*	*F*	Eta^2
	M	*M*			
STAI-S	35.99	39.21	1,873	20.681****	.023
STAI-T	41.03	46.20	1,868	57.771****	.062
CES-D	14.69	19.23	1,831	40.176****	.046

Note. **** The alpha level was adjusted to .0045 in interpreting significance, after application of the Bonferroni alpha correction procedure (i.e., a = .05/11 = .0045). STAI-S, State-Trait Anxiety Inventory-State subscale; STAI-T, State-Trait Anxiety Inventory-Trait subscale; CES-D, Center for Epidemiological Studies-Depression Scale.

CHAPTER 7
DISCUSSION

This research study examined cognitive errors and self-reported symptoms of anxiety and depression in a community sample of Greek adolescents using a cross-sectional design. Four major questions were explored. The first question was whether adolescents endorse negative cognitive errors in their thinking processes and whether these negative cognitive errors are associated with subsequent increases in signs of anxious and / or depressive symptoms. The second question was whether adolescents' self-reported symptoms of anxiety and depression are predicted by their overall cognitive distortions. The third question was whether different types of cognitive errors differentiate adolescents' self-reported symptoms of anxiety and depression. Finally, the fourth question was whether endorsement of negative cognitive errors and anxious and depressive symptoms change over the course of adolescence and whether any gender differences exist.

The findings from this investigation confirmed that cognitive distortions are a common and pervasive attribute of adolescents who reported depressive and / or anxious symptoms and demonstrated the generalisability of the association between cognitive distortions and depression and anxiety in Greek adolescents.

7.1 Relations between cognitive errors and anxious and depressive symptoms

Results of the present study indicated that, consistent with previous findings (e.g., Leitenberg et al., 1986), most adolescents did not frequently endorse any of the four types of negative cognitive errors (see Table 6.1). This was expected in that the CNCEQ, in accordance with cognitive theory, assesses dysfunctional thoughts that children and adolescents from a community sample should not typically manifest in their thinking. Thus, most adolescents did not seem to make negatively biased interpretations of external events.

On the other hand, results indicated that cognitive distortions in general, as well as all four types of cognitive errors were significantly associated with greater levels of anxious and depressive symptoms. In particular, the present study indicates a significant, although mild, correlation between overall cognitive distortion and anxiety and depression (approximately, r = .40 and r = .39, respectively). The correlations analysis reported in Table 6.2 provides empirical support for a cognitive model of depression and anxiety, given that all cognitive errors included in this study were significantly related to the two adolescent emotional problems. The correlations were comparable with what has been reported elsewhere in the literature with children and adolescents (Garber et al., 1993; Kempton et al., 1994; Leitenberg et al., 1986; Leung & Wong, 1998; Stewart et al., 2004; Tems et al., 1993; Thurber et al., 1990). As hypothesised, negative cognitive errors were associated with significant increases in signs of anxious and / or depressive symptoms. The above findings confirm the notion that cognitive errors are valuable constructs for understanding both depression and anxiety in adolescents. Beck et al. (1979) have argued that cognitive structures, including cognitive errors, may act as vulnerability factors, putting individuals at risk for developing depression in response to negative life events. In a similar vein, cognitive distortions may make adolescents vulnerable to experiencing depressive and / or anxious symptoms, particularly if they are combined with stressful

circumstances, which are prevalent in various important areas of adolescents' lives (Garber & Flynn, 2001; Garber et al., 1993). However, it should be emphasised that the findings from the present study support only the concomitant status of cognitive distortions in relation to self-reported symptoms of anxiety and depression. The presumed, antecedent, causal nature of such cognitions remains to be demonstrated in future longitudinal research studies.

The present study found that overall cognitive distortion, as measured by the CNCEQ, was a significant predictor of both anxious and depressive symptoms (see Table 6.3). Consistent with previous studies (Stewart et al., 2004; Weems et al., 2001), the finding that self-reported anxious and depressive symptoms were predicted by overall cognitive distortion supports the prominent role of cognitive errors in cognitive theories of anxiety and depression (Beck, 1976; Beck & Emery, 1985; Beck et al., 1979). Moreover, this finding is consistent with Beck's (1993) proposition that distorted processing of information, which Beck (1967, 1976) originally described as characteristic of depressed patients is not specific to this disorder, but rather it is apparent to various forms of psychopathology.

It should be emphasised that overall cognitive distortion consistently displayed a stronger relationship with self-reported anxiety than with depression. That is, cognitive distortion was, in fact, a stronger predictor of anxious symptoms than it was of depressive ones. This is not surprising given that it has been suggested that depression and anxiety may be a part of a more global dimension of negative affectivity (Watson & Clark, 1984). Even in the adult literature, where the distinction between anxiety and depression has been widely investigated, it has not been clearly determined whether anxiety and depression are discrete overlapping disorders or part of a larger more general internalising syndrome (Lucas, 1993). Similarly, it has been speculated that negative cognitive errors may not be specific to depression (Robins & Hinkley, 1989), but may more generally reflect a larger more general internalising syndrome, such as

negative affectivity (Ronan, Kendall, & Rowe, 1994; Watson & Clark, 1984).

7.2 Overgeneralisation and Catastrophising predict anxious and depressive symptoms

An important goal of this investigation was to determine which of the four types of cognitive errors, namely, overgeneralisation, catastrophising, personalisation and selective abstraction, were the strongest predictors of anxiety and depression. Moreover, to what extent did different types of cognitive errors differentiate between anxious and depressive symptoms?

Results indicated that the types of cognitive errors of overgeneralisation and catastrophising predicted a change in adolescents' self-reported anxious and depressive symptoms. More specifically, overgeneralisation was the strongest predictor of self-reported symptoms of state anxiety, whereas overgeneralisation and catastrophising were the strongest predictors of self-reported symptoms of both trait anxiety and depression (see Table 6.6). These findings indicated that adolescents' tendency to take one single negative event as representative of all others and to anticipate the worst possible outcome for an event predicted an increase primarily in anxious symptoms and secondarily in depressive ones. These results confirm the previous findings by Leitenberg et al. (1986), who found that overgeneralisation was the most strongly endorsed cognitive error in both the depressed group and the high-evaluation-anxiety group. Moreover, Weems et al. (2001) found that overgeneralisation and catastrophising scores were the strongest predictors of each of the measures of anxiety and overgeneralisation and selective abstraction were the strongest predictors of depression. Although it is interesting to compare the results of the present study with those of other researchers, it must be borne in mind that there are several methodological differences that prevent direct, valid comparisons. The present sample was restricted to adolescents from a community sample, whereas Leitenberg et al.

(1986) studied a nonclinical sample of school children from 9 to 13 years of age (grades four, six, and eight) and Weems et al. (2001) a sample of children and adolescents referred for anxiety problems (aged 6-17 years).

Overgeneralisation, catastrophising and the overall score from the CNCEQ were stronger predictors of anxiety scores than depression scores on the outcome measures. In other words, adolescents' tendency to manifest the cognitive distortions of overgeralisation and catastrophising was more associated with a tendency toward a more anxious rather than depressed condition. Perhaps overgeneralisation and catastrophising are more reliably associated with a change in anxiety symptoms. With regard to anxiety, Beck had suggested that some of the negative cognitive errors, such as catastrophising, are associated with anxiety disorders in adults (Beck et al., 1974). Moreover, Rachman (1998) had noted that "paradoxically, the recent extension of cognitive ideas into the study of anxiety and its disorders has been more successful, and more quickly successful, than the original work on depression"(p. 1). In any case the overall pattern of results (i.e., overall cognitive distortion and separate types of cognitive errors) provides support for the strong association between cognitive factors and anxiety.

Interestingly, no evidence emerged for a general specificity hypothesis in the present study. According to the general specificity hypothesis, cognitive distortions are postulated to be disorder specific and thus different and separate types of cognitive distortions should be related to depression and anxiety (Leung & Poon, 2001). Results indicated that both anxiety and depression were related to all types of cognitive errors, providing empirical support to a general cognitive model of psychopathology (see Table 6.2). Further analysis revealed that overgeneralisation and catastrophising were the strongest predictors to both anxiety and depression (see Tables 6.5 and 6.6). Thus, each emotional problem did not appear to have its specific type of cognitive errors. Adolescents who were frequently taking one single negative event as representative of all others and who were dwelling on the worst

possible outcome of any stressful event appeared to exhibit increased signs of both anxiety and depression. It would appear therefore that anxiety and depression share the same types of cognitive distortions.

7.3 Developmental differences

This study adds to the literature by providing information on the influence of age (i.e., early vs. late adolescence) on endorsement of cognitive distortions. An important contribution of this study is in the wide age range included in the sample. This broader range indicated significant differences in the evolution of cognitive errors and anxious and depressive symptoms during this period. As hypothesised, results indicated that cognitive errors were endorsed significantly more frequently during early adolescence than during late adolescence period. In other words, younger adolescents showed a greater tendency to cognitively distort than did older adolescents. More specifically, adolescents aged 12 to 15 years manifested significantly more frequently overall cognitive distortion and the cognitive errors of catastrophising and personalisation in their thoughts than did adolescents aged 16 to 18 years (see Table 6.8). Such findings are consistent with the notion discussed in Chapter 3 that adolescents, during the early adolescence period, may exhibit higher levels of cognitive errors in interpreting events compared to adolescents during the late adolescent period, who are more likely to have achieved a consolidation of formal operations, making them less vulnerable to cognitive distortions (Inhelder & Piaget, 1958; Piaget, 1972).

A possible explanation of such a finding may be that the reported cognitive errors during early adolescence may be related to normal cognitive development. Cognitive developmental theories (Flavell, 1963; Piaget, 1970) have established that adolescent thought processes are qualitatively different from those of younger children. The structures of formal operational thinking can be applied successfully to a great variety of problems, which make them much more flexible than those of the concrete

operational thinking. Hence, late adolescents in particular are able to think of a number of possible alternatives to a problem and are less likely to be puzzled or perplexed by outcomes that are unexpected. Although most adolescents' thinking makes significant advances due to the development of formal operations, (i.e., from 11 years to adulthood) (see Inhelder & Piaget, 1958; Piaget, 1970), Piaget (1972) later suggested that formal operations are not completely achieved until later in adolescence, between approximately 15 and 20 years of age. Hence, it has been proposed that, during early formal operations, the young adolescent may still face difficulty with abstract thinking, perceiving his or her experiences too subjectively and persisting to ideas that already have been discounted (Piaget, 1972). Therefore, consistent with the cognitive developmental theory, young adolescents' inclination to endorse cognitive errors more frequently in their thinking may be conceptualised as developmentally appropriate in early adolescence.

Additional support for the proposition that cognitive errors may reflect normal developmental trends comes from Elkind (1967), who pointed out the re-emergence of egocentrism during early adolescence. Adolescent egocentrism signifies that young adolescents tend to believe that they are the centre of others' attention and have difficulty separating their thoughts from the thoughts of others. An expected consequence of adolescent egocentrism is that the adolescent may be highly self-conscious, while attributing unlimited power to his or her thoughts, without attempting to test them out in reality. Subsequently, a possible explanation of the observed increased tendency of young adolescents to endorse cognitive errors is that their cognitive style might be influenced by the re-emergence of egocentrism. In a similar vein, the finding that young adolescents endorsed personalisation significantly more strongly, that is, they appeared more likely to blame themselves for bad outcomes, reflects this tendency (i.e., adolescent egocentrism), in that early adolescents tend to become focused on themselves and fail to adopt others' perspective, while taking on self-value criteria about their physical appearance or social experiences.

Finally, further support for the "normality" of young adolescents' cognitive dysfunction is found in the result of the present study that adolescents aged 12 to 15 years reported significantly less anxious symptoms and less (but not significant) depressive symptoms (see Table 6.9) compared to adolescents aged 16 to 18 years. In particular, as is consistent with the existing literature (e.g., Angold, 1988; Kashani et al., 1987; Rutter et al., 1994), a preponderance of anxious and depressive symptomatology was found in older adolescents. These significant differences between the two age groups provide some evidence that the cognitive distortions manifested during the early adolescence period may not necessarily be related to anxious or depressed symptoms, but may be related to normal cognitive development.

One hypothesis worth exploring in future studies is whether cognitive level, independent of age, is associated with the degree of endorsement of cognitive errors. For example, to investigate if concrete operational thinking and early formal operational thinking predict an increase in cognitive errors, and late formal operational thinking predicts a decrease in cognitive errors, as well as the relationships among cognitive distortions and anxious and depressive symptoms. On the other hand, as Maughan (2001) has argued in a recent review of lessons from longitudinal studies, future longitudinal research projects are urgently needed to identify the biological, psychological and social factors that contribute to the sharp increase of anxious and depressive symptoms in the late adolescence period.

7.4 GENDER DIFFERENCES

Results indicated that gender did not have a significant effect on cognitive distortions. In particular, there were no significant differences between boys and girls in the endorsement of cognitive errors in general, and the cognitive errors of catastrophising and selective abstraction (see Table

6.10). This finding is consistent with previous studies (Epkins, 1998; Leitenberg, 1986; Weems et al., 2001), suggesting that gender does not appear to affect the degree of dysfunctional cognitive processing in adolescents. Interestingly, it was found that boys reported personalising cognitions more strongly than girls and they endorsed more cognitive distortions in relation to the academic area. On the other hand, girls endorsed overgeneralisation significantly more often than boys did and they appeared to make more cognitive errors in relation to the athletic areas. In other words, boys appeared to take excessive responsibility for the occurrence of negative events and more so for events related to their academic life. In contrast, girls tended to take one single event as representative of all others, especially in athletic experiences. While many interpretations are possible to explain these differences, this finding could reflect a tendency for adolescents to manifest cognitive errors in areas where they may be experiencing more stressful events and in circumstances where they feel less confident due to explicit feedback. However, future research studies are needed to disentangle these differences, providing a better understanding of the different types of cognitive errors among boys and girls, as well as, the various contexts that these are manifested. In general, these findings support a recommendation that therapists evaluate the content and the type of adolescents' cognitive distortions, especially as they may relate to major themes in the adolescent's life and may have important implications for treatment programmes.

Also similar to results from previous research studies is the observation that the level of anxious and depressive symptoms is higher for girls than for boys (see Table 6.11). Finding that adolescent girls had an increased prevalence of anxious and depressive symptoms as assessed by the STAI and the CES-D, is consistent with the differences in the level of anxiety and depression between the two sexes reported in most prior studies (Cheng & Furnham, 2003; Dobson & Breiter, 1983; Haarasilta, Marttunen, Kaprio, & Aro, 2001; Kandel & Davies, 1982; Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998; Seligman, Kaslow, Alloy, Peterson,

Tanenebaum, & Abramson, 1984). For example, in a study conducted by Seligman et al. (1984), girls tended to report more depressive symptoms than did boys, suggesting that the adult sex difference in depression (Radloff, 1975) may be present as early as 8 to 13 years of age. Kandel and Davies (1982) also found that female adolescents (13 to 19 years of age) reported significantly more depressive symptoms than their male counterparts. The transitional period of adolescence seems to have a different effect on boys and girls, consisting of possibly fewer advantages for girls than for boys. Different explanations have been proposed in the literature to explain these differences (Lewinsohn et al., 1998; Rutter, 1986). Among others, an increase in risk factors, such as hormonal changes, genetic factors and increased adverse life events and a decline in protective factors, such as decrease of social support have been discussed (Harrington, 1994). Of note is that in a study conducted by Lewinsohn et al. (1998), results were more consistent with the formulation that the female vulnerability to emotional disturbances were associated with some type of genetic, rather than purely environmentally determined, gender difference. Continued study in these important areas will shed more light on the role of gender in adolescence and emotional problems.

7.5 LIMITATIONS

It is important to consider the methodological limitations of the present study that restrict the conclusions able to be drawn and because they provide directions for future research. Firstly, the current study has the general limitations of a cross-sectional design. Most importantly, causal inferences cannot be made. The cross-sectional design of this study does not allow an examination of the causal direction between cognitive variables and psychological disorders. Nonetheless, this study does succeed in establishing the presence of significant relationships between anxiety and depression and cognitive errors. However, it could also be that anxious and depressive symptomatology may lead to the development of maladaptive beliefs and cognitive distortions (see Cole et al., 1998).

Therefore, the present findings need to be replicated and should be further explored in future longitudinal research of adolescents to determine the extent to which cognitive errors are vulnerability factors in development of depression and anxiety. As cautioned by Leung and Poon (2001), "a longitudinal design is required to examine these rival but not necessarily mutually exclusive hypotheses, considering the possibility of an interactive, reciprocal relationship between cognitions and psychopathology" (p. 764). Although cross-sectionals studies cannot be used to confirm a causal relationship between variables, they may propose new hypotheses that could be later on be examined longitudinally.

Secondly, the present investigation used a student population rather than a clinical population and dealt with anxious and depressive symptoms rather than anxiety and depressive diagnoses. Participants were not severely anxious and/or depressed. Whether these results generalise to more seriously disturbed adolescents remains to be seen. Student populations may not demonstrate the same characteristics as clinical populations (Kazdin, 1978). In addition, doubts have been raised about the similarity of mild and severe anxious and depressive symptoms (Depue & Monroe, 1978), but the issue is an empirical one, at least with regard to specific correlates such as cognitive errors. Although the percentage of adolescents in this sample experiencing mild and moderate levels of anxious and depressive symptoms was substantial, it would be necessary to replicate and extend these findings in a clinical sample of adolescents with mood disorder and anxiety diagnoses before any strong conclusions are drawn regarding the validity of cognitive theory and practice. Nevertheless, the value of detecting vulnerability factors, before a clinical presentation is apparent, is noteworthy. There is more point to finding predictors in what could be a pre-clinical population (i.e., a school population) than in a clinical population, which has already been diagnosed and thus has some known underlying pathology.

Another methodological consideration in the present study involves the use of self-report measures, which allowed the inclusion of a larger sample than more comprehensive interviews would yield. However, the instruments are vulnerable to the disadvantages, which are common to all self-report questionnaires. These include individual differences in how the same items are interpreted and the influence of participant expectancy effects. Moreover, self-report measures have the problem of item overlap, which may inflate correlations. For example, it has been argued that self-report measures of depression have poor discriminant validity, especially with respect to anxiety (Gotlib & Cane, 1989; Lewinsohn, Roberts, Seeley, Rohde, Gotlib, & Hops, 1994). This could be dealt with a careful item analysis or avoiding solely self-report methods. However, it could turn out that clinician, teacher or parent reports of anxious and / or depressive symptoms of adolescents might indicate different relationships to the CNCEQ. The current investigation relied on self-report measures, which, although reliable, cannot replace clinical interviews and diagnoses. Future investigations of the linkages of cognitive errors and anxiety and depression could be extended to clinical populations with groups of carefully diagnosed adolescents.

These limitations not withstanding, it is proposed that the evidence of cognitive distortion demonstrates the importance of developing a better understanding of the relations between cognitive errors and anxious and depressive symptoms in adolescents, ultimately leading to improvements in primary prevention and intervention efforts.

7.6 Clinical Implications

This preliminary support for a cognitive model of anxiety and depression has implications for future research into the preventative and therapeutic interventions of emotional disturbances in adolescents. The clinical implications of the results are threefold.

Firstly, the types of cognitive distortions (i.e., catastrophising, overgeneralisation, personalisation and selective abstraction), as evaluated by the CNCEQ, appear to be at least common concomitants of anxiety and depression across adolescents. The present results provide some evidence of generalisability of Beck's cognitive theory to a Greek adolescent population thus providing a focus of treatment (e.g., cognitive restructuring) for which cognitive therapy is quite effective (see review by Beck, 1993). It has been suggested that cognitive restructuring produces changes in specific rationality, that is, the teaching of specific rationality results in increased general rationality (Nielsen et al., 1996). These findings support a recommendation that psychologists working with adolescents be alert to the content and type of cognitive errors of adolescents' thinking, systematically evaluating and modifying them in therapy. Hence, the current study provides some information to help researchers developing treatment interventions for anxiety and depressive disorders in adolescence. Future research should address the efficacy of a cognitive restructuring intervention based on the same principles of Beck's cognitive therapy with adolescents. Furthermore, future studies designed to evaluate Cognitive Behavioural therapy of anxiety and depression in Greek adolescents are warranted. This is important because of the significant impairment (e.g., poor school achievement, difficulties with intimate relationships) associated with both of these disorders in adolescence (Harrington, 1994; Klein, 1994).

Secondly, although assessment of clients' dysfunctional beliefs and maladaptive cognitions is mainly achieved through clinical interviewing techniques (see Beck, 1995), self-report cognitive style rating scales, such as the CNCEQ can ease this process. The CNCEQ has the advantages of being developed for children and adolescents and for being related to a theoretical model (Winters, Myers, & Proud, 2002). Its validity is supported by correlations with depression and anxiety (Leitenberg et al., 1986; Thurber et al., 1990; Weems et al.,2001), as well as with self-esteem (Leitenberg et al., 1986) and hopelessness (Thurber et al., 1990). For example, the CNCEQ may be used to help identify the specific cognitive

errors that underlie an adolescent's thinking in various areas and thus can have unique therapeutic value as an assessment tool. Moreover, the CNCEQ may offer sound measurement and high utility for understanding the diverse aspects of children's and adolescents' functioning with a variety of psychiatric disorders (Winters et al., 2002). Of note is that the scale's rapid completion and scoring offer initial access to information, which may not be readily noticed during direct interview. The identification early in therapy of the key cognitive errors assessed by the CNCEQ can help the therapist focus treatment more efficiently.

Finally, some theorists (Kendall, 1993; Weisz & Hawley, 2002) have argued that the major biopsychosocial changes of adolescence make this a developmental stage in life in which intervention, and in particular prevention programmes, can have exceptionally enduring impact. According to a recent practice parameter for psychiatric consultation to schools of the American Academy of Child and Adolescent Psychiatry (2005), there is a growing interest for clinicians to improve the mental health of students by developing programmes designed to prevent emotional disturbances. Recent evidence has emerged of the effectiveness of school-based prevention programmes targeted at mood and anxiety symptoms (Clarke, Hawkins, Murphy, Sheeber, Lewinsohn, & Seeley, 1995; Dadds, Spence, Holland, Barrett, & Laurens, 1997; Ehntholt, Smith, & Yule, 2005; Gillham, Reivich, Jaycox, & Seligman, 1995). For instance, the Coping With Stress Course for high school students (Clarke et al., 1995) and the Depression Prevention Programme for elementary school students (Gillham et al., 1995), which focused on helping students develop cognitive skills to identify and challenge negative thoughts related to depressed affect, as well as the Coping Koala Programme (Dadds et al., 1997) for students with symptoms of anxiety, which included a cognitive restructuring component in addition to relaxation exercises and exposure, have all been evaluated for evidence of effectiveness in school settings. All programmes were found to significantly reduce depressive and anxious symptoms among students receiving the prevention programmes. It will be important in future studies

to examine whether similar positive findings for school based prevention programmes with a focus on cognitive restructuring are obtained with Greek adolescent populations.

In a stimulating article, Albert Ellis (1993) provides some excellent reflections on possible future directions of rational-emotive and cognitive-behavioural therapy. Although he refers to a number of potential applications in many fields (i.e., business, management, politics, economics etc), he stresses that the main future of RET and cognitive-behavioural therapy will be in their psychoeducational applications. He argues that RET and CBT are already being, and can continue to be, applied in educational settings and introduced to large numbers of people in books, workshops, lectures as well as other audio-visual presentations. He further predicts:

> Better yet, perhaps, it will help literally millions of people who never have had any form of individual or group treatment to clearly see some of the ways in which they are needlessly disturbing themselves; to work at overcoming their self-constructed emotional, cognitive, and behavioural problems; and to achieve a more self-actualised and self-fulfilled existence. (Ellis, 1993, p. 200)

Finally, a recent report for depression and anxiety by the Centre for Economic Performance's Mental Health Policy Group (2006) is noteworthy. More specifically, the "Depression report: a new deal for depression and anxiety disorders" (2006) advocates an expansion of training facilities for cognitive-behavioural therapists to substantially increase the number of such people available to the general population, and declares the need to give people with mental illness the choice of psychological therapy.

> ...we have now evidence-based psychological therapies that can lift at least a half of those affected out of their depression or their chronic fear. These new therapies are not endless nor backward-looking treatments. They are short, forward-looking treatments that enable people to challenge their negative thinking and build on the positive side of their personalities and situations. The most developed of these therapies is cognitive behaviour therapy (CBT). The official guidelines from the National Institute for Clinical Excellence (NICE) say these treatments should be available to all people with depression or anxiety disorders or schizophrenia, unless the problem is very mild or recent (p. 1).

CHAPTER 8
CONCLUSIONS

The main purpose of this investigation was to examine the extent to which cognitive errors were endorsed by adolescents from a Greek community sample as well as the linkages among four types of cognitive errors and anxiety and depression. A fundamental premise of Beck's (1967, 1976) cognitive theory is the salience of maladaptive cognitive patterns, and in particular cognitive distortions as significant features in the development and maintenance of emotional disturbances, such as depression and anxiety. It is also proposed that individuals who tend to endorse more cognitive errors should tend to experience more negative affect, especially when encountering negative life events (Beck, 1967, 1976; Beck & Rush, 1985). The findings of this study support this contention and provide confirmation of Beck's cognitive theory (Beck, 1967, 1976).

In particular, results of this study support the hypothesis regarding the association of cognitive errors and anxious and depressive symptoms, and highlight the presence of a relationship between cognitive distortions and anxiety and depression in adolescence observed in previous studies (e.g., Leitenberg et al., 1986; Weems et al., 2001). Overgeneralisation, catastrophising and overall cognitive distortion scores predicted a change in adolescents' self-reported anxious and depressive symptoms, demonstrating the prominent role of cognitive errors in cognitive theories of anxiety and depression (Beck, 1976; Beck & Emery, 1985; Beck et al., 1979). Furthermore, the finding that overgeneralisation and catastrophising were both strong predictors of anxiety and depression indicates that they share the same types of cognitive distortions.

On the other hand, the observed decrease on scores of overall cognitive distortion over the age groups from early adolescence to late adolescence, suggests firstly that cognitive errors during early adolescence may reflect normal developmental trends, and secondly, that with increasing age, adolescents are less likely to adopt a negative cognitive bias. These findings may be interpreted in the context of the cognitive development changes arising during this developmental phase. The adolescent gradually becomes able to check out his or her reasoning against experience and accommodate to the cognitive development that has taken place. Nevertheless, of note is that late adolescents reported more anxious and depressive symptoms than younger ones, consistent with previous findings that the transitional years from middle to late adolescence tend to mark a major increase in risk for psychopathology (see review by Maughan, 2001).

This study contributes to the growing body of literature documenting relations between adolescent symptoms of anxiety and depression and cognitive errors and extends cognitive theories of depression and anxiety to a Greek adolescent population. Viewed in a larger context, these results should encourage further exploration of possible linkages of cognitive errors (the theory underlying Cognitive Behavioural Therapy) with adolescent emotional disturbances. Furthermore, the findings from the present investigation provide information to help professionals designing treatment interventions, as well as, educational interventions for anxiety and depressive disorders in adolescence. It is generally acknowledged that a primary goal of research is to help mental health professionals have a more informed and scientifically based practice and perhaps to subsequently improve patient outcomes. Hence, psychotherapy researchers have recognised the importance of matching treatment to specific patient characteristics (Beutler, 1991; Kazdin, 1993). The present research findings provide some of the first empirical data on the role of dysfunctional cognitive processing and emotional disturbances among Greek adolescent students, possibly identifying some primary targets for

intervention and prevention programmes for adolescents, as well as, highlighting the value of tailoring treatment approaches to the developmental stage of the adolescent (Cicchetti, 2001). The results suggest that it is important that attention is paid to cognitive restructuring as a component of programmes designed to prevent emotional and behavioural difficulties in youth.

In conclusion, the current study supported the existence of cognitive distortions in Greek adolescents, as well as, the association between negative cognitive errors and anxiety and depression, especially for the types of errors of overgeneralisation and catastrophising. All cognitive errors, as evaluated by the CNCEQ, appeared to be at least common concomitants of anxiety and depression across adolescents. The present results provide some evidence of generalisability of Beck's cognitive theory to a Greek adolescent population thus providing a focus of relevant intervention and prevention efforts for which cognitive therapy is quite effective and posing questions for future research studies. Although the findings from the present study are novel, a replication of this research with a larger sample size, including a wider age range, with other measures, which ideally should include an adolescent-based interview measure of cognitive variables, would be necessary to confirm these findings. It will also be important in future studies to incorporate measures of life events to assess their association to cognitive style and psychopathology.

Exciting and essential research efforts are under way, bringing together scientists from different yet interrelated disciplines to develop a better understanding of the linkages between dysfunctional cognitive processing and psychopathology in youth. Such works can serve to continue to bridge the gap between research and clinical practice treatment and thus to inform primary prevention efforts, along with refining the continuing intervention practices.

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APPENDICES

APPENDIX I QUESTIONNAIRES

1. Children's Negative Cognitive Error Questionnaire (CNCEQ) Greek version
2. State -Trait Anxiety Inventory (Form Y) (STAI) Greek version
3. Center for Epidemiological Studies-Depression Scale (CES-D) Greek version

CNCEQ

Ηλικία:

Φύλο (κυκλώστε): Α Θ

Οδηγίες

Αυτό το ερωτηματολόγιο περιγράφει μια σειρά καταστάσεων που μπορεί να αντιμετωπίσουν τα παιδιά. Κάθε κατάσταση ακολουθείται από μια σκέψη την οποία το παιδί μπορεί να κάνει σε αυτή την κατάσταση. Αυτή η σκέψη είναι σε «εισαγωγικά». Θέλουμε να μάθουμε κατά πόσο όμοια είναι αυτή η σκέψη με αυτό που εσείς θα σκεφτόσασταν στη συγκεκριμένη κατάσταση.

Παρακαλώ διαβάστε όλες τις περιπτώσεις και **φανταστείτε ότι συμβαίνουν σε εσάς, ακόμα κι αν δεν έχουν συμβεί ποτέ στο παρελθόν.** Μετά διαβάστε την σκέψη που είναι σε «εισαγωγικά». Κυκλώστε την δήλωση κάτω από κάθε σκέψη που νομίζετε ότι περιγράφει καλύτερα αυτό που εσείς θα σκεφτόσασταν στην συγκεκριμένη περίπτωση.

Για παράδειγμα ας διαβάσουμε αυτό:

Α. Είσαι ο τερματοφύλακας της ποδοσφαιρικής ομάδας του σχολείου. Ο αγώνας τελειώνει με ισοπαλία 1-1. Μετά τον αγώνα ακούς έναν από τους συμπαίκτες σου να λέει ότι η ομάδα σου έπρεπε να κερδίσει σήμερα. Σκέφτεσαι, «Αυτός/αυτή πιστεύει ότι ήταν δικό μου λάθος που δεν κερδίσαμε».

Αυτή η σκέψη είναι:

5	4	3	2	1
ακριβώς αυτό που θα σκεφτόμουν	**αρκετά κοντά σε αυτό που θα σκεφτόμουν**	**κάτι περίπου σαν αυτό που θα σκεφτόμουν**	**μοιάζει πολύ λίγο μ' αυτό που θα σκεφτόμουν**	**εντελώς άσχετο με αυτό που θα σκεφτόμουν**

Αν η σκέψη «Αυτός/αυτή πιστεύει ότι ήταν δικό μου λάθος που δεν κερδίσαμε» ήταν κάτι περίπου σαν αυτό που θα σκεφτόσουν σε αυτή την κατάσταση, θα πρέπει να κυκλώσεις:

3

κάτι περίπου
σαν αυτό που
θα σκεφτόμουν

Β. Βλέπεις δύο φίλους σου να μιλάνε στο διάλειμμα της προπόνησης. Καθώς πλησιάζεις, μπαίνουν στο γήπεδο και αρχίζουν τις πάσες. Σκέφτεσαι, «Ίσως είναι θυμωμένοι μαζί μου για κάτι».

Αυτή η σκέψη είναι:

5	4	3	2	1
ακριβώς αυτό που θα σκεφτόμουν	**αρκετά κοντά σε αυτό που θα σκεφτόμουν**	**κάτι περίπου σαν αυτό που θα σκεφτόμουν**	**μοιάζει πολύ λίγο μ' αυτό που θα σκεφτόμουν**	**εντελώς άσχετο με αυτό που θα σκεφτόμουν**

Αν η σκέψη «Ίσως είναι θυμωμένοι μαζί μου για κάτι» ήταν κάτι αρκετά κοντά σε αυτό που θα σκεφτόσουν σε αυτή την κατάσταση, θα πρέπει να κυκλώσεις:

4
αρκετά κοντά σε αυτό που θα σκεφτόμουν

1) Προσκαλείς έναν από τους φίλους σου να μείνει τη νύχτα σπίτι σου. Ένας άλλος φίλος σου μαθαίνει για αυτό. Σκέφτεσαι, «Θα έχει θυμώσει πολύ που δεν τον κάλεσα και δεν θα θέλει να είμαστε πια φίλοι».

Αυτή η σκέψη είναι: **5 4 3 2 1**

2) Στην ώρα της γυμναστικής κάνετε αγώνα σκυταλοδρομίας. Η ομάδα σου χάνει. Σκέφτεσαι, «Αν ήμουν λίγο γρηγορότερος, δεν θα χάναμε».

Αυτή η σκέψη είναι: **5 4 3 2 1**

3) Δοκιμάζεις να επιλεγείς στην σχολική ομάδα μπάσκετ. Σε 10 προσωπικές βολές έχεις 5 εύστοχες και στις 5 αστοχείς . Σκέφτεσαι, «Δεν έκανα καλή προπόνηση».

Αυτή η σκέψη είναι: **5 4 3 2 1**

4) Φανταστείτε ότι στην τάξη χωρίζεστε σε ομάδες των πέντε μαθητών που συναγωνίζονται στην ορθογραφία.Η ομάδα σου χάνει. Σκέφτεσαι, «Αν ήμουν πιο έξυπνος, δεν θα χάναμε».

Αυτή η σκέψη είναι: **5 4 3 2 1**

5) Κάποιοι από τους φίλους σου σε ρωτούν αν θα δοκιμάσεις να επιλεγείς για την σχολική ομάδα ποδοσφαίρου αυτήν την χρονιά. Είχες προσπαθήσει πέρυσι αλλά δεν τα κατάφερες. Σκέφτεσαι, «Δεν έχει νόημα να προσπαθήσω, αφού δεν τα κατάφερα πέρυσι».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

6) Τηλεφωνείς ένα συμμαθητή σου για να συζητήσετε για τις ασκήσεις μαθηματικών που έχετε για το σπίτι. Αυτός λέει: Δεν μπορώ να σου μιλήσω τώρα, ο πατέρας μου περιμένει τηλεφώνημα. Σκέφτεσαι, «Δεν ήθελε να μου μιλήσει».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

7) Εσύ και άλλοι τρεις συμμαθητές σου κάνατε μια ομαδική εργασία σε ένα βασικό μάθημα. Ο καθηγητής σας νομίζει ότι δεν είναι πολύ καλή και σας βάζει χαμηλό βαθμό. Σκέφτεσαι, «Αν δεν είχα κάνει τόσο πρόχειρη δουλειά, θα είχαμε πάρει καλύτερο βαθμό».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

8) Φανταστείτε ότι όταν κάποιος γιορτάζει στην τάξη, ο καθηγητής του δίνει το δικαίωμα να διαλέξει τον συμμαθητή του με τον οποίο θα έχουν μία ώρα ελεύθερη να κάνουν ό,τι θέλουν. Την προηγούμενη φορά που ένας φίλος σου γιόρταζε διάλεξε κάποιον άλλον. Τώρα που πάλι ένας φίλος σου γιορτάζει, σκέφτεσαι, «Μάλλον ούτε αυτός θα με διαλέξει».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

9) Συμμετέχεις στην ομάδα μπάσκετ και μετά την προπόνηση ο γυμναστής - προπονητής σου λέει ότι θέλει να σου μιλήσει. Σκέφτεσαι, «Δεν είναι ευχαριστημένος με αυτά που κάνω και δεν με θέλει άλλο στην ομάδα».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

10) Πήγες σε ένα πάρτυ, με έναν από τους φίλους σου. Με το που φτάσατε εκεί ο φίλος σου έκανε παρέα με άλλα παιδιά αντί να είναι μαζί σου. Μετά το πάρτυ, αποφασίσατε να σταματήσετε στο σπίτι του για λίγο πριν επιστρέψεις στο σπίτι σου. Αργότερα σκέφτεσαι, «Ο φίλος μου δεν ήθελε την παρέα μου απόψε».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

11) Ξέχασες να κάνεις στο σπίτι τις ασκήσεις για ένα μάθημα. Ο καθηγητής ζητάει από όλους τους μαθητές να παραδώσουν τις ασκήσεις. Σκέφτεσαι, «Ο καθηγητής θα νομίζει ότι είμαι αδιάφορος και θα με κόψει».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

12) Όλα πήγαν καλά στο σχολείο μέχρι την τελευταία ώρα που είχατε τεστ μαθηματικών. Δεν τα πήγες καλά και σκέφτεσαι «Το σχολείο είναι αγγαρεία, τι χάσιμο χρόνου».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

13) Έπαιξες μπάσκετ και έβαλες 5 καλάθια, αλλά έχασες 2 σουτ κάτω από τη μπασκέτα αμαρκάριστος. Μετά το παιχνίδι σκέφτεσαι, «Δεν έπαιξα καλά».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

14) Την προηγούμενη βδομάδα είχες τεστ ιστορίας και ξέχασες μερικά από τα πράγματα που είχες διαβάσει. Σήμερα έχεις τεστ μαθηματικών, και την ώρα που ο καθηγητής μοιράζει τις ερωτήσεις σκέφτεσαι, «Μάλλον δεν θα θυμηθώ αυτά που διάβασα, όπως έγινε την προηγούμενη βδομάδα».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

15) Περνάς μια μέρα στο σπίτι του φίλου σου. Την τελευταία ώρα πριν φύγεις βαριέσαι. Σκέφτεσαι, «Σήμερα δε πέρασα καλά ».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

16) Παίρνεις μέρος σε μαθήματα κομπιούτερ. Ο καθηγητής λέει στην τάξη ότι κάποιοι έχουν μείνει πίσω και δεν θα προχωρήσει σε ειδικότερα προγράμματα. Σκέφτεσαι, «Αν μάθαινα πιο γρήγορα, δεν θα εμπόδιζα και τους άλλους να συνεχίσουν».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

17) Η τάξη σου αρχίζει ένα νέο κεφάλαιο στα μαθηματικά. Το προηγούμενο ήταν πολύ δύσκολο. Την ώρα του μαθήματος σκέφτεσαι, «Το προηγούμενο κεφάλαιο ήταν τόσο δύσκολο, που ξέρω ότι θα έχω προβλήματα και με αυτό».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

18) Για το χαρτζηλίκι σου άρχισες να δουλεύεις λίγες ώρες τα Σάββατα βοηθώντας τον πατέρα σου στη δουλειά του. Εξαιτίας αυτού δύο φορές δεν πήγες με τους φίλους σου για παιχνίδι. Σκέφτεσαι, «Πολύ σύντομα, θα ξεκόψουν από μένα ».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

19) Την προηγούμενη βδομάδα ένα από τα παιδιά της τάξης έκανε ένα πάρτυ στο οποίο δεν σε κάλεσε. Κατά τη διάρκεια της βδομάδας άκουσες έναν άλλο συμμαθητή σου να μιλάει σε κάποιον προτείνοντας να προσκαλέσουν μερικά παιδιά να πάνε να δούνε μαζί μια ταινία. Σκέφτεσαι, «Θα συμβεί το ίδιο με την προηγούμενη βδομάδα, δεν θα με καλέσουν»

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

20) Έκανες μια εργασία, η οποία θα βαθμολογηθεί. Ο καθηγητής σου, σου λέει ότι θέλει να σου μιλήσει για την εργασία. Σκέφτεσαι, «Πιστεύει ότι έκανα πρόχειρη δουλειά στην εργασία και θα μου δώσει κακό βαθμό».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

21) Είσαι με δύο από τους φίλους σου και τους ρωτάς αν θέλουν να πάτε στο σινεμά το σαββατοκύριακο. Και οι δύο απαντούν ότι δεν θα μπορέσουν. Σκέφτεσαι, «Μάλλον δεν θέλουν να πάνε μαζί μου».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

22) Ο ξάδερφός σου, σου τηλεφωνεί και σε ρωτάει αν θέλεις να πάτε για μια μεγάλη βόλτα με τα ποδήλατα. Σκέφτεσαι, «Μάλλον δεν θα καταφέρω να τους ακολουθήσω και θα με κοροιδέψουν ».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

23) Η ομάδα σου μόλις έχασε σε ένα διαγωνισμό ορθογραφίας. Δοκιμάστηκες τελευταίος και ενώ έγραψες σωστά 4 λέξεις, έκανες λάθος στην τελευταία, που δεν ήταν εύκολη. Μετά το διαγωνισμό σκέφτεσαι, «Υστερώ στην ορθογραφία ».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

24) Την προηγούμενη βδομάδα έπαιξες μπάσκετ και δεν σκόραρες. Σήμερα κάποια παιδιά από την τάξη σου, σου ζητάνε να παίξεις ποδόσφαιρο. Σκέφτεσαι, «Δεν έχει νόημα να παίξω, δεν είμαι καλός στα αθλήματα».

Αυτή η σκέψη είναι: **5** **4** **3** **2** **1**

STAI - Y 1

ΟΔΗΓΙΕΣ: Παρακάτω υπάρχουν φράσεις που οι άνθρωποι συνηθίζουν να χρησιμοποιούν για να περιγράψουν τον εαυτό τους. Διαβάστε κάθε φράση και μετά βάλτε σε κύκλο τον αντίστοιχο αριθμό στα δεξιά της φράσεως για να δείξετε πώς αισθάνεστε τώρα, δηλαδή **αυτή τη στιγμή**. Δεν υπάρχουν σωστές ή λανθασμένες απαντήσεις. Μην ξοδεύετε πολλή ώρα για κάθε μια φράση, αλλά δώστε την απάντηση που φαίνεται να ταιριάζει πιο καλά σ' αυτό που αισθάνεστε **τώρα**.

		καθόλου	**λίγο**	**μέτρια**	**πολύ**
1.	Αισθάνομαι ήρεμος.	1	2	3	4
2.	Αισθάνομαι ασφαλής.	1	2	3	4
3.	Νιώθω μια εσωτερική ένταση.	1	2	3	4
4.	Αισθάνομαι σφιγμένος.	1	2	3	4
5.	Αισθάνομαι άνετα.	1	2	3	4
6.	Αισθάνομαι αναστατωμένος.	1	2	3	4
7.	Ανησυχώ αυτή τη στιγμή για ενδεχόμενες ατυχίες.	1	2	3	4
8.	Αισθάνομαι ικανοποιημένος.	1	2	3	4
9.	Αισθάνομαι φοβισμένος.	1	2	3	4
10.	Αισθάνομαι βολικά.	1	2	3	4
11.	Αισθάνομαι αυτοπεποίθηση.	1	2	3	4
12.	Αισθάνομαι νευρικότητα.	1	2	3	4
13.	Τρέμω από νευρικότητα.	1	2	3	4
14.	Είμαι αναποφάσιστος.	1	2	3	4
15.	Είμαι χαλαρωμένος.	1	2	3	4
16.	Αισθάνομαι ευχαριστημένος.	1	2	3	4
17.	Ανησυχώ.	1	2	3	4
18.	Είμαι μπερδεμένος.	1	2	3	4
19.	Αισθάνομαι σταθερότητα.	1	2	3	4
20.	Αισθάνομαι ευχάριστα.	1	2	3	4

STAI - Y 2

ΟΔΗΓΙΕΣ: Παρακάτω υπάρχουν φράσεις που οι άνθρωποι συνηθίζουν να χρησιμοποιούν για να περιγράψουν τον εαυτό τους. Διαβάστε κάθε φράση και μετά βάλτε σε κύκλο τον αντίστοιχο αριθμό στα δεξιά της φράσεως για να δείξετε πώς αισθάνεστε **συνήθως**. Δεν υπάρχουν σωστές ή λανθασμένες απαντήσεις.

Μην ξοδεύετε πολλή ώρα για κάθε μια φράση, αλλά δώστε την απάντηση που φαίνεται να ταιριάζει πιο καλά σ' αυτό που αισθάνεστε **γενικά.**

		καθόλου	**λίγο**	**μέτρια**	**πολύ**
21.	Αισθάνομαι ευχάριστα.	1	2	3	4
22.	Αισθάνομαι νευρικός και ανήσυχος.	1	2	3	4
23.	Είμαι ικανοποιημένος με τον εαυτό μου.	1	2	3	4
24.	Εύχομαι να μπορούσα να είμαι τόσο ευτυχισμένος όσο οι άλλοι φαίνονται να είναι.	1	2	3	4
25.	Αισθάνομαι αποτυχημένος.	1	2	3	4
26.	Αισθάνομαι αναπαυμένος.	1	2	3	4
27.	Είμαι ήρεμος, ψύχραιμος και συγκεντρωμένος.	1	2	3	4
28.	Αισθάνομαι πως οι δυσκολίες συσσωρεύονται ώστε να μη μπορώ να τις ξεπεράσω.	1	2	3	4
29.	Ανησυχώ υπερβολικά πολύ για κάτι που στην πραγματικότητα δεν έχει σημασία.	1	2	3	4
30.	Είμαι χαρούμενος.	1	2	3	4
31.	Κάνω δυσάρεστες σκέψεις.	1	2	3	4
32.	Μου λείπει η αυτοπεποίθηση.	1	2	3	4
33.	Αισθάνομαι ασφαλής.	1	2	3	4
34.	Παίρνω εύκολα αποφάσεις.	1	2	3	4
35.	Αισθάνομαι ανεπαρκής.	1	2	3	4
36.	Είμαι ικανοποιημένος.	1	2	3	4
37.	Κάποια ασήμαντη σκέψη μου περνά από το μυαλό και με ενοχλεί.	1	2	3	4
38.	Παίρνω τις απογοητεύσεις τόσο πολύ στα σοβαρά ώστε δε μπορώ να τις διώξω από τη σκέψη μου.	1	2	3	4
39.	Είμαι ένας σταθερός χαρακτήρας.	1	2	3	4
40.	Έρχομαι σε μια κατάσταση εντάσεως ή αναστατώσεως όταν σκέπτομαι τις τρέχουσες ασχολίες και τα ενδιαφέροντά μου.	1	2	3	4

CES-D

ΟΔΗΓΙΕΣ: Παρακαλώ συμπληρώστε ένα x στο τετράγωνο που θεωρείτε ότι ανταποκρίνεται στο πώς αισθανόσασταν κατά τη διάρκεια της περασμένης εβδομάδας (και όχι μόνο πως αισθάνεστε αυτήν τη στιγμή).

		σπάνια ή καθόλου (λιγότερο από 1 ημέρα)	λίγες φορές (1-2 ημέρες)	μερικές φορές (3-4 ημέρες)	συνεχώς (5-7 ημέρες)	ΒΑΘΜΟΛΟΓΙΑ
1.	Με ενοχλούσαν πράγματα που συνήθως δε με ενοχλούν.					
2.	Δεν είχα διάθεση να φάω. Η όρεξή μου ήταν κακή.					
3.	Αισθανόμουν ότι δε θα μπορούσα να ξεφύγω από τις μαύρες μου, ακόμα ούτε και με τη βοήθεια της οικογένειάς μου ή των φίλων μου.					
4.	Αισθανόμουν ότι είμαι το ίδιο καλά όπως οι άλλοι άνθρωποι.					
5.	Είχα πρόβλημα στο να κρατήσω το μυαλό μου συγκεντρωμένο σ' αυτό που έκανα.					
6.	Αισθανόμουν κατάθλιψη.					
7.	Αισθανόμουν ότι οτιδήποτε έκανα απαιτούσε μεγάλη προσπάθεια.					
8.	Αισθανόμουν γεμάτος /η ελπίδα για το μέλλον.					
9.	Πίστευα ότι η ζωή μου ολόκληρη ήταν μια αποτυχία.					
10.	Αισθανόμουν γεμάτος /η φόβο.					
11.	Ο ύπνος μου ήταν ανήσυχος.					
12.	Ήμουν χαρούμενος /η.					
13.	Μιλούσα λιγότερο από το συνηθισμένο.					
14.	Αισθανόμουν μοναξιά.					
15.	Οι άνθρωποι δεν ήταν φιλικοί μαζί μου.					
16.	Απολάμβανα τη ζωή.					
17.	Ξεσπούσα σε κλάμα.					
18.	Αισθανόμουν λυπημένος /η.					
19.	Ένιωθα ότι οι άλλοι με αντιπαθούσαν.					
20.	Δε μπορούσα να τα καταφέρω να ξεκινήσω να κάνω πράγματα.					

APPENDIX II ETHICS FORM

ETHICS RELEASE FORM

All students planning to undertake research in the Department of Psychology for degree or other purposes are required to complete this Ethics Release Form and have it signed by their supervisor and one other member of staff prior to commencing the investigation. Please note the following:

- An understanding of ethical considerations is central to planning and conducting research.
- The published Code of Ethics of the British Psychological Society (1997) Code of Conduct, Ethical Principles and Guidelines. BPS. Leicester and American Psychological Society (1992) Ethical Principles of Psychologists and Code of Conduct. American Psychologist, 47, no 12, 1597-1611 should be referred to when planning your research.
- Approval to carry out research does not exempt you from Ethics Committee approval from institutions within which you may be planning to conduct the research. eg: Hospitals, NHS Trusts, HM Prisons Service, etc.
- Completed and signed ethics release forms must be submitted as an appendix in the final dissertation

Please answer all of the following questions:

1.	Has a research proposal been completed and submitted to the supervisor?	Yes	✓	No	
2.	Will the research involve either or both of the following:				
	2.1 A survey of human subjects/participants	Yes	✓	No	
	2.2 An intervention with a cohort of human subjects/ participants, and/or an evaluation of outcome of an intervention?	Yes		No	✓
3.	Is there any risk of physical or psychological harm to participants (in either a control or experimental group)?	Yes		No	✓
4.	Will all participants receive an information sheet describing the aims, procedure and possible risks involved, in easily understood language? (Attach a copy of the participants information sheet)	Yes		No	✓
5.	Will any person's treatment or care be in any way prejudiced if they choose not to participate in the study?	Yes		No	✓

6.	Will all participants be required to sign a consent form, stating that they understand the purpose of the study and possible risks ie will informed consent be given?	Yes ☐	No ☑
7.	Can participants freely withdraw from the study at any stage without risk of harm or prejudice?	Yes ☑	No ☐
8.	Will the study involve working with or studying minors (ie <16 years)?	Yes ☑	No ☐
	If yes, will signed parental consent be obtained?	Yes ☐	No ☑
9.	Are any questions or procedures likely to be considered in any way offensive or indecent?	Yes ☐	No ☑
10.	Will all necessary steps be taken to protect the privacy of participants and the need for anonymity?	Yes ☑	No ☐
	Is there provision for the safe-keeping of video/audio recordings of participants?	Yes N/A	No ☐
11.	If applicable, is there provision for de-briefing participants after the intervention or study?	Yes ☑	No ☐
12.	If any psychometric instruments are to be employed, will their use be controlled and supervised by a qualified psychologist?	Yes ☑	No ☐

If you have placed an X in any of the double boxes [X], please provide further information below:

Please see attached Form.

Student's Name: TATJANA TAIRI

Degree Course: DPSYCH

Title Of Research Project: Cognitive Errors in Adolescence: The Linkages between, negative cognitive errors and anxious and depressive symptoms

Supervisor: BRYAN ADAMS

Signature of Student: Tatjana Tairi

Signature of Supervisor: (BRYAN ADAMS).

Signature of a 2nd Psychology Department member: (ROB CHAPPEL)

Date: 26.11.02

Any further comments:

Further Information for Ethics Release Form
Questions 2, 4, 6 and 8

2) The research will involve a survey of Greek students between 12 and 18 years old from at least three junior and three senior high schools in a moderate-size community. A detailed plan of the research, including the specific research focus and the methodology will be submitted to the Ministry of Education in Greece requesting permission to conduct research in schools. In addition, all participating schools will be sent letters introducing the aims and procedures of the study and requesting permission to include their students in the study. Thus, the schools' and / or teachers' informed consent will be obtained. Participants will be tested in small groups (<30) in a classroom situation at their respective institutions. All necessary steps will be taken to protect the privacy of participants and the need for anonymity.

4) Participants will not receive an information sheet describing the aims of the study as this could affect their responses. It is essential that participants remain naïve when answering the questions. However, as it was mentioned above, all participating schools will be sent letters introducing the aims and procedures of the study and requesting permission to include their students in the study. Thus, the schools' and/or teachers' informed consent will be obtained. In addition, there are no foreseeable risks from participating in the study. Participants will be tested in small groups (<30) in a classroom situation at their respective institutions. The researcher will read the instructions for each measure and demonstrate sample items. Participants then will complete the questionnaires, which will be presented in random order. After completion of questionnaires, participants will be de-briefed. The researcher will be present during the study.

6) Participants will not be required to sign an informed consent as this could affect their responses. It is essential that participants remain naïve when answering the questions. However, as the research will take place in a school environment, all necessary steps will be taken to obtain the required permission from the Ministry of Education as well as the schools' informed consent.

8) As mentioned above the research will involve a survey of Greek students between 12 and 18 years old. Parental consent will not be necessary as the research will take place in a school environment and therefore all necessary steps will be taken to obtain the required permission from the Ministry of Education as well as the schools' informed consent.

APPENDIX III GREEK DOCUMENTS

1. Application for permission to conduct research study in Greek schools
2. Approval for conducting research study

Α Ι Τ Η Σ Η

ΕΠΩΝΥΜΟ:	ΤΑΪΡΗ
ΟΝΟΜΑ:	ΤΑΤΙΑΝΑ
ΟΝΟΜΑ ΠΑΤΡΟΣ:	ΙΩΑΝΝΗΣ
ΗΜΕΡ. ΓΕΝΝΗΣΗΣ:	26 / 01 / 75
ΕΠΑΓΓΕΛΜΑ:	ΚΛΙΝΙΚΗ / ΣΥΜΒΟΥΛΕΥΤΙΚΗ ΨΥΧΟΛΟΓΟΣ
ΔΙΕΥΘΥΝΣΗ:	ΔΡΟΣΙΑ ΘΕΡΜΗ 570 01 ΘΕΣ/ΝΙΚΗ Τηλ: 2310 471934 Φαξ: 2310 868363 Κιν: 6947 791566
E-MAIL:	tatjanatairi@hotmail.com

Θεσσαλονίκη, 10 Φεβρουαρίου 2003

Προς τη Διεύθυνση Σπουδών Δευτεροβάθμιας Εκπαίδευσης

«Αίτηση έγκρισης διενέργειας ερευνητικής εργασίας σε Γυμνάσια – Λύκεια»

Σας παρακαλώ να μου εγκρίνετε τη διενέργεια έρευνας στα αναφερόμενα Γυμνάσια και Λύκεια του Νομού Θεσσαλονίκης στο πλαίσιο της διδακτορικής μου διατριβής. Συννημένα σας υποβάλω τα παρακάτω προβλεπόμενα δικαιολογητικά όπου φαίνεται αναλυτικά ο σχεδιασμός και η μεθοδολογία της έρευνας.

1. Ερωτηματολόγια
2. Βιογραφικό
3. Βεβαίωση επιβλέπουσας επιτροπής
4. Κατάλογος σχολείων όπου γίνεται η έρευνα
5. Δελτίο έρευνας σε έντυπη και ηλεκτρονική μορφή (δισκέτα)
6. Αναλυτικό σχέδιο έρευνας

Με τιμή,

Τατιάνα Ταΐρη

Να διατηρηθεί μέχρι .....

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΕΘΝ.ΠΑΙΔΕΙΑΣ & ΘΡΗΣΚΕΥΜΑΤΩΝ
ΕΝΙΑΙΟΣ ΔΙΟΙΚΗΤΙΚΟΣ ΤΟΜΕΑΣ ΘΕΜΑΤΩΝ
ΣΠΟΥΔΩΝ, ΕΠΙΜΟΡΦΩΣΗΣ ΚΑΙ ΚΑΙΝΟΤΟΜΙΩΝ
ΔΙΕΥΘΥΝΣΗ ΣΠΟΥΔΩΝ Δ/ΘΜΙΑΣ ΕΚΠΑΙΔΕΥΣΗΣ
ΤΜΗΜΑ Α'

Ερμου 15 101 85 Αθήνα
Τηλεφωνο : 3235722
FAX : 3224249
Πληροφορίες : Αν. Πασχαλίδου

Βαθμός Ασφαλείας .....

Αθήνα 14 -4-03
Αριθ. Πρωτ 36726 /Γ2
Βαθ. Προτερ.

ΠΡΟΣ :
1. κ. Τατιανα Ταΐρη
   Δροσιά Θέρμη
   57001 Θεσσαλονίκη
2. Διευθύνσεις Δευτεροβάθμιας Εκπ/σης
   Ανατολικής και Δυτικης Θεσσαλονίκης

ΘΕΜΑ : Έγκριση διεξαγωγής έρευνας.

Απαντώντας σε σχετική αίτηση σας και μετά τη γνωμοδότηση του Τμήματος Ερευνών Τεκμηρίωσης και Εκπαιδευτικής Τεχνολογίας του Παιδαγωγικού Ινστιτούτου πράξη 3/2003 σας γνωρίζουμε ότι **ε π ι τ ρ έ π ο υ μ ε** τη διεξαγωγή έρευνας από την κ. Τατιανα Ταΐρη κατά τη διάρκεια του σχολικού έτους 2002-2003 και 2003-2004 με την εξής προϋπόθεση: Τα ερωτηματολόγια να είναι ανώνυμα.

Επισημαίνεται ότι η συμμετοχή στην έρευνα δεν είναι υποχρεωτική.

Η έρευνα έχει θέμα: *«Γνωστικά λάθη στην εφηβεία: Πιθανή σύνδεση μεταξύ αρνητικών γνωστικών λαθών με αγχώδη και καταθλιπτικά συμπτώματα.»*

και απευθύνεται στους μαθητές των σχολικών μονάδων Δευτεροβάθμιας Εκπαίδευσης που αναγράφονται στο συνημμένο πίνακα.

Για την πραγματοποίηση της έρευνας θα πρέπει :

1. Οι επισκέψεις στα σχολεία να γίνουν μετά από συνεννόηση με τους Διευθυντές τους και σε συνεργασία με το σύλλογο καθηγητών ώστε να μη παρεμποδίζεται η ομαλή διεξαγωγή των μαθημάτων.
2. Τα αποτελέσματα της έρευνας μετά την ολοκλήρωση της να κοινοποιηθούν στην Υπηρεσία μας και στο Παιδαγωγικό Ινστιτούτο.

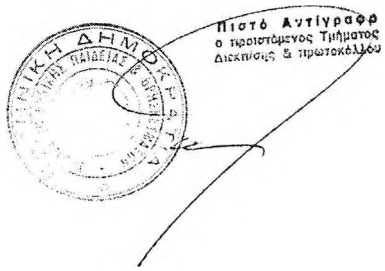
3. Οι Διευθυντές των Διευθύνσεων Δευτεροβάθμιας Εκπ/σης Ανατολικής και Δυτικής Θεσσαλονίκης να ενημερώσουν σχετικά τους Διευθυντές των σχολείων ευθύνης τους ώστε να διευκολύνουν την ενδιαφερόμενη στην πραγματοποίηση της έρευνας αυτής.

Ο ΔΙΕΥΘΥΝΤΗΣ

Συν. Σελ. 1

ΙΩΑΝΝΗΣ ΠΡΟΒΗΣ

Εσωτ. Διανομή
Δ/νση Σπουδών Δ.Ε.
Τμήμα Α'



APPENDIX IV RAW DATA (SPSS OUTPUTS)

1. HIERARCHICAL REGRESSION ANALYSES USING CNCEQ

1.1 Regression: Dependent variable STAI-S

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	CES-D , age, gender, TRAIT ANXIETY[a]	.	Enter
2	CNCEQ[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: STATE ANXIETY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,670[a]	,449	,446	7,846	,449	162,124	4	797	,000
2	,676[b]	,457	,454	7,791	,008	12,145	1	796	,001

a. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY

b. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY , CNCEQ

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39918,776	4	9979,694	162,124	,000[a]
	Residual	49059,979	797	61,556		
	Total	88978,754	801			
2	Regression	40656,032	5	8131,206	133,942	,000[b]
	Residual	48322,722	796	60,707		
	Total	88978,754	801			

a. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY

b. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY , CNCEQ

c. Dependent Variable: STATE ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9,353	2,709		3,453	,001
	age	,357	,166	,057	2,146	,032
	gender	-,330	,578	-,016	-,570	,569
	TRAIT ANXIETY	,421	,039	,415	10,709	,000
	CES-D	,298	,038	,296	7,781	,000
2	(Constant)	4,723	3,000		1,574	,116
	age	,478	,169	,077	2,830	,005
	gender	-,125	,577	-,006	-,217	,829
	TRAIT ANXIETY	,386	,040	,380	9,543	,000
	CES-D	,279	,038	,278	7,287	,000
	CNCEQ	,080	,023	,103	3,485	,001

a. Dependent Variable: STATE ANXIETY

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ	,103[a]	3,485	,001	,123	,775

a. Predictors in the Model: (Constant), CES-D , age, gender, TRAIT ANXIETY

b. Dependent Variable: STATE ANXIETY

1.2 Regression: Dependent variable STAI-T

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	STATE ANXIETY, gender, age, CES-D[a]	.	Enter
2	CNCEQ[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: TRAIT ANXIETY

Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,773[a]	,598	,596	6,603	,598	296,377	4	797	,000
2	,784[b]	,614	,612	6,474	,016	33,069	1	796	,000

a. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D

b. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D , CNCEQ

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51693,859	4	12923,465	296,377	,000[a]
	Residual	34753,069	797	43,605		
	Total	86446,928	801			
2	Regression	53080,056	5	10616,011	253,256	,000[b]
	Residual	33366,872	796	41,918		
	Total	86446,928	801			

a. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D

b. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D , CNCEQ

c. Dependent Variable: TRAIT ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16,394	2,222		7,378	,000
	age	,282	,140	,046	2,012	,045
	gender	2,187	,480	,105	4,553	,000
	CES-D	,507	,028	,512	18,000	,000
	STATE ANXIET	,299	,028	,303	10,709	,000
2	(Constant)	9,663	2,473		3,907	,000
	age	,442	,140	,072	3,150	,002
	gender	2,371	,472	,114	5,021	,000
	CES-D	,468	,028	,473	16,469	,000
	STATE ANXIET	,266	,028	,270	9,543	,000
	CNCEQ	,109	,019	,142	5,751	,000

a. Dependent Variable: TRAIT ANXIETY

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ	,142[a]	5,751	,000	,200	,795

a. Predictors in the Model: (Constant), STATE ANXIETY, gender, age, CES-D

b. Dependent Variable: TRAIT ANXIETY

1.3 Regression: Dependent variable CES-D

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TRAIT ANXIETY , age, gender, STATE ANXIETY[a]	.	Enter
2	CNCEQ[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CES-D

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,746[a]	,557	,555	7,003	,557	250,423	4	797	,000
2	,749[b]	,561	,559	6,972	,004	8,073	1	796	,005

a. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY, CNCEQ

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49122,353	4	12280,588	250,423	,000[a]
	Residual	39084,370	797	49,039		
	Total	88206,723	801			
2	Regression	49514,751	5	9902,950	203,731	,000[b]
	Residual	38691,972	796	48,608		
	Total	88206,723	801			

a. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY, CNCEQ

c. Dependent Variable: CES-D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-17,537	2,355		-7,447	,000
	age	-,020	,149	-,003	-,132	,895
	gender	,607	,516	,029	1,178	,239
	STATE ANXIETY	,237	,030	,238	7,781	,000
	TRAIT ANXIETY	,570	,032	,564	18,000	,000
2	(Constant)	-20,645	2,587		-7,980	,000
	age	,073	,152	,012	,480	,632
	gender	,747	,516	,035	1,449	,148
	STATE ANXIETY	,224	,031	,225	7,287	,000
	TRAIT ANXIETY	,543	,033	,537	16,469	,000
	CNCEQ	,059	,021	,076	2,841	,005

a. Dependent Variable: CES-D

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ	,076[a]	2,841	,005	,100	,771

a. Predictors in the Model: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Dependent Variable: CES-D

2. STEPWISE REGRESSION ANALYSES

2.1 Regression: Dependent variable STAI-S

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	CNCEQ-OG		Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).

a. Dependent Variable: STATE ANXIETY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,403[a]	,163	,162	9,608

a. Predictors: (Constant), CNCEQ-OG

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15395,842	1	15395,842	166,788	,000[a]
	Residual	79200,180	858	92,308		
	Total	94596,022	859			

a. Predictors: (Constant), CNCEQ-OG

b. Dependent Variable: STATE ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	25,515	1,001		25,484	,000
	CNCEQ-OG	,906	,070	,403	12,915	,000

a. Dependent Variable: STATE ANXIETY

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-CT	,047[a]	1,230	,219	,042	,671
	CNCEQ-PS	,032[a]	,897	,370	,031	,762
	CNCEQ-SA	,013[a]	,360	,719	,012	,741

a. Predictors in the Model: (Constant), CNCEQ-OG

b. Dependent Variable: STATE ANXIETY

2.2 Regression: Dependent variable STAI-T

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	CNCEQ-OG	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
2	CNCEQ-CT	.	Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).

a. Dependent Variable: TRAIT ANXIETY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,453[a]	,205	,204	9,225
2	,461[b]	,212	,211	9,187

a. Predictors: (Constant), CNCEQ-OG

b. Predictors: (Constant), CNCEQ-OG , CNCEQ-CT

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18696,819	1	18696,819	219,714	,000[a]
	Residual	72501,824	852	85,096		
	Total	91198,643	853			
2	Regression	19372,092	2	9686,046	114,760	,000[b]
	Residual	71826,551	851	84,403		
	Total	91198,643	853			

a. Predictors: (Constant), CNCEQ-OG

b. Predictors: (Constant), CNCEQ-OG , CNCEQ-CT

c. Dependent Variable: TRAIT ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	30,430	,964		31,572	,000
	CNCEQ-OG	1,002	,068	,453	14,823	,000
2	(Constant)	28,473	1,183		24,064	,000
	CNCEQ-OG	,867	,082	,392	10,515	,000
	CNCEQ-CT	,268	,095	,105	2,829	,005

a. Dependent Variable: TRAIT ANXIETY

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-CT	,105[a]	2,829	,005	,097	,666
	CNCEQ-PS	,002[a]	,060	,952	,002	,760
	CNCEQ-SA	,053[a]	1,475	,140	,051	,732
2	CNCEQ-PS	-,034[b]	-,920	,358	-,032	,677
	CNCEQ-SA	,027[b]	,742	,458	,025	,679

a. Predictors in the Model: (Constant), CNCEQ-OG

b. Predictors in the Model: (Constant), CNCEQ-OG , CNCEQ-CT

c. Dependent Variable: TRAIT ANXIETY

2.3 Regression: Dependent variable CES-D

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	CNCEQ-OG		Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
2	CNCEQ-CT		Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).

a. Dependent Variable: CES-D

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,417[a]	,174	,173	9,617
2	,426[b]	,182	,180	9,579

a. Predictors: (Constant), CNCEQ-OG

b. Predictors: (Constant), CNCEQ-OG , CNCEQ-CT

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15908,077	1	15908,077	172,010	,000[a]
	Residual	75466,642	816	92,484		
	Total	91374,719	817			
2	Regression	16598,230	2	8299,115	90,453	,000[b]
	Residual	74776,489	815	91,750		
	Total	91374,719	817			

a. Predictors: (Constant), CNCEQ-OG

b. Predictors: (Constant), CNCEQ-OG , CNCEQ-CT

c. Dependent Variable: CES-D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,490	1,024		4,386	,000
	CNCEQ-OG	,946	,072	,417	13,115	,000
2	(Constant)	2,462	1,259		1,955	,051
	CNCEQ-OG	,807	,088	,356	9,185	,000
	CNCEQ-CT	,276	,101	,106	2,743	,006

a. Dependent Variable: CES-D

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-CT	,106[a]	2,743	,006	,096	,668
	CNCEQ-PS	,036[a]	,979	,328	,034	,755
	CNCEQ-SA	,081[a]	2,201	,028	,077	,737
2	CNCEQ-PS	,001[b]	,039	,969	,001	,665
	CNCEQ-SA	,059[b]	1,549	,122	,054	,688

a. Predictors in the Model: (Constant), CNCEQ-OG

b. Predictors in the Model: (Constant), CNCEQ-OG , CNCEQ-CT

c. Dependent Variable: CES-D

3. HIERARCHICAL REGRESSION ANALYSES

3.1 Regression: Independent variable CNCEQ-OG; Dependent variable STAI-S

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	CES-D , age, gender, TRAIT ANXIETY[a]	.	Enter
2	CNCEQ-OG[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: STATE ANXIETY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,670[a]	,448	,446	7,853	,448	163,967	4	807	,000
2	,680[b]	,463	,459	7,757	,014	21,236	1	806	,000

a. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY

b. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY , CNCEQ-OG

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40451,067	4	10112,767	163,967	,000[a]
	Residual	49772,345	807	61,676		
	Total	90223,413	811			
2	Regression	41728,764	5	8345,753	138,710	,000[b]
	Residual	48494,649	806	60,167		
	Total	90223,413	811			

a. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY

b. Predictors: (Constant), CES-D , age, gender, TRAIT ANXIETY , CNCEQ-OG

c. Dependent Variable: STATE ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9,770	2,689		3,633	,000
	age	,341	,165	,055	2,060	,040
	gender	-,401	,575	-,019	-,698	,486
	TRAIT ANXIETY	,418	,039	,410	10,647	,000
	CES-D	,305	,038	,303	8,011	,000
2	(Constant)	7,242	2,712		2,670	,008
	age	,409	,164	,066	2,492	,013
	gender	-,439	,568	-,021	-,773	,440
	TRAIT ANXIETY	,369	,040	,362	9,167	,000
	CES-D	,282	,038	,281	7,449	,000
	CNCEQ-OG	,309	,067	,136	4,608	,000

a. Dependent Variable: STATE ANXIETY

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-OG	,136[a]	4,608	,000	,160	,765

a. Predictors in the Model: (Constant), CES-D , age, gender, TRAIT ANXIETY

b. Dependent Variable: STATE ANXIETY

3.2 Regression: Independent variable CNCEQ-OG; Dependent variable STAI-T

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	STATE ANXIETY, gender, age, CES-D[a]	.	Enter
2	CNCEQ-OG[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: TRAIT ANXIETY

Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Chang
1	,772[a]	,596	,594	6,593	,596	298,180	4	807	,000
2	,783[b]	,613	,610	6,463	,016	33,739	1	806	,000

a. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D

b. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D , CNCEQ-OG

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51847,337	4	12961,834	298,180	,000[a]
	Residual	35080,134	807	43,470		
	Total	86927,472	811			
2	Regression	53256,770	5	10651,354	254,969	,000[b]
	Residual	33670,701	806	41,775		
	Total	86927,472	811			

a. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D

b. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D , CNCEQ-OG

c. Dependent Variable: TRAIT ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16,172	2,204		7,339	,000
	age	,307	,139	,050	2,210	,027
	gender	2,170	,477	,104	4,551	,000
	CES-D	,506	,028	,513	18,057	,000
	STATE ANXIETY	,295	,028	,300	10,647	,000
2	(Constant)	13,147	2,222		5,917	,000
	age	,374	,137	,061	2,742	,006
	gender	2,032	,468	,098	4,343	,000
	CES-D	,470	,028	,476	16,710	,000
	STATE ANXIETY	,256	,028	,261	9,167	,000
	CNCEQ-OG	,322	,055	,145	5,808	,000

a. Dependent Variable: TRAIT ANXIETY

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-OG	,145[a]	5,808	,000	,200	,776

a. Predictors in the Model: (Constant), STATE ANXIETY, gender, age, CES-D

b. Dependent Variable: TRAIT ANXIETY

3.3 Regression: Independent variable CNCEQ-CT; Dependent variable STAI-T

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	STATE ANXIETY, gender, age, CES-D[a]	.	Enter
2	CNCEQ-CT[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: TRAIT ANXIETY

Model Summary

					Change Statistics				
Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Chang
1	,772[a]	,596	,594	6,600	,596	299,345	4	810	,000
2	,780[b]	,608	,605	6,511	,011	23,253	1	809	,000

a. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D

b. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D , CNCEQ-CT

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52162,901	4	13040,725	299,345	,000[a]
	Residual	35287,009	810	43,564		
	Total	87449,909	814			
2	Regression	53148,795	5	10629,759	250,705	,000[b]
	Residual	34301,114	809	42,399		
	Total	87449,909	814			

a. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D

b. Predictors: (Constant), STATE ANXIETY, gender, age, CES-D , CNCEQ-CT

c. Dependent Variable: TRAIT ANXIETY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15,540	2,193		7,085	,000
	age	,342	,138	,056	2,473	,014
	gender	2,131	,476	,102	4,474	,000
	CES-D	,502	,028	,507	17,923	,000
	STATE ANXIETY	,300	,028	,306	10,905	,000
2	(Constant)	10,626	2,392		4,443	,000
	age	,469	,139	,077	3,372	,001
	gender	2,179	,470	,105	4,637	,000
	CES-D	,476	,028	,481	16,932	,000
	STATE ANXIETY	,282	,027	,288	10,292	,000
	CNCEQ-CT	,291	,060	,114	4,822	,000

a. Dependent Variable: TRAIT ANXIETY

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-CT	,114[a]	4,822	,000	,167	,868

a. Predictors in the Model: (Constant), STATE ANXIETY, gender, age, CES-D

b. Dependent Variable: TRAIT ANXIETY

3.4 Regression: Independent variable CNCEQ-OG; Dependent variable CES-D

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TRAIT ANXIETY , age, gender, STATE ANXIETY[a]	.	Enter
2	CNCEQ-OG[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CES-D

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,747[a]	,558	,556	6,989	,558	254,688	4	807	,000
2	,749[b]	,561	,558	6,970	,003	5,515	1	806	,019

a. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY, CNCEQ-OG

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49767,772	4	12441,943	254,688	,000[a]
	Residual	39423,355	807	48,852		
	Total	89191,127	811			
2	Regression	50035,698	5	10007,140	205,993	,000[b]
	Residual	39155,429	806	48,580		
	Total	89191,127	811			

a. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY, CNCEQ-OG

c. Dependent Variable: CES-D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-17,339	2,334		-7,428	,000
	age	-,044	,148	-,007	-,300	,764
	gender	,665	,511	,032	1,301	,194
	STATE ANXIETY	,242	,030	,243	8,011	,000
	TRAIT ANXIETY	,569	,031	,561	18,057	,000
2	(Constant)	-18,274	2,362		-7,738	,000
	age	-,008	,148	-,001	-,057	,954
	gender	,638	,510	,030	1,252	,211
	STATE ANXIETY	,228	,031	,229	7,449	,000
	TRAIT ANXIETY	,547	,033	,540	16,710	,000
	CNCEQ-OG	,143	,061	,063	2,348	,019

a. Dependent Variable: CES-D

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-OG	,063[a]	2,348	,019	,082	,750

a. Predictors in the Model: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Dependent Variable: CES-D

3.5 Regression: Independent variable CNCEQ-CT; Dependent variable CES-D

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TRAIT ANXIETY , age, gender, STATE ANXIETY[a]	.	Enter
2	CNCEQ-CT[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: CES-D

Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,744[a]	,554	,552	7,010	,554	251,466	4	810	,000
2	,746[b]	,556	,554	6,995	,002	4,487	1	809	,034

a. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY, CNCEQ-CT

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49430,919	4	12357,730	251,466	,000[a]
	Residual	39805,663	810	49,143		
	Total	89236,582	814			
2	Regression	49650,499	5	9930,100	202,936	,000[b]
	Residual	39586,082	809	48,932		
	Total	89236,582	814			

a. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Predictors: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY, CNCEQ-CT

c. Dependent Variable: CES-D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-16,648	2,328		-7,150	,000
	age	-,082	,148	-,013	-,557	,578
	gender	,739	,511	,035	1,445	,149
	STATE ANXIETY	,238	,030	,241	7,890	,000
	TRAIT ANXIETY	,566	,032	,560	17,923	,000
2	(Constant)	-18,694	2,516		-7,430	,000
	age	-,017	,150	-,003	-,111	,911
	gender	,786	,511	,037	1,539	,124
	STATE ANXIETY	,232	,030	,235	7,677	,000
	TRAIT ANXIETY	,550	,032	,544	16,932	,000
	CNCEQ-CT	,139	,066	,054	2,118	,034

a. Dependent Variable: CES-D

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	CNCEQ-CT	,054[a]	2,118	,034	,074	,848

a. Predictors in the Model: (Constant), TRAIT ANXIETY , age, gender, STATE ANXIETY

b. Dependent Variable: CES-D

4. FREQUENCIES: AGE

EARLY LATE ADOLESCENCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12-15	558	63,2	63,2	63,2
	16-18	325	36,8	36,8	100,0
	Total	883	100,0	100,0	

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
CNCEQ * EARLY LATE ADOLESCENCE	867	98,2%	16	1,8%	883	100,0%
CNCEQ-CT * EARLY LATE ADOLESCENCE	880	99,7%	3	,3%	883	100,0%
CNCEQ-OG * EARLY LATE ADOLESCENCE	879	99,5%	4	,5%	883	100,0%
CNCEQ-PS * EARLY LATE ADOLESCENCE	881	99,8%	2	,2%	883	100,0%
CNCEQ-SA * EARLY LATE ADOLESCENCE	876	99,2%	7	,8%	883	100,0%
CNCEQ-SOC * EARLY LATE ADOLESCENCE	875	99,1%	8	,9%	883	100,0%
CNCEQ-ATH * EARLY LATE ADOLESCENCE	880	99,7%	3	,3%	883	100,0%
CNCEQ-ACA * EARLY LATE ADOLESCENCE	878	99,4%	5	,6%	883	100,0%
STATE ANXIETY * EAR LATE ADOLESCENCE	875	99,1%	8	,9%	883	100,0%
TRAIT ANXIETY * EAR LATE ADOLESCENCE	870	98,5%	13	1,5%	883	100,0%
CES-D * EARLY LATE ADOLESCENCE	833	94,3%	50	5,7%	883	100,0%

Report

EARLY L/ ADOLESC		CNCEQ	CEQ-C	CEQ-C	CEQ-F	CEQ-S	CEQ-SC	CEQ-A	CEQ-A	STATE NXIET	TRAIT NXIET	CES-D
12-15	Mean	56,44	14,44	13,61	14,52	13,94	19,78	18,01	18,72	36,77	42,91	16,39
	N	545	555	556	556	552	551	555	555	551	547	517
	Std. De	3,856	4,203	4,634	4,700	3,796	6,016	5,188	5,242	0,292	0,384	0,620
16-18	Mean	53,42	13,57	13,31	13,00	13,54	18,08	17,71	17,61	39,43	45,54	18,43
	N	322	325	323	325	324	324	325	323	324	323	316
	Std. De	3,192	3,819	4,769	3,959	3,846	5,664	4,881	5,395	0,723	9,970	0,298
Total	Mean	55,32	14,12	13,50	13,96	13,79	19,15	17,90	18,31	37,76	43,89	17,17
	N	867	880	879	881	876	875	880	878	875	870	833
	Std. De	3,684	4,085	4,684	4,499	3,817	5,943	5,076	5,323	0,526	0,305	0,539

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
CNCEQ * EARLY L. ADOLESCENCE	Between Grou (Combined)	853,473	1	1853,473	10,001	,002
	Within Groups	60306,7	865	185,326		
	Total	62160,1	866			
CNCEQ-CT * EARL LATE ADOLESCEN	Between Grou (Combined)	156,389	1	156,389	9,460	,002
	Within Groups	514,556	878	16,531		
	Total	670,944	879			
CNCEQ-OG * EARI LATE ADOLESCEN	Between Grou (Combined)	18,243	1	18,243	,831	,362
	Within Groups	241,504	877	21,940		
	Total	259,747	878			
CNCEQ-PS * EARL` LATE ADOLESCEN	Between Grou (Combined)	473,422	1	473,422	24,002	,000
	Within Groups	337,851	879	19,725		
	Total	811,274	880			
CNCEQ-SA * EARL` LATE ADOLESCEN	Between Grou (Combined)	32,890	1	32,890	2,260	,133
	Within Groups	718,461	874	14,552		
	Total	751,352	875			
CNCEQ-SOC * EAF LATE ADOLESCEN	Between Grou (Combined)	594,414	1	594,414	17,143	,000
	Within Groups	270,370	873	34,674		
	Total	864,784	874			
CNCEQ-ATH * EAF LATE ADOLESCEN	Between Grou (Combined)	18,833	1	18,833	,731	,393
	Within Groups	629,166	878	25,774		
	Total	647,999	879			
CNCEQ-ACA * EAF LATE ADOLESCEN	Between Grou (Combined)	248,091	1	248,091	8,835	,003
	Within Groups	597,645	876	28,080		
	Total	845,736	877			
STATE ANXIETY * E LATE ADOLESCEN	Between Grou (Combined)	433,833	1	1433,833	13,120	,000
	Within Groups	405,317	873	109,284		
	Total	839,150	874			
TRAIT ANXIETY * E LATE ADOLESCEN	Between Grou (Combined)	399,555	1	1399,555	13,366	,000
	Within Groups	884,951	868	104,706		
	Total	284,506	869			
CES-D * EARLY LA ADOLESCENCE	Between Grou (Combined)	812,832	1	812,832	7,374	,007
	Within Groups	604,973	831	110,235		
	Total	417,806	832			

Measures of Association

	Eta	Eta Squared
CNCEQ * EARLY LATE ADOLESCENCE	,107	,011
CNCEQ-CT * EARLY LATE ADOLESCENCE	,103	,011
CNCEQ-OG * EARLY LATE ADOLESCENCE	,031	,001
CNCEQ-PS * EARLY LATE ADOLESCENCE	,163	,027
CNCEQ-SA * EARLY LATE ADOLESCENCE	,051	,003
CNCEQ-SOC * EARLY LATE ADOLESCENCE	,139	,019
CNCEQ-ATH * EARLY LATE ADOLESCENCE	,029	,001
CNCEQ-ACA * EARLY LATE ADOLESCENCE	,100	,010
STATE ANXIETY * EARLY LATE ADOLESCENCE	,122	,015
TRAIT ANXIETY * EARLY LATE ADOLESCENCE	,123	,015
CES-D * EARLY LATE ADOLESCENCE	,094	,009

5. FREQUENCIES: GENDER

gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	398	45,1	45,1	45,1
	female	485	54,9	54,9	100,0
	Total	883	100,0	100,0	

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
CNCEQ * gender	867	98,2%	16	1,8%	883	100,0%
CNCEQ-CT * gender	880	99,7%	3	,3%	883	100,0%
CNCEQ-OG * gender	879	99,5%	4	,5%	883	100,0%
CNCEQ-PS * gender	881	99,8%	2	,2%	883	100,0%
CNCEQ-SA * gender	876	99,2%	7	,8%	883	100,0%
CNCEQ-SOC * gender	875	99,1%	8	,9%	883	100,0%
CNCEQ-ATH * gender	880	99,7%	3	,3%	883	100,0%
CNCEQ-ACA * gender	878	99,4%	5	,6%	883	100,0%
STATE ANXIETY * gend	875	99,1%	8	,9%	883	100,0%
TRAIT ANXIETY * gend	870	98,5%	13	1,5%	883	100,0%
CES-D * gender	833	94,3%	50	5,7%	883	100,0%

Report

gend	CNCEQ	CNCEQ-CT	CNCEQ-OG	CNCEQ-PS	CNCEQ-SA	CNCEQ-SOC	CNCEQ-ATH	CNCEQ-ACA	STATE ANXIETY	TRAIT ANXIETY	CES-D
male Mean	55,16	13,98	12,85	14,47	13,99	19,02	17,35	18,93	35,99	41,03	14,69
N	391	398	395	397	395	395	397	395	395	390	378
Std. Dev	3,044	3,956	4,253	4,339	3,868	5,804	4,783	5,261	9,912	9,290	9,225
fema Mean	55,45	14,23	14,03	13,53	13,62	19,26	18,35	17,81	39,21	46,20	19,23
N	476	482	484	484	481	480	483	483	480	480	455
Std. Dev	4,200	4,190	4,949	4,587	3,771	6,058	5,267	5,325	0,802	0,515	1,114
Total Mean	55,32	14,12	13,50	13,96	13,79	19,15	17,90	18,31	37,76	43,89	17,17
N	867	880	879	881	876	875	880	878	875	870	833
Std. Dev	3,684	4,085	4,684	4,499	3,817	5,943	5,076	5,323	0,526	0,305	0,539

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
CNCEQ * gender	Between Groups (Combined)	17,034	1	17,034	,091	,763
	Within Groups	62143,1	865	187,449		
	Total	62160,1	866			
CNCEQ-CT * gend	Between Groups (Combined)	13,171	1	13,171	,789	,375
	Within Groups	657,773	878	16,695		
	Total	670,944	879			
CNCEQ-OG * gen	Between Groups (Combined)	304,089	1	304,089	14,069	,000
	Within Groups	955,658	877	21,614		
	Total	259,747	878			
CNCEQ-PS * gend	Between Groups (Combined)	193,766	1	193,766	9,668	,002
	Within Groups	617,507	879	20,043		
	Total	811,274	880			
CNCEQ-SA * gend	Between Groups (Combined)	30,227	1	30,227	2,077	,150
	Within Groups	721,125	874	14,555		
	Total	751,352	875			
CNCEQ-SOC * ge	Between Groups (Combined)	12,498	1	12,498	,354	,552
	Within Groups	852,286	873	35,341		
	Total	864,784	874			
CNCEQ-ATH * ge	Between Groups (Combined)	217,799	1	217,799	8,525	,004
	Within Groups	430,200	878	25,547		
	Total	647,999	879			
CNCEQ-ACA * ge	Between Groups (Combined)	273,159	1	273,159	9,738	,002
	Within Groups	572,577	876	28,051		
	Total	845,736	877			
STATE ANXIETY *	Between Groups (Combined)	241,006	1	2241,006	20,681	,000
	Within Groups	598,144	873	108,360		
	Total	839,150	874			
TRAIT ANXIETY *	Between Groups (Combined)	758,883	1	5758,883	57,771	,000
	Within Groups	525,622	868	99,684		
	Total	284,506	869			
CES-D * gender	Between Groups (Combined)	262,040	1	4262,040	40,176	,000
	Within Groups	155,766	831	106,084		
	Total	417,806	832			

Measures of Association

	Eta	Eta Squared
CNCEQ * gender	,010	,000
CNCEQ-CT * gender	,030	,001
CNCEQ-OG * gender	,126	,016
CNCEQ-PS * gender	,104	,011
CNCEQ-SA * gender	,049	,002
CNCEQ-SOC * gender	,020	,000
CNCEQ-ATH * gender	,098	,010
CNCEQ-ACA * gender	,105	,011
STATE ANXIETY * gender	,152	,023
TRAIT ANXIETY * gender	,250	,062
CES-D * gender	,215	,046

SECTION C CLINICAL PRACTICE

CASE STUDY 1 A PERSON-CENTRED PERSPECTIVE APPLIED TO THE CASE OF ROSE

1.1 INTRODUCTION AND THE START OF THERAPY

The rationale for the choice of case

This work was chosen because it represented a good balance of process and content. In addition, this case shows the virtues of a person-centred approach emphasising the philosophy of Carl Rogers, who suggested that empathy was one of the necessary and sufficient conditions for personal change (Rogers, 1961).

In describing a case a major problem is deciding what to leave out. In the account which follows, only material that had been of particular significance was retained, thus, allowing more space for exploring moments which radically affected the process.

Summary of theoretical orientation

The theoretical framework used in the following case study was based on the person-centred model (Rogers, 1951, 1961). The person-centred approach is grounded on the assumption that individual human beings have within themselves vast resources of development. It challenges each person to accept responsibility for his or her own life and to trust the inner resources so as to move toward self-awareness, self-acceptance and wholeness (Rogers, 1951). The personal qualities of the therapist rather than the therapeutic techniques are emphasised, because the primary function of the therapist is to create a fertile and healing climate. The focus is on truly listening to and deeply understanding the clients' world from

their internal reference (Corey, 2005; Thorne, 1992). According to Rogers (1986), this therapy is best considered as a "way of being" rather than a "way of doing".

Biographical Details

Rose[14] was a 63-year-old woman of English origin. At the time of the referral, she had been retired from work for two years. Previously, she was employed as a nurse for older people. She was the mother of three adult children, John, 31 years old, Sue, 30 years old and Jane, 26 years old. Sue was married and had a baby girl who was one year old at the time and she was also four months pregnant. Rose lived with her husband in a privately own house. John and Jane were still living with them. Rose was married at the age of 21 and left home to be with her husband, who at the time was in the armed forces, stationed in Ireland. She reported having a very good and caring relationship with her husband, who was also retired. However, she mentioned that her husband was quick-tempered and that she had nobody to confide in. She was the middle of five children. She had two older brothers and two younger sisters. She reported being very close to her sisters who never got married and in particular to her youngest sister, who had suffered from agoraphobia for most of her life. Her father died in 1993 from a heart condition and her mother died suddenly and unexpectedly in recent years. She described her relationship with her parents as good, although during her childhood, she remembered that they were rarely at home because they were always working. She described her childhood as happy.

The context for the work and the referral

Rose was referred to Hornchurch Community Mental Health Team, North East London Mental Health NHS Trust by the Consultant Psychiatrist, where I was employed as a counselling psychologist. In his letter, Dr. T. suggested that Rose had been suffering from a depressive disorder.

[14] This is not the client's real name; it is an alias to ensure that the confidentiality agreed upon in the client-therapist relationship is maintained.

Although the consultant psychiatrist had already prescribed anti-depressant medication, he was of the opinion that additional psychological therapy was required to lift the client out of her depression.

The beginning of therapy

At our first meeting, Rose arrived on time and presented as an appropriately dressed and well-kept lady. She had poor eye contact but was co-operative. Her speech was normal in content, volume and rate. I tried to make, as clear as possible to her from the beginning, that this was her hour and that she had the freedom to use it for her own needs (Mearns & Thorne, 1988). I told her that she should talk about what she wished and that I was "very ready to hear" whatever she chose to bring up. In such a way, I would be able to redress the power balance between the therapist and the client, as well as initiate dialogue at a level comfortable for the client (Mearns & Thorne, 1988; Corsini & Wedding, 1995).

Almost immediately after Rose began to recount her story, she became very tearful and wept throughout the session. She expressed her sense of hopelessness in what she described as "not being herself and not coping very well with the difficulties she was experiencing". She explained that a lot of things that had happened had left her feeling low, distressed and emotionally drained. Rose described how her mother's death had left her feeling devastated. Shortly after that, she retired from her job, which she really enjoyed and felt that her life had no meaning anymore. She felt hopeless and helpless with nothing to look forward to. She had lost interest and pleasure in "almost everything" and spent most days sitting at home doing nothing. This was making her feel even worse, as she used to be a very active person. In addition, she described herself as always being slightly anxious but the last few months she felt that she could no longer control her anxiety, worrying excessively about "every little thing", which made her feeling low in mood as well as frustrated and angry with herself. Near the end of our meeting, I quite gently stopped Rose's flow of speech and I responded with a strongly affirming statement to show my interest,

warmth and understanding. I felt that it was very important to communicate my respect and understanding to strengthen her trust and our relationship (Natiello, 1987). Generally, throughout the session, I tried to create a suitable psychological climate based on safety and trust, which would enable Rose to experience the freedom necessary to initiate constructive personality change (Rogers, 1951; 1957). I tried to be authentic, genuine and present for her, as well as, empathic and I almost related to her feelings of distress. I strived to use myself as an instrument of change, which is in accordance to Rogers's belief (1961) that the attitudes and personal characteristics of the therapist, as well as, the quality of the client / therapist relationship are the prime determinants of the outcome of therapy. At the end of our session, Rose said that she had found the session helpful and we agreed on an appointment in the following week.

At our second appointment, an incident happened which seemed to contribute immeasurably to the trust between Rose and myself and marked the end of the "beginning" of therapy (Mearns & Thorne, 1988). Rose explained that since her mother died, she had no one to talk to, as she did not want to burden her husband with her problems. She always saw herself in the family as someone who had been strong and had managed everything quite well, and now she was let down by herself. She went on to describe how she was always the one who listened and cared for others and that now she was unable to do so. She was terrified that her family would desert her. I attempted to empathically reflect Rose's feelings surrounding her sense of fear and guilt. The goal was to "open up the client's experience and provide the client with a process where by he / she can form progressively more accurate constructions of his / her own experiences" (Rice, 1989, p. 290). This moment was somewhat critical for the development of the therapeutic relationship because it demonstrated that Rose had taken the risk of voicing her fear of rejection and the therapist had responded in a way that showed accepting, understanding and valuing. The trust in the therapeutic relationship appeared to have been generated to the extent that significant progress could be made and therefore, therapist and client were ready to enter the "middle" phase of

therapy. As Mearns and Thorne (1988) acknowledge "the development of trust is the point where we want to draw our arbitrary line to separate the beginning and the middle of the counselling process, because it is only when this trusts develops that the client is prepared to take more risks in the relative certainty that the therapist's acceptance and commitment will endure" (p. 117). In this case, it appeared that trust developed quite rapidly due to the presence of a number of factors, which suggested the client's high "state of readiness" for therapy (Mearns & Thorne, 1988). It became clear, from the beginning that Rose wanted to change; that she was willing to take considerable responsibility fro her own self in life; and that she was willing to recognise and explore her feelings.

Contract and counselling plan

Following Rose's assessment, we agreed to meet for 10 sessions of person-centred therapy to help her deal with her difficulties, which would be followed by a review to assess progress and arrange further sessions if necessary. Sessions would be of sixty minutes duration. Confidentiality and its limits were explained and agreed upon (Corey, 2005; Corey, Corey, & Callanan, 2003; Herlihy & Corey, 1997). Rose was made aware that I receive supervision by a chartered counselling psychologist and thus, I would be reviewing her records with him from time to time. Moreover, I mentioned that I would be contacting the consultant psychiatrist with a brief report of our meeting together, as well as at termination of therapy, as this was standard practice in the CMHT. Rose was also made aware that, should I believe that a risk of harm existed towards either herself or others, I would consult my supervisor and that confidentiality might then have to be breached (Herlihy & Corey, 1997). Boundaries were also explained (Corey et al., 2003).

Subsequent Sessions

At our third meeting, Rose talked about how much better she felt after our last meeting. She explained that she felt better because she knew that she could now talk to someone about her thoughts and feelings, without the fear of rejection. She next described how shortly after her mother's death, she retired from her job. Since then her life changed dramatically in that she felt that her life had no meaning anymore. She stopped socializing and wanted to be on her own. She felt miserable and could not be bothered to do anything. She had difficulty sleeping and she felt tired most of the time. She worried about everything as if "it was the end of the world" as she reported. At this point, I tried to summarize what we had been talking about to share my understanding of not just the surface meanings, but of the "meanings just below the surface" (Corey, 2005). I did that in order to "...present the client with the larger panorama to deal with, and if the connections were there to be made, or the contradictions to be resolved, then the client could do it" (Martin, 1989). Rose found my remarks quite helpful and she continued to focus on her feelings and experiences of that time.

During our fourth and fifth session, Rose was as negative about herself and her situation as since our first meeting. She repeated phrases such: "Nothing will change"; "There is no point trying"; "I am worthless"; "Nobody likes me anymore". Her *regression* reflected in a way an integral part of the process (Wexler & Rice, 1974), and it would be more valuable for therapy, if Rose was enabled to experience her position at its worst before she could move on through it. According to Wexler and Rice (1974), the person-centred therapist knows that the client's movement is likely to include periods of stuckness and that these are natural aspects of the freeing of the client's healing process. During these sessions, I felt that Rose needed to gain further strength before moving on. Although it was not easy for me to be certain about what was happening at these moments, I strongly believed that if I could consistently offer the

therapeutic conditions as fully as possible, the overall direction and effect would be positive (Mearns & Thorne, 1988). I was concerned in creating a climate that was psychologically safe for Rose, giving signals of warmth, genuineness and acceptance. My role was to be without a role (Natiello, 1987). I also relied on her self-report of the way she saw herself and as she revealed her feelings, I adopted an empathic attitude, in order for Rose to feel deeply understood and cared for. I attempted not to just listen to her words, but to focus on the way she was expressing them through her body language and her non-verbal vocalizations (Corey, 2005).

When this issue was brought up in supervision, my decision was validated and I was advised that an essential aspect of therapy is to "stay with" the client and to react to the needs of the client. Later during therapy, Rose reflected back on these sessions saying that it was very important for her that I was willing to just be with her in her hopelessness and did not try to take her out of it.

At our sixth and seventh session, Rose started recounting various memories and thoughts, which had come flooding during the previous week. She spoke at length about her childhood and how, while her mother was at work, she looked after her younger sisters. She reflected how difficult but also rewarding it was to have so many responsibilities from such a young age. She said that her mother never asked her to do anything but she always did her best to please her, especially since her mother seemed to be working very hard to provide for her family. She said that she always saw herself in the family as someone who was strong and was able to manage everything quite well, and now she was let down by herself and felt worthless. I tried to encourage her to speak freely and even express those feelings, which were too negative to accept and incorporate in her self-structure. Accepting her without judgment enabled Rose to move to greater acceptance and integration of conflicting and confusing feelings. As Rogers (1961) affirmed "when a therapist prizes the client in a total rather than a conditional way, forward movement is likely" (p. 33). Near the end of that meeting, it became rather obvioust that Rose

was greatly in charge of her own progress and that she was more able to take responsibility for herself. The therapeutic relationship had moved forward from a state of "trust" to a state of "mutuality" (Mearns & Thorne, 1988). According to Mearns and Thorne (1988), the establishment of mutuality is seen as a central process of person-centred therapy, as it means that the therapist and the client drop any forms of human defensiveness and can trust each other's commitment to achieve and maintain genuineness in relation to each other.

When Rose came to our eighth appointment, she spoke about how she had decided to start taking again an active role in her life rather than a passive one. She said that she had already started waking up early in the morning as she used to and walking her dogs. She went on to describe all the things that she would like to start doing during the day now that she had so much free time. She also said that she would like to spend more time with her granddaughter and how much she loved children. During the session Rose appeared to be regaining an interest in the things that she used to like and do in the past. The fact that she had began to think about making changes in her daily life, suggested that she started to feel more confident and in control and that she had some volition over her future. She also said that she was starting to "recognise" herself again and she explained that before she was not behaving "appropriately" because she felt depressed and she could not manage her emotions. Rose's decision was reinforced by asking her to think more constructively about how she might improve her situation. Of note is the therapist's non-directive and empathic attitude, to allow "the client to go through the problem-solving process, since it is not just the truth that makes the client free and strong; it is the process of finding the truth" (Martin, 1989).

1.3 THE CONCLUSION OF THE THERAPY

The end of therapy and evaluation of the work

The end of the therapeutic process came around during sessions nine and ten. The issues to which she was attending during these sessions focused on taking control of her life and were characterised by action. It became clear, through the client's progression, that Rose had largely faced and had overcome the emotional blockages, such as her lack of awareness of feelings, paralysing self-doubt and self-rejection as well as social isolation, which had been inhibiting the process of her life. Through the therapeutic relationship, it seemed that Rose was no longer so isolated socially and emotionally and her fear diminished as her trust increased. The reduction in fear is crucial in enabling the client to face the difficulties, which up until now he or she had to deny (Thorne, 1987). Rose appeared to be ready to take risks by facing situations, which she would previously had avoided and to be open to feelings of which she had earlier been afraid. During our work together, the therapist attempted to provide a therapeutic relationship where Rose could feel deeply valued in order to make it increasingly difficult for her to deny her own worth and therefore begin to overcome self-doubt and self-rejection (Rogers, 1980). Rose seemed to begin to achieve self-acceptance and she could now be freer to move forward in her life. As Mearns and Thorne (1988) state: "An important part of the healing process... is that he (client) begins to accept himself in the sense that he starts to cherish himself as a person of worth" (p. 131).

When our last session (session 11) had come to an end, I asked Rose to tell me her thoughts of the therapeutic process and to give me some feedback. She told me that she had found it very helpful and she really felt that I was there for her and had actually "listened to her story". She also said that it was as if she "had woken up from a bad dream" and that she felt happier because as she described: "I feel myself again".

Difficulties in the work and making use of supervision

During the counselling sessions, I encountered a number of difficulties in working with Rose. However, these difficulties and concerns were dealt with by making use of supervision, which proved to be extremely valuable and helpful.

One of the difficulties was that I worked in a Community Mental Heath Team where policy dictated that clients can only have a certain number of sessions. In person-centred therapy, this can take away power from both the therapist and the client (Mearns & Thorne, 1988). However, after consulting my supervisor, Rose and I were able to work constructively together by acknowledging and accepting this shared powerlessness from the beginning of therapy.

Another difficulty was that, at times, I felt restricted by the theoretical framework I was using, since person-centred therapy does not "allow" directive interventions and direct questioning (Rogers, 1951). At some point during the second session, I felt "stuck" and I ended up using a direct question, in order to clarify what she meant. However, during supervision, we discussed that the therapist should allow himself or herself to ask questions if clarification is needed (Corey, 2005).

Finally, in the early stages of therapy, I was aware of Rose's expectations of therapy to provide her with answers and solutions to her problems and dilemmas, which left me feeling anxious. I knew that this was not my role and to be placed in such a role could be counterproductive. However, with the help of my supervisor, I was able to gently unravel these expectations and dispel honestly and clearly the illusion that I would assume the role of expert in Rose's life. I find myself in agreement with Rogers' assertion (1961) that it is the client's responsibility to find the best way to resolve his or her life struggles and it is the therapist's responsibility to help the client help himself / herself. As Rogers (1961) acknowledged "...it is the client who knows what hurts, what direction to go, what problems are crucial, what experiences have been deeply buried..."

Learning from the case about myself as a therapist and about psychotherapeutic practice and theory

The most important learning experience from the current case was that, when a therapeutic climate is established by the therapist's creating a relationship based on certain attitudes such as genuineness, acceptance, empathic understanding and warmth, clients can drop their defences and work toward personally meaningful goals, a process that will eventually lead to self-acceptance and personal development (Corey, 2005).

Through Rose's reactions to therapy, whether these were commitment or stuckness, I was encouraged to continuously improve and reflect on my personal and professional development, in accordance to McLeod's (1998) suggestion of a developmental model of competence, which reminds therapists both of the unique strengths, weaknesses, gifts, and deficits that they bring with them into therapy, and of the fact that the development is never complete.

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CASE STUDY 2 COGNITIVE BEHAVIOURAL THERAPY APPLIED TO THE CASE OF EMMA

2.1 INTRODUCTION AND THE START OF THERAPY

The rationale for the choice of case

This work was chosen because it underlies the author's philosophy of practice, in that it shows the virtues of a cognitive-behavioural approach informed by Roger's core conditions. In particular, the therapeutic framework is based on the cognitive behavioural model (Beck, 1976), highlighting to some extent the philosophy of Carl Rogers, who proposed that empathy was one of the necessary and sufficient conditions for personal change (Rogers, 1961). In addition, this work stressed the value of cognitive restructuring (Beck & Emery, 1985), in tackling the client's self-defeating beliefs about his or her anxiety.

Summary of theoretical orientation

The theoretical framework used in the following case study was based on the cognitive-behavioural model (Beck, Rush, Shaw, & Emery, 1979). According to the cognitive behavioural approach, anxiety and panic usually result from thoughts of perceived or real danger (Beck & Emery, 1985). These may take the form of a physical danger such as having a heart attack, or a social danger such as fear of being rejected and / or of not being able to function (Beck, 1976; Beck & Emery, 1985). Beck (1976) suggests that an individual suffering from an anxiety disorder systematically overestimates the danger inherent in a given situation, which, in turn, activates a set of physiological responses that prepare the body for escape or self-defence. Danger is thus exaggerated, with a bias

to apprehend events as catastrophic and hypothetical threats are equated with actual ones. Since the perception of danger arises from false or excessive assumptions, the responses activated are inappropriate for the situation and they are interpreted as further sources of threat. Thus, it is maintained that anxiety reactions persist mainly as a result of the enduring maladaptive cognitions, which prevent normal affective or behavioural responses (Salkovskis, 1996). This reaction results in a series of vicious circles which tend to maintain or exacerbate the person's anxiety state. Hence, anxiety disorders are associated with viewing the world as dangerous and uncontrollable and viewing the self as helpless (Beck & Emery, 1985). Cognitive behavioural therapy attempts to treat anxiety states by helping patients to identify, evaluate and modify their unrealistic appraisals of danger and the behaviours which may be maintaining these appraisals (Clark, 1989).

According to Rippere (1994), the decision on what treatment to offer "rests on what problems the client presents, the client's attributes and resources, his circumstances and preferences, the therapist's skills and knowledge of the literature, and the amount of time participants have available to devote to the treatment" (p. 105). Cognitive-behavioural therapy seemed to fulfil the above propositions and meet the client's needs in this instance. In addition, cognitive behavioural therapy for anxiety disorders has been subjected to extended scientific testing and it has been found to be a highly successful treatment (Beck, 1991, 1993; Borkovec, Mathews, Chambers, Ebrahimi, Lytle, & Neloson, 1987; Butler, Fennell, Robson & Gelder, 1991; Clark, 1997; Power, Simpson, Swanson, Wallace, Feistner & Sharp, 1990).

Biographical Details

Emma[15] was a 50-year-old lady of English origin. She was born in Darlington of a normal full-time pregnancy. She described her childhood as happy. She started school at the age of 5. She reported being very

[15] This is not the client's real name, it is an alias to ensure that the confidentiality agreed upon in the client/therapist relationship is maintained.

nervous at school. She said that she had no friends until senior school and she has never had any close friends. Following school she went to college and attained 2 A' Levels. She then went to university and has a BSc in Zoology and a PhD in Physiology. She started work in 1984 as a research technician at St. Thomas Hospital, where she continued to work for the last 13 years. At the time of the referral, she was working as a research analyst in a pharmaceutical company. Emma met her present husband, John when she was 21 years of age and subsequently married him when she was 28. She reported having a very understanding and a good, caring relationship with her husband. They did not have any children because they never wished for any. Her husband worked as a primary school teacher. Emma reported that she was not close to either of her parents, who both lived together in Upminster.

The context for the work and the referral

Emma was referred to Hornchurch Community Mental Health Team, North East London Mental Health NHS Trust by the Consultant Psychiatrist, where I was employed as a counselling psychologist. In his letter, Dr. T. suggested that Emma had been suffering from a mixed anxiety and depressive disorder. He explained that Emma had been complaining of feeling low in mood and worrying excessively over trivial matters for the last four weeks. Dr. T. reported that Emma appeared eager to have psychological therapy and he felt that she would benefit from it.

Presenting Problem

When I first saw Emma she presented as an appropriately dressed, well-kept, middle-aged lady. She had poor eye contact but was co-operative. She was tearful and tremulous on occasions. Her speech was normal in content, volume and rate. She was stammering intermittently and lowering her voice. Emma said that her main problem was anxiety, which was affecting her mood. She described herself as always being an anxious and nervous person with a pessimistic outlook and low self-esteem. However, these days she felt that she could no longer control her anxiety, experiencing frequent panic attacks, which made her feeling hopeless and

low in mood. She explained that she started thinking that if her husband were to die suddenly she would not be able to cope. She was also worried about losing her job, although she said that her employers were very pleased with her work. Finally, she was worried about old age.

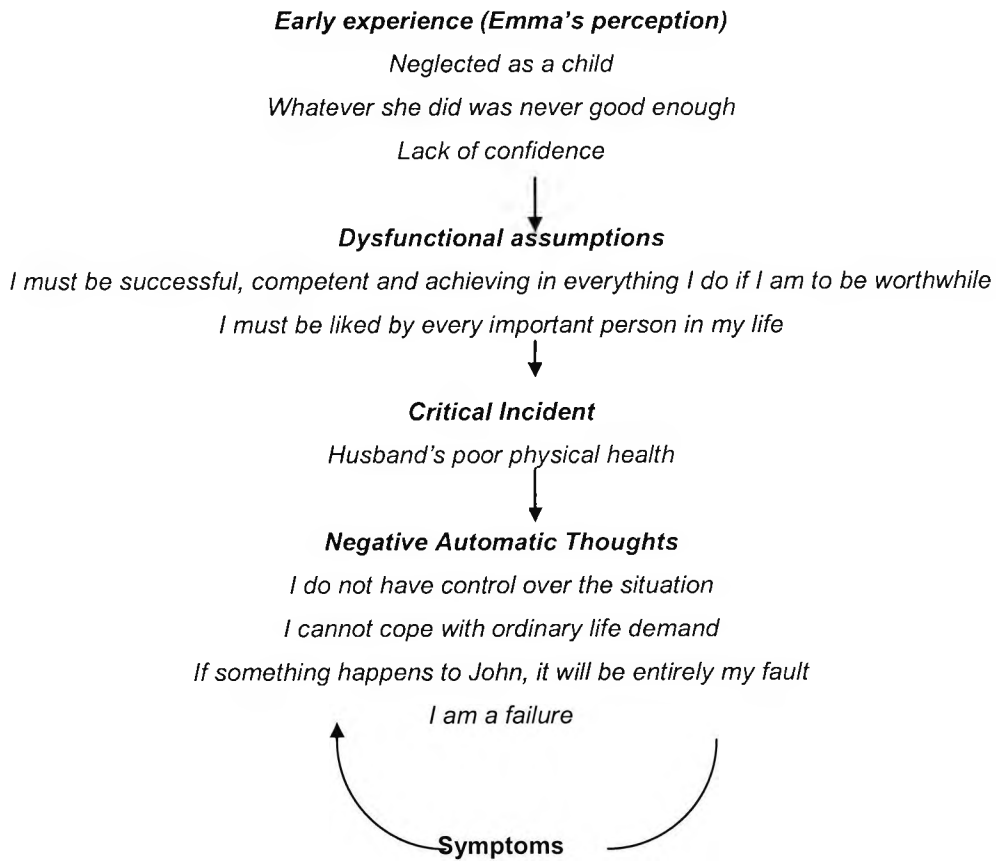
At this stage, the client is usually asked to talk about the difficulties that brought him or her to seek help by means of an open and unstructured style of exploration (Corey, 2005; Yalom, 2003). This gives the client the opportunity to tell his or her own story in his or her own way and facilitates the foundation of a good collaborative client / therapist relationship. It also enables the client to take an active, rather than passive role in counselling (Beck & Emery, 1985; Trower, Casey & Dryden, 1998). Moreover, the use of basic counselling skills, particularly reflecting and paraphrasing, as well as, attending behaviour (Mearns & Thorne, 1988), facilitates the establishment of a safe therapeutic climate. Finally, the therapist's empathic attitude, namely, giving signals of warmth and acceptance, help the client to feel understood and cared for.

Initial assessment and formulation of the problem

In the first two sessions of cognitive behavioural therapy, Emma was encouraged to explain the problem as she saw it and explore what it meant for her, what impact it had had upon her life and her outlook for the future. The goal of the assessment was to gain an overall picture of the present situation as the client sees it (Fennell, 1989; Williams, 1984). It involved exploring Emma's major difficulties, gathering information about their onset, development and context, as well as, associated negative automatic thoughts and dysfunctional beliefs. During the sessions, I briefly summarised what had been said and asked for feedback to ensure that I accurately reflected what Emma meant to convey. In such a way, I was able to work with Emma in clarifying the nature of her problems and in agreeing on an initial formulation, guided by the cognitive model of anxiety as described by Beck and Emery (1985). Such a formulation is essentially a hypothesis, to be validated during therapy, as more information becomes available and to be reviewed as treatment progresses (Trower et

al., 1998). Various factors seemed to have been implicated in Emma's anxiety. Her husband's poor physical health appeared to be the critical incident. However, other factors, such as Emma's early experience, including the sense of being neglected as a child and her lack of confidence seemed to have been related to her concerns. In addition, compounding her anxiety were her self-criticism and her self-defeating way of thinking. The preliminary formulation, as agreed with Emma, is described at Figure 2.1.

Figure 2.1: Initial Formulation



Behavioural:	Avoidance, social withdrawal.
Cognitive:	Low self-esteem, poor concentration, self-criticism, fear of losing control, fear of being rejected.
Affective:	Tense, frightened, unable to relax.
Somatic:	Heart racing, difficulty catching breath, dizzy feeling.

A second aim of the assessment was to inform Emma about the therapy and agree on a treatment plan, as well as begin therapy. Emma was informed that many of her symptoms appeared to be suggestive of an anxiety disorder and she was given as much detail as possible about the background, symptoms and treatment options of anxiety. In this respect, a rather educational approach was adopted, which would hopefully appeal to Emma, in that it focused on concrete and practical treatment options (Beck et al., 1979; Corey, 2005). Moreover, providing clients with details of their emotional disturbances and therapeutic interventions can also act in itself as a source of symptom relief for them (Williams, 1984), and subsequently help to increase rapport, therapeutic collaboration and confidence in the efficacy of the therapy (Beck et al., 1979). A handout about anxiety (see Beck & Emery, 1985, Appendix I, pp. 315-322) was therefore given to Emma, which described cognitive therapy for anxiety, to give her an understanding of what therapy would entail and to provide her with background information and useful hints about the treatment (Bradley, 1994).

Contract and counselling plan

Following Emma's assessment, a therapeutic plan consisting of 8 sessions of cognitive behavioural therapy towards tackling her anxiety was initially agreed upon, which would be followed by a review to assess progress and arrange further sessions if necessary. Sessions would be of sixty minutes duration. An initial brief explanation of cognitive behavioural theory was presented to ensure Emma's understanding of this particular model of emotional problems and how it fitted with her own case. Emma seemed pleased with this way of looking at her difficulties and appeared motivated and willing to engage to therapy. The primary aim of therapy was to help Emma restructure her thinking by first becoming aware of her thought processes, recognising their effects on feelings and finding alternative, more rational thoughts (Beck et al., 1979).

Confidentiality and its limits were explained and agreed upon (Corey, 2005; Corey, Corey, & Callanan, 2003; Herlihy & Corey, 1997). Emma was

made aware that I receive supervision by a chartered counselling psychologist and thus, I would be reviewing her records with him from time to time. Moreover, I mentioned that I would be contacting the consultant psychiatrist with a brief report of our meeting together, as well as at termination of therapy, as this was standard practice in the CMHT. Emma was also made aware that, should I believe that a risk of harm existed towards either herself or others, I would consult my supervisor and that confidentiality might then have to be breached (Herlihy & Copey, 1997). Boundaries were also explained (Corey et al., 2003), that is, client / therapist discussion of Emma's situation would be confined to the given sessions only, and concerns would not usually be discussed over the phone, except from a case of need (Corey, 2005).

2.2 THE DEVELOPMENT OF THERAPY

The pattern of therapy

In all, I saw Emma on nine occasions. The first two sessions were spent in establishing a good therapeutic relationship, history taking, psychoeducational input regarding CBT, negotiating a contract and therapeutic plan as well as providing Emma with symptom relief (Beck et al., 1979; Trower et al., 1998). Therapy then concentrated (sessions 3 to 6) on Emma's symptoms paying attention to the content and pattern of her thinking (see figure 2.1: Initial formulation). In particular, the focus was on cognitive restructuring, which is central to cognitive therapy, since it helps client to learn more helpful and realistic ways of thinking, leading to better ways of coping emotionally and behaviourally to events (Trower et al., 1998). The aim was to teach Emma how to recognize her negative automatic thoughts and underlying cognitive distortions as well as to train Emma on how to respond to her distorted thoughts with logic, reason and empirical testing. During the later sessions (7 to 9), both the therapist and the client identified and attempted to modify her long-held dysfunctional assumptions underlying her major concerns.

Key content issues and main techniques used

Early in therapy, Emma was familiarized with the proposal of setting an agenda, in order to make sure that major issues are not neglected and to ensure that her needs are being met (Beck & Emery, 1985; Hawton, Salkovskis, Kirk, & Clark, 1989). Emma thought that it was a good idea and we identified a number of tasks that should be included in each session, such as pressing problems, feedback on therapy, homework report, exploration of one or two main client concerns and setting the next homework. Setting an agenda is a valuable structure for ensuring that major topics are not overlooked and that time is allocated in a planned way (Trower et al., 1998).

As previously mentioned, the emphasis of therapy was directed towards cognitive restructuring. We initially practised identifying Emma's negative automatic thoughts during the session, and subsequently she was asked to develop her skills through self-monitoring homework tasks. Of note is that Emma had at first difficulty keeping a diary of her thoughts and feelings for a number of reasons. She explained that she found it rather difficult to complete and that, because she knew what she would write, she felt embarrassed by her personal beliefs and the way she saw herself. I tried to understand and uncover the reasons why Emma had not completed the task, so as to help her overcome this block. I then educated Emma on ways of testing and challenging her negative thoughts and on patterns of biased thinking, i.e. catastrophising, overgeneralisation, personalisation and selective abstraction (Beck, 1976; Beck et al., 1979). According to Butler (1999), it is important for clients to first learn to identify these cognitive errors in order to get more realistic alternatives to their negative automatic thoughts. Furthermore, the value of homework assignments was emphasized, namely, that it ensures that clients know how to apply the procedures learned in therapy to the situations they meet in everyday life outside of therapy. As Beck and Emery (1985) point out, "homework reinforces and supplements the educational aspects of cognitive therapy" (p. 189).

Once this block to treatment was overcome, Emma engaged well in therapy. We initially practiced together in finding rational responses to her negative thinking and she seemed to be making good progress. I was impressed that Emma had been very motivated in carrying out the agreed homework assignment for every session. She worked hard in identifying, testing and challenging her negative automatic thoughts and appeared safe enough to share painful issues in therapy. During sessions, I was praising Emma's efforts and particularly how well she was working with the cognitive model of change (Beck, 1976), so as to empower her independence.

Another technique that Emma found very beneficial was behavioural experiments. Behavioural experiments are considered one of the most effective ways of changing behaviour, as these help clients to check out the validity of their negative thoughts (Clark, 1989). During session 6, Emma and I explored her negative automatic thoughts regarding enrolment to a stained glass workshop. Some of her thoughts included: "I will not cope", "They will notice that I am anxious", "I will be embarrassed", "They will not accept me", "I am a failure". I then asked her to use the skills she had learnt in therapy to test and modify her negative thoughts. I also suggested to Emma to try to enrol to this course and find out whether her negative thoughts would be validated. At our next session, I was pleased that Emma had actually faced the situation rather than avoid it. In such a way, she could provide evidence that could be used in the client's disputing and contradicting of negative thinking from her own experience (Corey, 2005). The rest of the session was spent in attempting to increase Emma's conviction in realistic thinking by engaging more frequently in behaviours that were previously avoided.

At a later stage of therapy, we tried to identify and challenge the dysfunctional assumptions, her "core beliefs" which triggered her negative automatic thoughts. The purpose of this strategy was to reduce the risk of relapse, by undermining the fundamental assumptions on which irrational thinking is based (Hawton et al., 1989). The downward arrow technique

(Burns, 1980) proved to be a rather effective method in identifying Emma's core beliefs.

The therapeutic process and changes in the therapeutic process over time

Establishing a sound collaborative therapeutic relationship with the client is a necessary condition for effective cognitive therapy (Beck & Emery, 1985; Beck et al., 1979). The quality of the therapist/client relationship is best understood in terms of a gradual growth, in trust and safety. The author strongly agrees with Rogers's (1961) assertion that the personal qualities and attitudes of the therapist can affect the therapeutic relationship and outcome of therapy. Of particular help to Emma was genuineness and accurate empathy, which allowed her to talk openly about her difficulties without the fear of embarrassment. While in the beginning Emma was reluctant to discuss and explore painful issues, the establishment of a warm therapeutic relationship, based on trust and acceptance, facilitated Emma's disclosure of feelings and cognitions. This in turn allowed for the challenging of dysfunctional assumptions and subsequent supplementation of realistic alternatives.

In addition, asking the client to give to the therapist feedback in each session contributed to the development of the therapeutic relationship. In particular, feedback was very useful because it enabled me to find out how Emma felt about therapy and if anything had distressed her. In such a way, misunderstandings were clarified and the therapist was more able to respond in accordance with Emma's needs.

Finally, as Beck and his associates (1979) have pointed out "the development and maintenance of a therapeutic relationship... involves both the patient and the therapist and is based on trust, rapport and collaboration" (p. 50). I feel that Emma and I were able to establish a sense of trust and rapport. As a therapist, I was trying not to keep Emma waiting, to remember important facts about her, to maintain eye contact and to respond to her concerns in a congruent and non-judgmental way.

The above therapist' attitudes are considered to facilitate the growth of rapport (Beck et al., 1979).

2.3 THE CONCLUSION OF THE THERAPY

Evaluation of the work

Therapy with Emma was based on a cognitive-behavioural approach (Beck, 1976), informed with Rogers's "core conditions" (1951). The therapist attempted to create a suitable psychological climate based on safety and trust and tried to continuously monitor the therapeutic relationship. Throughout the course of therapy, Emma's condition was improving considerably. Her anxiety reduced and her mood lifted significantly as did her perspective on the future. She reported feeling more confident and being able to deal with difficulties. As the end of treatment approached, Emma worried that she would not be able to cope alone. We tackle these worries by exploring them and evaluating the evidence for their validity. Moreover, we decided on a number of skills that could help her to deal with prospective difficult situations. Finally, her plans and goals for the future were discussed, to help her accept responsibility for her actions and gain control over her life.

It is the author's belief that the decision in this case to use CBT informed by Rogers' core conditions was appropriate. However, it should be noted that the outcome of therapy was most probably influenced not only by the theoretical framework, but by a combination of different variables. The fact that Emma seemed to be psychologically minded facilitated the progress of therapy. In addition, she engaged well to therapy and appeared very motivated to help herself. She worked very hard in between sessions to identify and challenge her negative thoughts as well as face "her fears". Finally, a good trusting therapeutic relationship was established, where Emma was feeling safe to explore painful issues and to move forward.

Difficulties in the work and making use of supervision

During the present work with Emma, I encountered a number of difficulties, which I was able to overcome in consultation and with the support of my supervisor. Initially, I found the task of setting an agenda and covering everything we had decided rather hard. Occasionally, it felt rather uncomfortable being directive and teaching Emma the theory and method of change itself. I quickly realised that, in this case, I was offering "expertise" in which I was asking Emma to trust. However, the swift alleviation in her difficulties more than compensated for my discomfort. Finally, supervision was of a facilitative nature during which I was encouraged to use my own judgement whilst at the same time being aware of the issues involved.

Learning from the case about myself as a therapist and about psychotherapeutic practice and theory

One learning experience for me as a therapist occurred while, in attempting to grasp Emma' s subjective world, I could, at times, get absorbed in her feelings of frustration and helplessness, resulting in feelings of stuckness, frustration and helplessness. During supervision, I was encouraged to take a step back, and focus on the process instead of the content, as well as on issues such as transference and counter-transference (McLeod, 1998). I recognise now that, whatever the theoretical orientation, transference behaviours will inevitably occur during the counselling process, and thus, it is essential that these are consistently and effectively addressed.

Secondly, through Emma's reactions to therapy, whether these were commitment or resistance, I was encouraged to continuously improve and reflect on my personal and professional development. I find myself in agreement to McLeod's (1998) suggestion of a developmental model of competence, which reminds therapists both of the unique strengths, weaknesses, gifts, and deficits that they bring with them into therapy, and of the fact that the development is never complete.

Finally, during the last sessions, although I was getting excited for Emma's progress, I prevented my own feelings obstructing my reality and therefore, therapy (i.e., very positive interpretation of client's progress that does not reflect reality, unrealistic expectations of therapy), by being acutely aware of them (Wosket, 1999). During supervision, the importance of therapists' being aware of and in control of their feelings had been highlighted. I had also been encouraged to examine my personal responses to clients as a way of developing an internal supervisor (Casement, 1985).

This case, as with all my cases, gave me the chance to continue practicing and developing the required skills of a counseling psychologist. I have found that of equal importance to a sound theoretical practice are my sincere efforts to care for and understand clients, and my ability to convey to them empathy, respect and desire to be helpful. As Satir (1987) notes, the therapist's ability to be empathic, to "be there" and understand the client's internal experience, will be in itself healing for the client.

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SECTION D CRITICAL LITERATURE REVIEW

A REVIEW ON PERSONAL CONSTRUCT THEORY RELATING TO MARRIAGE AND MARITAL THERAPY

Summary

The purpose of this review has been to illustrate the application of personal construct theory in the work with couples. As an initial step the shift from the traditional, institutional type of marriage towards the companionship type of marriage is briefly discussed. In the main part of the review, marital relationships from a personal construct theory perspective are presented followed by an elaboration of personal construct therapy in the area of couples. Several assessment and therapeutic techniques (i.e., the couple characterisation, laddering, the fixed-role therapy and several variations of the grid method) are discussed to guide the clinical practice of the constructivist therapist working with couples.

***Keywords**: Personal construct theory; marital therapy.*

1.1 INTRODUCTION

> *"Through close role relationships, individuals strive to make the world more meaningful, predictable and understandable".*
> *(Neimeyer & Neimeyer, 1985, p.197)*

Though there are different views of marriage in Western society, the predominant one is still that marriage remains one of the most important goals of the majority of young people (Dominian, 1985a). On the other hand the high divorce rate in the last twenty-five years, is a clear indication that marital problems are widely experienced (Guttmann, 1993). According to Collard & Mansfield (1991), 37% of couples getting married, will seek divorce during the course of their relationship. It is also established that the divorce rate is higher in the early years of marriage. According to

Dominian (1985b), during the first years of marriage, marital breakdown is more like to occur through failure to establish the necessary minimum emotional and physical relationship. This notion is also established by the fact that, nowadays marital relationships develop on a basis of personal fulfilment, love and happiness. Therefore the absence of these elements is considered to be a ground for divorce (Dominian, 1985b). However, marital dissatisfaction may not lead to divorce. This is true, particularly in the early years of marriage and when marital problems are caused due to each partner's different views and expectations regarding the many aspects of marital life. Another path, which the distressed couple may choose, is that of marital therapy, to help them deal with their problems, and create a fulfilling lifestyle (Guttmann, 1993).

In the first part of the present review, one of the most important changes in marriage, namely, the shift towards the companionship type of marriage will be briefly discussed. In the main part of the review, personal construct theory and research relating to marriage and marital therapy will be critically evaluated. In such a way, a number of theoretical assumptions and therapeutic principles will be defined, as well as the goals and implications of personal construct approach to marital therapy. Finally, in the conclusion, some basic issues of personal construct therapy as applied to working with couples will be examined.

1.2 CHANGE IN MARRIAGE AND ITS IMPLICATIONS

The most fundamental change in marriage is the shift from the traditional, institutional type of marriage to the companionship type of marriage (Dominian, 1985a). More specifically, the traditional marriage has been described as one in which the husband is the provider, the source of authority and the head of the household, whereas the wife is the child bearer, the caretaker of the children and the manager of the house. Two primary features of the traditional marriage were, first, that each spouse had clearly delineated roles and second, that they were held together by

the external pressures of public opinion, laws and morals (Prochaska & Prochaska, 1978). On the other hand, the companionship marriage is characterised by the development of the couple's interpersonal relationship, based on intimacy, sharing, expressing feelings, affection, respect, empathic understanding, communication and mutual decision making. The emphasis of this type of marriage is on the personal and the affective (Dominian, 1985a). It should be highlighted, however, that this distinction does not imply that affective elements were absent from the traditional marriage or that the companionship marriage does not have any traditional characteristics.

One of the most important implications of the shift towards companionship marriage is the increase of the emotional and sexual expectations in the marriage. In the presence of material sufficiency, both men, and especially women have higher expectations of marriage and expect more personal fulfilment from it than previous generations of husbands and wives (Collard & Mansfield, 1991). At the heart of the marital conflict, is the failure of the couple to meet mutual needs. According to Dominian (1985b), "these mutual needs are likely to depend on the expectations of the couple, particularly the provision of what is essential for the survival of the marriage and its inherent quality" (p. 71). When material needs are met in marriage, then the emotional expectations of each spouse, particularly these of love and affection, become essential. In Western societies, the absence of love or happiness is considered to be a ground for dissolution of the marriage (Dominian, 1985b). Another important factor, which is linked to the companionship type of marriage and which influences marital discord or marital satisfaction, is communication, either verbal or non verbal. Many researchers investigating marital communication concluded that consensus or "good communication" is central to a satisfactory marriage (O'Leary, 1987). According to Gottman (1979), "of all the relationship variables that could be selected for understanding marital satisfaction, the couple's ability to arrive at consensus in resolving differences may be of central importance" (p. 10). That is to say, that the ease or difficulty with which the couple

communicates may have a major impact on the level of marital satisfaction and distress. It is noteworthy that love, affection and communication, as well as all the other basic characteristics that form the companionship marriage, are not the only factors that influence marital satisfaction. However, it is beyond the scope of this review to discuss other factors (i.e., age at marriage, social class, violence in marriage) which may contribute to either marital satisfaction or distress, and thus enhance the risk of divorce[16].

Clearly, one of the many reasons that explain the increased marital breakdown and rate of divorce nowadays is the couple's increased expectations in marriage (Dominian, 1985b). According to Dominian (1985b), "both wives and husbands are likely to seek a greater degree of fulfilment in emotional and sexual satisfaction and, when this is not present, to seek it in a second marriage" (p. 46). In sum, it is really important to have in mind that the emergence of the companionship marriage out of the traditional one, the changing roles of men and women, as well as, the changes in values which might judge the success of marriage, reflect and influence the developments in marital therapy that have occurred in the twentieth century (Prochaska & Prochaska, 1978).

1.3 A CONSTRUCTIVIST APPROACH TO MARRIAGE

Personal construct theory (PCT) was strongly orientated towards working with the individual (Kelly, 1955). Kelly (1955), however, did extend the application of his theory from the individual to the interpersonal level[17]. The *commonality* and the *sociality* corollaries, as well as the notion of the *role relationships* of PCT, which were elaborated by Kelly (1955), provide the ground for the conceptual understanding of the family and the couple

[16] See Carrere and Gottman (1999) for a review on the causal processes that make a marriage work and those processes that make a marriage dysfunctional.

[17] Neimeyer and Neimeyer (1985) argue that personal construct psychology is inherently a social psychology since it builds the significance of interpersonal construing (i.e., commonality between individuals and sociality) into its structure and therapeutic techniques.

(Feixas, 1992). Kelly's (1955) *commonality* corollary states that "to the extent that one person employs a construction of experience which is similar to that employed by another, his psychological processes are similar to those of another person" (p. 90), while the *sociality* corollary asserts that "to the extent that one person construes the construction processes of another, he may play a role in a social process involving the other person" (p. 95). The sociality corollary, in particular, indicates the importance of interpersonal relationships in PCT, since if an individual is able to understand the other's construing processes, he or she can develop a role relationship with that person, where the construing processes of both individuals become interconnected in a way characteristic of their relationship (Feixas, 1990b; Feixas, 1992).

The basic philosophical position of PCT is *constructive alternativism*, which asserts that each individual has one's own unique view of the world and that this view is always open to revision and change[18] (Kelly, 1955). From a PCT perspective, marriage and marital relationships are sought for the extension and elaboration of the spouse's anticipatory system (Feixas, 1992; Neimeyer & Neimeyer, 1985). Accordingly, Neimeyer and Hudson (1985), from the study of close and marital relationship, suggested that "marriage is seen as a vital form of intimate colleagueship in which two personal scientists develop an enduring collaboration with respect to one's another critical life investments" (p. 129). They also proposed that the development and maintenance, as well as, marital problems and breakdowns of marriage are influenced by the expected elaboration of one's core construct system. Duck (1973) also noted the central role of anticipation in the area of personal relationships. He suggested that individuals usually search for partners who not only employ similar constructs and who share common constructs for interpreting experience to validate their constructions, but also, over and above the search for similarity, they are searching for means in which their partner can help them elaborate their system for them.

[18] See Feixas, 1990a; Fransella, 2005; Kelly, 1969, for more details on Kelly's constructivism

When two persons develop a relationship and marry, they do so by adopting a shared symbolic understanding of the role relationship and its nature (Duck & Condra, 1990). A crucial prerequisite for marital satisfaction is for the couple to develop a construct subsystem for the anticipation of the other's view. This is quite similar to the notion of the development of a *role* relationship, where the construing processes of the couple are interconnected in a particular way and mutually affect each other (Feixas, 1992). According to Kelly (1955), an individual can develop a role relationship with another person, if he or she is able to understand that person's construing processes. Feixas, Procter and Neimeyer (1993) clearly noted that "in a role relationship, each member recognises the other as a validating agent, with one person's behaviour becoming (in)validational evidence for the other's core constructions and vice versa" (p. 148). However, a reason for the absence of a role relationship between partners is that one or both of them are unable to understand the other's construing processes and, thus they fail to meet mutual needs (Feixas, 1992).

Derived from the study of personal and marital relationships, Neimeyer and Neimeyer (1985) described a taxonomy of *disordered* relationships, where the nature and causes of marital problems became explicit, as well as *healthy* relationships that led to marital satisfaction. Healthy relationships were seen as those, where each spouse attempted to move forward another's construction processes and to validate the other's core constructs (Neimeyer & Neimeyer, 1985). They stated that:

> in the optimum marriage, commonality between partners at the level of their superordinate constructs ... provides extensive validation for each partner's core constructs, giving rise to the experience of love and happiness. (p. 202)

In contrast, they regarded *disrupted* relationships as those, which had once been satisfactory, but were characterised by failure of one or both partners to revise their constructions of each other, as they develop or as transitions in the relationship are encountered. Disruption of marital

relationships often occurs in long-standing marriages and is related to the dissimilarity in the way partners describe each other, particularly along their superordinate constructs (Neimeyer & Neimeyer, 1985). Neimeyer and Neimeyer (1985) also described *negative* relationships, as those where each spouse never validated each other's core structures and where mostly negative feelings and emotions were present in the relationship. In negative marital relationships "the lack of perceived similarity between spouses, at any significant level, robs both partners of the direct consensual validation that undergrids healthy relationships" (Neimeyer & Neimeyer, 1985, p. 202). It has thus been acknowledged that deterioration and dissatisfaction in personal and close relationships might be associated with limited capacities for sociality, low levels of commonality in partners' construing and absence of mutual validation of their core constructs.

In sum, marital problems from a PCT perspective might be triggered because the couple has not developed a construct subsystem for the anticipation of the other's view and thus, they have difficulties communicating and understanding each other (Feixas, 1992). Each partner is faced with a set of events for which his or her construct system is not yet prepared. It is quite clear in PCT that when our system of construing (ourselves and others) is in some way inadequate to deal with what we have to face, we may need both to modify our ways of approaching some things and invent new ways of meeting others (Dalton & Dunnett, 1992). The process of personal construct therapy is one of reconstruction and experience, as Kelly (1980) clearly stated that "psychotherapy needs to be understood as an experience, and experience, in turn, understood as a process that reflects human vitality" (p. 21). This is based on his notion, that a person changes himself through a process called experience that stands in contrast to the idea that, it is experience that changes man. In addition, Kelly (1955) described therapy as "a psychological process which changes one's outlook on some aspect of life" (p. 186). From this perspective, an overriding aim of marital therapy would be to attempt to produce change (and reconstruction) in the

couple's construct system, rather than focusing on the construing of an individual client, which was one of the aims of individual personal construct therapy (Winter, 1992).

1.4 PERSONAL CONSTRUCT THERAPY IN THE AREA OF COUPLES

It has been suggested that a primary goal of marital therapy, particularly with couples who are still committed to the marriage, should be to help them experience the possibilities of a more satisfying relationship, before finally deciding whether to remain together (Budman & Gurman, 1988). The focus of marital therapists working with couples is influenced by their underlying theoretical framework, which, in turn, will have some bearing on discussion of issues, such as, view of marriage, marital relationships and marital satisfaction. Within the field of marital therapy there are several theoretical frameworks and therapeutic approaches that can deal with marital problems of distressed couples. The way that a counselling or clinical psychologist would approach the couple and the way he or she would try to bring forward change and enhance the couple's relationship, usually reflects the school of psychological thought he or she represents. However, in order to better understand marital relationships and therapy, it is essential that they be considered within a sound theoretical framework. Therefore, the focus of this review is on marital therapy from a personal construct psychology perspective.

The initial stage of personal construct therapy in the area of couple involves the therapist's assessment and exploration of the couple's relationship (Neimeyer, 1993). Thus, the therapist must immediately begin to understand things from the particular view of the couple, as well as from the perspective of each spouse, accommodating to their verbal and non-verbal language (Feixas, 1992; Procter, 1981). According to Neimeyer and Neimeyer (1985) this process also facilitates the therapist's selection of an individual or conjoint therapy format. They suggest that even though a conjoint therapy is usually more beneficial, in other cases, for instance,

where the spouses show ambivalence about the continuity of their marriage, individual therapy is recommended. The present review, however, has mostly concentrated on the conjoint type marital therapy. The initial stage of therapy is very important, not only for the selection of an individual or conjoint therapy format but also, because the therapist needs to establish a firm understanding of the couple's constructs and the system in which they organise them, in order to help them deal with their marital problems (Neimeyer & Neimeyer, 1985). The therapist uses a number of techniques and discussion so as to elicit each partner's personal constructs and fully understand their construct system.

Only after the therapist has achieved progress in the initial stage of subsuming, can he or she begin to see what may be going wrong in a couple's relationship. After this stage, where the therapist has identified some of the marital problems and what might be causing them, he or she can move to the second stage; that of assisting change. Therefore, the conceptualisation of a couple's problems provides the strategic ground for designing an intervention (Feixas, 1992). It is very important to keep in mind that PCT does not have a strict "recipe of actions" to follow, because it is personally directed. Thus, it is the therapist's responsibility to tailor his or her approach in such a way that clients could respond to and feel safe with (Dalton & Dunnett, 1992).

Assisting change in personal construct therapy does not mean that the therapist will advise each spouse how to be, or what constructs to keep or to discard, but rather it means that the therapist will help them devise a construct subsystem through which they are able to better understand one another's construing processes, a crucial issue for their mutual understanding and marital happiness. This is based on Kelly's (1980) notion that, the client "will choose that alternative, aligned to one of his construct dimensions which appears to provide the greater opportunity for the further elaboration of his anticipatory system" (p. 32). It is also the therapist's responsibility to create experiments that each partner would feel safe enough to carrying them out. It is essential to clarify that the

strategies employed in the area of couples are usually adaptations of traditional strategies that are used in individual personal construct therapy (Feixas, 1992).

Another aspect of personal construct therapy in the area of couples that should be considered is what the couple has to do in therapy. It should be noted that the following general considerations derive from individual PCT, but could also be employed to PCT with couples. Therefore, in personal construct therapy, therapists and clients are seen as partners in an enterprise, where clients are experts on themselves and therapists are experts on helping them to explore their problems and set up experiments for change (Dalton & Dunnett, 1992). Only if each partner accepts responsibility of his or her perception of reality and for his or her personal construct system, he or she will be able to free the blockages and start to see the world through the eyes of the other. In addition, partners who want to enhance their marriage should be able to consider and experiment alternative patterns of their relationship during therapy, both from their current system but also from the development of new ones (Dalton & Dunnett, 1992). This process reflects the idea that experimentation is at the heart of personal construct psychology, because it is mainly thought that " the development of new experiments carries with it the implication that new results will be obtained, and those new results will lead to an alteration of the current construct system" (Dalton & Dunnett, 1992, p. 147).

Some of the primary goals of marital therapy are to help the couple question the functioning of their personal construct system, establish a role relationship and thus, assist change and enhance the relationship. In other words, marital therapy would probably focus on issues such as, encouragement of partners' to see the world through the eyes of the other, identification of the central differences of a couple's opinion as well as of agreement and facilitation on construing each other's constructions (Winter, 1992).

Greg Neimeyer (1985) puts particular emphasis on the development of the role relationship between therapists and clients in work with couples, and has described the wide variety of techniques and methods derived from PCT, which may be employed in such work. Some of the most commonly adapted techniques of PCT, to work with couples, are the couple characterisation, laddering, the fixed-role therapy and several variations of the grid method (Winter, 1992). It is worth noting that, these techniques may be employed both in an initial stage of therapy, where the interview takes place, as well as, during and in the end of therapy. Particularly, grids are often employed to monitor reconstruction during therapy and to evaluate the therapeutic outcome in the end of therapy (Winter, 1992).

Various adaptations on the grid procedure have been found to be effective in marital therapy, since they encourage exploration of a couple's ability to construe each other's constructions (Winter, 1992). Childs and Hedges (1981) used the grid method by combining the constructs elicited by each partner individually. Then, both partners rated the elements in the same combined list of constructs. In such a way, they tried to demonstrate that even though the couple shared a common language, there were significant areas of misperception. Thus, the grid method facilitated them to focus therapy on areas which the couple shared common goals. Bannister and Bott (1973) employed the repertory grid in a similar way, with the only difference being that the combined grid was completed conjointly. This method enabled the therapist to understand which partner's construct system had been dominant in determining their construct subsystem. In addition, examination of such a grid may indicate the extent to which each spouse is able to use the other's constructs and the degree of commonality in their construing (Winter, 1992).

Another adaptation of the repertory grid is the Reptest Interaction Technique (RIT) (Bonarius, 1977), which may serve both therapeutic as well as diagnostic purposes. The RIT was designed as a "getting acquainted" exercise and is often presented in the form of a relatively structured game with explicit instructions in the form of rules. In this

application of grid method, partners interview each other in turns using a grid format, in order to facilitate awareness of each other's construct system. Feixas (1992) described the RIT as "a grid procedure especially designed to increase mutual knowledge emphasising both intrapersonal exploration and interpersonal understanding" (p. 240). Neimeyer and Neimeyer (1985) have argued that the RIT may be an effective therapeutic technique with individuals who have a few role relationships. Finally, another variation of the grid method, which is worth mentioning, is a grid where the elicited elements are aspects of the couple's relationship at different points in time (Neimeyer, 1985).

In addition to several variations of the grid method, personal construct theorists have adapted a number of techniques, originally used in individual personal construct therapy, to their work with couples, such as the couple characterisation, laddering and the fixed-role therapy. The couple characterisation, an adaptation of Kelly's (1955) self-characterisation technique, has been employed in marital therapy, where each partner was asked to write, in third person, a description of their relationship from the perspective of someone who knows the couple intimately and sympathetically and then, discuss it with the other (Alexander & Neimeyer, 1989; Neimeyer & Hudson, 1985). In such a way, the couple would be encouraged to establish an understanding of the way that each partner views various aspects of their relationship and thus, identify each other's similar and different expectations of their marriage.

Laddering, on the other hand, which is commonly used for eliciting individual's superordinate constructs, has been employed in marital therapy, to help partners discern that, even though they may have differences of opinion at a subordinate level, they may have many common superordinate values, which were not previously identified (Neimeyer, 1985).

Another adaptation of the traditional strategies of PCP is the fixed-role therapy for couples (Kremsdorf, 1985). The aim of this experiment is "to

put partners in the role of scientists who are inquiring into their own marital problems and who can experiment with new ways to achieve marital satisfaction" (Kremsdorf, 1985, p. 218). In such a way, fixed-role therapy enables the couple to experiment with new patterns in their marriage and new ways of interacting with each other and therefore, improve the communication between them. It may also be of particular value, in that, it not only allows the couple to experiment with alternative behaviour but also to disengage core constructs from the experimentation by seeing it only as acting (Winter,1992). As Kremsdorf (1985) noted, "more important, this treatment technique demonstrated to the couple, that previous rigid patterns could be broken through experimentation and adoption of new perspectives" (p. 223).

A personal construct therapist working with couples, could also assist change, through a process called the Creativity Cycle. Kelly's belief (1980) that new constructs are obviously invented and not discovered reflects this process. The Creativity Cycle is concerned with the development of new constructions and consists of two processes, loose and tight construing. It starts with loosening constructs, which allows the generation of ideas and ends up with a tightened and validated construction (Dalton & Dunnett, 1992). An adaptation of the Creativity Cycle, in marital therapy, could assist the couple to make use of their ability to think both loosely and tightly, by focusing, for instance, on specific aspects of their relationship, and thus, enable them to employ the two phases of the Creativity Cycle in a proper relationship to each other (Winter, 1992).

Since PCT and the systemic therapies share the common epistemological stance of constructivism[19] (see Feixas, 1995), it is not surprising that, constructivist approaches to couples employ a number of methods from structural family therapy and systemic approaches, with a view to elaboration of a couple's construct system (Winter, 1992). Enactment,

[19] Feixas (1995) notes that PCT, which can be described as a systemic theory, and the systemic therapies "share the view that knowledge results from a construing process rather than from a

circular questioning, reframing, sculpting, genograms, as well as, paradoxical interventions are some of the methods used by personal construct therapists working with families and couples (Feixas, 1992). For instance, Procter (1981) in his work with families, placed emphasis on the use of some additional techniques, from various schools of family therapy, to produce particular changes in the family construct system.

In general, marital therapy from a personal construct theory perspective aims to assist partners in enhancing their relationship, both by developing a construct subsystem for the anticipation of the other's view and also by facilitating a couple's construing of each other's constructions. Personal construct psychology, unlike most personality theories, does not limit itself to a single set of psychotherapeutic techniques. According to Kelly (1980), "it calls for an orchestration of many techniques according to the therapist's awareness of the variety and nature of the psychological processes by which man works toward his end" (p. 35).

1.5 SOME CONCLUDING REMARKS

The central philosophical assumption of PCT is constructive alternativism, which asserts, "that all of our present interpretations of the universe are subject to revision and replacement" (Kelly, 1955, p. 15). According to Kelly (1977),

> What we think we know is anchored in our assumptions ...and that world we seek to understand remains always on the horizons of our thoughts... Everything we believe to exist appears to us the way it does because of our present construction of it. Thus, even the most obvious things in this world are open to reconstruction in the future (p. 6).

From this perspective, personal construct therapy is viewed as a process of reconstruction and experimentation, and therefore its focus is to help clients question the functioning of their personal construct system and

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direct representation of reality" (p. 306). See Feixas (1990a, 1992) for a detailed description of similarities between current systemic therapies and Kelly's (1955) PCT.

assist change (Dalton & Dunnett, 1992). The process of reconstruction implies both the development of new constructs, as well as, the modification of existing ones (Dalton & Dunnett, 1992). Kelly (1955) put particular emphasis on the generation of alternative constructions, "...no one needs to paint himself into a corner; no one needs to be completely hemmed by circumstances; no one needs to be victim of his biography" (p. 15).

Constructivist approach to couples employs a number of methods and techniques, mostly borrowed from systemic approaches, both to assist the development of elaboration of partners' construct systems and also, as assessment tools, some of which, were described earlier in the present review. According to Feixas (1995) "this model enables the therapist to use any technique of hand to generate an alternative (re)construction" (p. 331). It is thus important to note that, PCT seems to be technically eclectic but theoretically consistent (Feixas & Botella, 2004). Particular emphasis should be placed on grid procedure, since it is commonly used and has been usefully administered to couples or families, allowing the assessment of degree of commonality of construing and sociality (Feixas, 1992; Winter, 1992). According to Winter (1992), "one of the outstanding features of repertory and technique is its flexibility, the major limit on its range of application being the ingenuity of the investigator" (p. 65). Especially, in the study of the couples, the grid methods allow more complex and lengthy designs compared to the ones used for the study of families (Feixas, 1992). Aside from their therapeutic use, the grid designs have also been employed as assessment methods of research work in the area of the families and couples. However, most of the findings in the area of couples could not be well established since in most cases the samples were too limited or the results contradictory (Feixas, 1992).

Another aspect of PCT is the therapeutic relationship between therapists and clients. It becomes clear in PCT that the therapist-client relationship is seen as an expert-to-expert relationship, where clients are experts in the content of their lives and therapists are experts in the processes of

construction and thus, in the therapeutic process (Feixas, 1992). Feixas (1995) describes the contributions of such a therapeutic relationship.

> The aim of this approach is to enable the client to become a better scientist by developing more viable hypothesis and controls, regardless of their content. This idea of therapy as a "research paradigm" has the advantage of limiting the power of both client and therapist to circumscribed areas of expertise (p. 328).

This notion of an expert-to-expert relationship also reflects Kelly's (1955) credulous approach to therapy "if you don't know what is wrong with a person, ask him; he may tell you" (p. 322). In addition, the constructivist approach to couples is influenced by the reflexive nature of PCT. Originally, Feixas (1995) described PCT as "a way of construing how persons construe" (p. 320), reflecting Kelly's (1969) notion of PCT as in itself a construction, and as such, open to revision and change. It thus follows that partners are seen as scientists who elaborate theories (and hypotheses) to anticipate and predict each other's behaviour (Feixas, 1995).

On the other hand, the commonality and sociality corollaries, as well as, the notion of role relationship of Kelly's (1955) basic theory provide the ground for the conceptual understanding of the family and the couple (Procter, 2005). PCT allows itself to be extended to wider systems of construing, since validation of a personal construct system is mainly provided in the family at first, and wider systems later (Feixas, 1995).

It becomes apparent now, why from a PCP perspective, one of the prerequisites for marital satisfaction, is that each partner should attempt to move forward another's construction processes and to validate the other's core constructs (Neimeyer & Neimeyer, 1985). Nonetheless, PCT, in areas such as social interaction and personal and family relationships needs further elaboration (Neimeyer & Neimeyer, 1985; Winter, 1992). As Procter (1981) points out, PCT "has not yet been elaborated in the areas of multi-person relationships" (p. 354).

Accordingly, although numerous studies have been carried out to assess the effectiveness of personal construct therapy and have indicated positive changes on various measures in a range of client groups (Bell, 2005), considerably more research needs to be undertaken on the effectiveness of therapy conducted from a personal construct theory perspective and particularly in the field of personal construct therapy with families and couples.

In summary, personal construct psychology and particularly constructivist approaches to couples represent a fruitful and growing area of interest, for all of the various reasons discussed in this review but also for its dedication to consistency among the different levels of theory and practice.

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