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Kacper Radzki

The Pontifical Faculty of Theology in Wrocław, Wrocław, Poland

Kacper Radzki  <https://orcid.org/0000-0002-5431-5089>

Cognitive Flexibility as a Self-Regulatory Resource in Youth Resocialization

Elastyczność poznawcza jako zasób samoregulacji w resocjalizacji młodzieży

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Abstract

Aim. The aim of this study was to conceptualise cognitive flexibility as a key self-regulatory resource in the resocialization process of socially maladjusted youth, with particular emphasis on its moderating role in the relationship between cognitive dogmatism and social distance. In contrast to comparative analyses presented in the author’s earlier publication, the present paper focuses on regulatory mechanisms underlying differences in social and cognitive functioning of adolescents operating in distinct educational and institutional contexts.

Methods and materials. The study involved 148 participants, including students from secondary schools and residents of resocialization institutions. The *Actively Open-Minded Thinking Scale* (POEM) and a modified version of the *Bogardus Social Distance Scale* were used, incorporating hierarchical social roles characteristic of youth subcultures. Statistical analyses included descriptive statistics, *k*-means cluster analysis, linear regression models, and moderation analyses.

Results and conclusion. Three distinct profiles of cognitive and social functioning

Corresponding author: Kacper Radzki, e-mail: kacper.radzki@pwt.wroc.pl,
Papieski Wydział Teologiczny we Wrocławiu, Katedralna 9, 50-328 Wrocław, Polska

were identified. A key finding was that, within the cluster characterised by moderate levels of dogmatism, openness to facts functioned as a buffering mechanism, weakening the relationship between dogmatism and social distance. On this basis, the *Flexible Thinking and Social Hierarchy Model* (Polish: MEHS) was proposed, highlighting cognitive flexibility as a compensatory mechanism that facilitates the reduction of social barriers in hierarchical social structures. The findings support the need to orient resocialization and educational interventions toward the development of cognitive flexibility as an essential self-regulatory resource.

Keywords: cognitive flexibility, dogmatism, social distance, socially maladjusted youth, resocialization, moderation, self-regulation

Abstrakt

Cel. Celem opracowania było ukazanie elastyczności poznawczej jako kluczowego zasobu samoregulacyjnego w procesie resocjalizacji młodzieży niedostosowanej społecznie, ze szczególnym uwzględnieniem jej roli moderującej relację między dogmatyzmem poznawczym a dystansem społecznym. W odróżnieniu od analiz porównawczych przedstawionych we wcześniejszym artykule autora, niniejszy tekst koncentruje się na mechanizmach regulacyjnych leżących u podstaw zróżnicowanego funkcjonowania społecznego i poznawczego młodzieży funkcjonującej w odmiennych kontekstach wychowawczych.

Metody i materiały. Badaniem objęto 148 osób – młodzież ze szkół średnich oraz wychowanków placówek resocjalizacyjnych. Zastosowano *Skalę Pomiaru Otwartego i Elastycznego Myślenia* (POEM) oraz zmodyfikowaną *Skalę Dystansu Społecznego Bogardusa*, uwzględniającą hierarchiczne role społeczne charakterystyczne dla subkultur młodzieżowych. Analizy obejmowały statystyki opisowe, analizę klastrową metodą *k*-średnich oraz modele regresji liniowej i analizy moderacji.

Wyniki i wnioski. Wyodrębniono trzy profile funkcjonowania poznawczo-społecznego. Kluczowym wynikiem było wykazanie, że w grupie o umiarkowanym poziomie dogmatyzmu otwartość na fakty pełni funkcję bufora, osłabiając związek między dogmatyzmem a dystansem społecznym. Na tej podstawie zaproponowano *Model Elastycznego Myślenia i Hierarchii Społecznej* (MEHS), zgodnie z którym elastyczność poznawcza stanowi mechanizm kompensacyjny umożliwiający redukcję barier społecznych w warunkach funkcjonowania w strukturach hierarchicznych. Uzyskane wyniki wskazują na zasadność ukierunkowania oddziaływań resocjalizacyjnych i edukacyjnych na rozwój elastyczności poznawczej jako istotnego zasobu samoregulacyjnego.

Słowa kluczowe: elastyczność poznawcza, dogmatyzm, dystans społeczny, młodzież niedostosowana społecznie, resocjalizacja, moderacja, samoregulacja

Introduction

The issue of differences in the cognitive and social functioning of socially mal-adjusted youth and socially adjusted youth constitutes an important area of research in psychology and resocialization pedagogy. Attention is drawn to the influence of sub-cultural environments on the development of cognitive dogmatism, the level of cognitive flexibility, and social distance. As indicated by the author's previous analyses, youth residing in resocialization institutions function within strongly structured subcultural environments that foster the consolidation of rigid cognitive schemas and strengthen mechanisms of social exclusion (Radzki, 2016).

Hierarchies characteristic of criminal subculture, based on divisions into *gitesi*, *frajers*, and *cweles* (analogously among girls' groups: leaders, loners, and exploited individuals), regulate intragroup relations while significantly limiting an individual's cognitive openness. Similar mechanisms of hierarchization are also observed in school environments, where the roles of elites, outsiders, or nerds reflect the universal nature of social divisions among youth (Adamczyk, 2004; Fatyga, 1999; Przybylski, 2020; Radzki, 2015).

An important theoretical context for the present analyses is Bourdieu's theory of social capital (1986), according to which access to social resources and the quality of interpersonal relationships influence the cognitive and adaptive development of individuals. The limited social capital of youth from resocialization institutions contributes to the consolidation of dogmatic attitudes and an increase in distance toward external groups. Complementing this perspective is Allport's (1954) theory of intergroup contact, which indicates that the absence of positive intergroup interactions leads to the intensification of stereotypes and social distance.

The author's previous research findings confirm that youth functioning within closed institutional structures are characterised by a lower level of cognitive flexibility, which constitutes a significant barrier to effective social reintegration (Radzki, 2016b, 2016c, 2017a, 2017b). At the same time, earlier studies indicate significant relationships between dogmatism and limited openness to facts – rigid cognitive schemas are reinforced in environments based on hierarchy, power, and loyalty (Scott, 2022), while criminal subculture promotes closure to alternative interpretations of reality and deepens social isolation (Przybylski, 2020).

In this context, the research problem of the present study focuses on the analysis of differences in the level of cognitive flexibility, openness of thinking, and social distance between youth functioning within criminal subcultures and youth educated in non-institutional environments. Understanding these relationships is of key importance for designing effective resocialization interventions aimed at reducing cognitive

and social barriers by developing cognitive flexibility as a potential self-regulatory resource (Radzki, 2020).

Review of Theoretical Approaches

The analysis of differences in the cognitive and social functioning of socially maladjusted youth was embedded in several complementary theoretical perspectives that make it possible to explain the mechanisms underlying the development of cognitive dogmatism, cognitive flexibility, and social distance. Particular importance was attributed to Pierre Bourdieu's (1986) theory of social capital, Gordon Allport's theory of intergroup contact, the concept of criminal subculture, and Lev Vygotsky's (1989) theory of the zone of proximal development.

According to Bourdieu's theory of social capital (1986), an individual's functioning is determined by access to social relationships, norms, and resources enabling cognitive and adaptive development. The limited social capital of socially maladjusted youth, especially those functioning within criminal subcultures, fosters the consolidation of group conformism and rigid patterns of thinking, limiting exposure to alternative cognitive perspectives (Krajewicz, 2014; Przybylski, 2020; Radzki, 2016a). The absence of diversified social relations weakens the ability to process information adaptively and to adopt new ideas (Chańko, 2019; Muskała, 2014), whereas the higher level of social capital among socially adjusted youth supports the development of cognitive flexibility, critical thinking, and tolerance toward diversity.

This perspective is complemented by Allport's theory of intergroup contact (1954), which indicates that limited contact with representatives of other social groups leads to increased social distance, stereotyping, and the consolidation of negative attitudes toward "outsiders." The functioning of youth within closed subcultural structures fosters social isolation and the narrowing of interpersonal experiences, resulting in increased cognitive dogmatism and limited openness to diversity (Fatyga, 1999; Sarzała, 2015). In contrast, more frequent intergroup interactions characteristic of socially adjusted youth promote the deconstruction of stereotypes and the reduction of social distance.

An important interpretative context is also provided by the theory of criminal subculture, which describes the functioning of groups remaining in opposition to social norms and promoting an alternative value system based on loyalty, power, and distrust toward formal structures (Adamczyk, 2004; Flugel, 2020; Kucharewicz *et al.*, 2012; Krajewicz, 2014). Socialisation processes occurring within criminal subcultures reinforce conformism and limit the development of critical information processing, thereby promoting cognitive rigidity and increasing distance toward external groups (Przybylski, 2020). The hierarchical structure of roles — *gitesi*, *frajers*, and *cweles* — regulates intra-

group relations, reinforcing domination, marginalisation, and subordination (Przybylski, 2020; Radzki, 2015; Sarzała, 2015). Analogous mechanisms, although in a milder form, are also observed in school environments, where the roles of elites, outsiders, and nerds reflect the universality of social hierarchization among youth (Adamczyk, 2004; Fatyga, 1999).

An additional theoretical perspective is Vygotsky's concept of the zone of proximal development (1989), emphasising the crucial role of social interactions in cognitive development. In subcultural environments, the lack of positive role models and relationships supporting cognitive growth limits the possibility of developing executive functions and cognitive flexibility. In contrast, the environment of socially adjusted youth fosters the development of cognitive competencies, enabling more effective adaptation to changing social and educational demands.

The literature emphasises that cognitive rigidity and dogmatism are associated with a tendency toward simplified information processing and a limited readiness to revise one's beliefs (Kruglanski, 2004; Rokeach, 1960). These phenomena are also related to authoritarianism and intensified social prejudice, which may manifest, among other things, in increased distance toward out-groups (Adorno *et al.*, 1950; Duckitt, 2001).

In this context, cognitive openness and flexibility of thinking are treated as factors conducive to reducing prejudice and promoting a more complex understanding of social reality (Stanovich, 2011).

Review of Empirical Research

Previous empirical studies concerning openness and flexibility of thinking as well as social distance indicate significant differences in the cognitive and social functioning of socially adjusted youth and youth functioning within closed subcultural environments. These findings confirm the importance of cognitive flexibility as a factor promoting social adaptation and reducing dogmatism and distance toward external groups.

Research based on the Polish adaptation of the *Actively Open-Minded Thinking* (AOT) scale demonstrated that a higher level of openness and flexibility of thinking is associated with greater tolerance toward ambiguity and a lower tendency toward cognitive dogmatism (Błaszczak, 2022; Błaszczak & Kłoczek, 2022). The authors emphasise that the absence of well-developed cognitive flexibility contributes to the consolidation of rigid thinking patterns and cognitive closure, particularly in environments with limited access to diverse social models.

In turn, studies on flexibility in coping with stress indicate that youth functioning in open social environments are characterised by higher adaptive capacity, whereas youth living within closed social structures—including subcultures—demonstrate

lower levels of cognitive flexibility, which limits their ability to respond effectively to developmental and social challenges (Kruczek *et al.*, 2021).

An important complement to these findings is provided by research on social distance. Thuściak-Deliowska (2015) demonstrated that the level of distance toward specific social groups is strongly associated with the intensity of intergroup contact and the level of knowledge about these groups. These findings remain consistent with the assumptions of Allport's theory of intergroup contact (1954), according to which limited interactions foster the consolidation of stereotypes and the intensification of social isolation. In subcultural environments, characterised by minimising contact with "others," social distance becomes additionally reinforced.

Research on authoritarian tendencies and social distance further indicates that youth displaying stronger authoritarian inclinations are characterised by higher levels of distance toward out-groups, particularly in the context of stereotyping and prejudice (Trempała *et al.*, 2016). These findings suggest that closed social environments contribute to the consolidation of intolerant attitudes, which simultaneously limits the development of openness and flexibility of thinking.

In summary, the review of empirical research clearly indicates that openness and flexibility of thinking play a key role in the processes of social adaptation among youth. Limited intergroup contact and the internalisation of criminal subculture values contribute to the increase of social distance and the consolidation of schematic cognitive patterns, as confirmed both by research on open-minded thinking and by studies on social distance (Allport, 1954; Błaszczak & Kłoczek, 2022; Thuściak-Deliowska, 2015; Trempała *et al.*, 2016).

Methods and Materials

Research Procedure

The study was conducted in two different institutional contexts: in resocialization institutions and in secondary schools operating in non-institutional environments. Prior to the commencement of the research procedure, all required formal approvals were obtained, including the consent of institution directors, legal guardians, and the participants themselves. The research project was prepared in electronic form using the Qualtrics platform, which enabled the standardisation of the procedure and ensured uniform measurement conditions in both groups.

The questionnaires were made available to participants online, and the course of the study was supervised by teachers and educators in appropriately prepared, quiet rooms. Before completing the research instruments, participants were thoroughly informed about the purpose of the study, its procedure, the principles of anonymity

and voluntary participation, as well as the possibility of withdrawing at any stage without consequences. After providing informed consent, respondents proceeded to complete the set of research questionnaires.

The study was conducted in the form of an anonymous online survey. Participants were informed about the purpose of the study, its voluntary nature, and the possibility of withdrawing at any stage. Data were collected using a questionnaire distributed electronically. The study had a cross-sectional design and was carried out under natural conditions for the respondents (outside a controlled laboratory environment). The completion time for the questionnaire was approximately 10 minutes.

Characteristics of the Research Groups

The study involved a purposively selected group of adolescents. Participants were recruited through direct invitations to participate in the study. The inclusion criteria were age corresponding to the period of adolescence and consent to participate in the study. A detailed demographic description of the sample is presented in the following part of the article.

The initial research sample consisted of 188 individuals. Due to lack of consent, incomplete data, and failure to meet the age criterion, 40 observations were excluded from the analysis. Ultimately, 148 participants were included in further analyses, divided into two groups: adolescents attending secondary schools ($n = 75$) and adolescents residing in resocialization institutions ($n = 73$).

In the entire sample, females constituted 54.1% and males 45.9%. The mean age of the participants was 17.76 years ($SD = 1.16$), with the youngest participant being 16 years old and the oldest 22 years old. In terms of educational background, 54.7% of participants attended general secondary schools, 32.4% vocational schools, and 12.8% primary schools. Analysis of family structure indicated that the majority of participants (62.8%) were raised in families with two or more siblings, 26.4% had one sibling, and 10.8% were only children.

The group of secondary school students was characterised by a predominance of females (58.7%) over males (41.3%). The mean age was 18.63 years ($SD = 0.87$), indicating a relatively homogeneous age distribution, with a predominance of individuals aged 18–19 years. Most participants in this group attended general secondary schools (92%), whereas 8% reported attending vocational schools. Regarding family structure, 61.9% of students had two or more siblings, 33.3% had one sibling, and 4.8% were only children.

In the group of adolescents from resocialization institutions, the gender distribution was nearly balanced (50.7% males and 49.3% females). The mean age was 16.86 years ($SD = 0.63$), with a predominance of individuals aged 16–17 years. In this group, vocational school students predominated (57.5%), as well as primary school students

(26%), whereas only 16.4% reported attending general secondary school. In terms of family structure, 67.8% of participants came from large families, 25.4% had one sibling, and 6.8% were only children.

The two groups differed significantly in terms of age, educational structure, and gender distribution. Adolescents attending secondary schools were older, more frequently educated in general secondary schools, and characterised by a higher proportion of females. In contrast, adolescents from resocialization institutions were younger and more frequently fulfilled their educational obligations in vocational or primary schools. These differences may reflect the specific characteristics of functioning within the two educational environments, including more frequent educational and social deficits in the group of socially maladjusted youth. Additionally, the higher proportion of large families in this group may constitute a risk factor for educational difficulties as well as emotional and social deficits.

Research Instruments

Two measurement instruments were used in the study. The first was the *Actively Open-Minded Thinking* (AOT) scale, developed by Stanovich and West (1997) and adapted to Polish conditions as the *Open and Flexible Thinking Measurement Scale* (POEM) by Błaszczak and Klocek (2022). The study employed the *Open and Flexible Thinking Questionnaire* (POEM), including the subscales of dogmatism (POEM_DOGM), openness to facts (POEM_OTWnF), and the overall score (POEM), as well as a modified *Bogardus Social Distance Scale* (DS), enabling the measurement of the general level of social distance and its specific dimensions (DS_G, DS_F, DS_C).

Responses in the questionnaires were provided on a six-point Likert scale (from *strongly disagree* to *strongly agree*), which enabled the quantitative analysis of the examined constructs. The results of individual scales were calculated as the mean scores of the items assigned to them, with higher values indicating a higher level of the analysed trait.

The POEM scale is characterised by high reliability, with a Cronbach's *alpha* coefficient of 0.90.

The second instrument was a modified version of the *Bogardus Social Distance Scale* (1925), adapted to the specificity of criminal subculture and hierarchical relations occurring both in resocialization institutions and in school environments. The modified version of the *Bogardus Social Distance Scale* was used to adjust the instrument to the specificity of the examined group. Due to the modifications introduced into the structure of the scale, the obtained results should be interpreted with caution, treating them as indicators of tendencies rather than precise measurements of the trait. The assessment of the psychometric properties of the instrument (reliability and validity) constitutes a limitation of the present study.

The adaptation of the scale involved three fundamental changes. First, the three broadest levels of acceptance referring to formal relationships (tourist, residence permit holder, citizen) were removed, as they were considered insufficiently relevant to the everyday experiences of adolescents. Second, two levels referring to potential family relationships were added, such as the acceptance of a person as the life partner of the respondent's child, which increased the sensitivity of the instrument to the meaningful and emotional aspects of social relations. Third, the scale was reversed by assigning higher values to narrower levels of acceptance, which enabled a more precise analysis of participants' attitudes.

Considering hierarchical subcultural divisions made it possible to increase the ecological validity of the instrument and to better reflect the real experiences of the study participants.

The independent variables in the study were indicators of open and flexible thinking (dogmatism, openness to facts, and the overall POEM score), whereas the dependent variable was the level of social distance (the overall DS score and its specific dimensions). All variables were quantitative in nature and were subjected to statistical analysis using exploratory methods and regression modelling.

Results and Conclusion

Data Analyses – Assumptions and Scope

Detailed statistical analyses covering correlational relationships between variables, intergroup comparisons, and classical tests of differences were presented in the author's earlier study devoted to cognitive openness and social distance among socially maladjusted youth and youth functioning in non-institutional environments (Radzki, 2025). The referenced article presented the full results of quantitative analyses, including comparisons of the levels of dogmatism, openness to facts, and social distance between the examined groups, together with their detailed empirical interpretation.

In the present text, the scope of the analyses has been deliberately narrowed. Only descriptive statistics are presented, serving as a point of reference for further interpretations, whereas the principal emphasis has been placed on a different analytical aspect – understanding cognitive flexibility as a mechanism regulating the cognitive and social functioning of youth. Flexibility of thinking is not treated here solely as a variable differentiating groups, but rather as a self-regulatory resource that may moderate the relationships between cognitive dogmatism, openness to facts, and the level of social distance.

Basic Descriptive Statistics

The analysis of descriptive statistics was conducted to provide a general characterisation of the examined variables in two groups: adolescents attending secondary schools functioning in non-institutional environments (RESO: no) and residents of resocialization institutions (RESO: yes). Detailed values of means, standard deviations, score ranges, skewness coefficients, and tests of distribution normality are presented in Table 1.

The analyses included the following variables: POEM, indicating the general level of open and flexible thinking; POEM_DOGM, referring to the level of cognitive dogmatism; and POEM_OTWnF, measuring openness to facts, understood as the readiness to consider new information and revise one's beliefs. The social functioning of the participants was described using indicators of social distance: DS – general social distance, DS_G – distance toward *gitesi*, DS_F – distance toward *frajers*, and DS_C – distance toward *cweles*.

The presentation of results in Table 1 enables a comparison of the cognitive and social profiles of both groups and constitutes a point of reference for further analyses, particularly those concerning regulatory mechanisms associated with cognitive flexibility.

Table 1
Descriptive and Distribution Statistics

Variable	RESO	N	ME	SD	Min	Max	Skewness	Shapiro-Wilk test	
								W	p
POEM	No	75	3.43	0.49	2.13	4.93	0.23	0.99	0.665
	Yes	73	3.57	0.56	2.20	4.60	-0.29	0.98	0.374
POEM_DOGM	No	75	2.98	1.02	1.00	5.33	0.15	0.98	0.153
	Yes	73	3.59	1.03	1.00	6.00	-0.16	0.98	0.236
POEM_OTWnF	No	75	3.88	0.84	1.40	6.00	0.24	0.97	0.057
	Yes	73	3.54	0.73	1.40	6.00	0.40	0.94	0.003
DS	No	75	3.11	0.91	1.00	6.00	0.39	0.98	0.195
	Yes	73	4.18	0.83	1.94	5.83	-0.48	0.98	0.190
DS_G	No	75	3.21	1.01	1.00	6.00	0.41	0.97	0.071
	Yes	73	3.53	1.27	1.00	6.00	-0.12	0.98	0.173
DS_F	No	75	3.06	1.00	1.00	6.00	0.51	0.97	0.080
	Yes	73	4.37	1.16	1.00	6.00	-0.49	0.95	0.009
DS_C	No	75	3.06	1.21	1.00	6.00	0.59	0.95	0.004
	Yes	73	4.66	1.17	1.00	6.00	-0.73	0.91	<0.001

Note. POEM – open and flexible thinking; POEM_DOGM – dogmatism; POEM_OTWnF – openness to facts; DS – social distance; DS_G, DS_F, DS_C – specific dimensions of social distance.

Cluster Analysis and Mechanisms Regulating Social Distance

Some of the obtained results deviated from the expected relationships, which may indicate a more complex nature of the relationship between cognitive flexibility and social distance.

In order to identify patterns of functioning among the participants, a cluster analysis using the k-means method was conducted. Prior to the analysis, the variables were standardised. The optimal number of clusters was determined on the basis of silhouette index analysis by testing solutions ranging from 2 to 10 clusters. Ultimately, a three-cluster solution was adopted as the one that best differentiated the examined cases. The stability of the solution was enhanced by applying multiple algorithm initialisations ($nstart = 25$). The extracted clusters differed significantly in terms of all analysed variables, which confirms both the statistical and interpretative validity of the adopted solution.

The first cluster, described as “Closed Dogmatists with High Social Distance,” was characterised by the highest level of dogmatism ($M = 4.26$) and the highest level of social distance ($M = 4.66$). Particularly elevated levels of distance concerned groups occupying the lowest status in the social hierarchy: *frajers* ($DS_F = 4.79$) and *cweles* ($DS_C = 5.02$). This profile indicates the dominance of cognitive rigidity and a strong attachment to hierarchical social divisions serving organising and protective functions.

The second cluster, described as “Internally Divided Individuals with Moderate Dogmatism,” was characterised by a moderate level of dogmatism ($M = 2.93$) and moderate openness to facts ($M = 3.28$), accompanied by an average level of social distance ($M = 3.91$). This profile proved to be the most cognitively and interpretatively complex, indicating the coexistence of contradictory tendencies – both openness and susceptibility to dogmatism.

The third cluster, described as “Flexible and Open Individuals,” constituted the opposite of the first cluster. It was characterised by the lowest level of dogmatism ($M = 2.86$), the highest cognitive openness ($M = 4.14$), and the lowest level of social distance ($M = 2.69$), indicating a high level of social acceptance and cognitive flexibility (Table 2).

The application of cluster analysis had an exploratory character and served to identify differentiated patterns of cognitive and social functioning within the examined group.

Table 2
Mean Values of Variables Across Clusters

Cluster	POEM_DOGM	POEM_OTWnF	POEM	DS_G	DS_F	DS_C	DS
1 ($N=41$)	4.26	3.60	3.93	4.15	4.79	5.02	4.66
2 ($N=49$)	2.93	3.28	3.13	3.06	4.14	4.51	3.91
3 ($N=58$)	2.86	4.14	3.50	3.07	2.56	2.45	2.69

Note. POEM – open and flexible thinking; POEM_DOGM – dogmatism; POEM_OTWnF – openness to facts; DS – social distance; DS_G, DS_F, DS_C – specific dimensions of social distance.

Linear Regression Analyses Within Clusters

In the next step, separate linear regression analyses were conducted for each cluster, in which social distance (*DS*) served as the dependent variable, while dogmatism (POEM_DOGM) and openness to facts (POEM_OTWnF) were treated as predictors (Table 3).

Table 3

Regression Results for Individual Clusters

Cluster	Predictor	<i>b</i>	SE	<i>t</i>	<i>p</i>	R ²	Skor R ²
1 (<i>N</i> =41)	POEM_DOGM	-.026	0.15	-1.75	0.089	0.123	0.077
	POEM_OTWnF	-.032	0.15	-2.13	0.039		
2 (<i>N</i> =49)	POEM_DOGM	-.032	0.09	-3.42	0.001	0.206	0.172
	POEM_OTWnF	-.018	0.13	-1.34	0.186		
3 (<i>N</i> =58)	POEM_DOGM	-.009	0.10	-0.92	0.361	0.016	-0.20
	POEM_OTWnF	-0.04	0.13	-0.33	0.744		

Note. POEM – open and flexible thinking; POEM_DOGM – dogmatism; POEM_OTWnF – openness to facts.

In Cluster 1, the regression model did not reach statistical significance, $F(2, 38) = 2.67$, $p = 0.082$, with a coefficient of determination of $R^2 = 0.12$. However, openness to facts proved to be a significant predictor ($B = -0.32$, $SE = 0.15$, $t = -2.13$, $p = 0.039$), suggesting that even within a group characterised by a high level of dogmatism, greater cognitive openness may be associated with lower social distance.

In Cluster 2, the regression model was statistically significant, $F(2, 46) = 5.98$, $p = 0.005$, explaining 21% of the variance in social distance ($R^2 = 0.21$). Dogmatism proved to be a significant predictor ($B = -0.32$, $SE = 0.09$, $t = -3.42$, $p < 0.001$), whereas openness to facts did not reach statistical significance ($B = -0.18$, $SE = 0.13$, $p = 0.186$).

In Cluster 3, the regression model was not significant, $F(2, 55) = 0.44$, $p = 0.646$, and the explained variance in social distance was minimal ($R^2 = 0.02$). None of the predictors reached the level of statistical significance, suggesting a relative autonomy of social distance from the examined cognitive characteristics in this group.

Interaction and Moderation Analysis – Cognitive Flexibility as a Regulatory Mechanism

Particularly important findings were obtained in Cluster 2, where an additional regression analysis was conducted, including the interaction between dogmatism (POEM_DOGM) and openness to facts (POEM_OTWnF) in predicting social distance (*DS*).

This model proved to be statistically significant, $F(3, 45) = 7.69, p < 0.001$, explaining 34% of the variance in the dependent variable ($R^2 = 0.34$).

Both dogmatism ($B = 1.53, SE = 0.62, p = 0.018$) and openness to facts ($B = 1.35, SE = 0.52, p = 0.013$) proved to be significant predictors of social distance. Of key importance, however, was the significant interaction between these variables ($B = -0.56, SE = 0.19, t(45) = -3.01, p = 0.004$), indicating that an increase in openness to facts weakens the positive influence of dogmatism on social distance.

This means that among individuals characterised by greater cognitive openness, dogmatism loses its “socially isolating” function, which suggests the existence of a regulatory mechanism enabling the reduction of social barriers despite tendencies toward rigid thinking.

Despite the observed high multicollinearity between the predictors, it was decided to continue the moderation analysis. This decision was justified both by the high level of explained variance ($R^2 = 0.34$) and by meeting the key assumptions of the model (normality of residuals, homoscedasticity). High multicollinearity did not affect the stability of the estimates, and the interaction itself had significant statistical and theoretical importance.

The conducted moderation analysis confirmed significant main effects of dogmatism ($B = -0.31, SE = 0.08, Z = -3.81, p < 0.001$) and openness to facts ($B = -0.30, SE = 0.11, Z = -2.66, p = 0.008$), as well as a significant interaction effect ($B = -0.56, SE = 0.17, Z = -3.31, p < 0.001$). The simple slopes analysis demonstrated that greater openness to facts strengthens the negative effect of dogmatism on social distance, confirming the role of cognitive flexibility as a mechanism regulating the relationship between cognitive rigidity and social functioning.

In the remaining clusters (“Closed Dogmatists” and “Flexible and Open Individuals”), the interaction effect did not reach statistical significance, which indicates the specific character of the regulatory mechanism revealed in the cluster with the intermediate cognitive profile.

The cluster analysis clearly revealed the heterogeneity of the cognitive and social functioning of the examined youth, indicating that they do not constitute a homogeneous population either in terms of the level of cognitive rigidity or the manner of regulating social relationships. The identification of three clearly differentiated functioning profiles confirms the legitimacy of moving away from unified models of educational and resocialization interventions toward more individualised and process-oriented approaches.

Of particular importance is the discovery concerning the group described as the “Internally Divided Individuals,” in which cognitive flexibility—understood as openness to facts and the ability to revise one’s beliefs—performs the function of a regulatory mechanism. In this group, cognitive openness acted as a buffer mitigating the negative impact of dogmatism on social distance, promoting the reduction of interpersonal barriers despite the presence of tendencies toward rigid thinking. This finding indicates that it is not the level of dogmatism itself that determines the intensity of social distance,

but rather the manner in which the individual regulates their beliefs in contact with new information and social situations.

On the basis of the conducted analyses, the *Flexible Thinking and Social Hierarchy Model* (FTSHM) was developed, assuming the key role of cognitive flexibility in neutralising the negative consequences of cognitive rigidity under conditions of functioning within hierarchical social structures. In this approach, flexibility of thinking is not merely an individual resource but serves as a compensatory mechanism enabling individuals to function more adaptively in social relationships, even in environments characterised by strong divisions and hierarchical norms.

The obtained results have significant implications for resocialization and educational practice. They indicate that particularly promising directions for intervention are those aimed at developing cognitive openness in groups characterised by moderate rigidity of attitudes, where the regulatory potential of flexible thinking is the greatest. This finding also opens new research perspectives, encouraging further analyses of the role of cognitive flexibility as a mechanism reducing social distance and of its significance in the functioning of individuals within various formal and informal social hierarchies.

The obtained effects were moderate in nature, indicating the important, although not exhaustive, role of the analysed variables in explaining the level of social distance. Finally, it should be emphasised that the study had several limitations, including the non-random selection of the sample, the use of a modified measurement instrument, and the exploratory character of the statistical analyses. These factors may limit the possibility of generalising the obtained results.

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