HAIGAZIAN UNIVERSITY

ASSOCIATION BETWEEN TEMPERAMENT AND PROFESSION

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS TO THE DEPARTMENT OF SOCIAL AND BEHAVIORAL SCIENCES AT HAIGAZIAN UNIVERSITY

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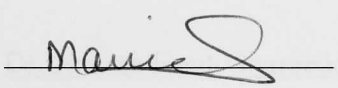

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DEDICATION

To GOD for every step of the way

&

To my parents for always believing in me

ACKNOWLEDGMENT

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ABSTRACT

The association between the emotional substrate of personality, temperament, and three profession related outcomes (type, working status, and income) was assessed using raw data from a Lebanese national mental health database at IDRAAC. The Lebanese-Arabic TEMPS-A, and the Arabic CIDI-3.0 were administered to 547 respondents (45% men, 55% women). T-test was performed to detect differences between means, and multivariate analyses were used to assess correlates of working status and financial income. Results showed that hyperthymic temperament is a positive trait associated with high rank and managerial careers, higher number of working hours and more income. Depressive, cyclothymic, irritable, and anxious are related to lower rank careers. In addition, irritable temperament is negatively correlated to higher income. In conclusion, this study supported the existing literature on the association between temperament and profession in a Lebanese sample, and introduced a new clinical assessment tool for the understanding of human nature in the context of work.

CHAPTER 1

Introduction

"My temperament is not inclined toward more self-promotion than is absolutely necessary for my professional well-being". (Robert Silverberg)

Statement of the problem

Similar to many fields, the sector of career and profession made use of psychological assessment throughout its development and progress. The purpose of psychological assessment was dual, first to direct individuals to professions that match their style and capabilities, and second, to assist individuals with personal concerns for better productivity. With time, several theories of career development have evolved, where some had a social learning or environment perspective such as Lent, Brown and Hackett's social cognitive theory, others focused on human traits and personality such as Holland's typology. Personality has been defined as the mental construct that entails the human intellect, temperament, skills, mortality, and attitudes built up throughout the person's life span (Warren & Carmichael, 1930).

One major contributor to the role of personality in career counseling was John Holland. Holland speculated that individuals seek professions that are compatible with their personalities. According to Holland (1996), each person has a "modal personality style" that develops from hereditary and environmental factors surrounding the individual. Consequently, one needs self-knowledge to choose a career that satisfies his or her "modal personality style". Holland's theory suggested six personality styles: realistic, investigative, artistic, social, enterprising, and conventional (Holland, 1996).

These personality styles correspond to six types of occupations in a hexagonal format, whereby adjacent categories are most alike and opposites are not. This hexagonal model emphasizes five key concepts: consistency (when a person has adjoining types), differentiation (a person with a pure personality type will fit one type of occupation but not any of the others), identity (clear and stable goals), congruence (work matches personality), and calculus (research) (Holland, 1996). However, Holland failed to explain the developmental process that leads a person to choose a career, but rather only described factors that influence career choice (Zunker, 2006).

On another level, personality was tackled from different angles leading to the evolution of many theories. Some, like Holland, described types of personalities from a career perspective (Holland, 1996), others focused on specific dimensions of personality such as temperament (Akiskal, 2001). Temperament is the innate factor of personality, which is not a product of life experiences, and explains the "how" of the human behavior. In other words, temperament is the emotional reactivity of the human nature (Akiskal., 2001).

The concept of temperament dates back to the days of Hippocrates, and mental health specialists have become more and more interested per se that temperament has an important role apart from the other compartments of personality in shaping a person's life such as creativity, risky behavior, choice of mate, suicidality, mental disorders, and profession. Several instruments were developed and many studies were conducted to study the different theories of temperament. One theory of temperament, based on Kraeplin's work, suggested that an individual has five types of affective temperaments: depressive, cyclothymic, hyperthymic, irritable and anxious (Akiskal, Khani & Scott-Strauss, 1979), with individual variability among them.

Identifying the role of affective temperaments in profession helps in understanding how individuals handle the tasks of their profession, how they relate and react to their colleagues, co-workers, clients, and employers; as well as it sheds light on the individual drive for achievement. Additionally, and equally important, temperament assists the clinician in understanding one perspective of the clients' problems in the working environment.

To our knowledge only one study, has linked affective temperaments to profession in specific samples of psychiatric outpatients (Akiskal, Savino & Akiskal, 2005d). In Lebanon, the field of personality and career is relatively understudied, and more specifically, there are no studies linking temperament to profession.

Purpose of the study

The purpose of this study was to investigate the association between temperament and profession in Lebanon. In addition, this study evaluated the effect of temperament on working status, and income as one outcome of professional achievement controlling for age, gender and existing mental disorders.

Hypotheses

Based on the purpose of the study mentioned above, the following hypotheses were assessed:

Hypothesis 1: Affective temperament profiles differ by profession type: people working in managerial and higher ranked job positions have more hyperthymic temperament but less depressive, cyclothymic, irritable, and anxious temperaments. As jobs move towards becoming less managerial, lower ranked and requiring less education,

people would have less hyperthymic temperament and more from the other four temperaments.

Hypothesis 2: Affective temperament is associated with the working status of the individual.

Hypothesis 3: Financial income, an indicator of professional achievement, is positively correlated to hyperthymic temperament, but negatively correlated to the other four temperaments.

Significance of the study

The significance of this study is that it is the first initiative taken to assess the association between temperament and profession in Lebanon. In addition, this is done using a new scale, the Temperament Evaluation of the Memphis Pisa Paris and San Diego Auto questionnaire (TEMPS-A) in its Lebanese Arabic version. The advantages of the TEMPS-A lay in the fact that it is a self-filled short scale that assesses innate traits of the individual that are not influenced by the environment and that are quite stable. In fact, it is these traits that exert an impact of how the individual reacts to the external factors, and behaves in a working environment.

In addition, the fact that the TEMPS-A focuses on a dimension of personality that is not influenced by the environment, there remains no need to control for environmental changes. TEMPS-A measures the emotional drive of the individual and has been linked to several outcomes directly and indirectly through other mediating factors such as mental disorders, creativity, energy, etc, which in turn has been linked to profession (for example, the predisposition of the person to develop a mental disorder and lose days of work). This in turn highlights further the importance of temperament in predicting long-

term outcomes that might not be applicable or existing currently and that might affect the person's professional life.

In comparison, for example, Holland's typology described personality characteristics of people that might be influenced by the environment, and that do not account for the person's beliefs about stability and changing of career, and thus lack the stability of the characteristics of temperament. Being a genetically determined construct, temperament possibly offers a reliable indication of the present and the future, and does not necessitate longitudinal testing and test-retest reliability as other constructs might require.

The nature of the study

The present study is quantitative in nature. The raw data used were derived from a huge national database on mental health developed by the Institute for Development Research Advocacy and Applied care (IDRAAC), Lebanon. A sample of 1320 respondents filled the Lebanese- Arabic TEMPS-A and the Arabic Composite International Diagnostic Interview (CIDI) 3.0 (mean (± SD) age: 43 (± 16) years, 45% men & 55% women). Descriptive analyses included means of scores with standard deviation, and percentages of rates. Student's T-test and ANOVA were used to assess differences between means. Bivariate Pearson correlations were conducted between temperament and mental disorders among specific profession groups. Logistic regression was used to analyze the association between working status (yes/no) and the following independent variables: temperament mean scores (depressive, cyclothymic, hyperthymic, irritable, and anxious), gender, age (years), and mental disorders. Linear regression was

used to analyze the association between income and temperament, adjusting for gender, age, mental disorders and current main profession.

Definition of terms

Anxiety disorders: Anxiety disorders are a class of disorders characterized by excessive and irrational fears of everyday situations that deviate from the normal reactions to stress. They include generalized anxiety disorder, phobias (specific, agora, social), obsessive compulsive disorder, panic disorder, and posttraumatic stress disorder (APA, 1994).

Anxious temperament: The anxious temperament is a type of affective temperament characterized by traits such as worrying and anxiety expressed as somatic symptoms such as headaches, nausea, pain, etc. (Akiskal, 1989).

CIDI 3.0: The Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) is a fully structured interview developed by the World Health Organization (WHO) that generates both International Classification of Diseases (ICD)-10 and Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV diagnoses. This instrument is widely used in epidemiologic and clinical studies and could be administered by lay interviewers (Kessler & Ustun, 2004).

Cyclothymic temperament: Cyclothymic temperament is a type of affective temperament which includes traits alternating between irregular cycles of drive and lethargy, decreased need followed by increased need for sleep, arrogance and lowered self esteem, passionate

involvement in activities then loss of joy in life, high and low humor, occasional romantic failure, uneven work record, episodic pattern of substance use, etc. (Akiskal, 1989).

Depressive temperament: Depressive temperament is a type of affective temperament which includes traits such as gloomy, pessimistic, humorless, quiet, passive, skeptical, complaining, conscientious, self-critical, preoccupied with failure, need for more than 9 hours of sleep, etc. (Akiskal, 1989).

Hyperthymic temperament: Hyperthymic temperament is a type of affective temperament which includes traits such as: increased energy and productivity, short sleep patterns, vivid, active, extroverted, self assured/self confident , strong willed , risk taking/sensation seeking, breaking social norms, generous and spendthrift, cheerful and jovial, expansive, robust and tireless, irrepressible, infectious quality. Individuals with hyperthymic temperament are often seen as strong, energetic, productive, and well respected (Akiskal, 1989).

IDRAAC: The Institute for Development Research Advocacy and Applied Care (IDRAAC) is a non-profit Lebanese NGO specialized in mental health research, training, and community services (www.idraac.org).

Impulse control disorders: Impulse control disorders are a class of disorders characterized by pathological impulsivity. They include intermittent explosive disorder, conduct disorders, attention deficit hyperactivity disorder, kleptomania, pathological

gambling, pyromania, trichotillomania (pulling out hair from their roots), and dermatillomania (skin picking) (APA, 1994; Kessler & Ustun, 2004).

Irritable temperament: Irritable temperament is characterized by being grouchy, edgy, jealous type, skeptical, impulsive, etc. (Akiskal, 1989).

L.E.B.A.N.O.N: The Lebanese Evaluation of the Burden of Ailments and Needs Of the Nation (LEBANON), is a national study conducted in 2002-2003 by IDRAAC in association with the Department of Psychiatry and Clinical Psychology at Balamand University and St. Georges Hospital University Medical Center. This study is part of the World Health Organization (WHO) World Mental Health (WMH) Survey Initiative (Karam, Mneimneh, Karam et al., 2006; Karam, Mneimneh, Dimassi et al., 2008).

Mood disorders: Mood disorders are a group of diagnoses characterized by dysfunctional disturbances in the person's emotions. They include major depressive disorder, dysthymia, cyclothymia, bipolar I and bipolar II disorders (APA, 1994).

Personality: "Personality is the entire mental organization of a human being at any stage of his development. It embraces every phase of human character: intellect, temperament, skill, mortality, and every attitude that has built up in the course of one's life" (Warren & Carmichael, 1930, p. 333).

Substance use disorders: Substance use disorders are a class of disorders characterized by excessive abuse and or dependence on substances such as alcohol or dugs such as cocaine, prescribed medication, heroin, marijuana, cannabis, etc. (APA, 1994).

Temperament: Temperament is the biological emotional substrate of personality which appears to be stable across the individual's life span (Akiskal, 2001; Von Zerssen & Akiskal, 1998; Cloninger, Svrakic & Przybect, 2006; Evans, Akiskal, Greenwood et al. 2008).

TEMPS-A: The Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Auto-questionnaire (TEMPS-A) is a self-filled questionnaire designed to assess five types of affective temperaments: depressive, cyclothymic, hyperthymic, irritable and anxious (Akiskal, Akiskal, Haykal, et al., 2005a).

WMH surveys: The World Mental Health (WMH) Survey is a global initiative lead by Harvard University and WHO Geneva. It was launched in 2000 to collect national data from over 27 countries worldwide. The primary objective of this survey was to produce nationally representative data on prevalence, correlates, and treatment of mental disorders for proper action planning (Kessler & Ustun, 2004).

Limitations

There are several limitations to this study. First, the data was collected retrospectively for temperament and mental disorders, second, although the TEMPS-A is a self-filled auto-questionnaire, 43.1% of respondents were not able to fill in the TEMPS-

A questionnaire themselves due to illiteracy, old age, or possibly because of fatigue since the TEMPS-A was given after the CIDI 3.0. However, there was no difference between the two modes of delivery (self-filled vs. interviewed) (Karam, Mneimneh, Salamoun et al., 2007). Finally, the profession section of the CIDI does not allow for the accurate assessment of specific professions, but rather categorized specific professions into groups with hierarchy. This renders comparisons with published literature on this issue somewhat difficult.

CHAPTER 2

Review of Literature

This chapter aims at giving an overview of what has been studied and discussed so far in the literature about personality, temperament and profession, with special focus on the background that have led to the present study.

It is important to keep in mind that each individual has a unique nature characterized by how he or she thinks, feels and behaves on a daily basis. This human nature is referred to as personality, which originated from the Latin word *personna,* meaning "mask". The human personality is a construct that comprises innate elements such as temperament and intelligence, and environment affected elements such as character. Some elements of personality start unfolding since birth, namely temperament. As a baby a person is classified as either "easy" for being joyful, smiley, and pleasant or "fussy" for being irritable, crying, and kicking. However, it is not until adulthood that personality develops completely, and starts manifesting itself in pretty much every aspect of the individual's life.

The introduction of personality in career counseling

Specialists in the field of mental health have recognized the importance of personality in human life; one aspect of human lives being their career. Many theories have evolved in the field of career counseling linking profession to clinical psychology (Zunker, 2006). One major achievement was attributed to J. Holland (1996). Holland's work had contributed to bringing mental health to the forefront in the world of industry, where his instruments are being widely used.

The purpose of Holland's typology was to characterize people according to how they resemble six personality types and then match these personalities to six working environments. This was achieved to support the hypothesis that congruence of job environment and personality leads to satisfaction, stability in career, and consequently achievement. The six personality types included description of preferences for activities and occupations (such as working with tools, literary or artistic activities, serving others through personal interaction, directing others, maintaining orderly routines), person's values (such as creativity, rewards, acquisition of knowledge, social services, social status, power), how the person sees self as (such as mechanical skills, analytical, innovative, interpersonal skills, lacking scientific ability, skills in business and production), how the person thinks others see him/her (such as normal, asocial, disorderly, agreeable, energetic, careful), and what the person avoids (interaction with people, routines, technical activities) (Holland, 1996).

Holland's theory did not embark upon the underlying factors explaining how people behave at work, how well they will do, their level of energy, whether they have the potential to succeed or not, etc. On the other hand, this study tackled these issues by using the construct of temperament that offered possible explanations for how people behave at work, and their level of success, etc.

Psychopathology and career development

Not only personality style is important, but according to the DSM-IV (APA, 1994) psychopathology affecting humans could lead to work maladjustment (Zunker, 2006, p. 162). Some examples of such psychopathological symptoms would be paranoid, schizoid, antisocial borderline, narcissistic, obsessive-compulsive, avoidant, and

depressed behaviors and faulty cognitions. Although people can suffer from similar mental disorders, yet these disorders can have different consequences from one person to the other (Zunker, 2006, p. 164-165). For example, behavioral problems and faulty cognitions may lead to underachievement, performance anxiety, interpersonal problems, or addiction to work in different people (Lowmann, 1993 as stated in Zunker, 2006). Temperament has been extensively studied as an innate predisposing factor of mental disorders (see below), consequently using it in the field of career counseling and more specifically in this study controls for the effect of psychopathology on profession.

The importance of temperament in human functioning

Temperament is the "how" of our behavior rather than the "what" or "why". It offers one explanation of how we handle stress and difficulties in life, the level of energy we have, our productivity, the person we feel compatible to marry, the profession we choose to pursue, the risks we take, how much creative we are, and which level of accomplishment we reach.

It is speculated that the origins of temperament started a long time ago when thinkers in *ancient Egypt* (3300 BC -523 BC) or Bilad Al-Rafidayn talked about four body humors or "juices" (sanguine/blood, choleric/yellow bile, melancholic/ black bile, phlegmatic) that are balanced and blend well in healthy humans. Each person has a blend of these "juices" with usually one or two being dominant and affecting behavior. However, it was not until Greek thinkers such as Hippocrates (400 BC) adopted the concept that it was publicized. These four "juices" were then paired with elements, seasons and treated with certain types of food or diet. For example, warm foods, increase yellow bile, while cold foods increase phlegm (Harris, 1998).

The *Sanguine/blood* temperament is linked to the season of spring (wet and hot), and element of air. It is characterized by being generally light-hearted, fun, loving, entertaining, spontaneous, having leader abilities, and confident. On the other side, a person can be arrogant and impulsive. In the old days, this humor was treated with leeches, because it is based on the process of the blood being sucked out and being able to understand the effect of the process (Harris, 1998).

The C*holeric/yellow bile* temperament is linked to summer (dry and hot), and fire, and have a lot of ambition, energy, and passion. But on the negative side, can be easily angered or bad-tempered. Many great charismatic military and political figures were cholerics! (Harris, 1998).

People with *Melancholic/black bile* temperament have fall/autumn (dry and cold) as their season, and earth as their element. They are thoughtful, often very kind and considerate, perfectionist by nature, highly creative, but also can become overly pre-occupied with the tragedy and cruelty in the world which holds them back from proceeding with things (Harris, 1998).

Phlegmatic temperament corresponds to the season of winter (wet and cold), and the element of water. A phlegmatic person is calm, unemotional generally self-content and kind. Because people with phlegmatic temperament are very consistent, relaxed, rational, curious, it makes them good administrators and diplomats. Like the sanguine, the phlegmatic has many friends. However, the phlegmatic is more reliable and compassionate; these characteristics typically make the phlegmatic a more dependable friend (Harris, 1998).

With the advances in science and the field of psychology over the years, the concept of temperament evolved more and more. The study of temperament, the

biological emotional component of personality, has been the focus of research in the last 50 years. Kraeplin suggested the existence of four temperaments: the manic, depressive, cyclothymic, and irritable (Akiskal, 2001). Subsequently, definitions of temperament have been proposed to uncover its constitutional origin. According to Thomas and Chess (1977), temperament is influenced by genes and has a neurobiological basis. While Rothbart (2000), defines temperament as relatively stable, primarily biologically based, with individual differences in reactivity and self-regulation.

In summary, temperament is best described as the emotional reactivity of an individual (Akiskal, 2001), appears to be stable across the individual's life span (Von Zerssen & Akiskal, 1998; Cloninger et al., 2006; Karam et al., 2007), and has a strong genetic basis (Evans et al. 2008). Moreover, it was generally agreed that emotionality, activity, and sociability are aspects of temperament. These aspects differed by gender and by social context.

Based on the definitions and aspects of temperament, several scales were constructed. Some assessed temperament within the context of personality such as the Gray's two-factor scale (1970), Zuckerman et al. five factor scale (Zuckerman, Kuhlman, Joireman et al., 1993), Cloninger's Tridimensional Personality Questionnaire (TPQ) (Cloninger, 1987), Von Zerssen's Munich Personality Test (MPT) (Von Zerssen & Akiskal, 1998), and the Temperament and Character Inventory (TCI) (1993). Other scales assessed only temperament namely the Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Interview (TEMPS-I) (Placidi, Signoretta, Liguori et al., 1998). Akiskal and colleagues (1977; 1979) hypothesized that there existed five types of affective temperaments: the depressive, cyclothymic, hyperthymic, irritable, and the anxious, based on Kraeplin's theory and developed the TEMPS-I accordingly.

Generally, characteristics of the depressive temperament include traits such as being most of the time gloomy, pessimistic, humorless, quiet, passive, skeptical, complaining, conscientious, self-critical, preoccupied with failure, low energy drive, need for more than 9 hours of sleep (appendix A items 1 to 21). Cyclothymic temperament includes traits where the individual has naturally irregular cycles of drive and lethargy, decreased need for sleep followed by increased need, arrogance and lowered self esteem, passionate involvement in activities then loss of joy in life, high and low humor, occasional romantic failure, uneven work record, episodic pattern of substance use, etc. (appendix A items 22-42). Characteristics of hyperthymic temperament traits include high energy level, irritability, being cheerful, overoptimistic, overconfident, grandiose, over talkative, warm, people seeking, uninhibited, risk taking, needs less than 6 hours of sleep, etc (appendix A items 43-63). The anxious temperament is characterized by being a worrying person most of the time and having anxiety related somatic symptoms such as headaches, nausea, pain, etc. (appendix A items 64-84). Lastly, irritable temperament is characterized by being grouchy, edgy, jealous type, skeptical, impulsive, etc. (appendix A items 85-110).

The TEMPS-I was used in clinical assessment, however and in order to facilitate research on temperament, Akiskal and colleagues adapted the TEMPS-I into a self-filled auto-questionnaire administered to adults (TEMPS-A) (Akiskal et al., 2005a). The TEMPS-A in addition to its version in English (Akiskal et al., 2005a; 2005b), was adapted and validated in eight languages so far (Bloink, Breigger, Akiskal et al, 2005; Karam, Mneimneh, Salamoun et al., 2005; Matsumoto, Akiyama, Tsuda, et al., 2005; Vahip, Kesebir, Alkan et al., 2005; Pompili, Girardi, Tatarelli et al., 2007; Vazquez,

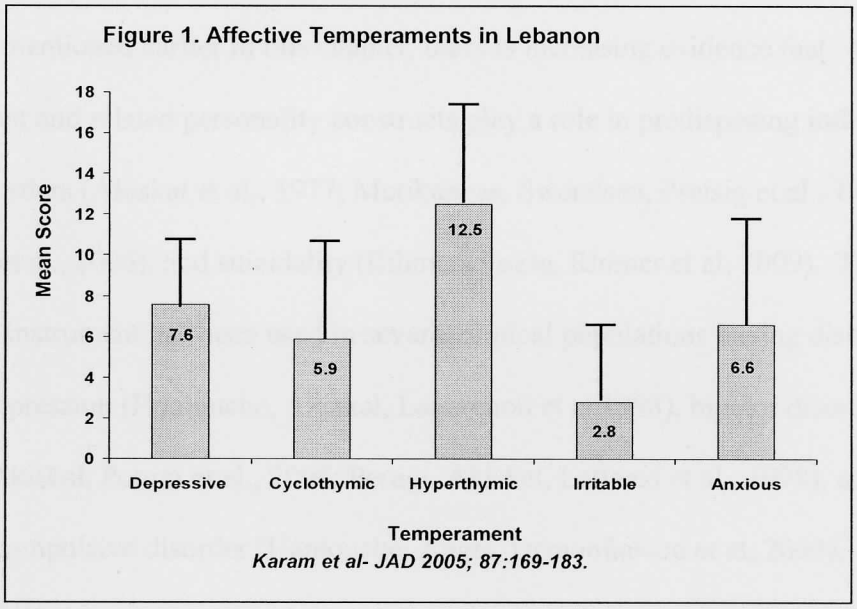
Nasetta, Mercado et al., 2007, Figueira, Caeiro, Ferro et al., 2008; Rozsa, Rihmer, Gonda et al., 2008).

The strong genetic basis and stability of temperament in addition to the finding that it is a human trait could contribute to the understanding of innate human nature with respect to outcomes such as education, success, profession, emergence of mental illness, etc. This present study built on these basic assumptions and what has been learnt about temperament throughout the years and used this construct to assess its association to profession in a Lebanese community sample.

What do we know about temperament in Lebanon?

The TEMPS-A was translated and adapted into the Lebanese-Arabic by the Institute for Development Research Advocacy and Applied Care (IDRAAC) (Karam et al., 2005). Lebanon is the only country where the TEMPS-A was administered to a nationally representative sample to assess the temperament of the Lebanese. This was part of the Lebanese Evaluation of the Burden of Ailments and Needs Of the Nation (L.E.B.A.N.O.N.) (Karam et al, 2005; 2006; 2008) study which was carried out by IDRAAC, as part of the World Health Organization (WHO) World Mental Health (WMH) surveys.

The first publication on temperament from Lebanon showed that mean scores of Lebanese adults were highest on the hyperthymic, followed by the depressive, cyclothymic, anxious, and lastly the irritable temperament subscales (Figure 1) (Karam et al., 2005). These trends were similar to the general trends in other populations: Germany, Turkey, Argentina, Italy and Hungary (Bloink et al., 2005; Vahip et al., 2005; Vazquez et al., 2007; Pompili et al., 2008; Rozsa et al., 2008).



Reflecting findings from other countries, depressive, cyclothymic and anxious temperaments are more common among women in Lebanon, whereas hyperthymic temperament is more common in men. Irritable temperament seems to be equally common in men and women (Karam et al., 2005).

In Lebanon, hyperthymic and anxious temperaments are pronounced in all age groups (18+ years) with no inter age group differences. Depressive temperament is more apparent in older age groups (51+ years), whereas cyclothymic and irritable temperaments are more apparent in younger age groups (18-30 years) (Karam et al., 2005).

These published findings from Lebanon, came to the advantage of this present study and offered standardized scores for temperament to refer to. As well as, they highlighted the importance of controlling for gender and age in this study.

Temperament as a predisposing factor for mental disorders

As mentioned earlier in this chapter, there is increasing evidence that temperament and related personality constructs play a role in predisposing individuals to mental disorders (Akiskal et al., 1977; Merikangas, Swendsen, Preisig et al., 1998; Cloninger et al., 2006), and suicidality (Rihmer, Rozsa, Rhimer et al, 2009). The TEMPS-A instrument has been used in several clinical populations having disorders such as major depression (Hantouche, Akiskal, Lancrenon et al 1998), bipolar disorders (Akiskal, Akiskal, Perugi et al., 2006; Perugi, Akiskal, Lattanzi et al., 1998), and obsessive compulsive disorder (Hantouche, Angst, Demonfaucon et al, 2003).

The lifetime prevalence of mental disorders in Lebanon was as follows: 16.7% anxiety disorders, 12.6% mood disorders, 4.4% impulse control disorders, and 2.2% substance use disorders (Karam et al., 2008). The prevalence of mental disorders in one year (12-month prevalence) in Lebanon was as follows: 11.2% anxiety disorders, 6.6% mood disorders, 2.2% impulse control disorders, and 1.3% substance use disorders (Karam et al., 2006). Recent results from the LEBANON study, showed that depressive, anxious, irritable and cyclothymic temperaments were positively associated with mood, anxiety, impulse control and substance use disorders. Whereas, hyperthymic temperament was negatively associated with mood and anxiety disorders, but positively associated with impulse control and substance use disorders (Karam, Salamoun, Yeretzian et al., 2009). Having a score of 14.5 on the anxious subscale and a score lower than 14.5 on the hyperthymic subscale highly increased the odds that a person developed any anxiety disorder. Having a score of 14.5 on the anxious subscale and a score lower than 6.5 on the hyperthymic subscale highly increased the odds that a person developed any mood disorder. High scores (> 8) on the irritable temperament subscale among

highly educated people with high scores of anxious temperament and low scores of hyperthymic temperament significantly increased the odds that a person developed a mood disorder (Karam et al., 2009). These results might imply that temperament has a strong association with mental disorders, and thus might have a role working through mental disorders regarding certain outcomes. The implications of these findings definitely helped in the interpretation of the results of this study.

What has been reported so far on temperament and profession?

Identifying the role of temperament in profession helps in understanding the type of professions individuals choose, how well they can manage their work stress, how they relate to their colleagues, co-workers, clients, and employers, and sheds light on achievement and possibly financial earnings. To our knowledge, only one published article, has linked temperament to profession in specific samples of psychiatric outpatients (Akiskal et al., 2005d). Another study (in submission) evaluated affective temperaments among Portuguese university students in different majors. However, the study had major limitations since some of the participating university students may have changed their major after the study was conducted, and some may not end up working in their field of study necessarily.

In Akiskal et al (2005d), the authors reported in a sample of psychiatric outpatients, that managers had a lower cyclothymic score and higher hyperthymic score than the comparison group, while industrialists had much higher hyperthymic traits. In addition, they reported that lawyers and physicians had higher rates of depressive temperament, and architects and artists had higher cyclothymic scores than the control group (Akiskal et al., 2005d).

Purpose of the study and hypotheses

The objective of the present study was to investigate the association between temperament, and three profession related variables (type of profession, number of working hours, and financial income) in Lebanon. The study aimed to investigate affective temperament profiles among different professions to show that hyperthymic temperament is more common in managerial and higher ranked careers, compared to the depressive, cyclothymic, anxious and irritable temperaments. As jobs become less managerial and lower ranked, working people would tend to have less hyperthymic traits and higher traits of the other four temperaments. In addition, this study aimed to assess the role of affective temperament on the working status of the individual. Finally, it aimed to show that income is positively correlated with hyperthymic temperament but negatively correlated with the other four temperaments.

CHAPTER 3

Method

Participants

A nationally representative stratified multi-stage clustered area probability sample (a sampling technique where the population is divided into clusters, then a random sample of these clusters is selected) of 1320 non-institutionalized adults (aged ≥18 years). The fist stage included a geographical sample divided into 342 primary sampling units with probabilities proportional to estimated size. Second stage, was selecting households in each unit, the third stage was selecting the respondent randomly from each household, and the fourth was selecting in random 10% of households the spouse of the respondent. The mean age of the participants was 43 ± 16 years (45% men, 55% women); 68% of them were married, 24 % single and the remaining 8% were either separated, divorced or widowed (Karam et al., 2005).

Procedures

The variables used for this study were derived from a national database on mental health compiled by IDRAAC. This database stems from the LEBANON study. This study was comprised of two components: the LEBANON World Mental Health component which was carried in association with Harvard University (USA) and the World Health Organization (WHO, Geneva), its instrument being the Composite International Diagnostic Interview (CIDI) 3.0 (Karam et al., 2006; 2008). The second part was the LEBANON-TEMP component using the Lebanese-Arabic TEMPS-A (Temperament Evaluation of the Memphis Pisa Paris and San Diego, appendix A)

(Karam et al., 2005; 2007). A total of 2857 respondents were administered the CIDI 3.0 and a sub sample of 1320 respondents (47% of the total sample) filled the TEMPS-A.

Data were collected between September 2002 and June 2003. Consent procedures for the LEBANON study were approved by the Institutional Review Board (IRB) committee of the Saint George Hospital University Medical Centre / Faculty of Medicine, Balamand University, Lebanon.

Instruments

Two instruments were used in this study. The first instrument is the Lebanese-Arabic TEMPS-A, a self-filled questionnaire for adults (age ≥ 18 years) which assessed affective temperaments. This scale was a 110 yes/no items questionnaire for women and 109 items for men (Karam et al., 2005) which constituted of the descriptive ingredients of five affective temperament scales: depressive (21 items), cyclothymic (21 items), hyperthymic (21 items), irritable (20/21 items) and anxious (26 items). In addition, the TEMPS-A included a question that asked the respondents to choose only one global subjective impression about their own temperament. It included a section that asked the respondents whether their answers on the TEMPS-A represented them *most* of their life after age 18 years, or not. In addition they were asked about the reason(s) of change whether it was due to illness, age, medications (close-ended questions), or to "other reasons" (open-ended questions). Internal consistency (chronbach alpha) of this scale on an epidemiological sample varied between 0.66 (depressive) and 0.88 (anxious), and factor analysis yielded five factors (Karam et al., 2005).

The second instrument was the Arabic CIDI 3.0. The CIDI included two Parts: Part I assessed DSM-IV (APA, 1994) "core" disorders such as Depression, Mania, Panic,

Phobias, Generalized Anxiety Disorder (GAD), Intermittent Explosive Disorder (IED), Suicide and Alcohol Abuse. Part II assessed risk factors, consequences and other correlates (employment, educational attainment, social and marital life, exposure to trauma, etc) as well as additional DSM-IV disorders including Drug abuse, Post-Traumatic Stress Disorder (PTSD), Obsessive Compulsive Disorder (OCD), Psychosis, Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder, and Separation Anxiety Disorder (SAD). Part II section was administered to all Part I respondents who met lifetime criteria for any "core" disorder, plus a probability sub-sample (20%) of the rest of the respondents (who screened negative). All disorders were assessed for lifetime and 12 month (in past year of the study).

All respondents were asked questions related to their annual income and Part II respondents were asked about their profession. For details on the description of professions, please refer to appendix B.

Translation of the TEMPS-A and CIDI into Arabic was based on a process of forward translation, back translation, resolution of discrepancies between translation and back translation, pilot testing, cognitive debriefing and final revision.

Variables to study

Entering the thousands of variables from the two instruments resulted in the national mental health database, which could be used for the testing of endless hypotheses depending on the study of interest. For this thesis, only raw variables related to the hypothesis were selected and manipulated and analysed to produce the presented results.

All needed variables were transferred and analyzed on SPSS version 15.0. Descriptive analyses included means with standard deviation, and percentages. Student's T-test and ANOVA were performed to assess differences between means. Bivariate Pearson correlations were conducted between temperament and mental disorders among specific profession groups. Logistic regression was used to analyze the association between currently working versus not working (dependent variable) and the following independent variables: temperament mean scores (depressive, cyclothymic, hyperthymic, irritable, and anxious), gender, age (years), and mental disorders. Linear regression was used to analyze the association between income (dependent variable) and the following independent variables: temperament mean scores (depressive, cyclothymic, hyperthymic, irritable, and anxious), gender, age (years), mental disorders and current main profession. Significance was set at 95% with $p<0.05$ considered significant.

CHAPTER 4

Results

Demographic and temperament characteristics of the sample

The sample constituted of 547 respondents (59.8% females, N=327) with mean (± SD) age: 43.6 (± 15.7) years (ranging between 18 and 83). The temperament profile of the participants reflected the general population trend with minimal deviation varying from -0.1 SD for hyperthymic temperament and +0.2 SD for the other four temperaments (appendix C). The mean score of the sample on the depressive temperament subscale was 8.1, on the cyclothymic subscale 6.6, on the hyperthymic subscale 11.9, on the irritable subscale 3.3 and on the anxious subscale 7.8 (appendix C). Proportions of respondents scoring within – 1 SD to +1 SD of the population mean are shown in appendix D.

Profession characteristics of the sample

Almost half of the 547 sample (45%, n=248) were asked questions related to their current profession profile. The distribution of profession in the sample was as follows: 18% professionals, 18% craft & related trade workers, 17% service workers, shop & market workers, 12.5% clerks, 12 % elementary occupations, and 3-7% other professions such as senior officials, general managers, technicians, armed forces, etc. (appendix E).

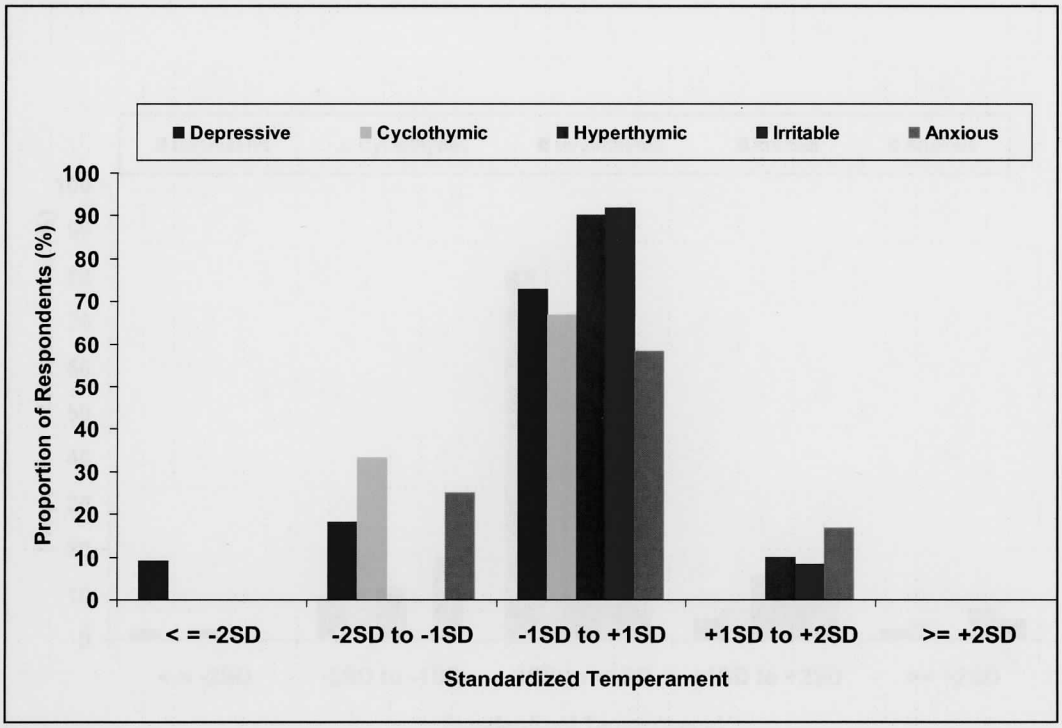
Temperament and profession type

Hypothesis 1: Affective temperament profiles differ by profession type: people working in managerial and higher ranked job positions have more hyperthymic

temperament but less depressive, cyclothymic, irritable, and anxious temperaments. As jobs move towards becoming less managerial, lower ranked and requiring less education, people would have less hyperthymic temperament and more from the other four temperaments.

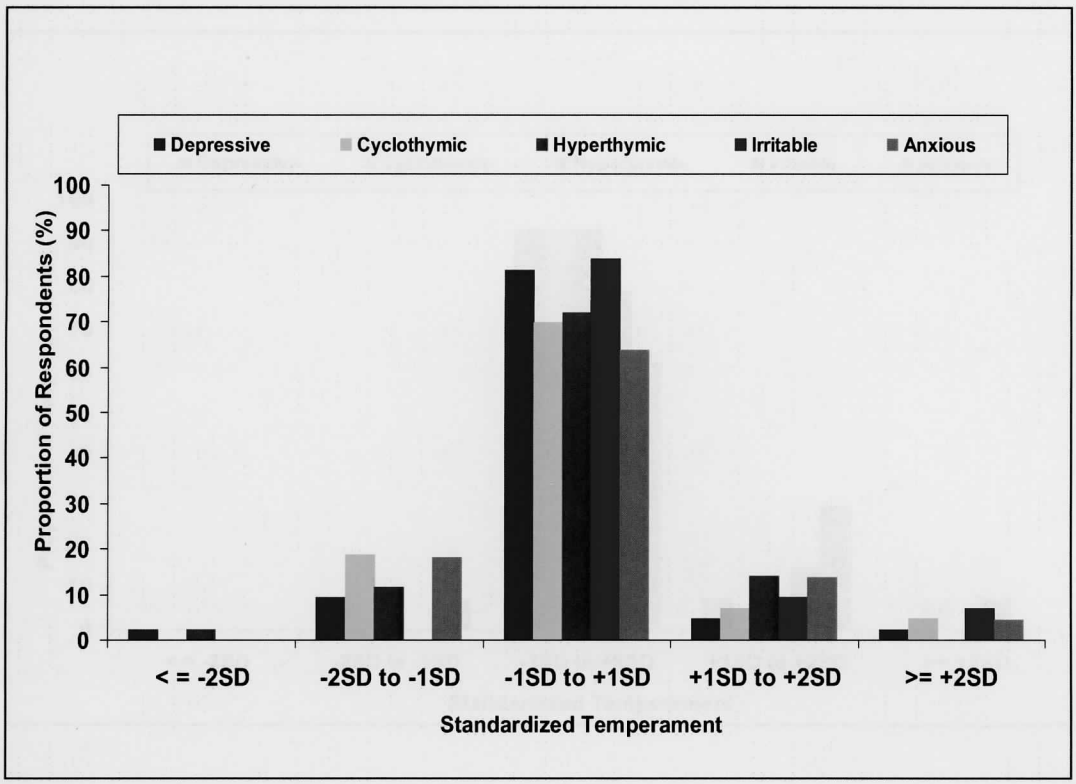
To test this hypothesis, the mean scores of all respondents where transformed into standardized score using the Lebanese already existing data (Karam et al., 2005). Then for each type of profession the proportion of respondents in each standard deviation (SD) from the mean category (<-2 SD, -2 SD to -1 SD, -1 SD to +1 SD, +1 SD to +2 SD, >+2 SD) of each temperament was computed. The proportion (y-axis) was plotted against the categories of SDs for each temperament and presented in a separate figure for each profession. Results on skilled agricultural and fishery workers and armed forces were not reported due to very small numbers (n=8 for each). Mean scores on temperaments for each profession are shown in appendix F. In general, legislators, seniors officials and managers, professionals, and associate professionals had scores on the hyperthymic temperament around the population mean, but scored on the other four temperaments at close to or below the population mean. All other professional groups (clerks, service, shop and market workers, skilled agricultural and fishery workers, craft workers, plant and machine operators, elementary occupations, and armed forces) scored on the depressive, cyclothymic, anxious and irritable temperament at the population mean or above it. However, they did not have lower scores than the population mean on the hyperthymic temperament (appendix F).

Figure 2. Proportion of legislators, senior officials and managers scoring above or below the population mean on each of the five affective temperaments



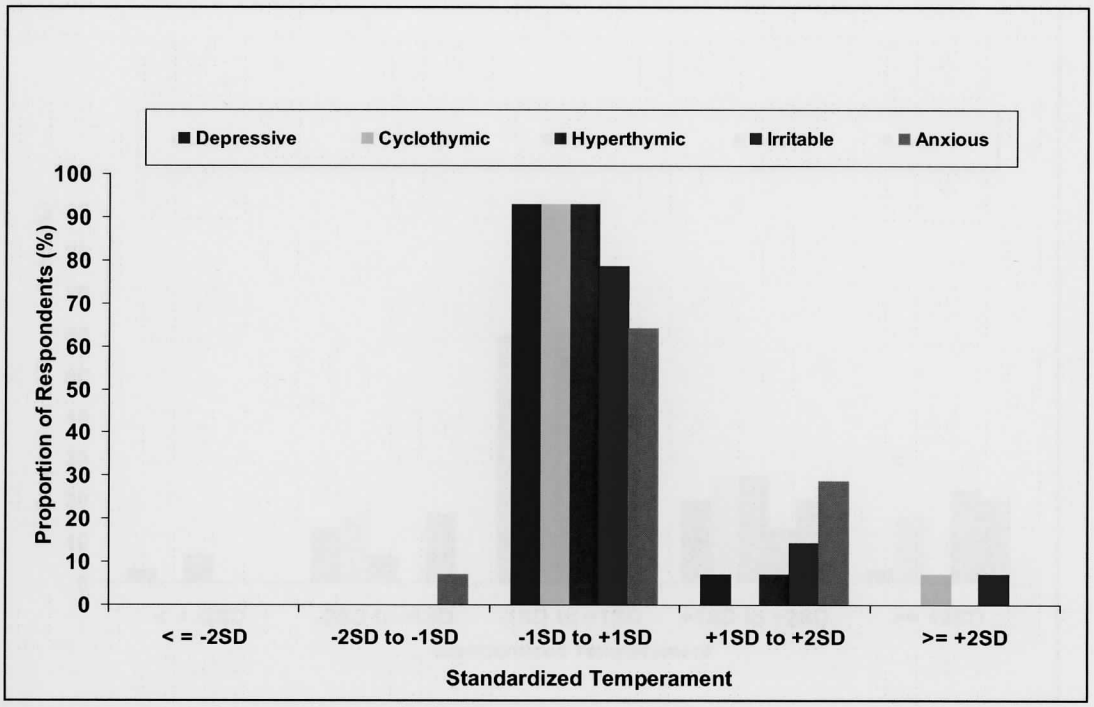
The vast majority (90%) of legislators, senior and general mangers had hyperthymic scores in the -1 SD to +1 SD of the population mean and the remaining 10% had scores greater or equal to + 2 SD. In other words, none of them had a low hyperthymic score (<-1SD). On the other hand, none of legislators, senior and general mangers had scores greater or equal to + 2 SD on the irritable, and anxious temperaments. More so, none had score above +1SD on depressive and cyclothymic temperaments (Figure 2). These results supported hypothesis 1. For more information on value of proportions, please refer to appendices G-K.

Figure 3. Proportion of professionals scoring above or below the population mean on each of the five affective temperaments



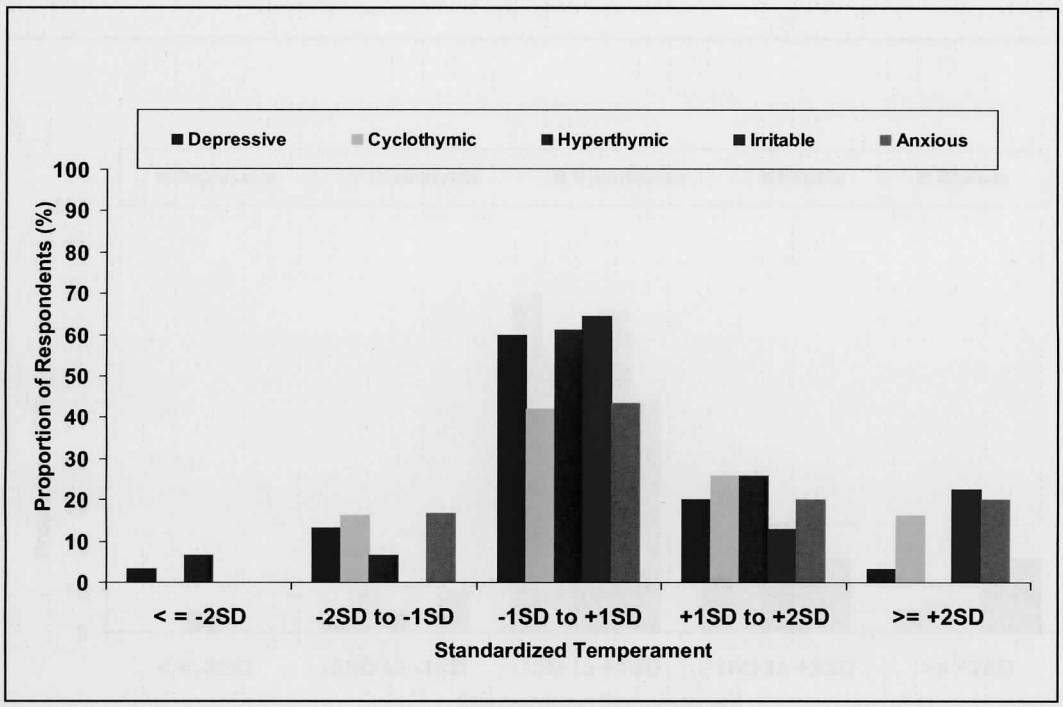
The majority of professionals (63-82%) had scores on all five temperaments within -1 SD to +1 SD of the population mean, and a minority had low hyperthymic scores. Less than a quarter of professionals had extreme high scores (> + 1 SD) on the depressive, cyclothymic, irritable and anxious temperaments with variability (Figure 3). These results supported hypothesis 1. The hyperthymic temperament was common in this work group and other temperaments were relatively low. For more information on value of proportions, please refer to appendices G-K.

Figure 4. Proportion of technicians and associate professionals scoring above or below the population mean on each of the five affective temperaments



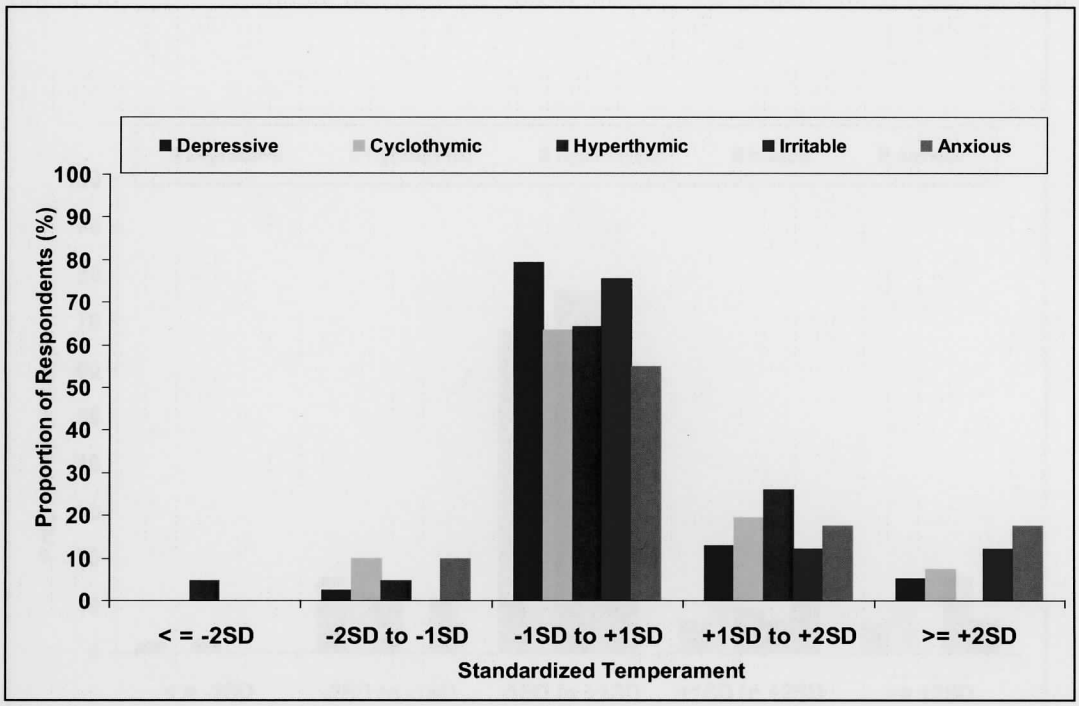
The vast majority (93%) of technicians and associate professionals had hyperthymic scores in the -1 SD to +1 SD of the population mean and the remaining 7% had scores greater or equal to + 2 SD. In other words, none of them had a low hyperthymic score. On the other hand, none of them had scores greater or equal to + 2 SD on the depressive and anxious temperaments. Only about 7% had extreme high scores of cyclothymic and irritable temperaments. About 14% had scores +1 SD to + 2 SD of irritable temperament and 29% of anxious temperament (Figure 4). These results supported hypothesis 1. For more information on value of proportions, please refer to appendices G-K.

Figure 5. Proportion of clerks scoring above or below the population mean on each of the five affective temperaments



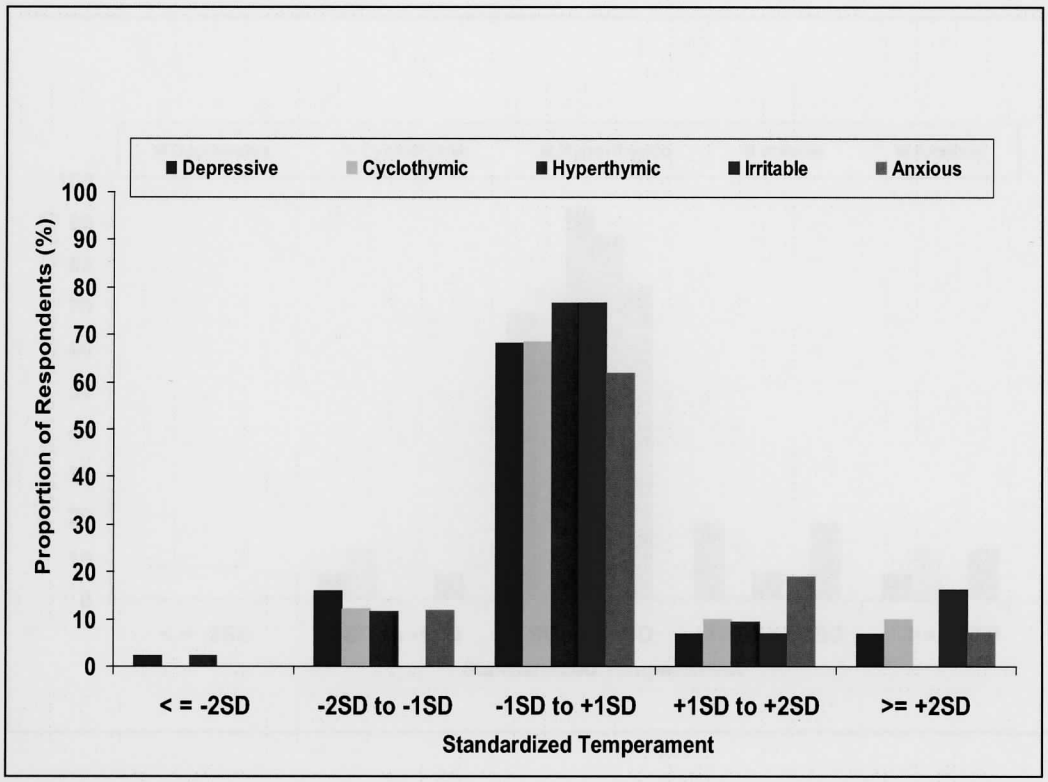
In the clerk group, the proportion of people with temperament scores in the -1SD to + 1SD range was 40 to 65%, with about 40% having cyclothymic temperament, 40% anxious temperament, and 40% irritable temperament above +1SD. A quarter had depressive temperament above +1SD. Only two-thirds had hyperthymic temperament in the -1SD to + 1SD range, and a quarter above + 1SD (Figure 5). These results supported hypothesis 1. For more information on value of proportions, please refer to appendices G-K.

Figure 6. Proportion of service, shop and market workers scoring above or below the population mean on each of the five affective temperaments



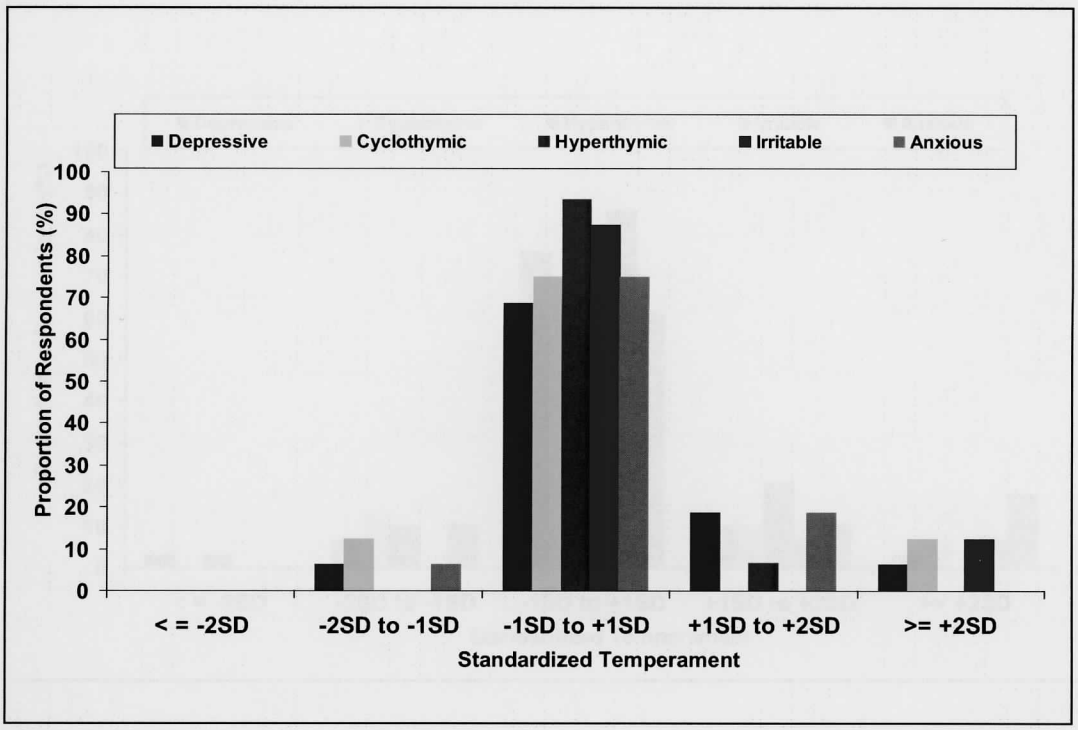
Among service, shop and market workers, only two-thirds had hyperthymic temperament in the -1SD to + 1SD range, and about a quarter above + 1SD. 35% had anxious scores above +1 SD and a quarter had scores above + 2SD on the irritable and cyclothymic temperaments (Figure 6). These results supported hypothesis 1. For more information on value of proportions, please refer to appendices G-K.

Figure 7. Proportion of craft and related trade workers scoring above or below the population mean on each of the five affective temperaments



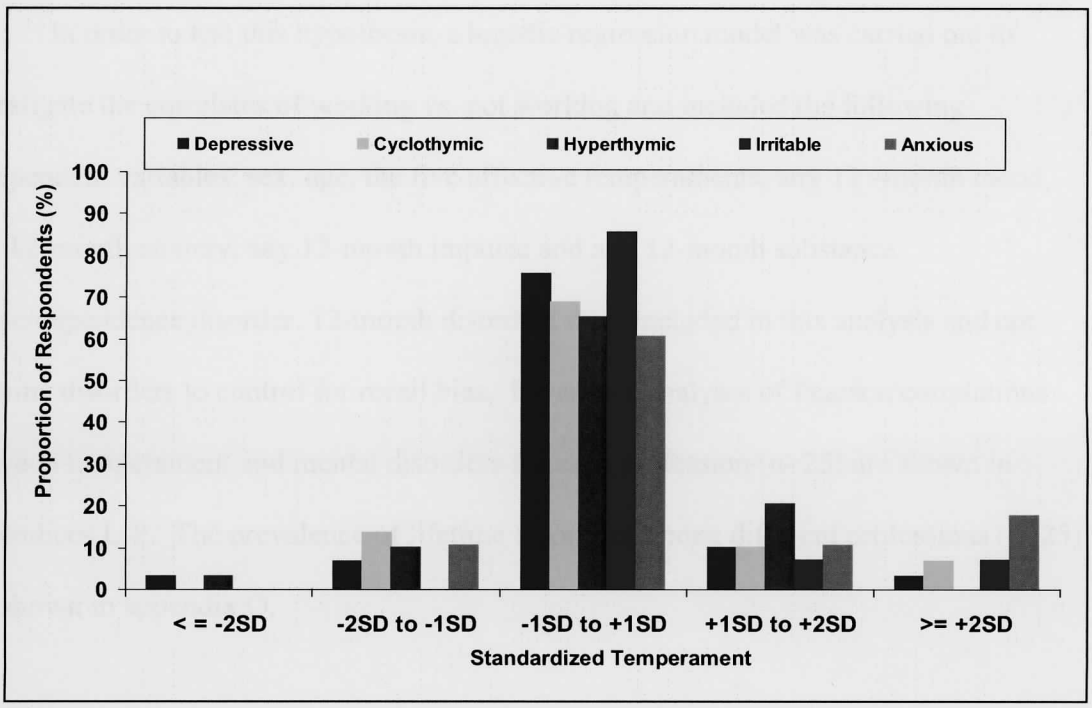
About 62-77% of craft and related trade workers had scores on all temperaments in the -1SD to + 1SD range. Close to a quarter had scores above +1 SD on the cyclothymic, irritable, and anxious temperaments, and 14% had less than -1SD on the hyperthymic temperament (Figure 7). These results supported hypothesis 1. For more information on value of proportions, please refer to appendices G-K.

Figure 8. Proportion of plant and machine operators, assemblers scoring above or below the population mean on each of the five affective temperaments



At least two thirds of plant and machine operators and assemblers had scores on all temperaments in the -1SD to + 1SD range, except the hyperthymic temperament where 93.3% have scores in the -1SD to + 1SD range and the remaining above +2 SD. A quarter had high depressive temperament (> +1 SD) and 12-19% had high cyclothymic, irritable and anxious temperaments (Figure 8). These results supported hypothesis 1 except for the hyperthymic temperament. For more information on value of proportions, please refer to appendices G-K.

Figure 9. Proportion of elementary occupations scoring above or below the population mean on each of the five affective temperaments



About two-thirds of people working in elementary occupations had cyclothymic and anxious scores in the -1SD to + 1SD range. Less than 15% had low scores (-1SD) on the depressive, cyclothymic and anxious temperaments (Figure 9). 65.5% had hyperthymic scores in the – 1 SD to +1 SD and 20.7% > +1 SD. These results partially supported hypothesis 1 except for hyperthymic temperament. For more information on value of proportions, please refer to appendices G-K.

In summary, hyperthymic temperament was more accentuated in higher ranked jobs, but was common too in other jobs requiring high energy. However, the other four temperaments were by far increasingly more common in lower ranked jobs, especially clerks.

Temperament and working status

Hypothesis 2: Affective temperament is associated with the working status of the individual.

In order to test this hypothesis, a logistic regression model was carried out to investigate the correlates of working vs. not working and included the following independent variables: sex, age, the five affective temperaments, any 12 –month mood, any 12-month anxiety, any 12-month impulse and any 12-month substance abuse/dependence disorder. 12-month disorders were included in this analysis and not lifetime disorders to control for recall bias. Bivariates analyses of Pearson correlations between temperament and mental disorders for each profession (n>25) are shown in appendices L-P. The prevalence of lifetime disorders among different professions (n>25) are shown in appendix Q.

Table 1. Logistic regression model for correlates of currently working versus not working (N=488)

Dependent variable	OR	95% CI	P-value
Sex (male)	**9.28**	**5.8, 14.8**	**< 0.001**
Age (years)	**0.98**	**0.97, 0.99**	**0.02**
Depressive temperament	0.92	0.84, 1.00	0.06
Cyclothymic temperament	1.05	0.98, 1.13	0.2
Hyperthymic temperament	1.04	0.99, 1.11	0.1
Irritable temperament	0.95	0.86, 1.03	0.2
Anxious temperament	**1.06**	**1.00, 1.12**	**0.04**
Any mood (12-month)	**0.49**	**0.25, 0.94**	**0.03**
Any anxiety (12-month)	0.94	0.53, 1.68	0.8
Any impulse (12-month)	0.59	0.18, 1.96	0.4
Any substance abuse (12-month)	0.40	0.05, 3.00	0.4

The results of the model showed that individuals who are currently working were likely to be males, younger adults, have higher scores on the anxious temperament subscale and have no mood disorder (Table 1). Depressive temperament was borderline negatively associated with being currently working. The results partially supported hypothesis 2 in showing that anxious temperament is associated with working.

Temperament and number of working hours

There was no association among the depressive, cyclothymic, irritable, or anxious temperament and number of working hours. However, respondents who had higher scores on the hyperthymic temperament subscale worked a larger number of hours than those with lower scores (appendix R).

Temperament and financial income

Hypothesis 3: Financial income, an indicator of professional achievement, is positively correlated to hyperthymic temperament, but negatively correlated to the other four temperaments.

To test this hypothesis, a linear regression model was carried out to investigate the correlates of financial income in one year and included the following independent variables: sex, age, the five affective temperaments, any 12 –month mood, any 12-month anxiety, any 12-month impulse and any 12-month substance abuse/dependence disorder, and number of working hours, controlling for the type of current profession.

Table 2. Linear regression model for correlates of financial income among those who are currently working (N=246)

Dependent variable	Adjusted Beta Estimate	P-value
Sex (male)	**0.24**	**0.003**
Age (years)	0.08	0.2
Depressive temperament	-0.006	1.0
Cyclothymic temperament	0.06	0.6
Hyperthymic temperament	**0.16**	**0.03**
Irritable temperament	**-0.22**	**0.02**
Anxious temperament	0.04	0.7
Any mood (12-month)	-0.01	0.8
Any anxiety (12-month)	0.08	0.3
Any impulse (12-month)	-0.03	0.7
Any substance abuse (12-month)	0.05	0.4
Number of working hours	-0.01	0.9
Current main profession	**-0.34**	**<0.001**

The results of the model showed that higher financial income was more common among males, among individuals working in higher ranked jobs, individuals who had higher scores on the hyperthymic temperament subscale, but lower scores on the irritable temperament subscale (Table 2). The results partially supported hypothesis 3 for hyperthymic and irritable temperaments only.

CHAPTER 5

Discussion

The results of this study had supported the published literature on the existence of an association between personality and type of profession (Zunker, 2006). More specifically this study addressed one innate component of personality in the context of profession. In addition, this study looked at other profession related factors such as being in a working status versus not, number of working hours and financial income in association with temperament.

Type of professions and temperament profiles

The findings from this study showed that people having high hyperthymic temperament (> +1 SD) and low depressive, cyclothymic and irritable temperaments tend to work in high rank professions that require higher education and leadership such as legislators and managers. This is similar, though to a lesser extent, among professionals such as architects, engineers, physicians, lawyers, and professors. On the other hand, people who have higher depressive, cyclothymic and irritable temperaments tended to work in moderate to lower jobs that require much less education or none, and are task oriented with no managerial roles. These included secretaries, receptionists, cooks, hairdressers, models, farmers, fishers, carpenters, taxi drivers, mechanics, police officers, etc. Moreover, about half of clerks had high scores on the cyclothymic temperament. In this study, lawyers, physicians, and architects were grouped under professionals, and results showed that they do have relatively higher cyclothymic scores when compared to the other two highly ranked jobs (legislators/managers and technician/associate

professionals). The commonality of the high hyperthymic temperament in high ranked jobs did not decrease markedly in lower ranked jobs as hypothesized in this study. One argument about the hypothesis might be that inherently Lebanese people have high hyperthymic temperament (Karam et al., 2005) this is why it is not expected to see significantly decreasing trends by profession. On the other hand, although some professions require hyperthymic characteristics, yet they do not necessarily have lower scores on the other four temperaments.

In Akiskal et al (2005d), the authors reported in a sample of psychiatric outpatients, that managers had a lower cyclothymic score and higher hyperthymic score than the comparison group, while industrialists had much higher hyperthymic traits. In addition, they reported that lawyers and physicians had higher rates of depressive temperament, and architects and artists had higher cyclothymic scores than the control group (Akiskal et al., 2005d). The results of this study cannot be accurately compared to the Akiskal et al (2005d) study due to differences in samples and profession categorization, however it showed similar trends.

Additionally, one can point to the category of -1 SD to +1 SD and argue that since in most professions the highest proportion of people are in this category, then there are no real temperament differences between people in different professions. Although this sounds true at first glance, yet there are several explanations countering this argument and supporting the hypothesis. First, in a sample with the assumption of normal distribution, it is expected to have the majority of the sample (68%) falling between the -1 SD and +1 SD. Despite this, the proportion of individuals in this middle range differed between professions. For example, in higher ranked jobs the majority were indeed in this "normal range" with the remaining mainly having extreme low scores on

the depressive, cyclothymic, irritable and anxious temperaments and extremely higher scores on the hyperthymic temperament. On the contrary, one moves towards the lower ranked jobs, ones notices that less people are spread in the -1 SD to +1 SD range but rather are generally increasingly spread in the higher extremes for depressive, cyclothymic, irritable and anxious temperaments. This was not a true finding for hyperthymic temperament as discussed earlier. Also, it is worth noting here, that although many people in all professions might be falling in this category of SDs yet this by no means implies they are similar and can fit in the same jobs. Rather, this hints for a further study of this group of people and identify factors other than temperament that might be having a role and that are not tackled in this study.

Temperament and number of working hours

The second hypothesis of this study indirectly argues that people who have hyperthymic temperament tend to tolerate working a higher number of hours, while those who have depressive, cyclothymic, or irritable traits do not. As expected and knowing the original characteristics of hyperthymic temperament (such as high energy, always on the go, loves to do projects, workaholic, etc) (Akiskal, 1989), in this study people with higher scores on this temperament reported that they worked a greater number of hours than those who had lower scores on this temperament. One the other hand, one would have expected an opposite trend for the depressive temperament due to the characteristics of this trait (Akiskal, 1989) such as lower level of energy, requiring higher number of sleep hours, less ambition, less risk taking and management of tasks, but the results of this study did not confirm this trend.

Temperament and working status

Previous publications have shown that mental disorders have a burden on the work and productivity of the individual (WHO, 2001). On the other hand, temperament has been shown to be a predisposing factor for the emergence of mental illness (Akiskal, 2001). Therefore, evaluating temperament in the context of profession highlights the possible effect of psychopathology on work and productivity.

Controlling for sociodemographic variables, and testing the effect of temperament in the presence of mental disorders on work status, the results from this paper showed that anxious temperament is associated with working while mood disorders are associated with not working. An explanation of this would be that anxious temperament has been described as a trait of survival (Akiskal & Akiskal, 2005c) across the centuries keeping the person safe and alive. Thus it pushes the person to work to secure his needs etc. Mood disorders as expected do cause a burden on the individual, and has been linked to mortality and years lived with disability (WHO, 2001), thus incapacity to work.

Temperament and financial income

Another important outcome of human life achievement is financial income. Controlling for gender, age, type of profession, and number of working hours, this study showed that having a hyperthymic temperament was positively related to higher income but irritable temperament was not. These results could be explained by the fact that hyperthymic temperament has been associated in the literature with less psychopathology and higher income jobs, while irritable temperament (as seems to be not a desirable trait) was not (Karam et al., 2005). In other words, being a person who is edgy and irritable might not be a good quality with positive impact on work stability and success.

Limitations and future research

The results of this study should be interpreted in light of the following limitations: the data was collected retrospectively for temperament and mental disorders, and although the TEMPS-A is a self-filled auto-questionnaire, 43.1% of respondents were not able to fill in the TEMPS-A questionnaire themselves due to illiteracy, old age, or possibly because of fatigue since the TEMPS-A was given after the CIDI 3.0. However, there was no difference between the two modes of delivery (self-filled vs. interviewed) (Karam et al., 2007). Finally, the employment section of the CIDI was not an exact source of describing specific profession.

Practical implications and future directions

Despite that, this paper had highlighted the existence of a relation between temperaments and profession in its three outcomes type, practice and income. Hyperthymic temperament appeared to be a positive trait to the human career life and financial status, while the other temperaments especially the irritable were not. Results supported the concept that anxious temperament is a survival trait. This study was a first initiative that opens the door for more specialized studies using temperament assessment for the better understanding of the working client. Such future studies can tackle the importance of specific traits of each temperament on human life.

Moreover this study sheds light on some clinical implications for the usefulness of the temperament assessment in psychotherapy. In the clinic, it is frequent that a client is presenting with problems that are directly related to the work environment as being affected by what is happening at work or on the contrary as being in a condition that is affecting his or her productivity at work, relations with workmates, progress, etc.

However, the client's diagnosis might not be the main cause of the impairment but rather the human nature might have an additive effect that the therapist needs to identify. This becomes handy while addressing the problems, assessing the underlying factors, what could be dealt with and what need to be lived with. Another implication falls in the domain of career counseling. Assessing the temperament of employees highlights their innate potential to work heavily, to handle several tasks simultaneously, be in a managerial position, to take risks, to be creative, to be alert and careful, enjoy group work, help others, etc. Because temperament as discussed earlier has been associated with several future outcomes such as the possibility of having mental disorders or becoming suicidal, etc. the employer can have an idea of what to expect in the future from the employee.

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APPENDICES

APPENDIX A

الاسم: _____

Ta. وقت البدء الحالي بالتحديد: [__][__] [__][__] **مثلاً: 10 45**

الدقيقة الساعة **دقيقة الساعة**

T0. بعد أن تقرأ التصاريح، أجب بصح أو خطأ على كل تصريح. الجواب بـ "صح" يعني أن التصريح يصّر ويدّل على شعورك، تفكيرك أو تصرفاتك **معظم الوقت** من حياتك **بعد أن بلغت عمر الـ 18 سنة**. ملاحظة: قد يتقلب شعورك، تفكيرك، أو تصرفاتك حسب الأوضاع والأوقات المختلفة في حياتك: نطلب منك أن تجيب بـ "صح" على التصريح الذي يعبّر بالطريقة **الأفضل** عن وضعك **معظم الوقت** في حياتك **بعد أن بلغت عمر الـ 18 سنة.**

لا تنسى أن تضع X على "صح" أو "خطأ"

أجب بصح أو خطأ على التصاريح التالية. الجواب بـ "صح" يعني أن التصريح يعبّر بالطريقة الأفضل عن وضعك معظم الوقت في حياتك بعد أن بلغت عمر الـ 18 سنة

		صح	خطأ
T1	أنا إنسان حزين وتعيس.		
T2	يقول لي الناس أنني لا أرى الجانب الحسن من الأشياء.		
T3	لقد عانيت الكثير في الحياة.		
T4	أعتقد بأن الأشياء غالبا" ما تنقلب للأسوأ.		
T5	أستسلم بسهولة.		
T6	بقدر ما أستطيع أن أتذكر، أشعر بأنني كنت فاشلاً.		
T7	ألوم نفسي دائما" على أمور يعتبرها غيري أموراً بسيطة.		
T8	ان نشاطي أقل من غيري.		
T9	أنا من الناس الذين لا يحبون التغيير كثيرا".		
T10	أُفضّل الاستماع لأقوال الآخرين عندما أكون بين مجموعة.		
T11	غالبا" ما أستسلم لما يريده الآخرون.		
T12	أشعر بإنزعاج شديد عند مقابلة أناس جدد.		
T13	يَجْرَحُ إحساسي بسهولة، من النَقد أو النبذ (رفض).		
T14	أنا من الناس الذين بوسعِك الاعتماد عليهم دائماً.		
T15	أهتمّ لحاجات الآخرين أكثر مما أهتمّ لحاجاتي.		
T16	أنا إنسان أعمل بجهد.		
T17	أُفضّل أن أكون مرؤوساً على أن أكون رئيساً.		
T18	أنا بطبيعتي شخص مرتّب ومنظّم.		
T19	أنا من الناس الذين يشككون في كل شيء.		
T20	رغبتي الجنسيّة دائما" ضعيفة.		
T21	أحتاج عادة للنوم أكثر من تسع ساعات يومياً.		
T22	غالباً ما أشعر بالتعب دون سبب.		
T23	تنتابني تقلبات فجائيّة في مزاجي وطاقتي.		
T24	مزاجي وطاقتي إمّا مرتفعين أو منخفضين، نادراً معتدلان.		
T25	قدرتي على التفكير تتغيّر بشكل متكرر من الدقة والوضوح إلى عدم الدقة وعدم الوضوح دون سبب واضح.		
T26	أستطيع أن أحبّ أحداً كثيراً، وأن أفقد اهتمامي به كلياً بعد ذلك.		
T27	أهبّ (أفجر غضباً) غالباً على الناس، وبعدها أشعر بالندم.		
T28	غالباً ما أبدأ في عملٍ ولكن أفقِد الإهتمام به قبل إنجازه.		
T29	غالباً ما يتغيّر مزاجي دون أي سبب.		
T30	مرارا" ما أتقلب من النشاط والحيويّة إلى البطء.		
T31	أحياناً أخلد للنوم محبطا" ولكن أفيق صباحاً منشرحاً.		

لا تنسى أن تضع X على "صح" أو "خطأ"

		صح	خطأ
T32	أحياناً أخلد للنوم منشرحاً، وأستيقظ صباحاً، شاعراً بأن الحياة لا تستحق شيئاً.		
T33	يقول لي الناس بأنني غالبا" ما أتشاءم وأنسى الأوقات السعيدة السابقة.		
T34	أتأرجح ما بين الشعور بثقة زائدة إلى عدم ثقة في النفس.		
T35	أتأرجح ما بين كوني منطلقا" ومحبا" للعشرة إلى كوني منعزلا" عن الآخرين.		
T36	أشعر بكل الأحاسيس بشدة.		
T37	تتقلب حاجتي للنوم كثيرا" من ساعات قليلة، إلى أكثر من تسع ساعات.		
T38	نظرتي للأشياء أحياناً حيّة و أحياناً أخرى عديمة الحياة.		
T39	أنا إنسان يمكن أن يكون حزيناً وسعيداً في الوقت نفسه.		
T40	أحلم كثيرا" في اليقظة بأشياء يعتبر الآخرون تحقيقها مستحيل.		
T41	غالباً ما أشعر بدافع قوي للقيام بأعمال خارجة عن المعتاد لدرجة انها تثير الإستعجاب.		
T42	أنا من النوع الذي يقع ويخرج من الحبّ بسهولة.		
T43	مزاجي عادة، حيويّ أو فرح.		
T44	تبدو لي الحياة كاحتفال، أتمتع به إلى أقصى الحدود.		
T45	أُحبُّ سَرْد النكات، فيعتبرني الناس إنساناً لديه روح النكتة.		
T46	أنا من النوع الذي يعتقد أن كلّ شيء سينتهي بخير.		
T47	ثقتي في نفسي قوية.		
T48	غالبا" ما تراودني الكثير من الأفكار العظيمة.		
T49	أنا دائماً على أهبَّة الإستعداد.		
T50	لي القدرة على إنهاء أعمال كثيرة دون أن أشعر حتى بالتعب.		
T51	عندي موهبة الكلام و الإلهام وإقناع الآخرين.		
T52	أُحبُّ أن أستلم مشاريع جديدة حتى ولو كانت مغامرة.		
T53	لا يقوى أحد أو شيء على صدّي عندما أقرر القيام بشيء ما.		
T54	أُحسُّ براحة تامّة حتى مع أناس بالكاد أعرفهم.		
T55	أحبُّ أن أكون وسط عدد كبير من الناس.		
T56	يقول الناس أنني غالبا" ما أتدخّل في ما لا يعنيني.		
T57	أنا كريم، وأصرف كثيرا" من الأموال على الآخرين.		
T58	عندي قدرات وخبرة في مجالات كثيرة.		
T59	أشعر أنه من حقي وصلاحيتي أن أعمل كلّ ما يحلو لي.		
T60	أنا إنسان يحب أن يكون "الرئيس".		
T61	عندما أختلف بالرأي مع أحد، أدخل معه في جدال حاد.		
T62	رغبتي الجنسية دائما" عالية.		
T63	عادة يمكنني أن اكتفي بأقلّ من ست ساعات نوم يوميا".		
T64	أنا إنسان ضيق الخلق (سريع الغضب).		
T65	أنا بطبيعتي إنسان غير راض على الاشياء.		
T66	أنا كثير الشكوى.		

معظم الوقت بعد أن بلغت 18 عاماً

أجب بصح أو خطأ على التصاريح التالية. الجواب بـ "صح" يعني أن التصريح يعبّر بالطريقة الأفضل عن وضعك معظم الوقت في حياتك بعد أن بلغت عمر الـ 18 سنة

لا تنسى أن تضع X على "صح" أو "خطأ"

		صح	خطأ
T67	أنتقد الآخرين بشدّة.		
T68	غالبا" ما أشعر بأنني متوتر.		
T69	غالبا" ما أشعر بأنني شديد التوتر الى درجة الإنفجار .		
T70	يسيطر علي شعور مزعج بالحوصة، لا أستطيع فهمه.		
T71	غالبا" ما أشعر بالغضب الشديد وأكاد أدمّر (أهدّم) كل شيء.		
T72	إن عاكسني أحد قد أصعِّد ذلك إلى شجار.		
T73	يقول لي الناس أنني أهب (أفجر غضباً) دون سبب ما.		
T74	عندما أغضب أنبر في وجه الناس بحدة.		
T75	أحب استفزاز الناس حتى و لو كنت بالكاد أعرفهم.		
T76	مزحي اللاذع إتجاه الناس أدخلني في مشاكل.		
T77	باستطاعتي أن أغضب وأهتاج لدرجة أنني قد أؤذي أحداً ما.		
T78	أشعر بالغيرة على زوجتي أو (صديقتي) لدرجة لا أستحملها.		
T79	أنا إنسان معروف بأنني أستعمل عبارات بذيئة (أسبّ) كثيراً.		
T80	لقد قيل لي أنني أصبح عنيفا" عندما أتناول كميّة قليلة من الكحول.		
T81	أنا إنسان يشكك كثيرا".		
T82	من الممكن أن أكون ثورياً.		
T83	غالباً ما تكون رغبتي الجنسيّة مرتفعة جداً بشكل يزعجني.		
T84	(للنساء فقط). تنتابني نوبات من الغضب قبل دورتي الشهريّة مباشرة، لا أستطيع السيطرة عليها.		
T85	بقدر ما أستطيع ان أتذكر، فأنا طوال عمري، إنسان قلق.		
T86	أجد نفسي دائما" مهموما" بأمر ما.		
T87	أحمل همّ الأمور اليوميّة التي يعتبرها غيري تافهة.		
T88	لا أستطيع أن أكف عن القلق.		
T89	عديد من الناس أشاروا عليّ بأن أخفف من كثرة قلقي.		
T90	عندما أتعرض للضغط، يتوقف عقلي عن التفكير.		
T91	أنا غير قادر على الإسترخاء.		
T92	غالبا" ما أشعر بحوصة داخليّة.		
T93	عندما أتعرض للضغط، غالبا" ما ترتجف يداي.		
T94	غالبا" ما أشعر بإنزعاج في المعدة.		
T95	عندما أشعر بالتوتر، من الممكن أن أعاني من الإسهال.		
T96	عندما أشعر بالتوتر، غالبا" ما أشعر بغثيان.		
T97	عندما أشعر بالتوتر، أضطرّ لدخول الحمام أكثر من العادة.		
T98	عندما يتأخر أحداً عن موعد العودة إلى المنزل أخاف من أن يكون قد أصابه أي مكروه.		
T99	غالبا" ما أشعر بالخوف من أن يصاب أحد أفراد عائلتي بمرض خطير.		
T100	اني أفكر باستمرار بأن أحداً قد يخبرني نبأ" سيئ عن أحد أفراد عائلتي.		
T101	نومي غير مريح.		

معظم الوقت بعد أن بلغت 18 عاماً

أجب بصح أو خطأ على التصاريح التالية. الجواب بـ "صح" يعني أن التصريح يعبّر بالطريقة الأفضل عن وضعك معظم الوقت في حياتك بعد أن بلغت عمر الـ 18 سنة

لا تنسى أن تضع X على "صح" أو "خطأ"

		صح	خطأ
T102	كثيرا" ما أجد صعوبة لأنام.		
T103	أنا بطبيعتي إنسان حذر جداً.		
T104	غالبا" ما أستيقظ ليلاً خائفاً من أن يكون في المنزل لصوص.		
T105	ينتابني الصداع بسهولة عندما أتعرض للضغط.		
T106	عندما أتعرض للضغط، اشعر باحساس مزعج في صدري.		
T107	أنا شخص لا يشعر بالأمان.		
T108	أشعر بضغط شديد إذا حصلت تغيرات في نظام حياتي حتى لو كانت التغيرات بسيطة.		
T109	عندما أقود السيارة، حتى ولو لم أخالف أي قانون، أشعر بخوف من أن يوقفني الشرطيّ.		
T110	أنتفض بسهولة عندما أسمع أصوات مفاجئة.		

T111.0* اختر **صفة واحدة** من الصفات المذكورة أدناه والتي تصفك بالشكل **الأفضل** في **معظم** حياتك **بعد** أن بلغت عمر الـ **18 سنة** (ضع دائرة حول تلك الصفة)، يمكن ان تنطبق عليك أكثر من صفة، تذكر أننا نريد وصف **واحد فقط**، هو الذي يصفك بالشكل **الأفضل**، **معظم** حياتك **بعد** أن بلغت عمر الـ **18 سنة**.

إنتبه !

إختر صفة واحدة فقط

	ضع (x) في الخانة التي تمثل جوابك	نعم
T111	أنا تقريباً، دائماً حزين.	
T112	أنا مليء بالنشاط والحيويّة والمرح.	
T113	لدي كثيراً من التقلبات الانفعالية (صعوداً وهبوطاً).	
T114	أنا سريع الغضب، وأشياء صغيرة تجعلني أثور.	
T115	أنا تقريباً، دائماً قلق.	
T116	أنا انسان ذو مزاج معتدل.	

T117 - محطة تدقيق خاصة بالمحقق:

وقت الإنتهاء الحالي بالتحديد: [__][__] [__][__]
الدقيقة الساعة

للمجيب.

كلا	نعم

T118- لقد قرأت كل الأسئلة: (أي مئة واحدى عشر سؤال 111)
ضع (x) في الخانة المناسبة

الإمضاء: _____

أرفض الإمضاء: ضع من فضلك إشارة في المربع ☐

		نعم
- T119	**اختر احتمالاً واحداً فقط من الإحتمالات المذكورة وضع (x) في الخانة التي تمثل جوابك**	
	1- لم أجد أي صعوبة في فهم الأسئلة	
	2- وجدت بعض الصعوبة في فهم الأسئلة	
	3- وجدت صعوبة كبيرة في فهم الأسئلة	

ملاحظة: الرجاء ذكر أرقام الأسئلة التي وجدت صعوبة فيها: ___

		نعم
- T120	لقد سُئلت في هذه الإستمارة أن تختار التصاريح التي تعكس شعورك، تفكيرك أو تصرفاتك **معظم الوقت** من حياتك **بعد أن بلغت عمر الـ 18 سنة**. هل تعتقد أن التصاريح التي اخترتها (أي التي أجبت عليها بـ "صح"): **اختر احتمالاً واحداً فقط من الإحتمالات المذكورة والتي تعبّر عن حالتك بالشكل الأفضل وضع (x) في الخانة التي تمثل جوابك**	
	1- تصفك بالشكل الأفضل بين عمر **الـ 18** حتى **الآن**	
	2- تصفك بالشكل الأفضل خلال فترة زمنية من حياتك، **بدءاً من عمر الـ 18** ولكن **ليس حتى الآن**، فقد توقفت هذه الفترة عند عمر ..... (الرجاء حدد العمر في الفراغ)	
	3- تصفك بالشكل الأفضل **ليس مباشرةً بعد سن الـ 18** ولكن بعد فترة زمنية من بلوغك سن الـ 18 وذلك من عمر ..... **حتى الآن**. (الرجاء حدد العمر في الفراغ)	
	4- لا تستطيع أن تحدد إذ انك **تتقلب** كل الأوقات	

		نعم
- T121	إذا كنت قد تقلبت بين سن الـ 18 حتى الآن (**أي أن جوابك في السؤال السابق T120، كان 2، 3، أو 4**). ما كان **سبب** هذا التقلب؟ **يمكنك الإختيار أكثر من احتمال واحد، ضع (x) في الخانة التي تمثل جوابك**	
	1- مرض، حدد:	
	2- التقدم في السن	
	3- أدوية، حدد:	
	4- غيره، حدد:	

APPENDIX B

CIDI PROFESSION CODE LIST

LEGISLATORS, SENIOR OFFICIALS AND MANAGERS

1. Legislators and senior officials *(all members of state, regional or local legislatures)*

(Code all members of national, state, regional, or local legislatures, or national, state, regional, or local government policy advisors, implementers, or representatives, or senior officials of special-interest organizations, here. Senior government officials who manage a government-controlled industrial, public utility, transport or other such business enterprise or organization, should be classified as corporate managers or managers, as appropriate)

Examples include:

Charity organization senior officials

Employers' organization senior officials
Environmental protection organization senior officials
Humanitarian organization senior officials
Political party leaders
Special-interest organization senior officials
Sports association senior officials
Trade and industry association leaders
Trade union leaders
Wild life protection organization senior officials

2. Corporate managers *(organizations having 3+ managers or 11+ employees)*

(Code corporate managers who manage enterprises and organizations having three or more managers, or eleven or more employees, or departments or sections of enterprises and organizations having three or more managers, or eleven or more employees, here.)

Examples include:

Chief executive officers
Deans
Managing directors of companies
Marketing department managers
Operations department managers
Personnel department managers
Presidents of companies

Production department managers
Sales department managers
Section managers

3. General managers (*organizations having 1-2 managers or less than 11 employees)*

(Code general managers and managers of small enterprises and organizations having only one or two managers, or ten or fewer employees, here.)

Examples include:

Managers in businesses in which there are not more than one other manager
Managers in businesses in which there are not more than ten employees
Small business managers

PROFESSIONALS

4. Physical, mathematical and engineering science professionals (*university degree required)*

(Code physical, mathematical and engineering science professionals holding positions requiring a college or university degree in the physical, mathematical or engineering sciences, here.)

Examples include:

Architects
Chemists
Computer applications engineers
Computer programmers
Computer systems analysts
Engineering technologists
Engineers
General public service administrators
Mathematicians
Physicists
Statisticians

5. Life science and health professionals (*university degree required)*

(Code life science and health professionals holding positions requiring a college or university degree in the life or medical sciences, here.)

Examples include:

Agronomists
Biologists
Botanists
Chiropractors
Dentists
Medical doctors
Professional midwives
Pathologists
Pharmacists
Registered nurses
Veterinarians

6. Teaching professionals (*university degree required)*

(Code teaching professionals holding positions requiring a college or university degree in teaching or one or more other disciplines, here.)

Examples include:

College and university lecturers
College and university professors
College and university readers
Curricula developers
Pre-primary education teachers
Primary education teachers
Professional remedial teachers
Secondary education teachers
School inspectors
Special education teachers

7. Other professionals (*university degree required)*

(Code other professionals holding positions requiring a college or university degree in their field, here.)

Examples include:

Accountants
Artists (actors, ballet dancers, opera singers, commercial artists, etc.)
Journalists
Lawyers
Librarians
Ministers of religion (with an associates degree or higher)

Professional social workers (with an associate degree or higher)
Psychologists
Public service administrative professionals
Vocational guidance counselors

TECHNICIANS AND ASSOCIATE PROFESSIONALS

8. Physical and engineering science associate professionals (*some formal training required)*

(Code physical and engineering science associate professionals who do not have a college or university degree in their field, but have completed a course of formal training, here.)

Examples include:

Aircraft pilots
Air traffic controllers
Building inspectors
Computer assistants
Computer equipment operators
Engineering technicians
Medical equipment operators
Photographers
Physical science technicians
Quality inspectors

9. Life science and health associate professionals (*some formal training required)*

(Code life science and health associate professionals who do not have a college or university degree in their field but have completed a course of formal training, here.)

Examples include:

Associate midwives
Dieticians
Faith healers
Farming advisers
Herbal healers
Life science technicians
Massage Therapists
Medical assistants
Optometrists
Practical nurses
Sanitary inspectors

10. Teaching associate professionals *(some formal training required)*

(Code teaching associate professionals who do not have a college or university degree in their field but have completed a course of formal training, here.)

Examples include:

Driving instructors
Flying instructors
Pre-primary education teaching assistants
Primary education teaching assistants
Professional nursery teaching assistants
Professional remedial teaching assistants
Professional special education teaching assistants
Teachers of the visually impaired
Teachers of the mentally handicapped
Teachers of the hearing impaired

11. Other associate professionals *(some formal training required)*

(Code other associate professionals who do not have a college or university degree in their field but have completed a course of formal training.)

Examples include:

Administrative secretaries
Bookkeepers (bookkeeping clerks are 12)
Employment agents
Entertainers (who perform on the streets, in night-clubs, at circuses, in bands, etc.)
Insurance agents
Police detectives
Real estate agents
Religious workers
Social workers (with less than an associate degree)
Stock brokers

CLERKS

12. Office clerks *(no direct contact with clients)*

(Code office clerks who do not have direct contact with clients here.)

Examples include:

Bookkeeping clerks (bookkeepers are 11)
Filing clerks
Mail carriers
Mail clerks
Materials clerks
Personnel clerks
Secretaries
Stock clerks
Tax clerks
Typists

13. Customer service clerks (*direct contact with clients)*

(Code customer service clerks who have direct contact with clients, including contact with clients over the telephone, here.)

Examples include:

Bank tellers
Bookmakers
Cashiers
Counter clerks
Debt collectors
Pawnbrokers
Post office counter clerks
Receptionists
Telephone switchboard-operators
Ticket clerks

SERVICE WORKERS / SHOP & MARKET SALES WORKERS

14. Personal and protective service workers (*provide personal services)*

(Code personal service workers who provide various personal services in connection with travelling, housekeeping, child-care, and other services, here. Also code protective service workers who protect individuals and property, and maintain law and order, here.)

Examples include:

Child-care workers
Cooks
Fire-fighters
Flight attendants
Hairdressers

Housekeepers
Nursing aids
Police officers
Security guards
Train conductors

15. Models, salespersons, and demonstrators *(pose, display, demonstrate or sell goods)*

(Code models, salespersons, and demonstrators who pose, display, demonstrate, or sell goods in the retail, wholesale, advertising, or fashion industries, here.)

Examples include:

Advertising models
Artist's models
Demonstrators
Fashion models
Market salespersons
Retail salespersons
Fruit stand salespersons
Vegetable-stand salespersons
Wholesale salespersons

SKILLED AGRICULTURAL AND FISHERY WORKERS

16. Market-oriented skilled agricultural and fishery workers *(perform complex, non-routine tasks)*

(Code market-oriented skilled agricultural and fishery workers, who are not mainly managers or machinery operators, but do perform complex, and non-routine tasks, here.)

Examples include:

Beekeepers
Dog breeders
Farmers
Fishery workers
Hunters
Loggers
Skilled farm workers
Skilled forestry workers
Trappers

17. Subsistence agricultural and fishery workers (*for personal, not commercial use*)

(Code subsistence agricultural and fishery workers, who are not managers, machinery operators, or market oriented, but do provide food, shelter and a minimum of cash income for themselves and their households, here. it should be noted that the necessary skills an understanding of the natural environment and the crops and animals worked with, as well as manual strength and dexterity are usually acquired by working from childhood with other members of the household to produce the necessities for subsisting.)

Examples include:

Subsistence farmers
Subsistence farm workers
Subsistence fishers
Subsistence fishery workers
Subsistence hunters
Subsistence hunting workers
Subsistence wild plant gatherers
Subsistence herders
Subsistence aquatic life gatherers
Subsistence trappers

CRAFT AND RELATED TRADES WORKERS – occupations which are craft oriented consist of skilled jobs directly involved in the production of goods where the tasks and duties require an understanding of and experience with natural resources and raw materials used and how to achieve the desired techniques and practices, but they may also use more technologically advanced tools and machines.

18. Extraction and building trades workers (*mining, quarrying, and construction industries)*

(Code extraction and building trades workers, in the mining, quarrying, and construction industries, here.)

Examples include:

Bricklayers
Building exterior cleaners
Carpenters
Cement finishers
Electricians
Miners
Painters

Plumbers
Roofers
Stone cutters

19. Metal, machinery and related trades workers (*manufacturing, repair, communications, public utilities)*

(Code metal, machinery, and related trades workers, in the manufacturing, repair, communications, and public utilities industries, here.)

Examples include:

Blacksmiths
Electrical fitters
Electric power line workers
Mechanics
Metal-smiths
Sheet-metal workers
Structural metalworkers
Telephone installers
Toolmakers
Welders

20. Precision, handicraft, printing and related trades workers (*skilled handicraft, printing)*

(Code precision handicraft, printing, and related trades workers, in the manufacturing, and repair industries, here.)

Examples include:

Film developers
Glass blowers
Handicraft workers
Jewelers
Musical instrument makers
Potters
Printers
Silk-screen printers
Sign-writers
Typesetters

21. Other craft and related trades workers (*skilled craftsman)*

(Code other craft and related trades workers in manufacturing, retail, and personal services, here.)

Examples include:

Bakers
Basket makers
Butchers
Cabinet-makers
Cigarette makers
Dressmakers
Food graders
Shoe-makers
Tobacco graders
Wood treaters

PLANT AND MACHINE OPERATORS AND ASSEMBLERS

22. Stationary plant and related operators *(make materials from which parts are made)*

(Code stationary plant and related operators in manufacturing, mining, public utilities, and sanitary services, here. Stationary plant and related operators operate and monitor industrial plants, automated assembly lines, and industrial robots.)

Examples include:

Chemical machine operators (mixing, heat-treating, filtering, distilling, etc.)
Furnace operators
Glass-blowing machine operators
Kiln-operators
Mining machine operators
Plant operators
Power plant operators
Water purification plant operators
Well-drilling equipment operators
Wood-processing plant operators

23. Machine operators and assemblers *(make finished products)*

(Code machine operators and assemblers, who primarily operate and monitor industrial machinery, or assemble products to strict specifications and procedures, here.)

Examples include:

Assemblers (machinery, equipment, supplies, and other products)
Chemical production machine operators (coating, finishing, plating, developing, etc.)
Food canning machine operators
Machine tool operators
Plastic products machine operators
Printing-press operators
Sewing-machine operators
Textile machine operators
Woodworking machine operators

24. Drivers and mobile plant operators (*mobile implies operating a machine in a plant)*

(Code drivers and mobile plant operators who tend or drive trains, motor vehicles, industrial and agricultural machinery and equipment, and ships and other water-craft, here.)

Examples include:

Bulldozer operators
Bus drivers
Crane operators
Fork-lift operators
Locomotive engineers
Motorized farm equipment operators
Railroad brakers
Sailors
Taxi drivers
Truck drivers

ELEMENTARY OCCUPATIONS – jobs that only require low or elementary skills and little or no judgment.

25. Sales and services elementary occupations (*perform routine, unskilled services)*

(Code elementary sales and services workers, who sell goods or services door-to-door, on the street, or over the telephone, or clean private households, business establishments, transportation equipment, or laundry by hand, or perform other routine, unskilled services, here.)

Examples include:

Domestic cleaners

Door-to-door salespersons
Garbage collectors
Hand dishwashers
Janitors
Newspaper deliverers
Odd-jobs persons
Shoe-shiners
Telephone salespersons
Window washers

26. Agricultural, fishery and related laborers (*perform routine tasks using hand-held tools)*

(Code agricultural, fishery and related laborers, who perform simple routine tasks using hand-held tools, such as digging, shoveling, raking, fertilizing, etc., here.)

Examples include:

Aquatic laborers
Brush cutters
Choppers
Farm laborers
Fish hatchery worker
Fruit pickers
Greenhouse laborers
Hatchery laborers
Migratory workers
Tree tapping laborers

27. Laborers in mining, construction, manufacturing and transport (*perform routine tasks)*

(Code laborers in the mining, construction, manufacturing, and transportation industries, who perform simple, routine tasks, using simple, hand-held tools, such as lifting, moving, carrying, clearing, etc., here.)

Examples include:

Animal-drawn vehicle drivers
Bottle sorters
Construction laborers
Factory laborers
Freight handlers
Hand packers
Mining laborers

Order pullers
Rickshaw drivers
Simple-assembly workers (nuts and bolts, supermarket warehouse, etc.)

ARMED FORCES

28. Armed forces

(Code all active members of the army, navy, air force, marines, coast guard, and national guard, commissioned, non-commissioned, and warrant officers, and all enlisted personnel, here. Do not code civilian employees working for the military or members of the National Guard not on active duty, here.)

OTHER

29. Other (specify)

APPENDIX C

Temperament profile of all respondents (n=547).

Temperament	Sample Mean score (± SD)	Population * Mean score (± SD)	Deviation from Population Mean
Depressive	8.1 (3.2)	7.6 (2.9)	+ 0.2 SD
Cyclothymic	6.6 (4.7)	5.9 (4.3)	+ 0.2 SD
Hyperthymic	11.9 (4.7)	12.5 (4.5)	- 0.1 SD
Irritable	3.3 (3.6)	2.8 (3.1)	+ 0.2 SD
Anxious	7.8 (6.0)	6.6 (5.2)	+ 0.2 SD

SD: Standard Deviation
* Karam et al., 2005

APPENDIX D

The distribution of temperament z-scores among respondents (n=547).

Temperament	Distribution of Z-scores (%)				
	≤ -2 SD	-2 SD to -1 SD	-1 SD to +1 SD	+1 SD to +2 SD	≥ 2 SD
Depressive	1.9	8.2	69.8	14.0	6.1
Cyclothymic	0.0	12.0	67.1	13.5	7.3
Hyperthymic	6.1	12.5	70.2	11.2	0.0
Irritable	0.0	0.0	82.0	7.6	10.4
Anxious	0.0	12.2	60.7	15.7	11.0

SD: Standard Deviation

APPENDIX E

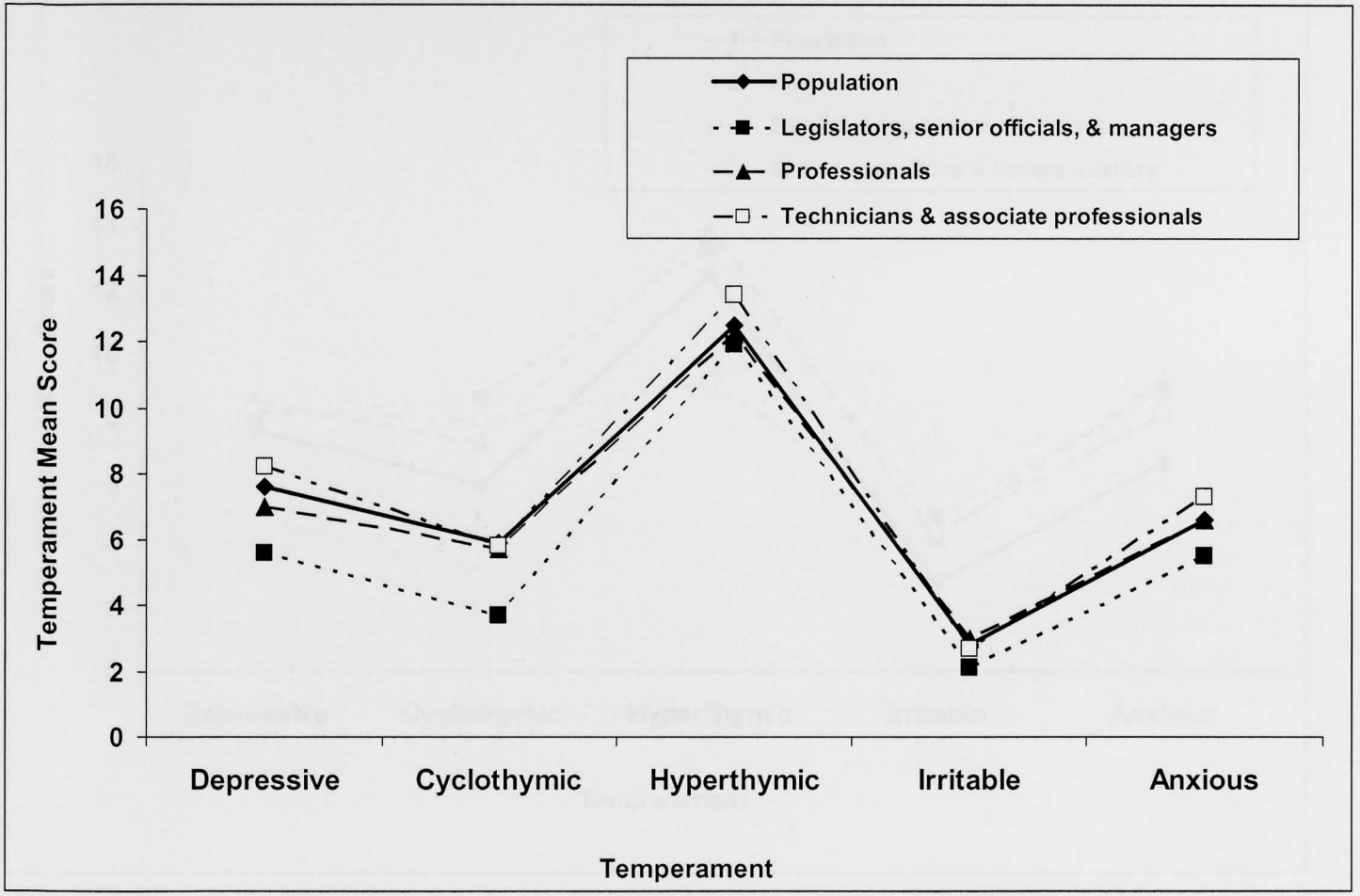
The type and frequency of current main profession of respondents (n=248).

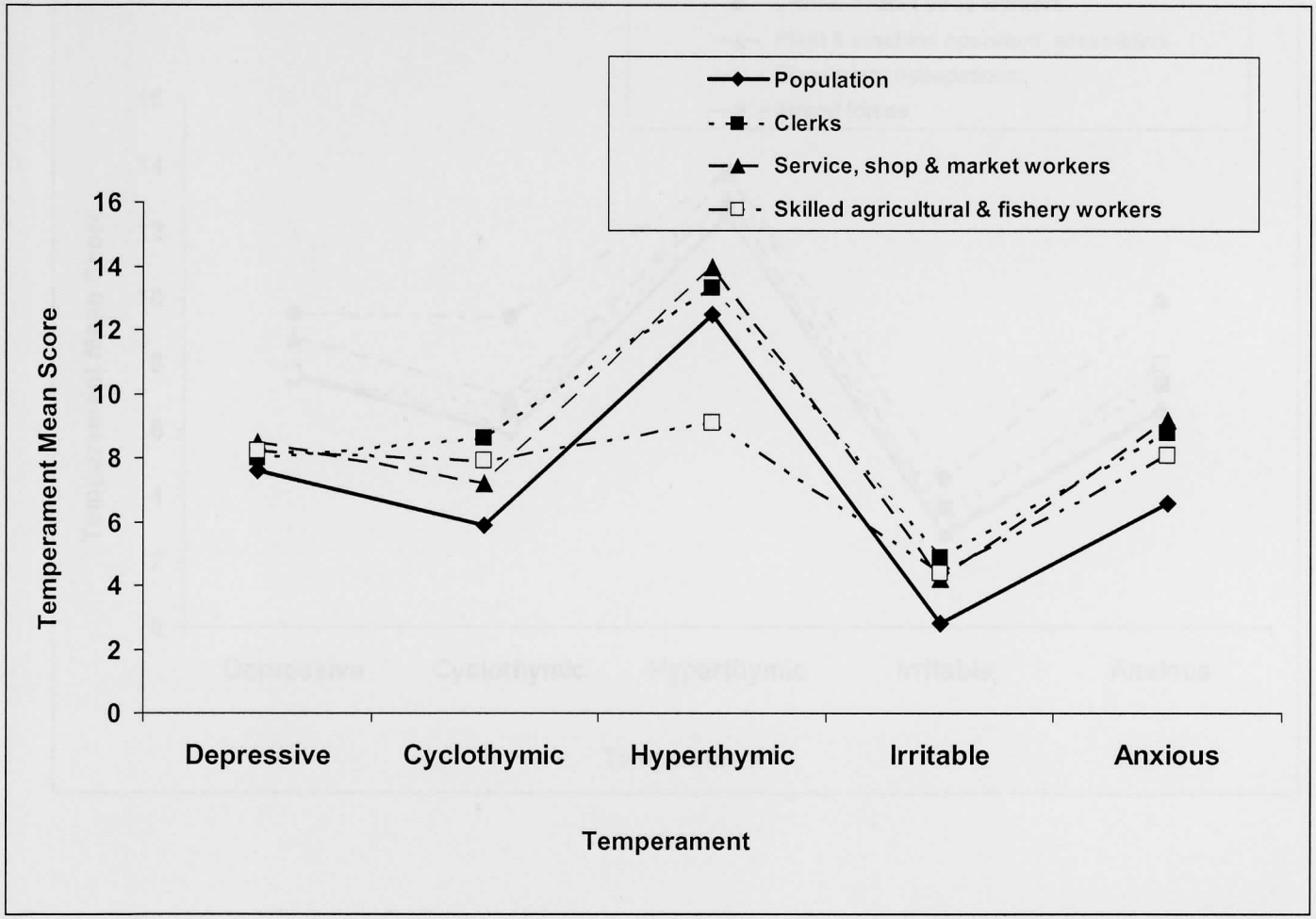
Profession Type*	N	%
Legislators, senior officials & managers	12	4.8
Professionals	44	17.7
Technicians & associate professionals	14	2.6
Clerks	31	12.5
Service, shop & market workers	42	16.9
Skilled agricultural & fishery workers	8	3.2
Craft & related trade workers	44	17.7
Plant & machine operators, assemblers	16	6.5
Elementary occupations	29	11.7
Armed forces	8	3.2

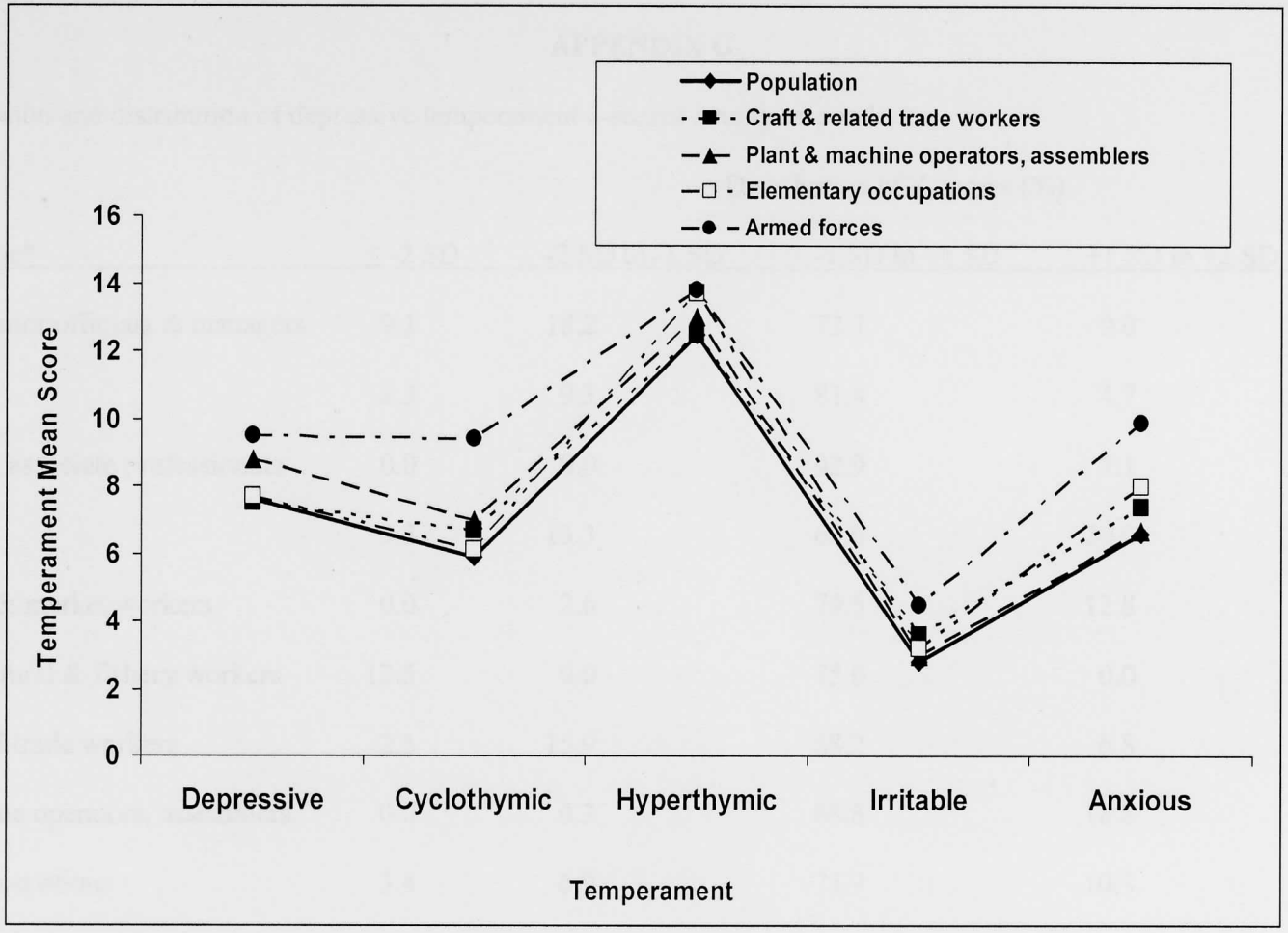
* For a complete description of the specific professions under each type please refer to Appendix B.

APPENDIX F

Mean Temperament Scores and Professions




Population
Clerks
Service, shop & market workers
Skilled agricultural & fishery workers
Temperament Mean Score
16
14
12
10
8
6
4
2
0
Depressive
Cyclothymic
Hyperthymic
Irritable
Anxious
Temperament


Population
Craft & related trade workers
Plant & machine operators, assemblers
Elementary occupations
Armed forces
Temperament Mean Score
16
14
12
10
8
6
4
2
0
Depressive
Cyclothymic
Hyperthymic
Irritable
Anxious
Temperament

APPENDIX G

Type of profession and distribution of depressive temperament z-scores among respondents.

	Distribution of Z-scores (%)				
Profession Type*	≤ -2 SD	-2 SD to -1 SD	-1 SD to +1 SD	+1 SD to +2 SD	≥ +2 SD
Legislators, senior officials & managers	9.1	18.2	72.7	0.0	0.0
Professionals	2.3	9.3	81.4	4.7	2.3
Technicians & associate professionals	0.0	0.0	92.9	7.1	0.0
Clerks	3.3	13.3	60.0	20.0	3.3
Service, shop & market workers	0.0	2.6	79.5	12.8	5.1
Skilled agricultural & fishery workers	12.5	0.0	75.0	0.0	12.5
Craft & related trade workers	2.3	15.9	68.2	6.8	6.8
Plant & machine operators, assemblers	0.0	6.3	68.8	18.8	6.3
Elementary occupations	3.4	6.9	75.9	10.3	3.4
Armed forces	0.0	0.0	62.5	25.0	12.5

* For a complete description of the specific professions under each type please refer to Appendix B.

APPENDIX H

Type of profession and distribution of cyclothymic temperament z-scores among respondents.

	Distribution of Z-scores (%)			
Profession Type*	-2 SD to -1 SD	-1 SD to +1 SD	+1 SD to +2 SD	≥ +2 SD
Legislators, senior officials & managers	33.3	66.7	0.0	0.0
Professionals	18.6	69.8	7.0	4.7
Technicians & associate professionals	0.0	92.9	0.0	7.1
Clerks	16.1	41.9	25.8	16.1
Service, shop & market workers	9.8	63.4	19.5	7.3
Skilled agricultural & fishery workers	0.0	71.4	0.0	28.6
Craft & related trade workers	12.2	68.3	9.8	9.8
Plant & machine operators, assemblers	12.5	75.0	0.0	12.5
Elementary occupations	13.8	69.0	10.3	6.9
Armed forces	12.5	37.5	37.5	12.5

* For a complete description of the specific professions under each type please refer to Appendix B.

APPENDIX I

Type of profession and distribution of hyperthymic temperament z-scores among respondents.

	Distribution of Z-scores (%)			
Profession Type*	≤ -2 SD	-2 SD to -1 SD	-1 SD to +1 SD	+1 SD to +2 SD
Legislators, senior officials & managers	0.0	0.0	90.0	10.0
Professionals	2.3	11.6	72.1	14.0
Technicians & associate professionals	0.0	0.0	92.9	7.1
Clerks	6.5	6.5	61.3	25.8
Service, shop & market workers	4.8	4.8	64.3	26.2
Skilled agricultural & fishery workers	14.3	28.6	42.9	14.3
Craft & related trade workers	2.3	11.6	76.7	9.3
Plant & machine operators, assemblers	0.0	0.0	93.3	6.7
Elementary occupations	3.4	10.3	65.5	20.7
Armed forces	0.0	0.0	75.0	25.0

* For a complete description of the specific professions under each type please refer to Appendix B.

APPENDIX J

Type of profession and distribution of irritable temperament z-scores among respondents.

	Distribution of Z-scores (%)		
Profession Type*	-1 SD to +1 SD	+1 SD to +2 SD	≥ +2 SD
Legislators, senior officials & managers	91.7	8.3	0.0
Professionals	83.7	9.3	7.0
Technicians & associate professionals	78.6	14.3	7.1
Clerks	64.5	12.9	22.6
Service, shop & market workers	75.6	12.2	12.2
Skilled agricultural & fishery workers	71.4	0.0	28.6
Craft & related trade workers	76.7	7.0	16.3
Plant & machine operators, assemblers	87.5	0.0	12.5
Elementary occupations	85.7	7.1	7.1
Armed forces	75.0	0.0	25.0

* For a complete description of the specific professions under each type please refer to Appendix B.

APPENDIX K

Type of profession and distribution of anxious temperament z-scores among respondents.

	Distribution of Z-scores (%)			
Profession Type*	-2 SD to -1 SD	-1 SD to +1 SD	+1 SD to +2 SD	≥ +2 SD
Legislators, senior officials & managers	25.0	58.3	16.7	0.0
Professionals	18.2	63.6	13.6	4.5
Technicians & associate professionals	7.1	64.3	28.6	0.0
Clerks	16.7	43.3	20.0	20.0
Service, shop & market workers	10.0	55.0	17.5	17.5
Skilled agricultural & fishery workers	0.0	75.0	25.0	0.0
Craft & related trade workers	11.9	61.9	19.0	7.1
Plant & machine operators, assemblers	6.3	75.0	18.8	0.0
Elementary occupations	10.7	60.7	10.7	17.9
Armed forces	25.0	37.5	0.0	37.5

* For a complete description of the specific professions under each type please refer to Appendix B.

APPENDIX L

Pearson correlations between temperament and lifetime axis I DSM-IV disorders among professionals (N=44)

	Temperament				
	Depressive	Cyclothymic	Hyperthymic	Irritable	Anxious
Specific phobia	0.14	0.16	0.09	0.11	0.09
Social phobia	-0.06	-0.06	0.14	-0.16	-0.04
Generalized anxiety disorder	0.08	-0.01	-0.06	0.36*	0.18
Post-traumatic stress disorder	0.26	0.22	0.06	-0.009	0.39*
Separation anxiety/adult SAD	0.17	0.36*	-0.04	0.07	0.26
Any anxiety disorder	0.33*	0.20	0.01	0.25	0.36*
Major depressive disorder	0.33*	0.06	-0.27	-0.02	0.23
Dysthymia	0.16	0.24	0.12	-0.005	0.40**
Bipolar I/II disorders	0.11	0.01	-0.08	-0.04	0.04
Any mood disorder	0.36*	0.06	-0.29	-0.03	0.23
Any impulse control disorder	0.10	0.02	-0.10	0.07	0.004

For a complete description of the specific professions under each type please refer to Appendix B

* P<0.05, ** P<0.01

APPENDIX M

Pearson correlations between temperament and lifetime axis I DSM-IV disorders among clerks (N=31)

	Temperament				
	Depressive	Cyclothymic	Hyperthymic	Irritable	Anxious
Specific phobia	0.12	0.10	-0.04	0.02	0.24
Generalized anxiety disorder	-0.11	-0.23	-0.45*	-0.15	-0.05
Post-traumatic stress disorder	0.15	0.04	-0.12	-0.09	0.24
Separation anxiety/adult SAD	0.15	0.04	-0.12	-0.09	0.24
Any anxiety disorder	0.02	-0.08	-0.33	-0.09	0.14
Major depressive disorder	-0.02	0.07	-0.54**	-0.02	0.24
Dysthymia	0.15	-0.08	-0.19	-0.005	0.12
Bipolar I/II disorders	0.14	0.02	0.16	0.16	-0.01
Any mood disorder	0.05	0.08	-0.44*	0.06	0.22
Any impulse control disorder	-0.03	0.25	0.19	0.32	0.03

For a complete description of the specific professions under each type please refer to Appendix B

* P<0.05, ** P<0.01

APPENDIX N

Pearson correlations between temperament and lifetime axis I DSM-IV disorders among service, shop & market workers (N=42)

	Temperament				
	Depressive	Cyclothymic	Hyperthymic	Irritable	Anxious
Specific phobia	0.14	0.30	-0.02	0.34*	0.30
Social phobia	0.19	-0.08	-0.40*	0.28	0.28
Generalized anxiety disorder	-0.04	-0.07	0.04	-0.13	-0.04
Post-traumatic stress disorder	0.36*	0.11	-0.48**	-0.16	0.05
Separation anxiety/adult SAD	0.05	0.05	0.02	-0.06	0.16
Any anxiety disorder	0.29	0.19	-0.29	0.17	0.35*
Major depressive disorder	0.29	0.15	-0.20	-0.05	0.17
Dysthymia	-0.02	-0.04	0.14	-0.09	-0.03
Bipolar I/II disorders	0.08	0.06	-0.11	0.16	-0.06
Any mood disorder	0.31	0.16	-0.23	0.001	0.15
Any impulse control disorder	0.08	0.23	-0.07	0.12	0.15

For a complete description of the specific professions under each type please refer to Appendix B

* $P<0.05$, ** $P<0.01$

APPENDIX O

Pearson correlations between temperament and lifetime axis I DSM-IV disorders among craft & related trade workers (N=44)

	Temperament				
	Depressive	Cyclothymic	Hyperthymic	Irritable	Anxious
Specific phobia	-0.04	-0.06	0.13	0.14	-0.02
Generalized anxiety disorder	0.22	0.04	0.16	0.36*	0.21
Post-traumatic stress disorder	0.51**	0.57**	0.02	0.09	0.59**
Separation anxiety/adult SAD	0.49**	0.40**	0.19	-0.06	0.16
Any anxiety disorder	0.53**	0.45**	0.18	0.37*	0.52**
Major depressive disorder	0.11	0.26	-0.01	0.08	0.13
Dysthymia	-0.08	-0.13	0.02	-0.07	-0.07
Bipolar I/II disorders	-0.07	0.14	0.16	0.14	0.10
Any mood disorder	0.06	0.30	0.08	0.15	0.18
Any impulse control disorder	0.44**	0.28	0.21	0.38*	0.37*

For a complete description of the specific professions under each type please refer to Appendix B

* P<0.05, ** P<0.01

APPENDIX P

Pearson correlations between temperament and lifetime axis I DSM-IV disorders among elementary occupations (N=29)

	Temperament				
	Depressive	Cyclothymic	Hyperthymic	Irritable	Anxious
Specific phobia	0.35	0.40*	0.14	0.21	0.32
Social phobia	0.22	0.28	0.05	0.29	0.32
Generalized anxiety disorder	0.02	0.08	-0.03	0.11	0.25
Post-traumatic stress disorder	-0.02	0.11	-0.04	-0.06	0.11
Any anxiety disorder	0.27	0.44*	0.05	0.26	0.503**
Major depressive disorder	-0.14	-0.20	-0.30	-0.15	-0.26
Dysthymia	0.02	0.16	0.10	-0.02	0.35
Bipolar I/II disorders	0.36	0.37*	0.14	0.23	0.11
Any mood disorder	0.09	0.10	-0.13	-0.002	-0.01
Any impulse control disorder	0.12	0.08	-0.16	0.12	0.16

For a complete description of the specific professions under each type please refer to Appendix B

* P<0.05, ** P<0.01

APPENDIX Q

Prevalence of lifetime axis I DSM-IV disorders and type of profession*

(%)	Professionals N=44	Clerks N=31	Service, shop & Market workers N=42	Craft & related Trade workers N=44	Elementary Occupations N=29
Specific phobia	15.9	9.7	7.1	4.5	3.4
Social phobia	2.3	0.0	7.1	0.0	3.4
Generalized anxiety disorder	4.5	6.5	7.1	4.5	3.4
Post-traumatic stress disorder	9.1	3.2	7.1	4.5	6.9
Separation anxiety/adult SAD	2.3	3.2	7.1	11.4	0.0
Any anxiety disorder	29.5	16.1	31.0	15.9	17.2
Major depressive disorder	25.0	32.3	28.6	13.6	17.2
Dysthymia	4.5	3.2	2.4	2.3	3.4
Bipolar I/II disorders	2.3	6.5	2.4	4.5	6.9
Any mood disorder	27.3	38.7	31.0	18.2	27.6
Any impulse control disorder	6.8	9.7	2.4	4.5	6.9
Any disorder	40.9	54.8	45.2	29.5	37.9

* Professions with n>25 were included in this analyses. For a complete description of the specific professions under each type please refer to Appendix B

APPENDIX R

Number of working hours per day and temperament mean scores.

	Temperament Scores Mean (± SD)				
	Depressive	Cyclothymic	Hyperthymic	Irritable	Anxious
Not working	8.4 (3.2)	6.6 (4.6)	10.9 (4.7)	3.1 (3.3)	7. 8 (6.0)
Half time (5 hours)	7.7 (3.5)	6.7 (5.2)	11.7 (4.7)	2.8 (3.3)	8.4 (6.2)
Full time (9 hours)	7.8 (3.1)	6.9 (4.9)	12.8 (4.3)	3.9 (4.0)	7.8 (6.0)
Full time (10-11 hours)	7.2 (3.2)	4.9 (4.4)	13.6 (4.7)	3.1 (4.1)	5.2 (4.4)
Full time (> 11 hours)	8.3 (2.6)	7.5 (4.5)	14.0 (4.3)	3.6 (3.1)	8.3 (5.0)
P-value	NS	NS	<0.0001	NS	NS

SD: Standard Deviation