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INDIVIDUAL DIFFERENCES STRATEGIC THINKING AND BEHAVIOR STYLES

The aim of this paper is an identification of individual differences in styles of strategic thinking and behaviors a dispositional variables, which are particularly important in complex task situations. There were conducted the research using the *Strategic Thinking and Behavior Questionnaire STBQ* (Bajcar, 2012) on a group of 2034 people. As a result of k-means cluster analysis, four clusters with characteristic styles of strategic thinking and behavior were extracted: 1) Activists, 2) Thinkers, 3) Passivists and 4) Strategists. Also, empirical results revealed the differentiation of personality ($N = 440$), and temperamental traits ($N = 350$) in the strategic thinking and behavior clusters. Extracted strategic thinking and behavior styles express the individual differences of the intentional and task activity, which reveal personal resources and deficits in the efficient realization of life goals, educational and professional tasks. Moreover, personality and temperamental characteristics of strategic thinking and behavior styles expand psychological context in the explanation of the task behaviors. The obtained knowledge about individual differences in styles of strategic thinking and behavior specifies conditions and possibilities of maximization of the efficient behavior in the key areas of human activity, as an education or professional work.

Keywords: strategic thinking, strategic behavior, individual differences

INTRODUCTION

Numerous disciplines of science are based on the assumption that a human being strives after effective behavior. Hence praxeology defines general rules and regularities of any forms of intentional and purposeful behavior (Kotarbiński, 2000; Pszczołowski, 1982). Relying on the praxeological basis of effective behavior, psychology examines effectiveness from the perspective of effective system of behavior regulation (Bandura, 2001), cognitive models (Strzałecki, 2003; 2004), and theory of “effective” personality (Obuchowski, 1982). Effective behavior is thus defined as an effect of

the ability to plan and act over a long period of time, the ability to continually redefine aims and tasks as well as the ability to adapt to new circumstances. These theories correspond with mechanisms of strategic thinking, which are particularly valued in theory of organization and management, albeit definitions of this term place great emphasis on its personal character (Bonn, 2005; Liedtka, 1998; Mintzberg, 1994). Strategic thinking is defined as an emergence of lower and higher cognitive processes related to generation, formulation, implementation, evaluation and modification of behavior strategies (Nosal, 1998; 2001). Strategy, defined in this way, integrates convergent mechanisms

(such as analytical, synthetic and critical thinking) as well as divergent ones (such as creative thinking, generation processes, innovativeness, or intuitive thinking) (Bonn, 2005; Liedtka, 1998; Nosal, 2001; Bajcar, 2011). It is worth noting that in strategic thinking an important issue is the need to combine cognitive processes with motivational and behavioral (implementation) strategies (Cantor, 1990; Gollwitzer, 1996; Mischel, Cantor, & Feldman, 1996; Nosal, 1998). Hence this paper views strategic thinking in a broader context, in relation to dimensions of strategic behavior. Such a broad definition of strategic thinking corresponds with theories defining psychological predictors of effective behavior. Most of these theories, such as theory of reasoned action (Fishbein & Ajzen, 2010), theory of planned behavior (Ajzen, 1991), or cognitive theories of self-regulation (Bandura, 2001; Gollwitzer, 1999; Carver & Scheier, 1998) strive to systematize and integrate various mechanisms of behavior regulation. Integrity of cognitive mechanisms and motivational and behavioral strategies indicates a key role of self-control and self-regulation processes of various mechanisms and lower-order processes in execution of effective behavior and avoidance of distraction in activity (Chuderski, 2010; Carver & Scheier, 1998; Kuhl, 1992; Taylor & Pham, 1996). In purposeful activity and task execution the subject thus activates higher-order regulatory mechanisms at the metacognitive level (Bandura, 2001; Nosal, 2001), that govern mechanisms of goal formulation, activity channeling as well as supervision of basic cognitive processes (Chuderski, 2010; Flavell, 1979; Fox & Riconscente, 2008; Paris, 2002). At this highest level of regulation the subject endeavors to maintain a close relationship between intention and behavior in the process of intentional activity based on evaluation and selection of aims as well as supervision of their implementation (Gollwitzer, 1999; Obuchowski, 1993).

In meta-regulation the subject activates strategies of conflict management between intention and behavior or obstacles to goal achievement, such as complexity, novelty and urgency of the task (Carver & Scheier, 1998; Gollwitzer, 1999; Kuhl, 1992). With respect to monitoring properties and controlling competencies, strategic thinking may be compared to metacognitive skills, which foster maximization of effective behavior (Nosal, 2011).

The idea of strategic thinking relates also to theories of cognitive styles (Gallen, 1999; Nosal, 1990; 2001), which occupy an important place in the model of behavior oriented towards formulation and implementation of behavior strategies. Cognitive styles refer to various levels of behavior regulation, such as information field management, information structure search, notional category management, equivalence detection and use of the resources of experience as well as cognitive control and self-regulation, supervision and metacognition (Nosal, 1990; Davidson & Sternberg, 1998).

The theory of mental self-government styles constitutes a particular analogy to individual differences in strategic thinking and behavior. This theory assumes that in intellectual activity a significant role is played by metacognitive control and decision processes which supervise the more elementary cognitive processes (Nosal, 2001). On the basis of the five dimensions of self-regulation of cognitive processes the following mental self-government styles have been distinguished to illustrate different ways of individual management of one's cognitive resources (Sternberg, 1997; Strzałecki & Wiśniewska, 2010): 1) (according to function) legislative, executive and judicial styles; 2) (according to form) monarchic, hierarchic, oligarchic and anarchic styles; 3) (according to level) local and global styles; 4) (according to range) internal and external styles; (according to tendency) liberal and conservative

styles. This diversity of attributes and mechanisms in these styles reveals the complexity and multidimensional character of the system of cognitive regulation of human behavior. Moreover, mental self-government styles mediate between the subject's abilities and their implementation and serve as indicators of the subject's effectiveness in completion of various tasks (Strzałecki & Wiśniewska, 2010).

These theoretical associations imply that purposeful or task-oriented behavior of the subject is strategic in character, since it involves formulation and selection of adequate cognitive and behavioral strategies in an individual system of controlling and maximizing effective behavior (Czerniawska, 2006; Flavell, 1979; Sternberg, 1997). Moreover, the essence of strategic activity is deliberate combination of mechanisms of formulation of behavior strategies and motivational and behavioral aspects of their implementation. These functionally different mechanisms are integrated thanks to volitional and self-regulatory processes, which are responsible for activation of mentally formed programs of goal implementation (Gollwitzer, 1996; Kadzikowska-Wrzosek, 2010; Mischel, Cantor, & Feldman, 1996). Such an integrated model of strategic thinking and behavior constitutes a regulation cycle of intentional behavior and closely corresponds with the dichotomy of deliberative and implemental processes in Gollwitzer's intentional behavior model (1999). In addition, styles of strategic thinking and behavior defined in such a way may be treated as universal models of the subject's effective behavior.

In description of effective behavior the general praxeological perspective is well supplemented by the psychological perspective of individual differences. Knowledge about inter-subject variability in cognitive abilities as well as their behavioral consequences facilitates a more adequate evaluation and selection of behavior strategies as well as a more

accurate prediction of effective behavior. In this context, search for individual differences in the form of specific configurations of dimensions of strategic thinking and behavior is highly justified. The concept of style seems to be an appropriate way of expressing individual differences, thanks to such attributes of style as a high level of its generality, or the possibility to integrate cognitive and personality mechanisms (Strelau, 2015; Messick, 2001; Sternberg & Grigorenko, 1997). Style, *ex definition*, constitutes a specific configuration of particular attributes and strategies of behavior refers to relatively constant individual differences in management and control of cognitive, emotional and motivational processes (Messick, 1994). Strategic thinking style may thus constitute basis for description of different models of management of mechanisms of behavior programming (Nosal, 2000; 2011). Identification of different styles of strategic thinking and behavior may have important practical implications for self-government, educational stimulation or management practice. Knowledge about a particular style of strategic thinking and behavior used may increase awareness of one's own potential and limitations in behavior self-regulation. Moreover, knowledge about various styles of activity offers an opportunity to stimulate or control effectiveness of task-oriented activity of other people in the field of education and work.

In a broader context, management of higher-order cognitive and self-regulatory processes (at the strategic or metacognitive level) is rooted in an individual model of styles and cognitive preferences as well as unique configuration of temperamental and personality traits of the subject (Nosal, 2000; Strelau, 2015). Thus, it seems justified not only to distinguish individual models of strategic thinking, but also to determine their dispositional basis in temperament and personality. Such an extended profile of particular strategic thinking and

behavior styles offers a wider psychological context in explanation of the subject's behavior in problem-solving or task-solving in the field of education or work.

METHOD

Measures

To measure indexes of strategic thinking and behavior *The Strategic Thinking and Behavior Questionnaire STBQ* (Bajcar, 2012) was used. It consists of 11 measurement scales identifying various dimensions of strategic behavior. 1) Activity diagnoses activity orientation, initiative in behavior as well as a tendency to act in different situations; 2) Flexibility measures openness to novelty and change as well as the ease of changing one's behavior; 3) Creativity signifies the ability to discover, generate and implement new modes of activity, and also non-stereotypical and innovative solutions; 4) Endurance is used to measure the ability to act long-term as well as a persistent endeavor to implement the aims set and activities undertaken; 5) Risk preference measures the level of preference for risky situations as well as the ease of dealing with insecurity and unpredictability of the environment; 6) Effective behavior diagnoses the subject's endeavor to achieve effective behavior and the aims set; 7) Analytical skills measure the ability to detect strong and weak points and to assess opportunities and threats in problem solving; the ability to discover flaws and to perceive new aspects of a task-solving situation; 8) Global thinking diagnoses a tendency to think in broad terms, the ease of adopting numerous perspectives in evaluation of the activities and tasks undertaken; 9) Consequence prediction measures the ability to predict the consequences of events and effects of one's own and other people's behavior; 10) Long-term planning signifies a tendency to plan and program behavior over a long peri-

od of time; 11) Strategic evaluation diagnoses a tendency of an individual to analyze one's own activities and their effects (successes and failures) with respect to such resources as: time, effort, financial, emotional and social costs. All the scales demonstrated a high level of internal consistency (Cronbach's α at .76 – .86)¹. Due to numerous relations between particular scales, two factors have been singled out in factorial analysis. The first – strategic behavior – clusters behavioral dimensions, such as activity, creativity, flexibility and endurance in behavior as well as risk preference, and expresses a more implemental aspect of activity. On the other hand, the other factor – strategic thinking – clusters cognitive characteristics of activity, i.e. dimensions of analytical skills, consequence prediction, analysis and strategic planning as well as global thinking. This bifactorial structure of STBQ dimensions corroborates the relative discreteness of the distinguished functional regulation mechanisms of mental processes and behavior (Bajcar, 2012). Therefore, the distinguished behavior styles give grounds for separate description of strategic thinking style and strategic behavior style, although at the functional level both styles are mutually correlated ($r = .44$).

To measure temperamental traits *The Formal Characteristics of Behavior – Temperament Inventory* (FCB-TI; Zawadzki & Strelau, 1997) was used, measuring energetic and temporal characteristics of behavior: Activity, Endurance, Emotional reactivity, Sensory sensitivity, Briskness as well as Perseverance. To measure personality traits the NEO-FFI *Personality Inventory* (Zawadzki, Szczepaniak, & Strelau, 1995) was used, measuring: Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness.

¹ More detailed information about the reliability and validity of SBTQ are presented in other paper (Bajcar, 2012).

RESULTS

Individual differences in strategic thinking and behavior

With a view to discovering individual differences in the multidimensional construct of strategic thinking and behavior, the study was conducted on a sample of 2034 subjects, including 1109 women and 925 men aged 18-78 ($M_{age} = 33.1$; $SD_{age} = 12.7$).

Previous data analyses revealed significant differences in strategic thinking and behavior styles between genders (Bajcar, 2012). Compared to women, men displayed a significantly higher level of strategic behavior dimensions (i.e. flexibility, persistence in behavior and risk preference). It may thus be ascertained that men are more ready to take risks, more enduring and persevering in implementation of their plans than women. They also deal better with unpredictable situations and are more adaptable. However, no differences were detected between men and women in characteristics of mental strategic mechanisms, which implies other sources of their determination than gender differences. It may thus be assumed that gender is a differentiating factor for motivational-behavioral components of strategic style.

Current data confirms that men scored significantly higher ($p < .001$) in all dimensions of strategic behavior than women, but in addition they differed from women in the level of two dimensions of strategic thinking (i.e. consequence prediction and strategic evaluation). Compared to women, men better predicted consequences of events and human behavior, $F(1, 2032) = 5.60$; $p = .02$; as well as more ready to analyze their own successes and failures from the perspective of different personal resources (such as time, effort, financial, emotional and social costs) than women, $F(1, 2032) = 5.17$; $p = .02$. These gender differences in strategic thinking and behavior styles may result from

social expectations regarding gender roles in social and professional life (Wojciszke, 2004).

To explore individual differences in strategic thinking and behavior, k-means cluster analysis (Zakrzewska, 2004) was conducted, with four clusters with different strategic behavior styles (Fig. 1). To facilitate comparison of the levels of particular indexes measured, all the results were presented in the form of standardized z scores.

The first cluster of subjects, referred to as *Thinkers*, was characterized by an increased level of all cognitive dimensions, i.e. analytical skills, consequence prediction, global thinking, long-term planning as well as strategic evaluation, and at the same time a low level of behavioral dimensions. This characteristics corresponds with *deliberative style*, dominated by mental formulation of behavior strategies rather than processes of their implementation.

The second group of subjects – *Activists* – displayed a high level of strategic dimensions, such as activity, flexibility, creativity, persistence in behavior as well as risk preference, and at the same time exhibited a low level of cognitive indexes (i.e. analytical skills, globality, consequence prediction, long-term planning and strategic evaluation). The results imply that the subjects mainly focus on execution and maintenance of activity, on implementation of ideas and solutions, at the cost of mental processing activity. Such a configuration of dimensions corresponds with *proactive-implemmental style*.

Another cluster – *Strategists* – consisted of subjects manifesting *strategic style*, namely characterized by high intensity of all indexes of strategic thinking and behavior (namely cognitive and motivational-behavioral mechanisms). This means that they have a great ability to integrate cognitive activity with the executed behavior. It may thus be said that activity of *Strategists* is underpinned by pragmatic striving for effectiveness and by adaptation of their behavior to the circumstances.

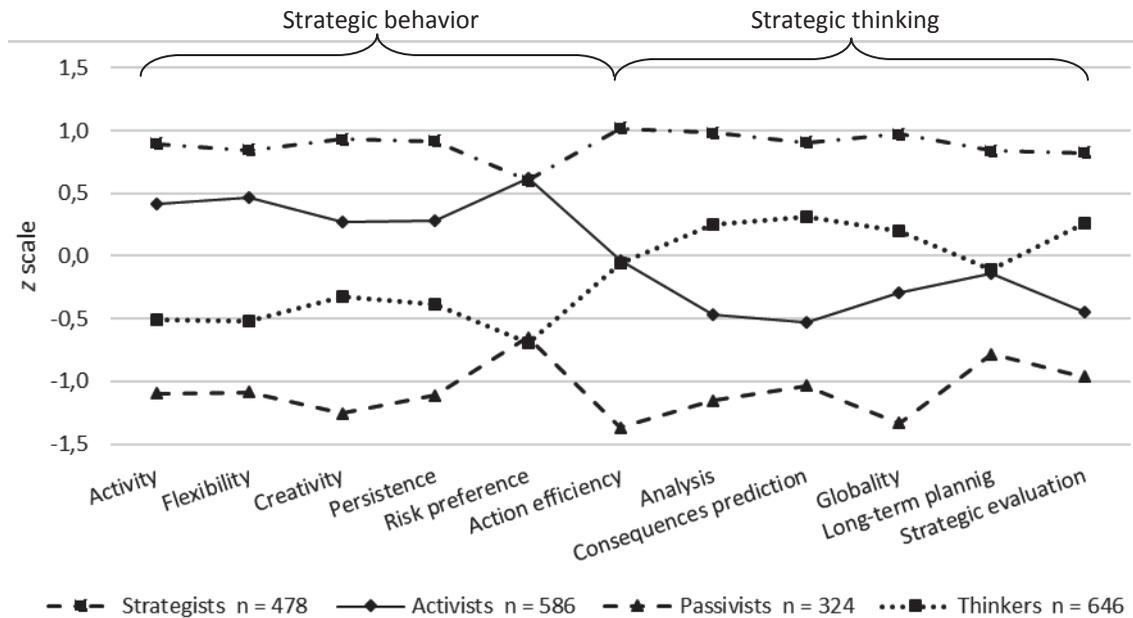


Fig. 1. Strategic thinking and behavior styles – Results of the cluster analysis

Subjects in the last cluster displayed *passive style*, expressed in a low level of all aspects of strategic thinking and behavior of the subject. Subjects in this group – *Passivists* – exhibited a lower risk preference, activity, flexibility, creativity and persistence in behavior. Moreover, the subjects were not very active in analysis, globality, “thinking in broad terms” and “thinking ahead.” This implies that they tend to preserve the *status quo* and to wait for the events to develop on their own.

These analysis results revealed individual differences in intensity of particular dimensions of strategic thinking and behavior. The four distinguished groups manifest different models of strategic behavior, revealed in various task-solving situations.

Temperamental traits and strategic thinking and behavior style

The next step consisted in an attempt to identify the temperamental model in the

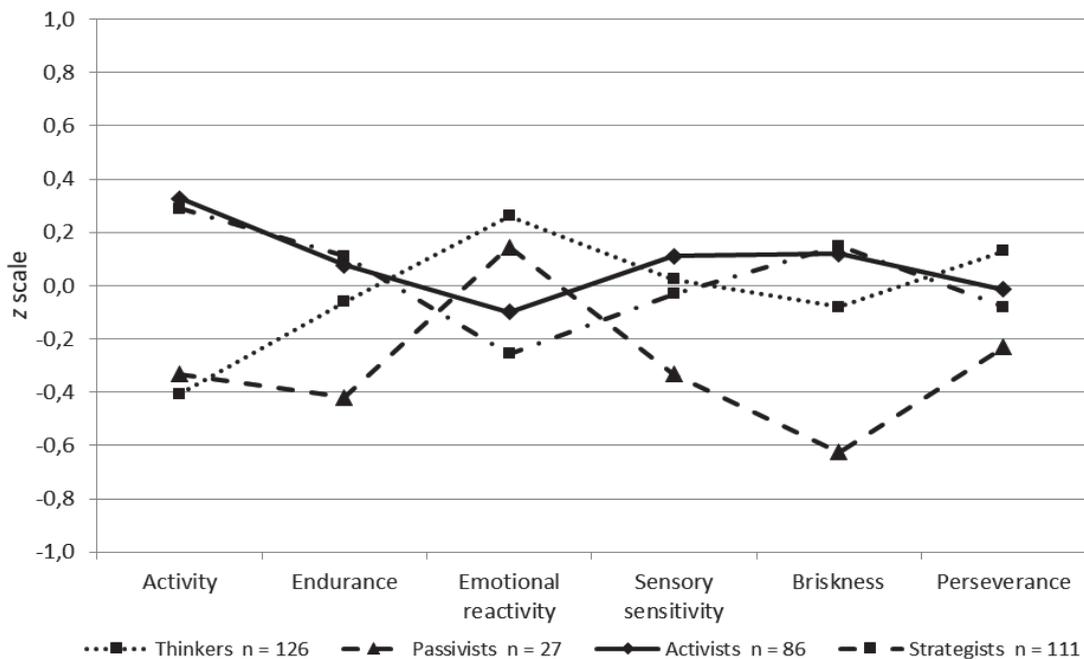
clusters with different strategic thinking and behavior styles. The study was conducted on a sample of 350 subjects (including 183 women and 167 men, aged 18-78, $M_{age} = 33.86$, $SD_{age} = 15.13$). The conducted variance analysis reveals that the distinguished strategic thinking and behavior styles are related to different temperamental characteristics. Subjects with different profiles of behavior exhibit a significantly different level of activity, emotional reactivity, briskness and a marginally significant level of endurance (Table 1 and Fig. 2)..

Post hoc tests (see Table 1) revealed that *Activists* and *Strategists* are more active than *Thinkers* and *Passivists*. In addition, *Strategists* do not differ in the level of activity of *Activists*. These results confirmed the earlier presented characteristics of strategic thinking and behavior styles. Mean variance analysis also demonstrates that *Passivists* are significantly more reactive than *Strategists* and *Activists* as well as less sensitive to incoming

Table 1. Results of the one-way ANOVA analysis of temperamental traits in the groups with different styles of strategic thinking and behavior

	Sum of square	Mean square	F (3,346)	<i>p</i>	η^2	Post hoc tests*
Activity	42.25	14.08	15.88	.001	.12	M, P < A, S
Endurance	7.12	2.37	2.40	.067	.02	P < A, S
Emotional reactivity	17.25	5.75	6.00	.003	.05	M > A, S
Sensory sensitivity	4.21	1.40	1.41	.240	.01	P < A
Briskness	15.03	5.01	5.19	.002	.04	P < A, M, S
Perseverance	4.29	1.43	1.44	.232	.01	-

* mean differences on the significance level $p < .05$. $N = 350$. A – Activists, M – Thinkers, P – Passivists, S – Strategists.

**Fig. 2.** Temperamental traits in the groups with different style of strategic thinking and behavior

stimuli than *Thinkers*. In addition, *Thinkers* appeared to have a greater tendency than *Activists* to maintain their response after the stimulus subsides.

These results demonstrate that *Activists* are characterized by high activity and endurance,

and simultaneously low perseverance. Such a set of temperamental traits manifests great energy resources and high readiness to undertake and maintain activity and facilitates rapid changing or shifting of responses as well as undertaking constantly new activities (Strelau,

2015; Łukaszewski & Marszał-Wiśniewska, 2006). *Passivists* display a low level of activity, endurance and briskness, with simultaneous high reactivity. Such a temperament model manifests low and rapidly diminishing energy resources of an individual, which may account for their behavioral and intellectual inertia. Such subjects may wish to preserve their energy and abilities. *Thinkers* are moderately sensitive and reactive and not very active, with the highest sensitivity to incoming stimuli among all the subjects. It seems that they focus solely on processing of external stimulation. In this way they close themselves off in a world of ideas and thoughts, which does not favor high intellectual effectiveness. *Strategists*, on the other hand, manifest low reactivity, high rate of response as well as increased activity. Such a temperamental type allows an individual to respond quickly to the circumstances and to become involved in various activities. Thanks to that, *Strategists* display high flexibility, risk preference or creativity and innovativeness in behavior. With reference to indexes of strategic thinking, *Strategists* are prepared for increased mental activity in response to dynamic circumstances.

Personality traits and strategic thinking and behavior style

The next step involved an attempt to identify differences in personality traits accompanying particular strategic thinking and behavior styles. The study was conducted on a sample of 440 subjects (including 259 women and 181 men) aged 18-70; $M_{age} = 46.21$; $SD_{age} = 14.26$. Variance analysis results revealed variation in personality traits in clusters with different strategic thinking and behavior styles (see Table 2 and Fig. 3).

Post hoc analysis shows that *Strategists* are significantly more emotionally stable than the remaining groups. Moreover, *Strategists* exhibit a significantly higher level of extraversion than *Thinkers* and *Passivists*. There are, however, no

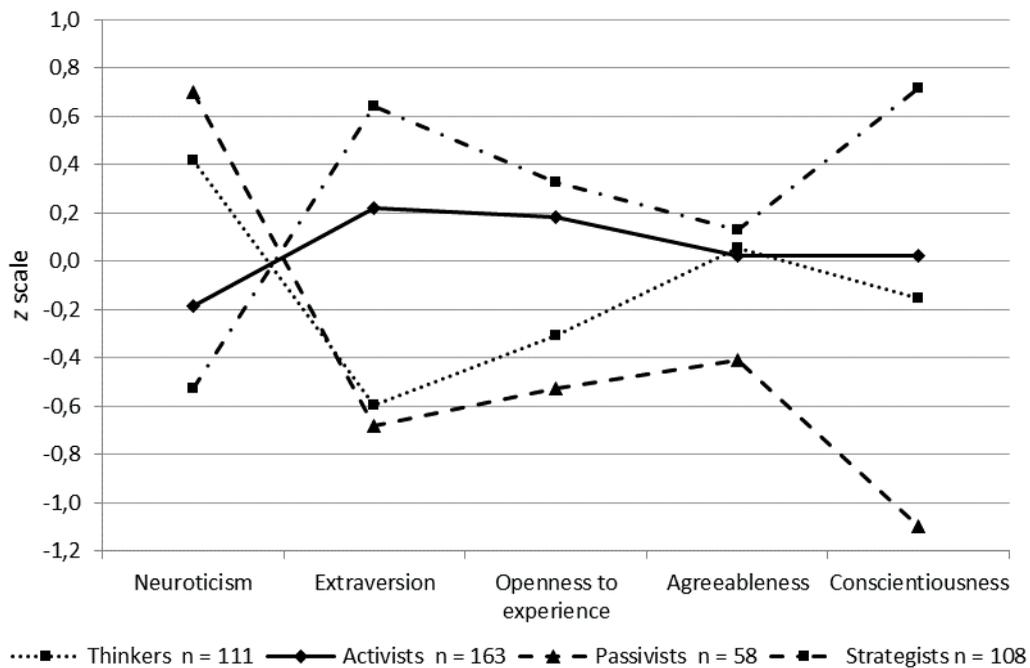
differences between *Strategists* and *Activists* in extraversion, expressing openness to other people. *Post hoc* analysis also revealed that *Activists* are significantly less agreeable, and *Strategists* – more conscientious in behavior than the remaining subjects. *Thinkers*, on the other hand, are significantly more conscientious and meticulous than *Passivists*, and the remaining groups do not differ in the level of conscientiousness.

On the basis of the conducted analysis of variance one may identify personality characteristics of subjects with a preference for a particular strategic thinking and behavior style. *Activists* are rather relentless in interpersonal relations as well as slightly chaotic in behavior. The remaining personality traits, such as neuroticism, openness and extraversion achieve a moderate level, which matches characteristics of the proactive style, activity-orientation, fast response to changes and successful dealing with complex stimulation of the environment. It would hence follow that for *Activists* activity is more autotelic than instrumental in character. *Passivists* manifest little openness to experience, introversion and high agreeableness. This implies that they display a tendency to avoid, withdraw, or to be governed by others. Are at the same time they are highly emotionally unstable and chaotic in behavior. Such personality characteristics confirmed a low level of adaptability of the passive style. The *Thinkers* group revealed a well-balanced personality profile. The moderate level of all analyzed strategic dimensions makes it difficult to explain the regulatory mechanisms of this thinking and behavior style. It is quite possible that more complex (moderating) correlations between cognitive, personality and temperamental variables are involved in the personality profile of the deliberative style. *Strategists* display a high level of emotional stability, extraversion and conscientiousness, and in addition a moderate level of openness to

Table 2. Results of the one-way ANOVA analysis of personality traits in the groups with different styles of strategic thinking and behavior

	Sum of square	Mean square	F (3, 436)	<i>p</i>	η^2	Post hoc tests*
Neuroticism	83.88	27.96	34.33	.001	.19	A < M, P S < M, A, P
Extraversion	118.41	39.47	53.68	.001	.27	M, P < A, S A < S
Openness to experience	43.77	14.59	16.09	.001	.10	M, P < A, S A > M, P
Agreeableness	12.06	4.02	4.11	.007	.03	P < M, A, S
Conscientiousness	127.959	42.65	59.79	.001	.29	P < M, A, S S > M, A

* mean differences on the significance level $p < .05$. $N = 350$. A – Activists, M – Thinkers, P – Passivists, S – Strategists.

**Fig. 3.** Personality traits in the groups with different style of strategic thinking and behavior

experience and agreeableness. Such a personality profile exhibits an individual's potential for effective thinking and behavior as well as highly pragmatic ability to integrate mental

processes with activity. *Strategists* display great ease in interpersonal and task-solving situations, which allows them to be highly effective in various fields of activity.

CONCLUSIONS

In summarizing study results, a number of issues should be emphasized. Firstly, a consistent model of individual differences in strategic thinking and behavior has been identified. The four different styles of strategic behavior that have been identified exhibit varying levels of adaptability and effective activity in complex task-solving situations. Moreover, an important study result is identification of variation of temperamental and personality traits in particular strategic thinking and behavior styles. *Activists* display increased activity in behavioral aspects as well as decreased activity of mental processes. In addition, they manifest a high level of energy resources, resilience to distraction and difficulties and little perseverance, and with regard to personality traits – relentlessness towards others. *Thinkers* display a dominating level of mental activity at the strategic level, while in behavior they exhibit greater inertia, lack of initiative and state-orientation. They demonstrate a personality profile that is not very varied, and temperamentally they are not very active but extremely sensory sensitive. *Passivists* in turn display a low level of strategic thinking and behavior, and in personality characteristics exhibit introversion and emotional instability, chaoticity and low openness to experience. Moreover, they are highly reactive, but not very active. *Strategists* possess the ability to integrate a high level of cognitive processes and responses. In addition, they are emotionally stable, not very reactive, meticulous in behavior, highly active and very prompt in responses. Such characteristics reveals a great potential of energy and intellectual resources in *Strategists*. It may be thus assumed that these profiles of strategic thinking correspond with the model of rational behavior and present models of activity of varying levels of effectiveness. These individual differences in strategic thinking and behavior styles and their

temperamental and personality characteristics define the personal basis of effective self-regulation and effective behavior. Relations between temperamental and personality traits and strategic thinking and behavior styles refer to the regulatory function of temperament (Strelau, 2015) and personality (Obuchowski, 1982; Łukaszewski, 1974). Personality traits determine individual preferences to use particular strategic mechanisms which correspond with the model of effective personality and the resulting effective regulatory system (Strzałecki, 2012; Obuchowski, 1982). Temperamental traits supplement and enhance characteristics of strategic thinking and behavior styles in the aspect of stimulation regulators as well as the subject's preferences for a particular cognitive-emotional style (Strelau 2015; Matczak 1982).

Diagnosis of potential of resources defined in such a way, as well as cognitive, motivational and behavioral deficits of the subject, facilitates determination of the direction for self-development and maximization of effectiveness of the behavior strategies used. Awareness of one's own mental and regulatory potential increases knowledge about preconditions/bases of effectiveness vs. lack of effectiveness of one's own activity. It should foster rational behavior and adequate selection of strategies to achieve appropriate aims. On the other hand, knowledge about variation in thinking and behavior styles facilitates more accurate prediction of the subject's effective behavior and opportunities to stimulate or govern activity of others in realization of their life aims, in educational and professional tasks. A particularly important area which manifests mechanisms of strategic thinking is the field of choosing and following one's career path.

Limitations

It must be assumed that the presented empirical findings may be limited in formulation of conclusions. The first limitation may lie in the

solely declarative method of measurement of variables, not corroborated by any behavioral indexes. In this respect, future studies will involve measurement of strategic variables in task simulations and control of effectiveness variables, such as task result or time of execution. Another source of measurement error could stem from measurement context effect, as a result of measurement of all the variables simultaneously with the use of surveys with a similar style of test items and identical scales (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In order to investigate this effect, common method variance was evaluated. Due to limitations of the techniques available, also common latent factor technique (*CMF*) and Harman's single factor test were used. In model testing with the use of common latent factor (Johnson, Rosen, & Djurdjevic, 2011), confirmatory factor analysis was conducted of two factorial models in both studies (measuring temperament and personality traits). In the study measuring temperamental traits in the first model three latent variables were selected (factor 1 – Strategic behavior, factor 2 – Strategic thinking, factor 3 – Temperamental traits).

After introduction of common latent factor *CMF* into the three-factor model, fit indices did not change, and standardized regression coefficients of paths in models did not differ from scores in the model without the selected latent factor² ($\Delta\beta < .2$) (Richardson, Simmering, & Sturman, 2009). Analogous results were obtained in confirmatory factor analysis of the combined factorial model for strategic dimensions and personality traits. After introduction of *CMF* into the three-factor model (factor 1 – Strategic behavior, factor 2 – Strategic thinking, factor 3 – Personality traits),

2 Parameters of model without *CMF*: $\chi^2/df = 1.93$; RMSEA = .05; GFI = .95; AGFI = .91; CFI = .97; TLI = .95. Parameters of model with *CMF*: $\chi^2/df = 2.04$; RMSEA = .05; GFI = .95; AGFI = .90; CFI = .97; TLI = .95.

fit indices achieved a comparable level in relation to the model without the selected *CMF*³. Harman's single factor test demonstrated that single-factor variance does not exceed 50% and is significantly lower than variance in three-factor model of personality traits and strategic dimensions⁴ as well as temperamental traits in combination with dimensions of strategic thinking and behavior⁵. These analysis results thus indicate that common method variance error did not occur in the current study.

Due to these limitations, current study results should be treated as preliminary findings in this field of study. The revealed individual differences in strategic thinking and behavior styles constitute a starting point for research verifying validity of strategic thinking and behavior styles in different task-solving and decision-making situations, which will require from subjects formulation, selection and implementation of particular behavior strategies. Future studies will involve verification of the identified strategic thinking styles on the basis of more objectivized indexes of measurement of cognitive and behavioral variables.

The empirical findings obtained in the study may constitute grounds for construction of a theoretical and empirical model of personal and situational determinants of particular strategic thinking and behavior styles, through extension of the set of dispositional variables under analysis as well as identification of a model of their direct and indirect correlations (including mediating and moderating systems). Due to explorative character

3 Parameters of model without *CMF*: $\chi^2/df = 2.36$; RMSEA = .06; GFI = .96; AGFI = .92; CFI = .98; TLI = .96. Parameters of model with *CMF*: $\chi^2/df = 2.32$; RMSEA = .06; GFI = .96; AGFI = 0.92; CFI = 0.98; TLI = .96.

4 Three factor model (SBTQ+NEO-FFI): $R^2 = .65$. One factor model (SBTQ+NEO-FFI): $R^2 = .43$.

5 Three factor model (SBTQ+FCB-TI): $R^2 = .65$. One factor model (SBTQ+FCB-TI): $R^2 = .29$

of the current study, future studies also aim at investigating the consequences of regulatory styles of strategic behavior with reference to effectiveness in task solving, resourcefulness as well as entrepreneurship. Another important theoretical and empirical issue in this field of studies will be an attempt to determine the functionality level, areas and range of dysfunctionalities of the identified models of strategic behavior.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Bajcar, B. (2011). Dywergencyjny i konwergencyjny charakter stylów myślenia i działania. In: M. Straś-Romanowska, A. Keplinger, & B. Bartosz (red.), *Transgresje – innowacje – twórczość* (pp. 121-135). Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.
- Bajcar, B. (2012). Kwestionariusz Styl Myślenia i Działania Strategicznego. Nowe narzędzie do pomiaru wskaźników myślenia strategicznego. *Studia Psychologiczne*, 50(2), 5-24.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Bonn, I. (2005). Improving strategic thinking: A multilevel approach. *Leadership & Organization Development Journal*, 26(5), 336-354.
- Cantor, N. (1990). From thought to behavior: Having and doing in the study of personality and cognition. *American Psychologists*, 45(6), 735-750.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Chuderski, A. (2010). Samokontrola: własności, funkcje, mechanizmy i ograniczenia. *Studia z Kognitywistyki i Filozofii Umysłu*, 4(1), 27-51.
- Czerniawska, E. (2006). Aktywność strategiczna i wybrane wymiary stylu poznawczego uczniów gimnazjum i liceum a ich osiągnięcia szkolne. *Psychologia Rozwojowa*, 11(2), 93-103.
- Davidson, J. E., & Sternberg, R. J. (1998). Smart problem solving: How metacognition helps. In: D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 47 - 68). Lawrence Erlbaum Associates Publishers.
- Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. New York: Psychology Press, Taylor & Francis.
- Flavell, J. H. (1979). A new area of cognitive – developmental inquiry. *American Psychologist*, 34(10), 906-911.
- Fox, E., & Riconscente, M. (2008). Metacognition and self-regulation in James, Piaget, and Vygotsky. *Educational Psychology Review*, 20(4), 373-389.
- Gallén, T. (1999). The cognitive style and strategic thinking. *Proceedings of the Leadership and Myers-Briggs Type Indicator*, 25-30. Washington DC, USA.
- Gollwitzer, P. M. (1996). The volitional benefits of planning. In: J. A. Bargh, & P. M. Gollwitzer (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 287-312). New York, London: The Guilford Press.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493-503.
- Johnson, R. E., Rosen, C. C., & Djurdjevic, E. (2011). Assessing the impact of common method variance on higher order multidimensional constructs. *Journal of Applied Psychology*, 96(4), 744-761.
- Kadzikowska-Wrzosek, R. (2010). Wolna wola w świetle badań współczesnej psychologii nad procesami samoregulacji oraz samokontroli. *Psychologia Społeczna*, 4(15), 330-344.
- Kotarbiński, T. (2000). *Dzieła wszystkie. Traktat o dobrej robocie*. Wrocław: Ossolineum.
- Kuhl, J. (1992). A theory of self - regulation: Action versus state orientation, self - discrimination and some applications. *Applied Psychology: An International Review*, 41(2), 97-129.
- Liedtka, J. M. (1998). Strategic thinking: Can it be taught? *Long Range Planning*, 31(1), 120-129.
- Łukaszewski W. (1974). *Osobowość: struktura i funkcje regulacyjne*. Warszawa: PWN.
- Łukaszewski, W., & Marszał-Wiśniewska, M. (2006). *Wytrwałość w działaniu. Wyznaczniki sytuacyjne i osobowościowe*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Matczak, A. (1982). *Style poznawcze*. Warszawa: PWN.
- Messick, S. (1994). The matter of style: manifestations of personality in cognition, learning, and teaching. *Educational Psychologist*, 29, 121-136.

- Messick, S. (2001). Style in the organization and defense of cognition. In: J. M. Collis, & S. Messick (Eds.), *Intelligence and Personality: Bridging the Gap in Theory and Measurement* (pp. 259-272). Mahwah, NJ: Erlbaum.
- Mintzberg, H. (1994). The rise and fall of strategic planning. *Harvard Business Review*, 72(1), 107-114.
- Mischel, W., Cantor, N., & Feldman, S. (1996). Principles of self-regulation: The nature of willpower and self-control. In: E. T. Higgins, & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 329-360). New York: Guilford Press.
- Nosal, C. S. (1990). *Psychologiczne modele umysłu*. Warszawa: PWN.
- Nosal, C.S. (1998). O myśleniu strategicznym. In Z. Wołk (Ed.), *Humanizm – prakseologia – pedagogika* (pp. 59-72). Zielona Góra: Wydawnictwo WSP.
- Nosal, C. S. (2000). Różnice w stylach myślenia i uczenia się. *Przegląd Psychologiczny*, 43(4), 469-480.
- Nosal, C. S. (2001). *Psychologia myślenia i działania menedżera*. Wrocław: Akade.
- Nosal C. S. (2011). Myślenie menedżera – między metapoznawaniem a intuicją. W: B. Rożnowski, & M. Łaguna (Eds.), *Człowiek w pracy i organizacji: perspektywa psychologiczna* (pp. 67-91). Lublin: Wydawnictwo KUL.
- Obuchowski, K. (1982). Badania osobowości efektywnej. In: K. Obuchowski, & W. Paluchowski (Eds.), *Efektywność a osobowość* (pp. 5-24). Wrocław: Ossolineum.
- Obuchowski, K. (1993). *Człowiek intencjonalny*. Warszawa: Wydawnictwa Naukowe PWN.
- Paris, S. G. (2002). When is metacognition helpful, debilitating, or benign? In P. Chambres, M. Izaute, & P. J. Marescaux (Eds.), *Metacognition: Process, function and use* (pp. 105-120). Boston: Kluwer.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Pszczółowski, T. (1982). *Dylematy sprawnego działania*. Warszawa: Wiedza Powszechna.
- Richardson, H. A., Simmering, M. J., & Sturman, M. C. (2009). *A tale of three perspectives: Examining post hoc statistical techniques for detection and correction of common method variance*. Cornell University, School of Hospitality Administration. <http://scholarship.sha.cornell.edu/articles/104>. Pobrano 7 lutego 2017
- Sternberg, R. J. (1997). *Thinking styles*. New York: Cambridge University Press.
- Sternberg, R. J., & Grigorenko, E. L. (1997). Are cognitive styles still in style? *American Psychologist*, 52(7), 700-712.
- Strelau, J. (2015). *Różnice indywidualne: historia – determinanty – zastosowania*. Warszawa: Wydawnictwo Scholar.
- Strzałecki, A. (2003). *Psychologia twórczości. Między tradycją a ponowoczesnością*. Warszawa: Wydawnictwo UKSW.
- Strzałecki, A. (2004). Metakomponenty procesu rozwiązywania problemów. Argumenty za niezmienniczością. *Zagadnienia Naukoznawstwa*, 40(4), 575-599.
- Strzałecki, A. (2012). Sprawność osobowości. Kontrowersje wokół ogólnego czynnika osobowości twórczej. *Zagadnienia Naukoznawstwa*, 192(2), 85-109.
- Strzałecki, A., Wiśniewska, E. (2010). Style myślenia według R. J. Sternberga. Uwarunkowania psychologiczne. *Przegląd Psychologiczny*, 53(1), 33-59.
- Taylor, S. E., & Pham, L. B. (1996). Mental simulation, motivation and action. In: P. M. Gollwitzer, & J. A. Bargh (Eds.), *The psychology of action. Linking cognition and motivation to behavior* (pp. 219-235). New York: The Guilford Press.
- Wojciszke, B. (2004). *Kobiety i mężczyźni: odmienne spojrzenia na różnice*. Gdańsk: GWP.
- Zakrzewska, M. (2004). Miary podobieństwa i odległości dla danych ilościowych wykorzystywane przez SPSS w analizie skupień, In: J. Brzeziński (Ed.), *Metodologia badań psychologicznych. Wybór tekstów* (pp. 506-534). Warszawa: Wydawnictwo Naukowe PWN.
- Zawadzki, B., & Strelau, J. (1997). *Formalna Charakterystyka Zachowania – Kwestionariusz Temperamentu (FCZ-KT). Podręcznik*. Warszawa: Pracownia Testów Psychologicznych PTP.
- Zawadzki, B., Szczepaniak, P., & Strelau, J. (1995). Diagnostyka psychometryczna pięciu wielkich czynników osobowości: adaptacja kwestionariusza NEO-FFI Costy i McCrae do warunków polskich. *Studia Psychologiczne*, 33, 189-225.

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RÓŻNICE INDYWIDUALNE W STYLACH MYŚLENIA I DZIAŁANIA STRATEGICZNEGO

ABSTRAKT

Celem tego artykułu jest identyfikacja różnic indywidualnych w zakresie stylów myślenia i działania strategicznego jako zmiennych dyspozycyjnych podmiotu, mających szczególne znaczenie w złożonych sytuacjach zadaniowych. Przeprowadzono badania za pomocą kwestionariusza Styl Myślenia i Działania Strategicznego SMiDS (Bajcar, 2012) w grupie 2034 osób. W rezultacie analizy skupień metodą k-średnich wyodrębniono cztery grupy osób o odmiennym stylu myślenia i działania strategicznego podmiotu: 1) Aktywistów, 2) Myślicieli, 3) Pasywistów i 4) Strategów. Ponadto analiza różnic wykazała zróżnicowanie cech osobowości ($N = 440$) i cech temperamentu ($N = 350$) w skupieniach o różnych stylach aktywności strategicznej. Wyodrębnione style myślenia i działania strategicznego wyrażają różnice indywidualne w funkcjonowaniu intencjonalnym i zadaniowym, które ujawniają podmiotowe zasoby i deficyty w skutecznej realizacji celów życiowych, zadań edukacyjnych i zawodowych. Ponadto osobowościowe i temperamentalne charakterystyki stylów myślenia i działania strategicznego poszerzają kontekst psychologiczny w wyjaśnianiu zachowań w sytuacjach zadaniowych. Uzyskana wiedza na temat różnorodnych stylów funkcjonowania pozwala określać warunki i możliwości maksymalizowania skuteczności działania w kluczowych obszarach ludzkiej aktywności, jak edukacja czy praca.

Słowa kluczowe: myślenie strategiczne, działanie strategiczne, różnice indywidualne