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COPING IN STRESSFUL SITUATIONS AND TEMPORAL VARIABILITY IN VISUAL-MOTOR COORDINATION LEVELS

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Introduction: The article brings up the problem of temporal variability in visual-motor coordination in the context of different stress coping strategies as formulated by Endler and Parker. A study was conducted to determine whether the level of each of the stress-coping styles is associated with reaction parameters.

Methods: The study was conducted using triplicate measurements in 58 volunteers. High-frequency stimulation tests were aimed at inducing stress in the subjects.

Results: The problem-focused and avoidance-focused strategies were found to be unrelated with the performance of motor tasks. Only the emotion-focused style level differentiated the subject in terms of two response parameters, namely mean reaction time and reaction time range.

Discussion: Individuals with a lower level of emotion-focused style were characterized by shorter mean reaction times in all measurements and wider range of reaction times in the first measurements, with no difference being observed against individuals with a higher level of emotional coping in the two subsequent measurements.

Conclusions: The obtained results confirm observations made in other studies, suggesting that the emotion-focused coping style is a significant factor differentiating individuals.

Keywords: conditions, psychomotor functioning in stress, stress coping strategies, visual-motor coordination

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INTRODUCTION

Nobody has to be persuaded to acknowledge that stress and stress coping are one of the key issues associated with the functioning of individuals in complex situations or situations associated with exposure to extreme environmental stimuli [12]. It is also obvious that the occupation of an aircraft pilot is associated with both of these components. Aviation-related tasks are characterized by both high level of complexity and the presence of numerous environmental stressors (hypoxia, vibrations, spatial confusion or gravity loads) [12]. The question of stress is also raised by many researchers, particularly in relation to the increasing pace of life of contemporary humans, the need to cope with the information overload (informational stress), and the relationships between stress, particularly chronic stress, and somatic disorders [9]. It should be kept in mind that stress affects numerous areas of life, including the most basic aspects such as motor functioning or eye-hand coordination. In some stressful situations, motor ability is required not only for succeeding in the task, but also to protect one's health and life. The study attempts to relate different stress coping strategies to simple motor responses requiring eye-hand coordination in stressful conditions.

Coping in stressful situations

Contemporary literature presents two main approaches to the problem of coping with stress. On one hand, coping is presented as a process. Of highest importance is the individual's perception of a particular situation, i.e. whether or not he/she considers the situation to be stressful. In addition, the coping process undergoes constant changes, making it difficult to propose any generalized statements regarding an individual or a population. The concept was developed by Lazarus and Folkman [11]. On the other hand, coping is presented as a fairly constant, predominant style of managing different stressful situations, i.e. as a trait. Thus interpreted, coping may be measured in a manner and using methods similar to those used for measuring other traits. This concept was supported by, among others, Endler and Parker, who proposed a theory involving three different coping styles: problem-focused, emotion-focused and avoidance-focused. Coping as a strategy characteristic for the individual provides a global insight in the individual's functioning in stressful conditions [11].

Different studies including the use of Endler and Parker's Coping Inventory of Stressful Situations (CISS) demonstrate that the most adaptational style is the problem-focused style [11]. It contributes, among others, to reducing the threatening aspect of the stimulus [5], facilitating easier stress management. For example, males preferring this coping strategy were observed to have a higher likelihood of abuse rehabilitation success [4] and generally less frequent reactions to negative events in life that involved increased consumption of alcohol; this was in contrast to individuals with a more emotional coping style [13]. What is interesting, although usually identified as poorly adaptational, the emotion-focused coping style is all the same efficient in some cases. The predominance of this style of coping in young females was associated with reduced susceptibility to depression [7]. Inconsistencies in available data trigger further research on various aspects of the functioning of humans, including motor functioning in the context of various coping strategies.

It seems all the more justified as the coping styles are associated with the temperament, and thus in a way, with the characteristics of the nervous system. In Polish studies [11] a large sample of responders was examined using CISS and Formal Characteristics of Behavior - Temperament Questionnaire questionnaires (FCBTQ). The FCBTQ is based on the Regulatory Theory of Temperament developed by Strelau and characterizing the temperament in the dimensions of six traits: two traits related to temporal characteristics of behavior (vigorousness and perseverance) and four traits related to energetic aspects of behavior (sensory sensitivity, emotional reactivity, endurance and activity). It turned out that both emotional reactivity and perseverance were well correlated with the emotion coping style. Endurance was negatively correlated with that style. This provides some insight into the functioning of individuals characterized by high level of emotional coping, including coping in stressful conditions. First of all, such individuals respond with strong emotional agitation even when exposed to weak stimuli, and agitation persists for longer periods. This is not matched by low endurance, which is probably the reason why the emotion-focused style is considered to be poorly adaptational. In case of the other styles, the results are not as unambiguous. One would expect positive correlation between endurance and the problem-focused style; however, the correlation was observed only as a trend. Positive correlations were observed, albeit with low power, for vigorousness, activity and sensory sensitivity. High scores in the avoidance-focused scale were associated with a high level of activity.

Overall, only the emotional coping-related results can be easily interpreted; it is difficult to draw unambiguous conclusions for other stress-coping strategies. On these grounds, it appears interesting to examine the functioning of individuals with different coping styles at the level of simple motor reactions.

Visual-motor coordination

Visual-motor coordination is one of the basic components of motor responses. It is gradually acquired since early childhood, stimulating physical and mental development [1]. Motor training ensures automation of certain functions, from the most basic such as walking to these most refined such as playing musical instruments. Visual-motor coordination warrants our capability to move around and avoid dangers.

It is a part of a larger theoretical construct of psychomotor abilities. Some researchers have adopted a model in which several independent factors affect the level of psychomotor abilities and performance in tasks involving this domain [6]. However, recent studies in the area suggest that there is one general factor of psychomotor abilities, in which the differences between individuals are determined by overall cognitive capabilities, with a significant role of the efficiency of working memory and temporal anticipation [2]. According to the analyses performed in the aforementioned studies, the improving performance observed in successive trials depends mainly on the speed of mental processes. As more and more effective methods to perform a particular task are being discovered, the cognitive resources are being engaged in the selected optimum strategy. The processing speed appears to be the main limiting factor. The cited studies involved mainly instrumentation-based measurements. Quite often, such studies raised objections related to their being unreliable as a measurement of real-life tasks. However, as new instrumentations and analytical methods were developed, one may agree with the researchers stating that "psychomotor abilities as measured in certain ways are important for certain tasks or occupations" [2] (p. 199). This is also true for visual-motor coordination. For example, in drivers' examination methodology developed by the Motor Transport Institute, a hypothesis has been proposed that a change in the performance of a coordination task as measured by the number of stimuli recorded using the Piórkowski apparatus may be an indicator of either fatigue or the motor training level [10].

Coping in the context of eye-hand coordination

Situations when the human life or health depend on good eye-hand coordination are not too common. However, the comfort of our everyday lives may be somewhat affected by this ability. Driving a car may be an example. Smooth driving, the sense of speed and distance from other road users markedly reduce the stress associated with driving. What happens, however, when the opposite is true, i.e. when something stressful occurs while driving? How would the stress coping strategies impact the performance?

One of the studies of such a relationship was conducted in police recruits during a high-stress simulation [8]. Physiological and mental correlates of stress were assessed, including the coping styles measured using the CISS questionnaire. The performance was assessed in terms of motor dexterity, decision-making speed and adequacy of decisions to particular situation. Although no direct correlation between stress coping strategies as defined by Endler and Parker with the task performance level was shown, the aftermath of the experienced stress was different for subjects. The recruits who preferred the emotional-focused strategy showed more symptoms of trauma, with post-traumatic stress disorder (PTSD) being diagnosed more often in this group. Similar relationships were observed in avoidance-focused coping strategy. No trauma or PTSD symptoms were observed in subjects who preferred the problem-focused strategy. Physiological correlates of stress were also significantly higher for emotion- and avoidance coping strategies.

In the study, tasks requiring both cognitive and motor domains were not separated, making it difficult to assess whether the differences in responses to stress in individuals with different coping styles might be related to the level of performance of simple motor tasks involving the visual-motor coordination. This was the research problem that instigated the present study.

RESEARCH HYPOTHESES

Hypothesis 1

High score in the Problem-Focused Style scale would be associated with no temporal changes in visual-motor coordination. This relates to the number of stimuli responded to, number of stimuli ignored, number of incorrect responses, mean reaction time as well as reaction time range.

Hypothesis 2

High score in the Emotion-Focused Style scale would be associated with temporal changes in visual-motor coordination. This relates to the number of stimuli responded to, number of stimuli ignored, number of incorrect responses, mean reaction time as well as reaction time range.

Hypothesis 3

High score in the Avoidance-Focused Style scale would be associated with temporal changes in visual-motor coordination. This relates to the number of stimuli responded to, number of stimuli ignored, number of incorrect responses, mean reaction time as well as reaction time range.

METHODS

Subjects

The study group consisted of 58 adult subjects (age span 19-40 years, mean age = 23.86 years, median = 22 years). The study group consisted of more women (n= 41) than men. All subjects were volunteers. The study was conducted in one of the rooms at the Warsaw University Faculty of Psychology in two last weeks of April 2010. Subjects were examined individually, with examination of each subject taking about 30 minutes.

Variables

Independent variable:
- measurement order

Dependent variables:
- number of stimuli responded to
- number of stimuli ignored
- number of incorrect responses
- mean reaction time
- reaction time range (the result was the difference between the longest and the shortest reaction time)

Covariates:
- Problem-focused style scale score
- Emotion-focused style scale score
- Avoidance-focused style scale score

Materials

Coping Inventory for Stressful Situations (CISS)

The questionnaire developed by Endler and Parker is a tool consisting of 48 statements related to various behaviors in stressful situations. In the instruction provided on the title page, the responder is asked to describe the level of involvement in individual tasks when facing a difficult or stressful situation. To this end, the responder circles one number on a 5-point scale (1-never, 2-very rarely, 3-sometimes, 4-frequently, 5-very frequently). The questionnaire consists of three scales: the problem-focused style scale, the emotion-focused style scale, and the avoidance-focused style scale. Each of the scales consists of 16 items; subject's score in each scale may range from 16 to 80. In the questionnaire adapted to Polish standards, the reliability coefficients of individual main scales range between 0.78 and 0.90 [11].

Piórkowski apparatus

A modern version of Piórkowski apparatus by GPE Electronics was used. The tool consists of the test keyboard and the control panel. The test keyboard consists of a row of 10 indicator lamps and 10 buttons located one underneath each lamp. The control panel is connected to the test keyboard using a cable and allows to determine the display rate of the stimuli as well as to record the number of correct responses, incorrect responses, ignored stimuli and reaction times (minimum, maximum and mean reaction time). The Piórkowski apparatus is used primarily in the measurements of visual-motor coordination [10]. The methodology assumes that 3 fast-paced trials may be used to predict the subject's response in a stressful situation. As the trial duration is increased, monotony and fatigue factors may also be accounted for. In this study, these conditions were met by the preset rate of 110 stimuli per minute and trial duration of 60 seconds. The proper study was preceded by a mock session (60 stimuli per minute for 20 seconds).

Procedure

Following subject's declaration of willingness to take part in the study, an appointment was made for a specific subject-selected time and date within the two last weeks of April 2010. At the beginning of examination, subjects completed the CISS questionnaire. The questionnaire was completed before the instrumentation-based test so as to eliminate the effect of the particular stressful situation on the responses. Subjects identified themselves by entering their nickname, age and sex on the questionnaire form. Having completed the questionnaire, the subject was asked to verify if they provided answers to all statements. Then, the instrumentation-based test followed. The researcher asked the subject to stand in front of the Piórkowski apparatus in a manner ensuring convenient access to buttons. Next, the researcher explained that lamps would be turned on and off at random at a preset pace, and the task of the

subject would be to possibly fastest and possibly most accurately press the corresponding buttons located below the lamps. Patients were advised that purpose of the instrument was not to measure their intelligence. In case of questions regarding the purpose of the instrument, the researcher answered that the subject would receive all information following the instrument-based test. In order to ensure that the subject understood the instructions, a mock run was conducted (60 stimuli per minute, duration 20 seconds). After the mock run, three one-minute runs were announced, including short breaks between each run to allow the researcher to record the results. The subject was informed that the test pace would be higher than that in the mock run. After each run, the researcher used the control panel invisible to the subject to record the data (number of correct responses, incorrect responses, ignored stimuli and the minimum, maximum and mean reaction times). No information on the results were provided during the test. After completion of the test, the subject could be informed of their results in the instrument test, should they wish so. When asked by the subject about their performance against other subjects, the responder answered that the data were not analyzed yet and thus they could not provide any answer. If the subject wanted to obtain information regarding the purpose of the test, the researcher provided the answer using everyday language, avoiding professional terminology. The researcher pointed out that the data would describe a general correlation rather than individual results. At the end, the researcher thanked the subject for having participated in the test.

Statistical analysis

Repeated measure analysis of variance was used with the measurement order as the intra-subject factor and the levels in individual dimensions of the stress coping styles as the inter-subject factors. The subjects were divided into groups of lower or higher levels or particular CISS traits on the basis of median scores. The η^2 effect assessment indices were also determined. According to recommendations provided by Cohen, η^2=0.001 is suggestive of a weak effect, η^2=0.06 is suggestive of a moderate effect, while η^2=0.14 and more is suggestive of a significant effect [3].

Results

Problem-focused style and the variability in individual aspects of visual-motor coordination including the measurement order

The main effect of the order of measurements in the context of stimuli correctly responded to was statistically significant, $F(2, 110) = 24.09$; $p < 0.001$; $\eta^2 = 0.305$. The performance level increased in sequential measurements. Similar relationships were observed for the number of incorrect responses, $F(2, 110) = 21.22$; $p < 0.001$; $\eta^2 = 0.278$, number of stimuli ignored, $F(2, 108) = 18.93$; $p < 0.001$; $\eta^2 = 0.260$, mean reaction time , $F(2, 110) = 114.16$; $p < 0.001$; $\eta^2 = 0.675$ and reaction time range, $F(2, 110) = 8.04$; $p = 0.001$; $\eta^2 = 0.128$. No interaction could be demonstrated between the level of the problem-focused style and the order of the measurement in terms of the number of stimuli responded to $F(1, 55) = 0.12$; NS, or any other dependent variable.

Emotion-focused style and the variability in individual aspects of visual-motor coordination including the measurement order

The main effect of the order of measurements in the context of stimuli correctly responded to was statistically significant, $F(2, 110) = 23.45$; $p < 0.001$; $\eta^2 = 0.299$. The performance level increased in sequential measurements. Similar relationships were observed for the number of incorrect responses, $F(2, 110) = 20.55$; $p < 0.001$; $\eta^2 = 0.272$, number of stimuli ignored, $F(2, 108) = 18.57$; $p < 0.001$; $\eta^2 = 0.256$, mean reaction time , $F(2, 110) = 122.68$; $p < 0.001$; $\eta^2 = 0.690$ and reaction time range, $F(2, 112) = 3.36$; $p = 0.05$; $\eta^2 = 0.057$.

A group effect (individuals above and below the median in the emotion-focused style scale) was also observed, $F(1, 55) = 8.81$; $p < 0.001$; $\eta^2 = 0.140$. Mean reaction times were different for individuals with different FSE scale results.

In addition, the effect of the interaction between the EFS level and the order of measurement in the context of mean reaction time was also statistically significant, $F(2, 110) = 4.10$; $p < 0.05$; $\eta^2 = 0.690$. Simple effects were analyzed so as to better explain the interaction effect. Student's t-test for independent samples was used separately for consecutive measurements to measure the differences between groups. In the first measurement, individuals with lower EFS scale scores ($M = 0.43$; $SD = 0.27$) were characterized by significantly shorter mean reaction times, $t(55) = -2.19$; $p < 0.05$, compared to individuals with higher EFS scale scores ($M = 0.45$; $SD = 0.22$). A similar relationship

Tab. 1. Pairwise comparisons in the simple effect analysis as a part of the unifactorial analysis of variance - mean reaction times.

(I) order	(J) order	Difference of means (I-J)	Standard error	Significance [a]	95% CI for the difference [a]	
					Lower limit	Upper limit
1	2	.018*	.003	.000	.012	.025
	- 3	.026*	.003	.000	.019	.034
2	1	-.018*	.003	.000	-.025	-.012
-	- 3	.008*	.002	.008	.002	.014
3	1	-.026*	.003	.000	-.034	-.019
	- 2	-.008*	.002	.008	-.014	-.002

Based on estimated boundary means.

*. Difference of means is significant at the level of .05.

a. Bonferroni adjustment for multiple comparisons.

Tab. 2. Pairwise comparisons in the simple effect analysis as a part of the unifactorial analysis of variance - mean reaction times.

(I) order	(J) order	Difference of means (I-J)	Standard error	Significance [a]	95% CI for the difference [a]	
					Lower limit	Upper limit
1	2	.013*	.002	.000	.009	.018
	- 3	.019*	.002	.000	.013	.025
2	1	-.013*	.002	.000	-.018*	-.009
-	- 3	.006*	.001	.001	.002	.009
3	1	-.019*	.002	.000	-.025	-.013
	- 2	-.006*	.001	.001	-.009	-.002

Based on estimated boundary means.

*. Difference of means is significant at the level of .05.

a. Bonferroni adjustment for multiple comparisons.

was observed for the two remaining measurements. The significant difference of means was -0.20 for the second measurements and -0.22 for the third measurements. In each case, individuals with lower EFS scale scores achieved shorter mean reaction times.

Unifactorial analysis of variance was used to measure the differences within groups. Pairwise comparisons in the group of responders with lower EFS scale scores were significantly different for all measurements. The results are presented in Table 1.

The mean reaction time was the longest in the first measurement ($M = 0.43$; $SD = 0.01$), shorter in the second measurement ($M = 0.42$; $SD = 0.01$) and the shortest in the third measurement ($M = 0.41$; $SD = 0.01$).

In case of the sample of subjects with scores above the ESF scale median, group differences were also observed as illustrated in Table 2.

Also in this group, the mean reaction time was the longest in the first measurement ($M = 0.448$; $SD = 0.004$), shorter in the second measurement ($M = 0.434$; $SD = 0.004$) and the shortest in the third measurement ($M = 0.429$; $SD = 0.004$). Relationships within groups are presented in Figure 1, where group 0 corresponds to individuals with scores below the median score and group 1 corresponds to individuals with scores above the median score.

The interaction effect was also observed in the reaction time range, $F(2,112) = 5.23$; $p < 0.05$; $\eta^2 = 0.850$. Simple effects were analyzed. Independent sample Student's t-test revealed differences occurring only within the first measurements, with significant differences between the below-median and above-median groups, $t(36,35) = 2.34$. In the first measurement, a wider reaction time range was observed in the group with lower EFS scale scores ($M = 0.25$; $SD = 0.08$) as compared to the group with higher EFS scale scores ($M = 0.20$; $SD = 0.04$). In the two remaining measurements, the differences were not statistically significant.

Unifactorial analysis of variance was used to measure the differences within groups.

Pairwise comparisons in the group with below-median EFS scale scores revealed a significant difference only in case of the second and the third measurement, with a wider range observed in the third measurement ($M = 0.25$; $SD = 0.01$) as compared to the second measurement ($M = 0.23$; $SD = 0.01$).

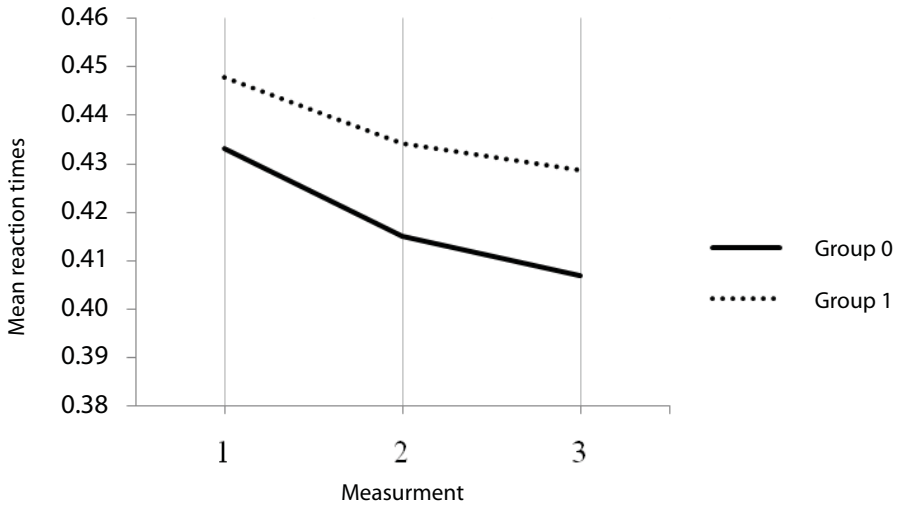

Fig. 1. Mean reaction times in individual groups.

Tab. 3. Pairwise comparisons in the simple effect analysis as part of the unifactorial analysis of variance - reaction time range.

(I) order	(J) order	Difference of means (I-J)	Standard error	Significance [a]	95% CI for the difference [a]	
					Lower limit	Upper limit
1	2	-.021*	.007	.028	-.039	-.002
	- 3	-.027*	.007	.001	-.044	-.010
2	1	.021*	.007	.028	.002	.039
-	- 3	-.006*	.004	.456	-.017	.005
3	1	.027*	.007	.001	.010	.044
	- 2	.006	.004	.456	-.005	.017

Based on estimated boundary means.

*. Difference of means is significant at the level of .05.

a. Bonferroni adjustment for multiple comparisons.

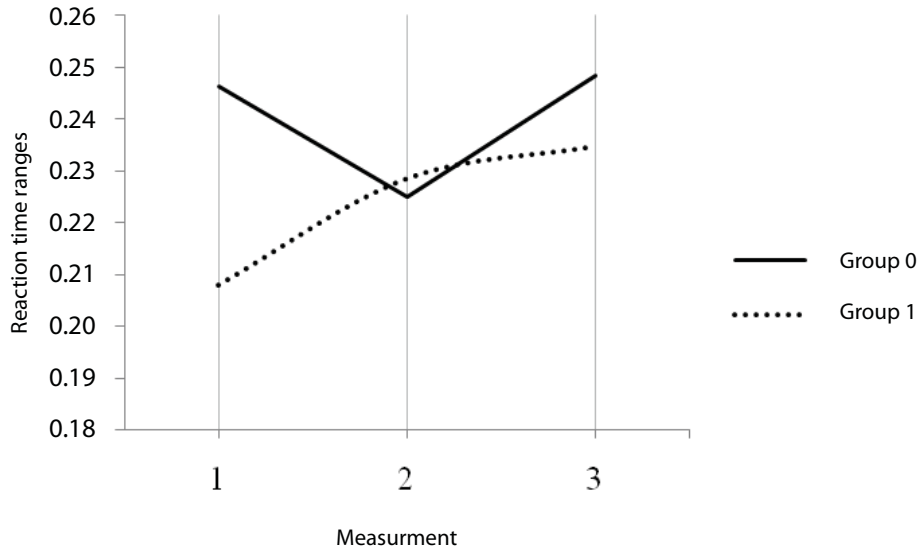

Fig. 2. Reaction time ranges in individual groups.

Pairwise comparisons in the group with above-median EFS scale scores revealed significant differences between the first and the second and between the first and the third measurement, as illustrated in Table 3.

There were no differences between the second and the third measurement. Reaction time range was narrower in the first measurement ($M = 0.21$; $SD = 0.007$), and wider in the second measurement ($M = 0.23$; $SD = 0.006$) and the third measurement ($M = 0.24$; $SD = 0.006$).

Relationships within each of the groups are presented in Figure 2, where group 0 corresponds to individuals with scores below the median score and group 1 corresponds to individuals with scores above the median score.

Avoidance-focused style and the variability in individual aspects of visual-motor coordination including the measurement order

The main effect of the order of measurements in the context of stimuli correctly responded to was statistically significant, $F(2, 112) = 24.63$; $p < 0.001$; $\eta^2 = 0.305$. The performance level increased in sequential measurements. Similar relationships were observed for the number of incorrect responses, $F(2, 112) = 21.13$; $p < 0.001$; $\eta^2 = 0.274$, number of stimuli ignored, $F(2, 110) = 18.87$; $p < 0.001$; $\eta^2 = 0.255$, and mean reaction time, $F(2, 112) = 97.76$; $p < 0.001$; $\eta^2 = 0.636$, but not in reaction time range, $F(2, 112) = 2.96$; NS. No interaction could be demonstrated between the level of the avoidance-focused style and the order of the measurement in terms of the number of stimuli responded to $F(1, 56) = 0.03$; NS, or any other dependent variable.

DISCUSSION

The research problem pertained to the relationship between the performance of simple motor tasks requiring visual-motor coordination and the stress coping styles of subjects. I was interested in co-occurrence of certain parameters, including the number of correct and incorrect responses, the number of stimuli ignored, mean reaction times and reaction time ranges with scores within individual scales of the CISS questionnaire.

The results of the statistical analyses showed main measurement order effects occurring for each of the dependent variables, indicating a change in performance in successive runs. This is suggestive of a motor learning effect. The effect power measured by η^2 was in the strong effect range for most cases. The result was consistent with expectations based on various studies involving the visual-motor correlation testing [2].

As shown by the above results, the problem-focused style level was not associated with any changes or no changes in visual-motor coordination considering different response parameters. Thus, one cannot say that the style co-occurred with better or worse performance of motor tasks. Similar observations were made in case of avoidance-focused style. Also in this case, no correlation with temporal changes in coordination was observed. According to the obtained results, both styles were not related with the performance of motor tasks, thus disproving Hypothesis 1 and Hypothesis 3.

At the same time, Hypothesis 2 was confirmed as the emotion-focused style level was significant for two parameters: mean reaction time and reaction time range, revealing association in temporal coordination changes. Individuals with a lower level of the emotion-focused style were characterized by significantly shorter mean reaction times in all measurements and wider range of reaction times in the first measurements, with no difference being observed against individuals with a higher level of emotional coping in the remaining measurements. In addition, the effect power as measured by η^2 was indicative of a strong effect.

The result is very interesting in light of the earlier data suggestive of non-adaptive character of the emotion-focused style. It can be concluded that individuals with higher emotional coping style levels had longer reaction times. Although this did not translate into efficiency (number of correct/incorrect responses) in the present study, one may not exclude that such a relationship could occur in other conditions. Longer reaction times may be associated with high perseverance observed in individuals preferring the emotion-focused coping style [11]. Inappropriately quenched stimulation might interfere with continuously inflowing stimuli leading to longer reaction times. On the other hand, high emotional reactivity might make concentration on the task more difficult and also lead to longer reaction times. Although a motor learning effect and significant shortening of the mean reaction time were observed, the reaction times in the higher emotion-focused style scale score group were longer than those in the lower emotion-focused style scale score group for all measurements.

The analysis of the reaction time range showed that individuals with higher levels of the emotion-focused coping style somewhat surprisingly presented more even reaction times in the first meas-

urement run. Perhaps the reaction times in the first measurement were quite long following each stimulus, increasing only partially in the second and third runs, thus increasing the range. The wider range might also be associated with increasing fatigue. Although no statistically significant difference was observed between the second and third measurement in the higher emotion-focused style scale score group, such a difference was observed in the lower emotion-focused style scale score group, as the reaction time range increased.

CONCLUSIONS

The obtained results confirm observations made in other studies, suggesting that the emotion-focused coping style is a significant factor differentiating individuals. The result in the emotion-focused style scale allows to predict individual's behavior at many levels, from the simple motor reactions to the successful abuse rehab treatment. No explanation has yet been provided regarding the importance of this dimension.

The present study was conducted in a relatively small subject sample which might affect the results, for example by unintended selectivity of the sample. A larger and more diverse sample of subjects should be conducted to confirm the observed correlations. The social acceptance factor should also be taken into account. The problem-focused approach to difficult situations is associated with better social acceptance. This might have influence on the responses of some subjects and thus on the overall profile of results. It would also be advisable to verify whether the test conditions actually induced stress in the subjects. It would also be interesting to expand the spectrum of tasks involving eye-hand coordination so as to minimize the single test specificity effect. One may say that the present study was only an interlude for potential further considerations. They might be interesting as they would provide better knowledge on the capabilities of humans with particular traits as well as more information of their stronger and weaker points. Such information would also be helpful in the context of improving individual's functioning, indicating whether it would be possible or necessary. The requirements we impose on ourselves often do not match our actual needs or capabilities, and therefore it is good to know one's limitations well.

AUTHORS' DECLARATION:

Study Design: Anna Fałat; **Data Collection:** Anna Fałat; **Statistical Analysis**: Anna Fałat; **Manuscript Preparation:** Anna Fałat; **Funds Collection:** Anna Fałat. The Author declares that there is no conflict of interest.

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