



Special research report

TEMPS-A[p] temperament profile related to professional choice A study in 1548 applicants to become a cadet officer in the Italian air force

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ABSTRACT

Background: Temperaments have been described with respect to their adaptive roles. Thus, depressive traits seem to increase sensitivity to suffering, cyclothymic traits appear relevant to creativity, and hyperthymic traits have been implicated in territoriality and leadership and more generally in active pursuits.

Methods: The temperaments of 1548 candidates applying to become a cadet officer in the Italian air force, who had taken the 2005 entrance examination, were compared with deviant and non-deviant peers. At a psychological level, we also compared those who had applied to become a cadet officer with other applicants who had failed in a previous entrance examination and with applicants who had passed or failed to pass the specific psychological entrance examination.

Results: Applicants who took the entrance examination are more hyperthymic than their peers, regardless of any concurrent psychosocial deviance (i.e. drug addiction). The specificity of this correlation is confirmed by the fact that applicants who made a second attempt to pass the entrance examination after an initial failure were more hyperthymic than first-time applicants. Similarly, success in specific psychological admission tests is related to the same temperamental profiles, since those who prove to be psychologically fit are more hyperthymic. The inverse relationship emerges from an examination of other temperamental scales, which are better represented in controls (non-applicants), or other applicants making their first attempt at admission, or those who were excluded due to psychological flaws.

Conclusion: In the present study, extremely high scores on the hyperthymic scale combined with extremely low ones in the cyclothymic scale seem to correspond to the specific temperament profile and to the highest likelihood of success in those applying to become a cadet officer in the Italian air force.

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1. Introduction

The whole question of the nature of affective temperaments is still an open issue. On the classical interpretation, based on Kraepelin's observations, they are lifelong, attenuated, subclinical forms of manic depressive illness (Kraepelin, 1921; Kretschmer, 1936). Nevertheless, the observation of

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their involvement in many human activities has induced many authors to consider their adaptive role.

According to their putative evolutionary role, affective temperaments may confer adaptive advantages on individuals and their social group. Depressive traits appear to heighten sensitivity to the suffering of other members of the species, favouring the survival of other conspecifics. Thanks to the role played by creativity in sexual seduction, hyperthymia appears to be an asset in sexual competition. Hyperthymic traits seem to give distinct advantages in leadership, exploration, territoriality and mating (Akiskal and Akiskal, 2005a,b). The most consolidated observations refer to the relationship between cyclothymic temperament and creativity. More specifically, neuroticism, cyclothymia, and dysthymia appear to enhance creativity in different ways—the first through access to negative affect, the second thanks to changeability of affect. When critical attention has been focused on the wider field of the professions, it has been possible to map out the temperamental and personality profiles of different professions, both in psychiatric outpatients and in healthy volunteers (Strong et al., 2007).

In outpatient psychiatric patients, lawyers and physicians turned out to receive high ratings on dysthymic temperament. Managers, entrepreneurs and journalists received very high ratings on the hyperthymic scale, together with low ones on the cyclothymic one. It should also be noted that architects and artists seem to have benefited from being cyclothymic. The role of cyclothymic and hyperthymic temperaments appears to be coloured by obsessional (OC) traits across the entire professional spectrum examined. In particular, artists' creative imagination appears to be 'liberated' by low levels of OC traits, whereas, among architects, relatively high levels of OC traits seem to contribute to the execution of their work (Akiskal et al., 2005b).

The relationship between professional choice and affective temperament has also been demonstrated in students. Law and art students presented a cyclothymic or irritable temperament, whereas engineering students expressed a hyperthymic one. Psychology and nursing students showed predominantly depressive and anxious temperaments. Medical students had the least extreme results in temperament scores and frequencies (Figueira et al., 2009).

In summary, temperament appears to be a factor involved in professional attitudes. The most impressive findings are those on the importance of cyclothymia in art and the prevalence of hyperthymic temperament in leadership.

A military career is definitely related to leadership issues. In the literature, temperamental traits in military samples have already been examined by means of Cloninger's Temperament and Character Inventory (TCI). Susceptibility to maladaptive responses to stress based on variants of temperament and character has been studied in psychiatrically hospitalized cadets, allowing comparison with controls and subjects at risk of early separation from basic training for psychological reasons. The controls were found to have healthier temperament and character profiles than either the at-risk or the hospitalized subjects. No difference was found between at-risk and hospitalized subjects on TCI scores (Elsass et al., 2001). A similar analysis was carried out among Navy Hospital Corpsmen using the Evaluated Recruit Temperament Survey (RTS). A group of items, which assesses a construct of preservice personal and vocational adjustment, was found to discriminate significantly between those corpsmen who became psychiatric casualties during a

4-year criterion period and those who did not (Booth et al., 1978). Cardiovascular parameters such as heart rate variability have been compared between individuals with different emotional stabilities in two different stressful situations. A tendency was found which implies the situational separation of fluctuations in the autonomic nervous system related to emotional stability. It suggests that an individual's ability to adjust to the outer environment depends not only on personality and temperament, but also on a physiological basis (Liu et al., 2004).

Similarly, personality dimensions like harm avoidance and self-directedness were found to predict the cortisol awakening response in military personnel. One feature examined was the relationship between the free fraction of cortisol in saliva after awakening and personality, as measured by Cloninger's TCI. The cortisol awakening response was lower in participants with low scores on harm avoidance, and higher in soldiers with high ratings on self-directedness and harm avoidance. These results show that the functioning of the hypothalamic-pituitary-adrenal axis is related to personality (Rademaker et al., 2009).

In a sample of jet pilots, another relationship studied was that between temperamental traits and the level of performance of an eye–hand co-ordination task. The assumption was that differences in the escalation of the level of temperamental traits, as measured by applying the Formal Characteristic of Behaviour–Temperament Inventory (FCB-TI), significantly influence eye–hand co-ordination. At the level of general scores, enhanced briskness proved to be the most important trait in eye–hand coordination (Biernacki and Tarnowski, 2008).

In this study, we have taken into consideration the relationship between affective temperaments and the choice of a military career in a sample of candidates who had applied to become a cadet officer in the Italian air force. The questions are:

- (1) is there a specific temperament to be discovered in those who wish to pursue a military career?
- (2) which temperament is the most functional in terms of passing the entrance examination?

We can try to answer the first question by comparing those applying to become a cadet officer in the Italian air force with young, deviant and non-deviant peers. We can also compare applicants with peers who failed in the entrance examination. Regarding the second, applicants who passed or failed to pass the psychopathological entrance examination, were compared on TEMPS-A[P] scales.

We chose to compare applicants with deviant peers because of their putative position in the temperamental continuum: we suppose deviants to be at the opposite extreme with respect to cadets, with non-deviant peers situated in the middle between these two extremes.

2. Methods

2.1. Design of the study

A comparative cohort study was designed in order to compare the affective temperaments of

- (1) those applying to become a cadet officer in the Italian air force with deviant (drug addicts) and young, non-deviant (control) peers;

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