

Role of emotional profile in adaptation to unpredictable situations: a pilot study with the Special Unit of the French Gendarmerie (GIGN)

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ABSTRACT

We examine relationships between the emotional profile – especially, neuroticism and coping style – and the ability to produce adapted responses in unpredictable situations. This study was performed in collaboration with the Special Unit of the French Gendarmerie (GIGN), during one of their applicant selection process. Consistent with the instructors' selection criteria, we assumed that selected applicants differed from non-selected applicants in their ability to cope with unpredictable situations. Our results indicate that a low level of neuroticism and a low level of emotion-oriented coping are predictive of selection, and therefore, of a strong ability to adapt to unpredictable situations, which plays a key role for special forces. Although these adaptive predispositions cannot be required from everyone, our results argue for the development of such abilities in training programs for operators faced with unpredictable situations.

KEYWORDS

Uncertainty Management; Military; Personality; Emotion; Coping; Adaptation

INTRODUCTION

Psychological adaptation to unpredictable situations occupies a central place in military activities. It is also becoming a relevant topic for the civilian world, which has been confronted with major unpredictable events in recent years. During such crisis situations, the adaptive abilities of individuals are challenged, as cognitive and material resources are overwhelmed by the multiple constraints and highly complex parameters of these inherently uncertain and rapidly evolving situations.

The production of a response adapted to such unpredictable situations depends in particular on the ability of each individual to engage in adaptive behaviors (Pulakos, Arad, Donovan, & Plamondon, 2000 ; Pulakos, Dorsey, & White, 2006 ; Pulakos & al., 2002). There seem to exist stable interindividual differences related to intelligence or personality traits. For example, some individuals tend to view challenging situations as a threat (the individual focuses on his/her difficulties in controlling events and on negative consequences), whereas others tend to view such situations as a challenge (the individual focuses on ways in which he/she can control events and on medium-to-long term positive effects). Moreover, certain personality traits are known to favor the production of creative responses depending on environmental conditions (Aguilar-Alonso, 1996 ; Amabile, 1996 ; Eysenck, 1995).

Among these traits, the emotional profile plays an important role. For example, Endler, Speer, Johnson and Flett (2000) showed that the individual's coping style has an effect on their adaptive ability. Individuals who tend to view challenging situations as a challenge rather than as a threat react better to stress, measured by physiological or subjective markers (Kobasa, 1979), and they have higher performance (Tomaka, Blascovich, Kelsey, & Leitten, 1993 ; Tomaka, Blascovich, Kibler, & Ernst, 1997).

In this study, we tested the hypothesis that certain personality traits or individual predispositions can account for interindividual differences in behavior and performance in situations requiring adaptation. In particular, we examined the effect of two individual characteristics related to the management of emotions (neuroticism and coping style) on the ability to produce adapted responses in unpredictable situations.

The study was conducted in collaboration with the GIGN, in the context of their applicant-selection process. Only applicants who successfully completed the physical-fitness selection test were invited to participate in this eight-week selection process, during which they had to face both unexpected and unpredictable situations. At the end of this eight-week process, the instructors made a decision to select applicants who met the quality criteria for being part of the special unit, in particular, with respect to their abilities to adapt to unpredictable situations. The fate of each applicant (*SELECTED* vs. *NOT-SELECTED*) provided an indirect measure of the applicant's ability to cope with unpredictable situations. Here, we focus on the relationship between this ability and the individual's emotional profile.

METHOD

Participants

The study involved 72 applicants (70 male, 2 female; mean age = 28.1, *SD* = 2.6 ; mean education level = 1 year post high-school, *SD* = 2; mean professional experience = 6 years, *SD* = 3). Among these, 33 were *SELECTED*, 10 *NOT-SELECTED*, and 29 did not complete the selection phase (they left of their own accord). Here, we focus on comparing results between *SELECTED* and *NOT-SELECTED* applicants.

Material

The dependent variable was the selection decision (*SELECTED* vs. *NOT-SELECTED*). The independent variables were measures related to the emotional profile: neuroticism and coping style, where the latter included: task-, emotion-, and avoidance-oriented coping. These measures were obtained using the following questionnaires:

- *NEO-PIR*, *neuroticism dimension* (Costa & McCrae, 1992). This dimension evaluates emotional instability based on 6 subdimensions: anxiety, anger-hostility, depression, social timidity, impulsivity, and vulnerability. There are 8 items in each subdimension.
- *CISS* (*Coping Inventory Stressful Situations*) (Endler & Parker, 1990). This 48-items questionnaire evaluates the way in which individuals handle stressful situations. Coping is evaluated as being oriented to the task, to emotions, or to avoidance. For each of these three coping styles, a score is calculated.

RESULTS

Statistical analysis

We examined relationships between the selection decision (*SELECTED* vs. *NOT-SELECTED*) and each of the four independent variables:

- *NEUROTICISM SCORE*
- *TASK-ORIENTED COPING SCORE*
- *EMOTION-ORIENTED COPING SCORE*
- *AVOIDANCE-ORIENTED COPING SCORE*

For each variable, participants were categorized into two groups depending on whether their score was lower or higher than the sample median. Fisher's exact test was used to test for statistically significant associations between this grouping variable and the selection decision.

In addition, multinomial logistic regression analysis was used to further quantify the strength of the association. For this analysis, all three groups of applicants (*SELECTED*, *NOT-SELECTED*, *DID NOT COMPLETE*) were retained and the *NOT-SELECTED* category was used as the reference. Confounding factors related to demographic (age, education level, professional experience, military experience) and other variables (chronotype, fatigue and sleepiness levels at the start of the selection process, napping, and regular sleeping habits) were taken into account.

Relationship between neuroticism and selection

Table 1. Contingency table for selection vs. neuroticism

	≤ 67	> 67	Total
Not- Selected	2	8	10
Selected	23	10	33
Total	25	18	43

SELECTED applicants have a significantly lower total *NEUROTICISM* score than *NOT-SELECTED* applicants (Fisher's exact test, $p = 0.01$). The logistic regression analysis indicated that individuals having a lower *NEUROTICISM* score were 8.5 more likely to be *SELECTED* ($p = 0.02$).

The contribution of the six subdimensions to the global neuroticism score was assessed using Fisher's exact test. Three of the subdimensions were found to contribute significantly: *anxiety* ($p = 0.04$), *anger-hostility* ($p = 0.02$) and *depression* ($p = 0.05$).

Relationship between task-oriented coping style and selection

Table 2. Contingency table for selection vs. task-oriented coping.

	≤ 67	> 67	Total
Not-Selected	7	3	10
Selected	13	20	33
Total	20	23	43

The *TASK-ORIENTED COPING* score was not significantly associated with the selection decision (Fisher's exact test, $p > 0.05$).

Relationship between emotion-oriented coping style and selection

Table 3. Contingency table for selection vs. emotion-oriented coping.

	≤ 28	> 28	Total
Not-Selected	2	8	10
Selected	20	13	33
Total	22	21	43

SELECTED applicants had a lower *EMOTION-ORIENTED COPING* score than *NOT-SELECTED* applicants (Fisher's exact test, $p = 0.03$). Logistic regression analysis indicated that individuals with a low score for emotion-oriented coping were 5.5 more likely to be selected, although this failed to reach statistical significance ($p = 0.06$).

Relationship between avoidance-oriented coping style and selection

Table 4. Contingency table for selection vs. avoidance-oriented coping.

	≤ 37	> 37	Total
Not-Selected	2	8	10
Selected	18	15	33
Total	20	23	43

No significant difference was observed between selected and not-selected applicants for the *AVOIDANCE-ORIENTED COPING* score (Fisher's exact test, $p = 0.08$). The low p value suggests a tendency for *SELECTED* applicants to have a lower score, which was confirmed by the logistic regression analysis showing that participants with a low score for avoidance-oriented coping were 8.4 more likely to be selected ($p = 0.03$).

DISCUSSION

We assumed that the selection decision (selected vs. not-selected) for an applicant was directly related to the applicant's ability to cope with unpredictable situations, consistent with the fact that this ability played a key role in the instructors criteria for selection. In this context, the results of this study indicate that certain dimensions of the emotional profile contribute to adaptation to unpredictable situations. Specifically, we found that a low level of neuroticism and a low level of emotion-oriented coping were strong predictors of a positive selection decision. Three subdimensions of neuroticism associated with negative emotions were found to be significant contributors to the total neuroticism score. Selected applicants tended to have low levels of *anxiety*, *anger-hostility* and *depression*. Our results also indicate that task-oriented coping, as measured by the CISS, is not a good predictor of the selection decision.

These results reveal that individuals who successfully handled unpredictable situations were emotionally stable, showing little anxiety and anger, and no tendency for depression. They are relaxed and able to handle stressful situations without becoming worried or shaken. Faced with stressful situations, these individuals accept negative emotions without being excessively impacted by them. They try to handle these situations using a problem-solving approach, although this latter aspect does not differentiate them from “non-adaptive” individuals.

In the poster, a supplementary analysis of these results will be presented, involving a comparison between neuroticism and coping-style scores for the study sample versus the general population.

CONCLUSION

The situation considered in this study is somewhat unusual, as members of this special unit are expected to handle extraordinary situations on a regular basis as part of their professional duties. Similar adaptive abilities cannot be required from everyone, not even operators of risky industrial systems. However, our findings may be useful in devising training and education programs for such operators. These trainings should seek to develop determinants of psychological adaptation.

Here, we focused on the emotional dimension of these psychological determinants. However, it is important to consider other components that also contribute to regulating activities and to the adaptation process, such as cognitive and interindividual components. At the cognitive level, the adaptation process involves the verification and adjustment of the relevance of representations and strategies, and the formulation of new adapted responses. At the interindividual level, the adaptation process involves adjusting one’s behavior in relation to others depending on circumstances, and an ability to escape from standard communication and coordination routines. These dimensions were explored in this study but could not be presented in this poster due to space limitations.

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