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Personality profiles and stress-coping strategies of Slovenian military pilots

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Abstract: The performance of a pilot also depends on the pilot's personality profile and their stress-coping style. In our study we aimed to analyze, by means of the Big Five Questionnaire (BFQ) and the Coping Responses Inventory (CRI), the personality profiles, stress-coping strategies and the relationship between them among Slovenian military pilots. The study involved 120 respondents: 30 of whom were military pilots in the experimental group, while the other 90 were in the control groups. The control groups included sport pilots, the general population and soldiers with no involvement in aviation. The members of the control group were selected with regard to the characteristics of the experimental group members, so that both groups were equivalent in terms of relevant factors (e.g. gender, age, health state, level of education etc), thus participating in a study of equivalent pairs. A statistical analysis identified statistically significant differences between the groups in the following BFQ dimensions: energy, conscientiousness and emotional stability; in the dimensions of CRI 'cognitive avoidance' (cognitive effort to avoid realistic consideration of a problem); and 'emotional discharge or emptying' (behavioural attempts to alleviate tension by venting negative emotions). Results revealed that certain personality characteristics were differentially and significantly related to specific stress coping strategies adopted by military pilots.

Key words: personality, coping behaviour, military pilots.

Osebnostni profil slovenskih vojaških pilotov in njihove strategije spoprijemanja s stresom

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Povzetek: Usposobljenost pilotov je odvisna tudi od njihovih osebnostnih karakteristik in strategij spoprijemanja s stresom. V pričujoči raziskavi smo skušali s pomočjo osebnostnega vprašalnika (BFQ) in Vprašalnika za ugotavljanje strategij spoprijemanja s stresom (CRI), analizirati osebnostne lastnosti, strategije spoprijemanja s stresom ter povezavo med njimi pri slovenskih vojaških pilotih.V vzorec smo zajeli 120 udeležencev eksperimentalne in kontrolnih skupin. V eksperimentalni skupini je sodelovalo 30 vojaških pilotov Slovenske vojske in 90 udeležencev v kontrolni skupini (športni piloti,

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pripadniki kopenske vojske ter splošna populacija, ki nima povezave z letalstvom in vojsko). Udeleženci v kontrolni skupini so bili izbrani na osnovi lastnosti vsakega posameznega člana eksperimentalne skupine, tako da so z njimi izenačeni po relevantnih faktorjih (spolu, starosti, zdravju, izobrazbi …). Ob pregledu razlik v strategijah spoprijemanja s stresom med vojaškimi piloti in kontrolnimi skupinami vidimo, da je do pomembnih razlik prišlo na dimenzijah BFQ vprašalnika: energija, vestnost in čustvena stabilnost ter na dimenzijah CRI vprašalnika: Kognitivno izogibanje (CA) in Emocionalno izlitje oziroma izpraznjenje (ED). Pri vojaških pilotih smo ugotovili tudi nekatere statistično pomembne razlike povezav med osebnostnimi dimenzijami in strategijami spoprijemanja s stresom.

Ključne besede: osebnost, spoprijemanje s stresom, vojaški piloti

CC = 3800, 3120

The Personality of Military Pilots

Until the late 60s, when several psychologists started to closely examine the characteristics of a perfect commercial, military or student pilot, the study of personality factors was not seen as important in aviation (Fine & Hartman, 1986; Haward, 1969; Macey, 1980; Reinhardt, 1970). However, a pilot's performance depends on, among others, these factors as well (Chidester, Helmreich, Gregorich, & Geis, 1991). Nevertheless, there had been several studies in the area of identifying the personality structures of military pilots already carried out at that time. Several conclusions from these studies will be presented further in the paper. Various authors (Bartram & Dale, 1982; Jessup & Jessup, 1971; Okaue, Nakamura, & Nira, 1977; Reinhardt, 1970) established that pilots are very emotionally stable and outstandingly extraverted. Ashman and Telfer (1983) and also Fine and Hartman (1986) described military pilots as individuals with a greater desire for achieving goals and a greater tendency towards activity. Besides this, they are more competitive, social and dominant but less introspective, emotional, sensitive and do not want to take a back seat behind individuals who are not pilots. Chidester et al. (1991) identified two dimensions that are crucial in a pilot's personality, namely: (a) instrumental traits, related with the desire to be successful and to achieve goals; and (b) expressive traits, related with interpersonal behaviour, emotionality and orientation. Picano (1991) examined experienced military pilots and identified three personality types. The first group is characterised by a component part of taking measures in solving problems, with an emphasis on planning, logical analysis and focus on details. The second personality type is distinguished by characteristics such as emotional control, introversion and anxiety. These pilots appreciated stability, safety and the predictability of their own environment more than other people do. The third group is characterized by independence, competitiveness and determination. They are less emotionally sensitive, less emphatic and are not concerned about making a good impression. Bartram (1995) studied the behaviour of the pilots in UK Army Air Corps and established that

those pilots who had successfully accomplished their training were more emotionally stable, extraverted, realistic and independent than those who fail training. Shinar (1995) established three personal characteristics that have a significant influence on the success of pilots: (1) a great desire for success (achievement); (2) being prepared to assert oneself and to confront difficulties in the fulfilment of one's own needs/wants; as well as (3) an awareness that success comes in steps and a readiness to accept success positively as a challenge or a mission, and to accept the profession-specific requirements. Hormann and Maschke (1996) ascertained that characteristics such as sociability, stability, audacity and orientation typify a successful pilot. Dzvonik (1999) studied the personalities of Slovak pilots and characterized them as emotionally stable and psychologically resistant to situational influences. He identified their behaviour to be based on achieving goals. Dolgin, Lambirth, Rentmeister-Bryant, and Moore (2003) came to the following conclusions about the statistically significant differences between pilots and the general population: student pilots achieved better results in the dimension of innovativeness and research – this can be seen from their activities, which involve the search for stimulation and audacious behaviour; while they achieved lower results in the dimension of damage avoiding, which measures reservation, rapid aversive learning and introversion. Koonce (2002) claims that pilots are well organized and they plan and perform their tasks very accurately and systematically. Dillinger, Wiegmann, and Taneja (2003) examined the differences in personality profiles and stress-coping strategies between student pilots and the general population. They established that student pilots generally achieved higher scores in the dimensions of extraversion, a realistic attitude and independence, while they achieved lower scores in the dimensions of anxiety and self-control. In contrast, a pilot's personality profile described by Fitzgibbons, Davis, and Schutte (2004) was characterized by the following characteristics: a pilot is an emotionally stable person with a low-level of anxiety, vulnerability, hostility, impulsiveness and depression. He/she is conscientious, a good judge, inclined to achieving goals, trusting, open, active and highly self-confident.

The Stress-coping Strategies of Military Pilots

The results of the studies on pilots' stress-coping strategies showed that pilots cope with stress more effectively when they are facing a problem or when their coping strategy focuses on a problem that requires immediate response or action (Ashman & Tefler, 1983; Dillinger, Wiegmann, & Taneja, 2003; Retzlaff & Gibertini, 1987; Picano, 1990). It has been proven that all pilots tend to exclude emotions. The variety of ways in which pilots, air crew and some military personnel cope with stress shows that stress-coping styles depend on the pilot's psychological characteristics and not on their ability to adapt to the aviation and military environment. Studies on pilots' personalities show that military pilots tend to manage stress in predictable ways (Ashman & Tefler, 1983; Retzlaff & Gibertini, 1987; Picano, 1990; Picano, 1991). Ac-

cording to the results of previous studies, military pilots are dominant and pro-active, are much less introspective and have a stronger desire to control their environment (Ashman & Tefler, 1983; Retzlaff & Gibertini, 1987; Picano, 1990). In their study on the emotional adaptation of US Air Force pilots, which is now considered a classic study, Fine and Hartman (1986) established that pilots overcame their emotional instability and difficult moments by searching for constructive solutions. Stress-coping styles of military pilots showed that they were able to deal effectively with problem situations. Their responses included immediate action to change a situation, control of impulsive (rash) reactions and the minimising of introspection.

In their 2003 study of the relationship between the personality and stress-coping strategies of student military pilots, Dillinger and colleagues (2003) used the Cattell Personality Inventory and the COPE Inventory to identify stress-coping strategies in 50 pilot students at the University of Illinois' Institute of Aviation. The COPE inventory is a 60-item inventory assessing a broad range of adaptive and maladaptive coping strategies. Participants were asked to indicate the extent to which each item was applicable in their experience of trying to deal with their cancer, requiring a response on a 4-point Likert-scale from 1 to 4. Ten out of the fifteen subscales of COPE were included in this research, reducing this to a 40-item inventory: Positive Interpretation, Behavioural and Mental Disengagement, Focus on Venting Emotions, Instrumental and Emotional Social Support, Active Coping, Denial, Humour, and Acceptance. Subscales were excluded to reduce the length of the overall survey, as this study was part of a larger project utilising a variety of measures (Carver, Scheier, & Weintraub, 1989). The results showed that some stress-coping strategies and personality profiles of student military pilots differed from those seen in the general population (Dillinger et al., 2003). Some personality characteristics of student pilots were statistically significantly correlated with specific stress-coping strategies. Differences between the student pilots and the general population were also seen in important stress-coping strategies which potentially contribute to success in aviation. The differences and correlations were established using Pearson's correlation coefficient. All of the global personality factors correlated with at least one stress-coping strategy. The dimension of extroversion positively correlated with the stress-coping strategy of seeking social support, while the dimension of anxiety positively correlated with alleviating stress with alcohol and negatively correlated with positive reinterpretation and growth. Mental stability negatively correlated with the seeking of social support for emotional reasons and a focus on and the venting of emotions, while independence negatively correlated with acceptance, denial, behavioural disengagement and mental disengagement. The dimension of self-control negatively correlated with seeking social support for emotional reasons and alcohol abuse, and positively correlated with religious coping (Dillinger et al., 2003). Similarities and differences can be found in the results of Picano's study (1990), where military pilots, air crew and the general population were compared using the COPE Inventory. Similar results were also reported by Fine and Hartman (1986).

The main aim of the study was to investigate in greater detail some of the distinctive features of military pilots. The personality and the stress-coping strategies of Slovenian military pilots were compared to those of the control groups. We aimed to establish whether military pilots differ from the control groups in terms of their personality and stress-coping styles. We also aimed to examine the relation between Big-Five personality factors and stress coping strategies among Slovene military pilots.

Method

Participants

The sample of participants consisted of four groups of 120 individuals, 30 of whom were military pilots in the experimental group, while the other 90 were members of the control groups. The sample of military pilots represents approximately 60 per cent of the total population. The three control groups included 30 sport pilots, 30 members of the general population and 30 soldiers with no involvement in aviation. The members of the control group were selected with regard to the characteristics of the experimental group members so that both groups were equivalent in terms of relevant factors (i. e., gender, age, health state, level of education etc), thus participating in a study of equivalent pairs. We chose three different control groups because of the small experimental sample size and in order to obtain a higher reliability in the differences between the groups.

Materials

The BFQ questionnaire

The BFQ questionnaire (a tool for measuring personality structure according to the Big Five model; Caprara, Barbaranelli, & Borgogni, 1993) design was based on considering the classical performance of five personality factors and their subdimensions, an additional scale of the social desirability of responses (L scale or Lie Scale), and frugality in establishing the sub-dimensions and number of items. The five major factors are ENERGY, AGREEABILITY, CONSCIENTIOUSNESS, EMOTIONAL STABILITY and OPENNESS.

The BFQ questionnaire consists of 132 items and is designed for measuring the Big Five dimensions and ten sub-dimensions. In each sub-dimension half of the statements have a positive meaning while half of the statements have a negative meaning with regard to the dimension. We used the L scale to measure one's tendency towards giving unjustified answers, whether "positive" or "negative". The L scale consists of 12 items that refer to socially desired behaviour or answers. The items

are set in such manner that total agreement or total disagreement is very unlikely to happen. Therefore, a very high or a very low score might signify that a respondent is trying to introduce him/herself in a more positive or a more negative way.

The Coping Responses Inventory – CRI

To identify the strategies for coping with stressful life situations we used the CRI-Adult inventory designed by Rudolf H. Moos (1992). The authors of the Slovenian translation of the CRI are Masten, Tušak and Ziherl, who were the first to apply this instrument to the Slovenian population (frame norms exist). The reliability of the instrument was adequate (the test-retest of reliability in a period of two weeks was 0.80). The established degree of constructive validity was also adequate (Moss, 1992).

The inventory consists of two parts: the introductory part (10 items), where someone presents a major problem from the last year of their life; and a longer second part (48 items), where the coping style is assessed using eight CRI sub-scales: logical analysis (LA), positive appraisal (PA), seeking guidance or support (SS), problem-solving action (PS) on the one hand (thus assessing the problem-focused coping styles) and, on the other hand, cognitive avoidance (CA), acceptance or resignation (A), seeking alternative rewards (AR) and emotional discharge or emptying (ED) (thus assessing coping styles unconnected to problems). Logical analysis (LA) measures the cognitive effort to understand the stressor and the attempt to mentally prepare for the stressor and its consequences. Positive appraisal (PA) involves an effort to explain and positively reinterpret the problem while at the same time accepting the reality of the situation. Seeking guidance or support (SS) consists of behavioural efforts to seek information, guidance and support. Problem-solving action (PS) includes behavioural efforts to do something and to deal with a problem directly. Cognitive avoidance (CA) measures cognitive efforts to avoid realistic consideration of the problem. Acceptance or resignation (A) encompasses cognitive efforts to respond to a problem by accepting it. Seeking of alternative rewards (AR) includes behavioural efforts to engage in new activities and create new sources of satisfaction. Emotional discharge or emptying (ED) covers behavioural efforts to alleviate tension by venting negative emotions. The first four strategies constitute the strategies of approaching (problem-focused) and the last four the strategies of avoidance (emotion-focused). The strategies are further divided into cognitive and behavioural, as shown in Table 1.

Each scale consists of six items, while the entire inventory consists of 48 items. The respondents reacted to items by indicating on a four-level scale (from ‘never’ to ‘very frequently’) how often they use individual strategies. The minimal score of each dimension is 0 and the maximal is 18.

Table 1. *Scales of the CRI-Adult*

	Approaching coping responses	Avoidance coping responses
Cognitive coping strategies	1. Logical analysis 2. Positive appraisal	5. Cognitive avoidance 6. Acceptance or resignation
Behavioural coping strategies	3. Seeking guidence and support 4. Taking problem-solving actions	7. Seeking alternative rewards 8. Emotional discharge

Procedure

The data were collected during spring and summer 2007 at different locations in Slovenia. The study subjects completed the BFQ and CRI in a classroom, following the instructions specified on the inventory. There was no time limit to complete the inventory.

The data were processed using the following methods:

- calculation of the basic statistical parameters (descriptives);
- one-way analysis of variances (ANOVA);
- post-hoc analysis of variances (Waller-Duncan test); and
- Pearson's correlation coefficients (for computing relationship between personality factors and the stress coping strategies).

All hypotheses were verified at a 5% risk level.

Results

The basic statistical parameters on the BFQ for all groups in the sample are given in Table 2. There is no statistically significant deviation from normal distribution on the dimension of the BFQ test.

Table 2. *Basic statistical parameters on the BFQ test for all participants (N* = 120*)*

variables	Min	Max	*M*	*SE*	*SD*	Skew	Kurt.	K-S	*p*
E	37	66	49.38	0.59	6.42	0.10	-0.79	1.07	0.20
A	30	68	47.82	0.67	7.31	0.37	-0.24	0.91	0.37
C	33	76	48.16	0.78	8.59	0.46	0.13	0.89	0.40
ES	31	74	50.73	0.75	8.19	0.18	0.31	0.72	0.67
O	26	69	44.96	0.81	8.82	0.48	-0.06	0.90	0.40
SINC	25	67	53.30	0.67	7.34	-0.76	1.72	1.21	0.11

Note. E – Energy; A – Agreeability; C – Conscientiousness; ES – Emotional stability; O – Openness; SS – Sincerity scale. Kurt. – kurtosis. K-S – the result of Kolmogorov-Smirnov test of normality

Analysis of differences in personality profile between groups on the BFQ test

Table 3. *One-way analysis of variance of the scores on the BFQ in different groups*

						Homogeneity of variances		Results of ANOVA		
dimensions		*N*	*M*	*SD*	*SE*	*F*	*p*	df_1, df_2	*F*	*p*
E	1	30	51.03	5.61	1.02	3.18	.03	3, 61.35	18.59[a]	.000
	2	30	51.17	6.94	1.27					
	3	30	43.90	3.71	0.68					
	4	30	51.40	5.88	1.07					
	Total	120	49.38	6.42	0.59					
A	1	30	48.20	6.41	1.17	0.57	.64	3, 116	2.80	.043
	2	30	50.73	6.61	1.21					
	3	30	45.83	7.42	1.36					
	4	30	46.50	8.02	1.46					
	Total	120	47.82	7.31	0.67					
C	1	30	49.63	8.97	1.64	2.24	.09	3, 116	10.46	.000
	2	30	49.23	9.01	1.65					
	3	30	41.60	5.56	1.02					
	4	30	52.17	6.77	1.24					
	Total	120	48.16	8.59	0.78					
ES	1	30	50.33	8.86	1.62	3.03	.03	3, 62.53	5.59[a]	.020
	2	30	51.33	9.62	1.76					
	3	30	47.20	5.85	1.07					
	4	30	54.07	6.71	1.23					
	Total	120	50.73	8.19	0.75					
O	1	30	42.93	7.37	1.35	1.82	.14	3, 116	11.56	.000
	2	30	49.30	8.34	1.52					
	3	30	39.03	5.40	0.99					
	4	30	48.57	9.65	1.76					
	Total	120	44.96	8.82	0.81					
SINC	1	30	51.50	10.0	1.83	4.28	.00	3, 61.44	4.18[a]	.009
	2	30	54.13	7.26	1.33					
	3	30	55.63	4.51	0.82					
	4	30	51.93	6.01	1.10					
	Total	120	53.30	7.34	0.67					

Note: 1 – general population; 2 – sport pilots; 3 – soldiers; 4 – military pilots; E – Energy; A – Agreeability; C – Conscientiousness; ES – Emotional stability; O – Openness; SS – Sincerity scale;
[a]Welch test that was used instead of *F* statistic whenever the variances in different groups were not homogeneous.

We examined the variances in the arithmetic means of BFQ dimensions between four groups. Some of the variances (Energy, Emotional stability, Sincerity scale) are shown to be unequal, so we obtained the Robust Test for Equality of Means (Welch and Brown – Forsythe procedures). We established that statistically significant differences occur in the dimensions of Energy, Agreeability, Conscientiousness, Emotional Stability and Openness.

The basic statistical parameters on the CRI for all groups in the sample are given in Table 4. There is no statistically significant deviation from normal distribution on the dimension of the CRI test.

Table 4. *Basic statistical parameters on the CRI test for all participants (N* = 120*)*

variables	Min	Max	*M*	*SE*	*SD*	Skew	Kurt.	K-S	*p*
LA	2	20	9.77	0.33	3.65	0.00	-0.55	1.10	0.18
PA	1	17	8.75	0.33	3.67	-0.04	-0.70	1.00	0.27
SS	0	16	7.46	0.33	3.61	0.49	-0.38	1.47	0.03
PS	1	18	10.91	0.38	4.17	-0.28	-0.90	1.28	0.07
CA	0	15	6.56	0.39	4.25	0.30	-0.89	1.38	0.04
ACC	0	15	3.92	0.31	3.37	1.00	0.69	1.63	0.01
AR	1	15	7.10	0.31	3.35	0.32	-0.57	1.41	0.04
ED	0	14	3.37	0.27	2.96	0.99	1.16	1.40	0.04

Note. LA – logical analysis; PA – positive appraisal; SS – seeking guidance or support; PS – problem-solving action; CA – cognitive avoidance; ACC – acceptance or resignation; AR – seeking alternative rewards; ED – emotional discharge or emptying. See also notes to Table 2.

Analysis of differences in stress-coping strategies between groups on the CRI test

A one-way analysis of variance was used to establish the differences between the groups involved in the experiment. Statistically significant differences were found in some dimensions measured by the CRI-Adults inventory. Table 5 shows statistically significant differences in the following dimensions: cognitive avoidance and discharge or emptying. In both of these dimensions the military pilots achieved lower results on average than the members of the control groups.

Table 5. *One-way analysis of variance of the CRI scores for different groups.*

		N	*M*	*SD*	*SE*	Low	Upp	F_{hom}	p_{hom}	*F*	*p*
LA	1	30	9.47	3.56	0.65	8.14	10.80	0.36	.79	0.34	.799
	2	30	9.70	3.35	0.61	8.45	10.95				
	3	30	9.57	3.65	0.67	8.20	10.93				
	4	30	10.33	4.10	0.75	8.80	11.87				
	Total	120	9.77	3.65	0.33	9.11	10.43				
PA	1	30	9.83	3.40	0.62	8.56	11.10	0.47	.70	1.47	.226
	2	30	8.77	3.98	0.73	7.28	10.25				
	3	30	8.50	3.34	0.61	7.25	9.75				
	4	30	7.90	3.83	0.70	6.47	9.33				
	Total	120	8.75	3.67	0.33	8.09	9.41				
SS	1	30	8.10	3.79	0.69	6.68	9.52	2.23	.09	1.90	.133
	2	30	7.03	3.44	0.63	5.75	8.32				
	3	30	8.30	3.88	0.71	6.85	9.75				
	4	30	6.40	3.11	0.57	5.24	7.56				
	Total	120	7.46	3.61	0.33	6.81	8.11				
PS	1	30	10.87	4.53	0.83	9.17	12.56	2.29	.08	1.46	.230
	2	30	11.50	3.95	0.72	10.03	12.97				
	3	30	9.63	4.60	0.84	7.91	11.35				
	4	30	11.63	3.39	0.62	10.37	12.90				
	Total	120	10.91	4.17	0.38	10.15	11.66				
CA	1	30	6.23	3.87	0.71	4.79	7.68	2.04	.11	2.79	.044
	2	30	7.10	4.76	0.87	5.32	8.88				
	3	30	7.93	3.66	0.67	6.57	9.30				
	4	30	4.97	4.25	0.78	3.38	6.56				
	Total	120	6.56	4.25	0.39	5.79	7.33				
ACC	1	30	3.63	2.57	0.47	2.68	4.59	1.42	.24	1.59	.195
	2	30	3.47	3.22	0.59	2.26	4.67				
	3	30	5.07	4.07	0.74	3.55	6.59				
	4	30	3.50	3.34	0.61	2.25	4.75				
	Total	120	3.92	3.37	0.31	3.31	4.53				
AR	1	30	6.93	3.12	0.57	5.77	8.10	1.87	.14	0.91	.437
	2	30	7.90	3.88	0.71	6.45	9.35				
	3	30	7.07	3.52	0.64	5.75	8.38				
	4	30	6.50	2.81	0.51	5.45	7.55				
	Total	120	7.10	3.35	0.31	6.49	7.71				
ED	1	30	3.13	2.26	0.41	2.29	3.98	2.68	.05	4.64	.004
	2	30	4.03	3.57	0.65	2.70	5.37				
	3	30	4.40	3.18	0.58	3.21	5.59				
	4	30	1.90	2.04	0.37	1.14	2.66				
	Total	120	3.37	2.96	0.27	2.83	3.90				

Note. 1 – general population; 2 – sport pilots; 3 – soldiers; 4 – military pilots; LA – logical analysis; PA – positive appraisal; SS – seeking guidance or support; PS – problem-solving action; CA – cognitive avoidance; ACC – acceptance or resignation; AR – seeking alternative rewards; ED – emotional discharge or emptying. See also notes to Table 3.

Table 6. *Results of Waller-Duncan test for statistically significant differences (tested at alpha .05)*

Variable	Group	Subset 1	Subset 2
BFQ E			
	3	43.90	
	1		51.03
	2		51.17
	4		51.40
BFQ A			
	3	45.83	
	4	46.50	46.50
	1	48.20	48.20
	2		50.73
BFQ C			
	3	41.60	
	2		49.23
	1		49.63
	4		52.17
BFQ ES			
	3	47.20	
	1	50.33	50.33
	2	51.33	51.33
	4		54.07
O			
	3	39.03	
	1	42.93	
	4		48.57
	2		49.30
CA			
	4	4.97	
	1	6.23	6.23
	2	7.10	7.10
	3		7.93
ED			
	3	4.40	
	2	4.03	4.03
	1	3.13	3.13
	4		1.90

Note. 1 – general population; 2 – sport pilots; 3 - soldiers; 4 – military pilots; E-Energy; A-Agreeability; C-Conscientiousness; ES-Emotional stability; O-Openness; CA-cognitive avoidance; ED-emotional discharge or emptying.

We used the post-hoc analysis of variance (Waller-Duncan test) to obtain more detailed overview of the differences between the groups on the test dimensions. Table

6 shows statistically significant differences in the following test dimensions; BFQ dimensions of Energy, Agreeability, Conscientiousness, Emotional Stability and Openness and CRI dimensions of cognitive avoidance and discharge or emptying. The group of the military pilots often differ significantly from all other groups. In both of CRI dimensions (CA and ED) the military pilots achieved lower results on average than the members of the control groups. In the BFQ dimensions of Energy, Conscientiousness and Emotional Stability the military pilots achieved the lowest results.

Relationship between personality factors and stress coping strategies

Table 7. *Pearson's correlation coefficients between personality factors and the stress coping strategies among military pilots.*

	LA	PA	SS	PS	CA	ACC	AR	ED
E	.53*	.15	–.02	.58*	–.12	–.16	–.17	.71**
A	–.24	–.04	.22	.27	–.13	.40	.11	–.00
C	–.62*	–.38	.01	–.22	–.08	.17	–.06	–.45
ES	–.14	–.04	.04	.21	–.08	.08	.07	.13
O	–.31	–.14	–.36	–.10	–.26	–.00	.07	–.06
SINC	–.11	–.30	–.29	–.36	.01	.01	.09	–.28

Note. LA – logical analysis; PA – positive appraisal; SS – seeking guidance or support; PS – problem-solving action; CA – cognitive avoidance; ACC – acceptance or resignation; AR – seeking alternative rewards; ED – emotional discharge or emptying; E – Energy; A – Agreeability; C – Conscientiousness; ES – Emotional stability; O – Openness; SINC – Sincerity scale.
*$p < .05$. **$p < .01$.

Among the correlations between personality factors and the stress coping strategies (Table 7) several were statistically significant: between the personality factor Energy and stress coping strategies logical analysis (.53), problem-solving action (.58) and emotional discharge or emptying (.71); and between Conscientiousness and logical analysis (–.62).

Discussion

Personal Characteristics

Human personality is an integrated but complex phenomenon characterised by its extensiveness and large variety of concepts. According to various definitions of personality, examining a human's personality is the most significant aspect of and is fundamental for identifying one's behaviour in different situations (Musek, 1999). Subsequently, research in the area of pilot personality showed that specific personality characteristics such as emotional stability, extraversion, sociability, con-

scientiousness, balance and orientation towards actions and activity, occur commonly in pilots (Ashman & Telfer, 1983; Bartram, 1995; Fine & Hartman, 1986; Dillinger et al., 2003; Fitzgibbons et al., 2004; Nakamura & Nira, 1977).

In our study, we aimed to identify the personal characteristics of Slovenian military pilots and compare them to appropriate control groups. If we revise the differences between groups, we can see that statistically significant differences occurred in the dimensions of energy, agreeability, conscientiousness, emotional stability and openness. In the dimensions of energy, conscientiousness and emotional stability, according to the results of the BFQ questionnaire, the military pilots scored significantly higher than the control groups. Thus, the military pilots seem to be more energetic and dynamic, more communicative and enthusiastic, as well as capable of asserting themselves leading and influencing other people. In some other theories the dimension of energy may be referred to as extraversion (McCrae & Costa, 1990) or Surgency (Goldberg, 1993). Our findings are consistent with the findings of several other studies that recognized pilots as more extraverted (Bartram, 1995; Dzvonik, 1999; Dillinger et al., 2003; Okaue, Nakamura, & Nira, 1977; Reinhardt, 1970). Moreover, statistically significant differences in favour of pilots were also noted in the dimensions of conscientiousness and emotional stability. They are considered to be more reliable, precise, persevering, steady and hardworking. They appear to be neat and tidy, exact, trustworthy, diligent, tireless and conscientious. They tend to be emotionally stable. Previous studies also reported a higher degree of emotional stability in pilots (Bartram, 1995; Dzvonik, 1999; Fitzgibbons et al., 2004; Nakamura & Nira, 1977; Picano, 1991; Reinhardt, 1970).

Stress-coping Strategies

Stress has become an important facet of our everyday life. It is the response of the organism to a potentially harmful factor. People cope with stressful situations in different ways. The choice of stress-coping strategy depends on several different factors.

Military pilots experience many stressful events or stressors. Generally, not only the quantity of different stressors is relevant but also their intensity. Every mistake made as a result of stress is quickly punished. For that reason, pilots must be mentally extremely stable and non-anxious, with an ability to concentrate on the task at hand.

Another main aim of the study was to establish how the stress-coping techniques of the Slovenian military pilots differ from those of the control groups. In this study the experimental group was comprised of military pilots, while the control groups were composed of members of the general population, sport pilots and soldiers.

The results of this study suggest that military pilots have preferred ways of coping with stress that are different from those of the control groups. A closer look

at the differences between military pilots and the control groups in terms of their stress-coping strategies shows that statistically significant differences emerged in the following dimensions: cognitive avoidance and emotional discharge or emptying. These CRI dimensions represent the stress-coping strategies unconnected with a problem. In both of these dimensions the pilots achieved lower results on average than the rest of the control groups. The results of our study are consistent with the study by Fine and Hartman (1986). They also established that, when facing a stressful situation, pilots only rarely look within themselves (introspection) or start accusing each other, fighting or acting childishly. The majority of pilots in this study demonstrated that they could cope with problem situations (i.e. use problem-focused strategies).

No statistically significant differences between the groups were identified in the dimensions of logical analysis, positive appraisal, seeking support, problem-solving action and acceptance. Hence, the Slovenian military pilots do not significantly differ from the control groups in terms of taking action more frequently or seeking social support less frequently to solve a stressful situation. The results of the studies on pilots' stress-coping strategies showed that pilots tend to exclude emotions and that they cope with stress more effectively when they are facing a problem or when their coping strategy is problem-focused and requires immediate response or action (Ashman & Telfer, 1983; Picano, 1990; Retzlaff & Gibertini, 1987). Accordingly, we expected to find differences between the military pilots and the control groups in the dimensions of seeking support and active problem-solving. In fact, the results did show a tendency moving in the expected direction, considering that sport pilots achieved on average higher results than the general population in the dimension of active problem-solving and lower results in the dimension of seeking support; however, this difference between the groups was not statistically significant.

Some stress coping strategies adopted by Slovene military pilots are significantly related to various aspects of their personalities. Personality factor Energy correlated with stress coping strategies logical analysis, problem-solving action and emotional discharge or emptying. Personality factor Conscientiousness was related negatively with stress coping strategy logical analysis; the cognitive effort to understand the stressor and the attempt to mentally prepare for the stressor and its consequences.

The results of our study are important because they define some of the psychological characteristics of military pilots. They also confirm past research by way of the different instruments used in the study. We suggest that further research be based on a larger number of subjects and that it includes other instruments for measuring personality and stress-coping strategies.

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