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Personality metatraits and Young's early maladaptive schemas[1]

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Abstract: Introduction and objective: The objective of the research presented here was an attempt to identify, represented in metatraits, personality-based determinants for early maladaptive schemas in Young's concept. The basic assumption was that metatraits understood as biologically conditioned, basic forces shaping a person's style of functioning in the sphere of thoughts, feelings and behaviour, explain to a significant extent the intensity of the maladaptive cognitive-emotional schemas. ***Materials and methods:*** A group of 404 subjects (221 women and 183 men) aged between 18 and 78 years (M = 37; SD = 10.78). Respondents completed the *CPM-Q-SF Personality Questionnaire* and the *YSQ-S3 Young's Schema* Questionnaire. ***Results:*** The results from the advanced statistical analyses confirmed the assumption that personality metatraits play a sigfnificant role in terms of predicting early maladaptive schemas. It turned out that the metatraits alpha-minus disinhibition and gamma-minus disharmony underlie all five schema areas in Young's approach. ***Conclusions:*** By verifying the relationships discussed, it is possible to conclude that metatraits denoting emotional instability, low frustration tolerance, aggressiveness as well as depressiveness, distrust and generally poor psycho-physical condition may represent a biologically determined personality basis for the organisation and development of dysfunctional mental codes that function as information processing mechanisms and motives for maladaptive behavioural reactions. In practical terms, the above-mentioned means that in case of certain personality disorders, working on schemas, referring to childhood experiences, may be the main approach due to the inability to change the biologically determined personality.
Keywords: personality metatraits, circumplex of personality metatraits, early maladaptive schemas

Introduction

Young (2010), inspired by the low effectiveness of cognitive behavioural therapy in the context of recurrence of certain psychiatric disorders, developed the cognitive meaning of schemas, characterising them as effects of destructive experiences from childhood, related to the deprivation of basic psychological needs. This approach focuses on factors other than cognitive distortions that sustain the rigidity of schemas and assigns much more importance to their early childhood origins (Roediger et al., 2018). A schema, in Young's terms, is more than a belief, it is a dysfunctional pattern made up of corresponding memories, emotions, thoughts and bodily sensations. The current model assumes eighteen such schemas, mapped to five higher-order factors, called the areas. These areas include: disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and over-vigilance and inhibition (Young et al., 2003).

1. Theoretical basics of research

In addition to the family environment, which is primarily responsible for the level of the child's needs met, the child's innate dispositions also have a significant influence on the development of maladaptive schemas (Vreeswijk et al., 2015). Personality characteristics that interact with social experiences can determine the quality of schemas formed, reinforce or nullify their intensity, and may even be the main cause of their emergence and development (Young et al., 2003; Arntz and Van Genderen, 2020).

1 Article in polish language: https://www.stowarzyszeniefidesetratio.pl/fer/59P_Grab.pdf

Metatraits defined as biologically determined general and basic patterns of personality dispositions (Digman, 1997; DeYoung et al., 2002; Musek, 2007) fit adequately with the assumptions of Young et al.'s (2003) concept, cited above, regarding the involvement of innate dispositions in the development of maladaptive schemas. Many researchers point to the biological endowment of metatraits, arguing for their genetic and neuropsychological basis (DeYoung et al., 2002; Hirsh et al., 2009; Jang et al., 2006; Musek, 2007; Rushton et al., 2008; Rushton and Irwing, 2011). According to Strus et al. (2014) metatraits understood in this way form a circular structure called the *Circumplex of Personality Metatraits*–CPM, determined by the orthogonal configuration of two basic dimensions: alpha and beta, on which two additional metatraits are located: gamma and delta. Each of them is bipolar, with specific sets of the Big Five characteristics (Costa i McCrae, 1992) corresponding to the respective poles, but forming more than just a combination of them. This structure is depicted in Figure 1, followed by Table 1, which contains the characteristics of metatraits.

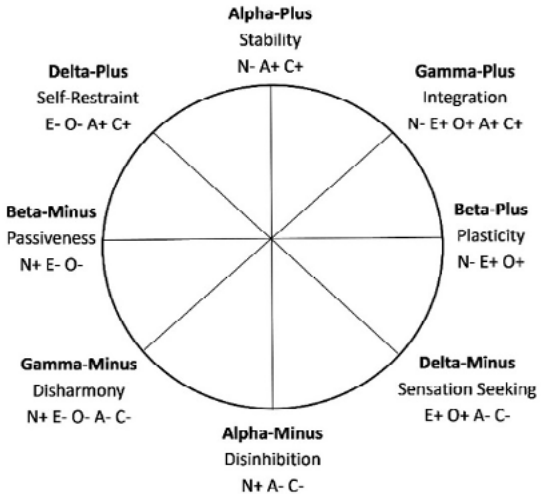

Figure 1. The Circumplex of Personality Metatraits

Note. N = Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C = Conscientiousness, +/– = positive/negative intensity of the trait (Kwiatkowska and Strus, 2021).

Table 1. Meaning of metatraits in the CPM model

Metatrait	Big Five configuration	Meaning
Alpha-plus Stability	N-, A+, C+ (E0, O0)	social adaptation, ethical attitude towards the world, ability to delay gratification, patient and persistent pursuit of a goal, calmness and emotional balance
Alfa-minus Disinhibition	N+, A-, C- (E0, O0)	emotional instability, imbalance, low tolerance for frustration, aggression, antagonism towards people, norms and social obligations
Beta-plus Plasticity	N-, E+, O+ (A0, C0)	behavioral and cognitive openness to change, engagement in new experiences, tendency to explore, initiative and inventiveness in social relationships, focus on personal development
Beta-minus Passiveness	N+, E-, O- (A0, C0)	shyness, behavioral and cognitive passivity, apathy, inhibition, submissiveness and submissiveness in relationships with people
Gamma-plus Integration	N-, E+, O+, A+, C+	balance in relation to ourselves and other people, effectiveness, openness to the world, warm and pro-social attitude, experiencing mental well-being
Gamma-minus Dysharmony	N+, E-, O-, A-, C-	depressiveness, negative emotionality, pessimism, distrust in interpersonal relationships, susceptibility to mental problems, mental and physical health deficits
Delta-plus Self-Restraint	E-, O-, A+, C+ (N0)	tendency to conformism and conventionalism, low emotionality (both negative and positive), high control of emotions and behavior, strong tendency to adjustment, modesty, scrupulousness, tendency to perfectionism
Delta-minus Sensation-Seeking	E+, O+, A-, C- (N0)	impulsiveness, emotional lability, stimulation seeking and risk taking, domination and expansiveness in social relationships, hedonistic tendencies

Note. N = Neuroticism, E = Extraversion, O = Openness to Experience, A = Agreeableness, C = Conscientiousness, +/– = positive/negative intensity of the trait, 0 = average intensity of the trait (Kwiatkowska and Strus, 2021).

The circular organisation assigns particular value to metatraits in the form of being able to unify many other personality models and constructs concerning tempers, values, emotions or mental disorders (Strus and Cieciuch, 2017). The theoretical potential of CPM also means that it is possible to match, i.e. localise, many different personality characteristics within the circle of metatraits. Such a procedure makes it possible to identify the most basic predispositions represented in metatraits for narrower content cognitive, emotional and motivational patterns (Kwiatkowska and Strus, 2021; Rogoza et al., 2019; Skoczeń et al., 2018).

In the context of the above considerations, it seems reasonable to assume that metatraits constitute the personality basis for early maladaptive schemas, and that these, as cognitive-emotional patterns, to some extent reflect underlying metatrait dispositions. So far, analyses focusing exclusively on the personality basis of schemas have mainly consisted of correlational studies indicating significant associations of schemas with the Big Five traits, especially high neuroticism (Muris, 2006; Sava, 2009, Thimm, 2010). Relationships between schemas and personality dimensions, as determined by the *TCI – Temperament and Character Inventory*, were also explored. This inventory distinguishes four temperament dimensions (novelty seeking, harm avoidance, reward dependence, perseverance) and three character dimensions (self-direction, cooperativeness and self-transcendence). The analyses showed high levels of positive and negative correlations between most *TCI* scales and individual schemas (Halvorsen et al., 2009; Atalay et al., 2013). The results cited therefore allow us to conclude that personality dispositions can be considered an important vulnerability factor in the development of maladaptive schemas. Metatraits describe general and basic patterns of personality dispositions (Strus and Cieciuch, 2021), and therefore this level of description appears to be the most pertinent and relevant for analysing, understanding and predicting schemas in the context of their psychobiological background.

2. Own research methodology

2.1. Objective of the research, problem, hypotheses

A study was therefore designed to attempt to identify, represented in metatraits, personality basis for early maladaptive schemas. Based on theoretical premises, five hypotheses were formulated regarding the location of schema areas (Young et al., 2003) in the CPM circular metatrait model (Kwiatkowska and Strus, 2021).

The area of disconnection and rejection mainly concerns difficulties in building relationships. The schemas belonging to it are associated with feelings of abandonment, insufficient love from other people, danger in social relationships, undeserving of love, lack of belonging (Young et al., 2003). Analysing metatraits predispositions (Kwiatkowska and Strus, 2021), hypothesis H1 was formed assuming that such patterns of thoughts and feelings are attributable to inaccessibility, distrust, distance and emotional coldness towards other people (gamma-minus disharmony).

The second area of impaired autonomy and performance relates to a low sense of subjectivity and competence (Young, 2010). Relating beliefs and perceptions associated with this area to metatraits (Kwiatkowska and Strus, 2021), hypothesis H2 was formulated, according to which weak psychological condition (gamma-minus) combined with cognitive and behavioural passivity (beta-minus) are the basis for schemas associated with a self-confidence deficit and a belief in a lack of readiness for self-determination.

The third area of impaired limits relates to difficulties in accepting limitations. On the basis of the semantic similarity of discussed schemas (Young et al., 2003) with personality metatraits (Kwiatkowska i Strus, 2021), hypothesis H3 was proposed. It assumes that tendencies to fall into frustration, aggressiveness and antagonism towards people, norms and commitments (alpha-minus) are determined by beliefs related to impaired control, intolerance of deferred gratification and difficulties in respecting one's own and others' boundaries.

A typical trait for the area of other-directedness is the feeling of having to put other people's needs and desires before one's own (Young et al., 2003). By re-

lating beliefs and feelings associated with this area to personality metatraits (Kwiatkowska and Strus, 2021), hypothesis H4 was formulated, according to which it was assumed that orientation towards others resulting from a sense of pressure to satisfy the needs of the environment develops on the basis of dependence and subordination in social relationships (beta-minus) and general poor psychological health and resilience (gamma-minus).

The fifth area of over-vigilance and inhibition is characterised by feelings of anxiety and tension that prevent the attainment of a state of relaxation and psychological well-being (Young et al., 2003). Analysing these types of thought and emotion patterns in relation to metatraits predispositions (Strus and Cieciuch, 2021), hypothesis H5 was formulated, assuming that depressiveness, distrust and poor mental resilience (gamma-minus) are the basis for the area of hypervigilance and inhibition.

2.2. Research tools

The *CPM-Q-SF Personality Questionnaire* and the *Young's Schema Questionnaire YSQ-S3* were used to obtain results on the analysed variables.

The CPM-Q-SF Personality Questionnaire by Strus et al. (2014) contains 72 statements describing a variety of thoughts, feelings, behaviours and is used to examine the 8 metatraits distinguished in the Circumplex of Personality Metatraits (CPM). In the present study, the Cronbach's alpha coefficients for the individual scales ranged from 0.68 to 0.84.

The Young's Schema Questionnaire YSQ-S3 (Young, 2005) in a Polish adaptation by Oettingen et al. (2018), is used to measure the severity of 18 early maladaptive schemas, forming five general areas as defined by Young et al. (2003). The Cronbach's alpha reliability parameters for the individual scales ranged from 0.76 to 0.94.

2.3. Subjects

The study targeting adults was conducted online in accordance with the principles of the Declaration of Helsinki. Subjects were informed of their voluntary participation, the purpose and conduct of the study and were assured of full anonymity and that the results obtained would be used for research purposes only. After giving their consent, respondents were sent a link to take part in the survey. A total of 404 people were surveyed, of whom 54.7% were female (221) and 45.3% were male (183). The age of the subjects ranged from 18 to 78 years (M = 36.80; SD = 10.78). Most of these were people living in towns with more than 50 000 inhabitants – 41.6% (168), as well as in towns with up to 10 000 inhabitants – 35.4% (143). The remaining 23% (93) indicated a town of between 10,000 and 50,000 citizens as their place of residence. The surveyed population mostly consisted of people with higher education – 58.4% (236). The remaining participants of the study were students – 19.8% (80) and persons with secondary education – 10.9% (44), primary education – 9.4% (38) and basic vocational education – 1.5% (6). As regards relationship status, the surveyed group consisted of persons in: a formal relationship – 44.1% (178), an informal relationship with plans for a joint future – 18.3% (74), an informal relationship without plans for a joint future – 13.1% (53). The remaining 24.5% (99) declared having no relationship at all.

2.4. Statistical analysis methods

Due to the number of individual schemas and the clarity of presentation and interpretation of the results, the analysis was limited to five general schema areas.

Hypotheses concerning the location of maladaptive schemas in the CPM model were tested according to the procedure recommended by Rogoza et al. (2021) in the R.Studio environment. The results obtained were analysed taking into account the three parameters most relevant to the present study, which determine the quality of interdependencies between the analysed constructs. The first one is the goodness-of-fit coefficient of the model (*fit*; R^2). This coefficient refers to the degree of fit of the correlation profiles of the external variables to the circular model, i.e. in this case the schemas to the CPM matrix. The fit thresholds are: < 0.70 – bad fit; > 0.70 < 0.80 – acceptable fit; > 0.80 – good fit. The second is the amplitude, indicating the distance between the average and the highest correlation of

the external variable with the variables from the circular model, i.e. the CPM metatraits. An amplitude value < 0.15 indicates that there is no definite relationship with a particular metatrait, which would mean that the external variable (schemas) does not have a clear location in the circular structure of the CPM. In contrast, a value > 0.15 indicates a strong enough association that the external variable is clearly located in the circle of metatraits. The third coefficient is the congruence coefficient, indicating the degree of congruence between the theoretical matrix and the empirical matrix. A value of > 0.85 indicates acceptable congruence, while > 0.95 indicates very good congruence (Strus and Cieciuch, 2021).

3. Results

3.1. Presentation of the obtained results

The results of the analyzes of the fit and placement of the five schema areas in the CPM model are presented in Table 2 and the corresponding Figures 2-6.

The fit coefficients for all five areas reached a value exceeding 0.80, indicating a good fit in the CPM matrix. The amplitude parameters (> 0.15) indicated a clear location of the analysed areas in the metatraits circle. The congruence coefficients confirmed the high degree of congruence between the assumed theoretical matrix and the obtained empirical matrix (>= 0.95). As expected from hypothesis H1, the area of disconnection and rejection was located in CPM space in the region delimited by gamma-minus disharmony (225°) with a shift towards alpha-minus disinhibition (270°). As assumed in hypothesis H2, the area of impaired autonomy and performance was located around gamma-minus disharmony (225°), however, contrary to expectations, not in association with beta-minus passiveness (180°), and alpha-minus disinhibition (270°). The area of impaired limits was located in the metatraits circle in the region defined by alpha-minus disinhibition (270°) with a relocation towards gamma-minus disharmony (225°). This result is consistent with the expectations formulated in hypothesis H3. The location of the area of other-directedness in the CPM was around 230°, and thus between gamma-minus disharmony (225°) and alpha-minus disinhibition (270°), and not, as assumed in hypothesis H4 between gamma-minus disharmony (225)° and beta-minus passivness (180°). The area of over-vigilance and inhibition was located in CPM space in the region defined by gamma-minus disharmony (225°). This result is consistent with the assumption made in hypothesis H5.

3.2. Discussion

The issues addressed in this thesis essentially revolved around the examination, represented in metatraits, personal determinants that contribute to the development of Young's schemas. It turned out that the region of the circular structure of the metatraits (Kwiatkowska and Strus, 2021), falling between alpha-minus disinhibition and gamma-minus dishar-

Table 2. Indicators of fit and location of schema areas in the CPM model (N=404)

Areas	Amplitude	Fit; R2	Matrix		Congruence
			Theoretical	Obtained	
Disconnection and rejection	0,44 [0,37; 0,51]	0,96	225	244,5 [236,7; 252,7]	0,99
Impaired autonomy and performance	0,44 [0,37; 0,51]	0,96	202,5	239,1 [232,1; 245,9]	0,95
Impaired limits	0,33 [0,26; 0,42]	0,92	270	259,9 [250,7; 269,8]	0,88
Other-directedness	0,25 [0,17; 0,33]	0,92	202,5	243,5 [228,4; 258,1]	0,93
Other-vigilance and inhibition	0,33 [0,25; 0,40]	0,96	225	230,9 [220,5; 240,1]	0,98

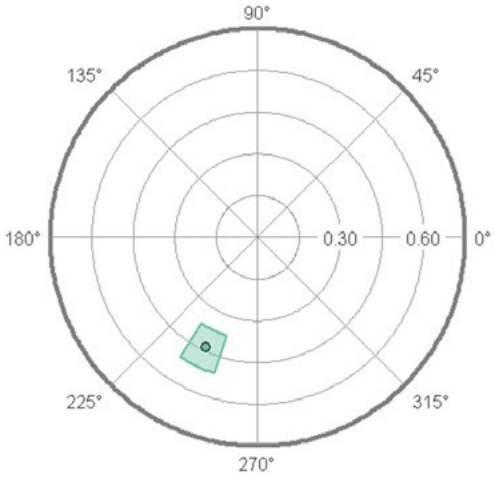

Figure 2. Location of the disconnection and rejection area in the CPM model

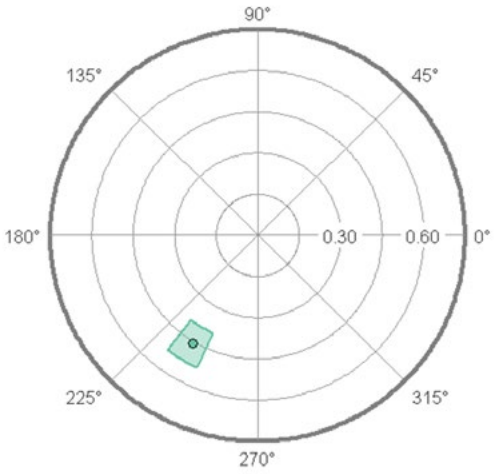

Figure 3. Location of the impaired autonomy and performance area in the CPM model

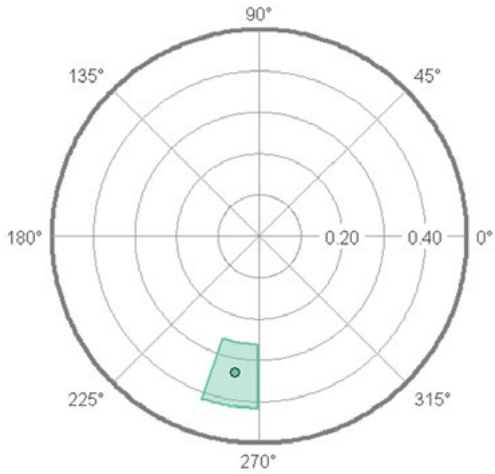

Figure 4. Location of the impaired limits area in the CPM model

Figure 5. Location of the other-directedness area in the CPM model

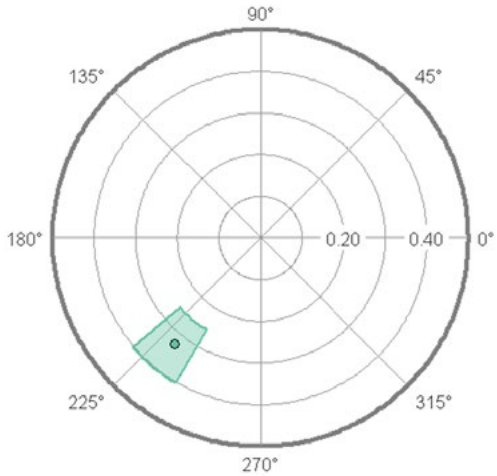

Figure 6. Location of the over-vigilance and inhibition area in the CPM model

mony, underlies all five areas of schemas, including those that, by virtue of their submissive nature, were hypothesized to be associated with beta-minus passivness. Thus, emotional instability, low tolerance for frustration, aggressiveness, antagonistic tendencies towards people and rules oriented internalisation, which in effect takes the form of inaccessibility, depressiveness, negative emotionality and general poor mental condition, are the basis for the development of convictions related to a deep sense of insecurity in interpersonal relationships, helplessness and dependence on others, the inability to defer gratification, the need to adapt one's actions to others' opinions and desires as well as the need to suppress the experiencing of emotions and the expression of one's own needs.

This regularity is in line with previous research indicating clear associations of schemas mainly with neuroticism and introversion (Muris, 2006; Sava, 2009, Thimm, 2010). The results obtained also correspond with DeYoung et al.'s (2002) assertion about the functions played by two basic meta-factors: alpha and beta. The first one is responsible for maintaining stability in terms of psychosocial functioning, while the second one is responsible for plasticity and adaptation to novelty and change. The individual's instability and low level of adaptability weaken his or her information processing system, which limits effective functioning in a changing environment. As suggested by the results of our own research, this system of maladaptive properties is also responsible for the organisation and perpetuation of patterns that are harmful to the individual in Young's (2010) conception. It is also worth noting the location of the schema areas around gamma-minus disharmony, which in the CPM model (Strus et al., 2014) has the status of a general factor of psychopathology along the lines of GFP (*General Factor of Personality*) in Musk's (2007) conception. The results in question confirm the psychopathological potential of gamma-minus disharmony as a general configuration of dysfunctional dispositions, which, according to this study, is also primarily responsible for various types of cognitive distortions that are detrimental to the individual, as well as the associated debilitating emotional states (Rushton and Irwing, 2011).

Validation of Young's schema localisation analyses in the CPM model provides a rationale for further research related to the mediating role of schemas in the relationship between metatraits and personality disorders (Zawadzki, 2017; Rogoza et al., 2018; Rogoza et al., 2019). In addition – taking into account the analyses indicating that certain parental attitudes are significant predictors explaining schema variability (Esmali Kooraneh and Amirsardari, 2015; Mącik, 2018), studies analysing the interactional relationships of personality metatraits with environmental experiences at the level of cognitive-emotional schemas seem appealing.

In the context of this study's limitations, it is worth noting first of all the issue related to the research concept adopted, which assumes – according to the CPM model (Strus et al., 2014) – a temperamental, and therefore occurring from birth, structure of personality metatraits among the subjects. Although numerous studies provide evidence of the neuropsychological basis of metatraits, so that they are inherently characterised by relative constancy over the life course, conclusions about their influence in the process of schema formation should be treated with caution-only in relation to theoretical assumptions and research confirming their validity.

Conclusions

The empirical localisation of the five schema areas in the circular matrix of metatraits makes it possible to conclude that an individual's natural tendencies towards emotional instability, falling into frustration, depressiveness, distrust and general poor psychophysical resilience represent a personality potential for the development of dysfunctional mental codes that function as information processing mechanisms and motives for maladaptive behavioural reactions. On a practical level, this means that in the case of some personality disorders, working with schemas, referring back to childhood experiences, may be the main focus due to the limited possibilities of changing the biologically determined personality.

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