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Styles of coping and the level of dogmatism in utterance texts as an indicator of anxiety in situations of social exposure

Abstract: A study was carried out involving persons representing high-anxious, low-anxious and repressor types according to the classification of Weinberger, Davidson & Schwartz (1979), selected using the Marlowe–Crowne Social Desirability Scale and the trait anxiety scale of the Spielberger State–Trait Anxiety Inventory. In seeking indicators of anxiety in repressors and high-anxious groups, the authors decided to analyse the level of dogmatism observed in utterance texts. The research was intended to determine whether styles of coping with threatening stimuli condition the level of dogmatism, which was regarded as a cognitive defence mechanism against anxiety. The method of formal analysis of texts (speeches given by the participants in a situation of social exposure) was used to identify their level of dogmatism, measured using the Dogmatism Quotient developed by Ertel. The highest value of the Dogmatism Quotient was recorded for repressors, and the lowest for the low-anxious subjects; a similar pattern was also observed for certain particular dimensions of dogmatism. Statistically significant differences in the level of dogmatism were found between the repressor and low-anxious groups and between the high-anxious and low-anxious groups. The study confirmed the previously discovered pattern whereby repressors exhibit more similarities to high-anxious than to low-anxious persons.

Key words: styles of coping, anxiety, language, dogmatism, repression

Introduction

The concept of styles of coping with threatening stimuli, originated by Weinberger, Schwartz and Davidson (1979), is based on the observation that the group of persons exhibiting a low level of trait anxiety in studies using questionnaire-based methods (as with the State–Trait Anxiety Inventory; Spielberger et al., 1983) consists of at least two subgroups. The first contains persons who actually have a low level of anxiety, while the second contains those who demonstrate a low level of anxiety in their self-descriptions, but who react to stressful situations with a high degree of physiological and behavioural agitation. It was found that persons in the second subgroup, described as repressors, attain high scores on scales used to measure defensiveness (such as the Social Desirability Scale; Crowne & Marlowe, 1960, 1964), which serve among other things to measure the degree to which test results are falsified.

Analysing the results obtained by subjects on scales measuring trait anxiety and tendency to react in a socially

approved manner, Weinberger et al. (1979) distinguished four groups of persons with different styles of coping with threatening stimuli: “true low-anxious”, “high-anxious”, “repressors” and “defensive high-anxious”.

According to both the original study and that of Myers (2000), members of each of the four groups have a tendency to behave in a characteristic style. The first group consists of low-anxious persons, who return low scores on scales of both anxiety and defensiveness. In low-anxious persons, who are described as carefree, light-hearted, calm and talkative, a low level of anxiety is found both in self-descriptions and in other indicators of emotional process, both behavioural and physiological. The second group is that of high-anxious persons, who are characterized by a high level of trait anxiety and low defensiveness. These subjects experience anxiety strongly and willingly talk about those experiences, disclosing details from their private life which are not required in the study.

The next group consists of persons classified as repressors, who achieve low scores on trait anxiety scales,

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but high scores on scales for defensiveness. They are described as punctual, polite, definite and clipped in their utterances, and willing to follow instructions. The final group consists of defensive high-anxious persons, who record high results on scales both for trait anxiety and for defensiveness. This last group is so far the least well known; it consists of persons who express discomfort in situations involving the disclosure of information required in studies, and feel embarrassment and worry.

Weinberger, Schwartz and Davidson (1979) thus developed a new way of conceptualizing the mechanism of repression. They proposed to consider it within the categories of the personality dimension, as one of the styles of coping with threatening stimuli, namely the repressive coping style. This approach to the study of repression, a concept introduced to psychology by Sigmund Freud¹, brought many results that were interesting from a theoretical standpoint. It involves treating repression as a personality variable and relating individual differences in the trait to the behaviours associated with it. Many important advantages of such an approach can be listed: it uses the precise methods characteristic of cognitive psychology, while clinical observations are replaced by experiments, regarding which Eagle (2000, p. 168), for example, states that the phenomena studied in them are highly similar to the mechanism of repression as understood psychoanalytically.

This method of operationalization of repression grew out of work on perceptual defense, which led to the identification of a group of individuals classed as repressors, as measured by high scores on the Repression–Sensitization Scale constructed by Byrne (1961). This group has a higher perception threshold for threatening stimuli. On the other hand, persons using the mechanism of sensitization (sensitizers), who obtain low scores on the latter scale, exhibit perceptive vigilance, with lower thresholds for emotionally threatening stimuli.

Analogously, Weinberger et al. described persons with a repressive coping style as having a tendency to block out the perception of a threat, denying the experience of negative affect and demonstrating a tendency to see themselves in a positive light. The results of studies in this area show that repressors have little tendency to experience anxiety consciously (during a stressful task), but at the same time exhibit a high level of anxiety through physiological and behavioural indicators (e.g. Asendorph & Scherer, 1983; Derakshan & Eysenck, 1997, 2001a, 2001b). Many researchers assume that repressors perform defensive self-deception strategies which are automatic

and unconscious. However, some researchers (Baumeister & Cairns, 1992; Darkshan & Eysenck, 1999, 2005) state that people described as repressive may in some situations consciously estimate their level of anxiety below that actually experienced, manifesting other-deception or impression management strategies.

Issues of anxiety particularly that of the mutual relationship between the dimension of trait anxiety and emotional behaviours, would appear to be of key importance for understanding the way of functioning of people representing the coping styles described by Weinberger et al. (op. cit.). Many studies have shown that these are persons with anxiety levels higher than or similar to those of persons who declare a high level of anxiety. The inconsistent portraits obtained of individuals with a repressive coping style are a result of their investment in maintaining an image of themselves as people who are unsusceptible to negative emotions and defending themselves against assertions which contradict that image.

It has been shown in many studies that people of repressor type avoid negative affect (see Myers, 2000; Myers, 2010; Myers & Derakshan, 2004, for reviews). In comparison with non-repressors, they have worse memories of negative events from childhood and adolescence (Davis & Schwartz, 1987; Myers & Brewin, 1994), and have worse recall of negative material in both intentional and incidental learning paradigms (Myers & Brewin, 1995; Myers & Derakshan, 2004).

In seeking indicators of anxiety in repressors, researchers have usually used methods which measure a physiological aspect of emotion such as heart rate (e.g. Newton & Contrada, 1992) or various types of expressive behaviour such as facial expression (e.g. Zinzuk, 2008). In our research, we decided to analyse texts produced by subjects, which may, outside their conscious control, reveal their state of anxiety. An analysis was made of the utterance texts of three groups of subjects, selected according to the criteria of Weinberger, Schwartz and Davidson (1979) – low-anxious persons, persons with a repressive coping style, and high-anxious persons – in order to compare their levels of dogmatism, measured by a version of the Dogmatism Quotient of Suitbert Ertel (1985, 1986, 1972) adapted for the Polish language. This indicator refers to attempts to find structural characteristics of linguistic expressions which reflect the cognitive property that Milton Rokeach called dogmatism.

Dogmatism as a complex of defensive cognitive reactions against anxiety

The concept of dogmatism as presented in 1960 by Rokeach is one of the earliest psychological theories to concentrate on the formal aspect of beliefs and their role in the thinking and behaviour of individuals and groups. In his now classic work *The Open and Closed Mind*, Rokeach drew attention to the possible similarity in way of thinking between persons who differ markedly in terms of the content of their accepted beliefs. This similarity concerns their attitude to a belief system differing from

¹ Freud described repression as a basic defence mechanism entailing an involuntary escape from the awareness of a threatening thought, idea, feeling or desire. This process requires a constant input of energy, and occurs when there exists a conflict between the pleasure drive and requirements (such as moral ones) which run counter to that drive. According to the founder of psychoanalysis, repression makes it possible to avoid anxiety and unpleasantness, but on the other hand leads to a deformed perception that makes it difficult or impossible to solve the problem, and also prevents the unloading of the excess of stimulation generated by drives and desires (Freud & Breuer, 1986; Freud, 1997).

their own, and can be described in the dimension of openness or closedness of mind. A belief system is more closed (dogmatic), the more the person's views are isolated from each other, which is reflected in the simultaneous acceptance of views that are logically inconsistent or lead to inconsistency; the more the differences between systems of accepted and rejected views are exaggerated and the similarities diminished; and the stronger is the person's aversion to and criticism of unaccepted views, where the social reality and factual situation are viewed in categories of threat.

In Rokeach's view, all of these properties of belief systems have a common causal basis: they are a complex of defensive cognitive reactions serving to protect against anxiety. A study by Rokeach showed that high-anxious persons have a higher level of dogmatism than low-anxious persons. A dogmatic belief structure thus fulfils a defensive function, and serves less to understand the world: "A closed system is nothing else but a set of protective mechanisms organized in order to create a cognitive framework that acts as a shield for the sensitive mind" (Rokeach, 1960, p. 70).

The aim of a dogmatic belief system is primarily to reduce anxiety by the selection of new information and the elimination of information which might be threatening. The stronger is the feeling of threat, the stronger is the tendency to accept uncritically the views of positive authorities, and consequently to evaluate all views in the light of their similarity to views professed. Dependence on the source rather than the content of information leads to an acceptance of internal contradictions between beliefs, exaggeration of the differences and rejection of views that do not agree with one's own. The level of anxiety is thereby reduced, and the individual's belief system becomes increasingly rigid² and schematic, uncritical and resistant to change. A dogmatic belief system also makes it harder to solve new problems that require a break from previous habits or schemes of thinking. It is also linked to an aversion to performing tasks that require a new way of thinking, and to a reduced ability to make syntheses of previous observations.

A possible source of anxiety in dogmatic persons, according to Rokeach, is experience from childhood, particularly a fear of expressing negative or ambivalent feelings towards their parents. There are nonetheless other possible explanations of the link between glorification of the parents and dogmatism. Malewski (1961) believes, for example, that persons who have a high sense of threat and who consequently think dogmatically do not speak about negative features of their parents in tests. They also do not wish to allow unfavourable characterizations of their own family into their consciousness, as this might increase their anxiety, in connection with the threat to their good image. Repression of hostile feelings towards the parents would therefore be, in Malewski's view, not so much a cause

of anxiety in dogmatic persons, but rather an effect of anxiety, the cause of which is not necessarily childhood experience.

Rokeach also showed that situations giving rise to threats lead to similar effects of dogmatization of beliefs as does anxiety as a permanent personality trait resulting from early childhood experiences. This remains the case for at least as long as the threat persists. For example, the decisions adopted by successive ecumenical councils of the Catholic Church were found to be more dogmatic when in the preceding period there had been perceived a greater threat to that institution. The dogmatism of the decisions was measured by the degree of the sanctions laid down for those who did not accept them and the rank of the authorities appealed to.

At the same time, as Rokeach notes, the more closed (dogmatic) is a person's belief system, the greater the threat that will be felt by that person in the world around them. Internal anxiety is therefore subject to externalization and may lead to a deformation of reality, creating only an "appearance" of understanding the world (Rokeach, 1960, p. 60).

The effect of anxiety on the level of dogmatism, regarded as a cognitive defence mechanism, has been the subject of many research studies and theoretical analyses (Rappaport, 1978, 1979; Redfering, 1979; Johnson, 2010). Contemporary studies on dogmatism have also confirmed that dogmatic persons demonstrate a significantly higher level of aggression, hostility and dissatisfaction than those not classed as dogmatic (Heyman, 1977; Sexton, 1983; Crowson, 2009; Johnson, 2010). They more often feel socially alienated, and are characterized by worry, a low sense of their own value, distrust, and lack of spontaneity and flexibility (Martin, Staggers, & Anderson, 2011).

Johnson (2010) treats dogmatism simply as a personality trait which can be described in cognitive, emotional and behavioural dimensions. The cognitive aspect is characterized by the following properties: intolerance of ambiguity, defensive cognitive closure, rigid certainty, compartmentalization, and lack of personal insight. In describing the emotional dimensions of dogmatism there are three key emotions: anxiety, fear and anger, while the behavioural dimension is manifested by a preoccupation with power and status, glorification of the in-group and vilification of the out-group, dogmatic authoritarian aggression or dogmatic authoritarian submission, and arrogant, dismissive communication.

Rokeach's concept and its contemporary developments are also referred to by Ertel (1986), who created an original method of content analysis, called the Dogmatism Quotient. In Ertel's view, this indicator may reveal such cognitive predispositions as a tendency towards closure, joining together, perfection and order. It is expressed by the proportion of lexemes in group A (such as *always, never, everyone, everything, nobody, totally, absolutely, without doubt, must, should, mustn't, necessarily*, etc.) to those in the contrasting group B (such as *sometimes, rarely, many, few, almost, hardly, may, doubtful, also, most probably*, etc.). In Ertel's research these lexemes were assigned to

² Rokeach (1960, p. 183) distinguishes between rigid and dogmatic thinking. The first refers to resistance to change of an individual belief, while the second refers to resistance to change in an entire belief system.

six semantic linguistic dimensions: 1) alwaysness – not alwaysness (such as *always, constantly, usually – once, sometimes, diversely*); 2) allness – not allness (such as *each, everybody, any – possibly, a certain amount, rarely*); 3) extremeness – moderateness (such as *never, nobody, maximum – a little, middling, to a certain degree*); 4) certainty – uncertainty (such as *for sure, without fail, evidently – probably, as if, doubt*); 5) exclusion – inclusion (such as *separately, different, alien – together, in common, joint*); 6) necessity – possibility (such as *necessarily, must, to order – one may, it's possible to, probably*). The first extreme mentioned in each case is the diagnostic for dogmatic thinking, and describes such properties of language and thought as resistance to change (alwaysness), high level of generality (allness), extremity, intensity, radicalism (extremeness), belief in the correctness of one's views, decisiveness and firmness (certainty), closure, rigidity and isolation (exclusion), and feeling of compulsion and impossibility of choice (necessity). Ertel clearly refers here to Rokeach's theory, and in particular such features of belief systems as rigidity, resistance to change, exaggeration of differences, radicalism of judgments and strong belief in their correctness, and their internal isolation and closure to influence.

The Dogmatism Quotient is the best-known and most frequently cited of Ertel's indicators (Baruffolo, 1980; Schwibbe, 1983; Damaske, 2000; McKenny, 2005). Ertel himself also devoted particular attention to it, making it the subject of the largest number of his papers. For example, he computed its value for texts produced by the same person at different times: he used it to compare speeches made by Hitler before and after he came to power, and texts written by Kant in various periods of his life, obtaining a marked rise in the Dogmatism Quotient as Hitler's power rose and as the views of the great philosopher matured. According to Ida Kurcz (2011), a high Dogmatism Quotient is found for many texts having the nature of propaganda. For example, Ertel analysed German press reports from the time of the building of the Berlin Wall, and found that the value of the index increased significantly in that period compared with the years preceding that event.

Compared with the best-known methods for investigating dogmatism, such as Rokeach's D Scale (1960) and Altemeyer's DOG Scale (1996), Ertel's method has the advantage that it does not examine the dogmatic attitude in a direct and declarative manner. Its goal is to "penetrate the inner world of meanings" of the narrator, which is hidden beneath the "structured sequence of stimuli" constituted by the linguistic material (Paluchowski, 2010, p. 59).

In our study we decided to look at texts produced by participants, which may, outside their conscious control, reveal their state of anxiety, as expressed by a higher level of dogmatism in the texts. We assumed that the higher level of state anxiety in high-anxious persons and repressors would bring about a higher degree of dogmatism in the structure of their texts (measured by Ertel's Dogmatism Quotient) in comparison with low-anxious persons. It may also seem that repressors, who have a low tendency to experience anxiety consciously even when it is at a high

level, do not have such possibilities of releasing and coping with anxiety as do high-anxious persons who are conscious of their own anxiety. This may lead to a greater degree of rigidity and extremeness in the structure of their texts. These considerations led us to propose the following research hypotheses:

H₁ There exist differences in DQ values between low-anxious persons on one hand and high-anxious persons and repressors on the other: the DQ is lower among low-anxious persons and higher among high-anxious persons and repressors.

H₂ There exist differences in DQ values between high-anxious persons and repressors: the DQ is lower among high-anxious persons and higher among repressors.

Method

Participants

To verify the above hypotheses, a two-stage study was carried out. In the first stage, a questionnaire survey was used to select groups of persons with particular coping styles as described by Weinberger et al. (1979). The respondents were 570 students on 14 different study courses (special teacher training, general teacher training, philosophy, political science, cognitive science, biology, geography, environmental protection, Polish language, English language, history, music, history of art, archaeology). The subjects' average age was 21, and all of them were Polish. The respondents completed the Spielberg et al. Trait Anxiety Scale as adapted for Polish by Wrześniewski et al. (2002) and the Marlowe–Crowne Social Approval Scale as adapted for Polish by Siuta (1989).

The laboratory testing stage involved 90 women (men will be tested in a separate study), each selected and classified in one of the three groups – repressors (30 persons), high-anxious (30 persons) and low-anxious (30 persons) – based on results attained on the Spielberg et al. Trait Anxiety Scale and the Marlowe–Crowne Social Approval Scale, when they differed from the mean by one standard deviation. Because cluster analysis by the k-means method did not indicate a characteristic cluster for defensive high-anxious persons, that group was not included in the study.

Procedure

Participants (N = 90) were assigned a task which might be potentially stressful – to give a speech lasting for several minutes in front of an audience consisting of two expert psychologists. The speech was to concern features of the subject's personality which the subject liked and disliked. Each subject had approximately 10 minutes to prepare the speech, and then went into a different room in which the audience was waiting. After the stage of speaking freely, the subject was asked eight standard questions (the same for all participants) by members of the audience:

- Is there any other feature of your personality that you do not like?

- Is there any other feature of your personality that you like?
- In your opinion, what features do people like about you?
- In your opinion, what features do people not like about you?
- Please reveal some negative aspect of yourself that your friends are not aware of.
- Do you consider yourself attractive?
- Is this conversation difficult for you?
- Do you want to add something?

The speech was recorded with the use of a digital video camera, the presence of which constituted another potential stress factor. All study participants were informed about the video recording before the experiment and provided written consent.

Measuring techniques

The texts of the recorded speeches were transcribed in the format used by the Transcriber program. They were analysed using the UAM Text Tools package, created at Adam Mickiewicz University's Faculty of Mathematics and Information Science (Obrębski and Stolarski, 2006). Each word was labelled with information about its part of speech and morphological attributes (number, gender, person) using data from the Poles/PMDB electronic morphological dictionary (Vetulani, Walczak, Obrębski, & Vetulani, 1988).

Identification of dogmatic and non-dogmatic expressions used by the participants was performed using a list of 260 words (131 dogmatic and 129 non-dogmatic) developed in a study by Obrębska and Nowak (2011) and Obrębska (2013). The computer labelling was supplemented by manual verification, which enabled the list to be extended to include new dogmatic and non-dogmatic expressions that had not been previously identified. These expressions were presented to five experts with backgrounds in psychology and language study, whose task it was to assign them to Ertel's categories. The original list of 260 words (Obrębska & Nowak, 2011; Obrębska, 2013) was extended by the 51 words and expressions – 24 dogmatic and 27 non-dogmatic – that attained a satisfactory level of agreement among the experts.

Ertel's original method of calculating the Dogmatism Quotient was based on the proportion of the number of lexemes from group A, being diagnostic for dogmatism, to the number from the contrasting group B. In our study, instead of simply counting occurrences of words, a weighted sum was computed. Each word carried a weight of 3, 4 or 5, corresponding to the number of the experts who had classified the word in the relevant group. Words with weights lower than 3 were considered not to be diagnostic for dogmatism. The value of the quotient for a given dimension was therefore most strongly influenced by those words for which the level of agreement among the experts was the highest.

The value of the quotient for a given dimension was computed (separately for each subject) as the sum of the weights of dogmatic words for that dimension divided by the sum of the weights of all words (dogmatic and non-dogmatic) for that dimension. The result was then averaged within the three groups of subjects: low-anxious (la), repressors (r) and high-anxious (ha). Values of standard deviation were then computed, and analysis of variance (one-way ANOVA) was performed using Tukey's *post hoc* HSD test. The value of the overall Dogmatism Quotient was calculated in the same way, taking account of words from all of the dimensions.

Results

The reliability of the questionnaires, measured using Cronbach's Alpha, was satisfactory:

- for the Spielberger et al. Trait Anxiety Scale as adapted for Polish by Wrześniewski et al. (2002), $\alpha = 0.87$;
- for the Marlowe–Crowne Social Approval Scale as adapted for Polish by Siuta (1989), $\alpha = 0.74$.

Ertel's one-factor model of the Dogmatism Quotient, consisting of six semantic linguistic dimensions, was examined. Exploratory factor analysis (Principal Component Analysis, Oblimin rotation, without specifying the number of factors to extract) showed not the postulated one but two factors (see Tables 1 and 2). These two factors explain 59.98% of the total variance. The dimension of exclusion was removed from the Dogmatism Quotient and treated separately.

Table 1. Total variance explained: Principal Component Analysis of 6 dimensions

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.543	42.378	42.378	2.543	42.378	42.378
2	1.056	17.600	59.978	1.056	17.600	59.978
3	0.870	14.499	74.477			
4	0.634	10.561	85.038			
5	0.551	9.175	94.213			
6	0.347	5.787	100.000			

Source: authors' work.

Table 2. Pattern matrix: Principal Component Analysis of 6 dimensions; rotation method: Oblimin with Kaiser normalization

Dimensions	Component 1	Component 2
Alwaysness	0.783	-0.249
Allness	0.642	0.056
Extremeness	0.701	-0.112
Certainty	0.588	0.312
Exclusion	-0.011	0.947
Necessity	0.797	0.134

Next, exploratory factor analysis of the 5 dimensions was conducted (Principal Component Analysis with Oblimin rotation). This time, the total explained variance was 50.15%. The 5 dimensions of dogmatism are parts of the one-factor model.

Mean values and standard deviations of the dimensions of dogmatism obtained for each group are given in Table 5. The last column (DQ) contains the overall result for the Dogmatism Quotient.

The mean values of the Dogmatism Quotient obtained for the particular groups are shown in Graph 1. The differences between groups were significant: $F(2,87) = 7.853, p < 0.001$. The most homogeneous group, with the smallest scattering of results, was found to be the repressors, while the largest standard deviation was

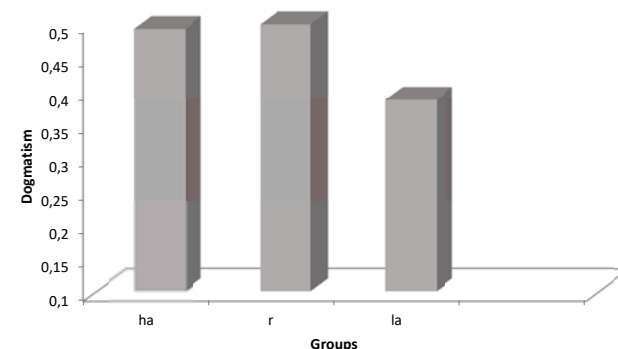
Table 3. Total variance explained: Principal Component Analysis of 5 dimensions

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.514	50.287	50.287	2.514	50.287	50.287
2	0.906	18.126	68.413			
3	0.652	13.044	81.457			
4	0.585	11.694	93.151			
5	0.342	6.849	100.000			

Source: authors' work.

Table 4. Pattern matrix: Principal Component Analysis of 5 dimensions, rotation method: Oblimin with Kaiser normalization

Dimensions	Component 1
Alwaysness	0.729
Allness	0.645
Extremeness	0.683
Certainty	0.658
Necessity	0.818

Graph 1. Mean values of the Dogmatism Quotient obtained by high-anxious (ha), repressive (r) and low-anxious (la) groups

Source: authors' work.

Table 5. Means and standard deviations for particular dimensions of dogmatism obtained by high-anxious (ha), repressive (r) and low-anxious (la) groups

Group	Allness	Necessity	Extremeness	Alwaysness	Certainty	DQ
ha	0.63 (0.14)	0.36 (0.20)	0.82 (0.10)	0.29 (0.23)	0.48 (0.13)	0.49 (0.12)
r	0.69 (0.15)	0.38 (0.18)	0.83 (0.09)	0.38 (0.30)	0.47 (0.11)	0.50 (0.08)
la	0.58 (0.21)	0.23 (0.17)	0.78 (0.14)	0.22 (0.22)	0.38 (0.17)	0.39 (0.15)

Source: authors' work.

recorded for the low-anxious group (this concerns the overall Dogmatism Quotient).

A higher value of the Dogmatism Quotient was obtained for the repressors and high-anxious subjects, and a lower value for the low-anxious group. Hypothesis H₁ was confirmed. As regards the individual dimensions of dogmatism, not all differences were statistically significant: alwaysness – $F(2.85) = 2.838$, $p = 0.064$; allness – $F(2.87) = 2.893$, $p = 0.061$; extremeness – $F(2.87) = 2.104$, $p = 0.128$; certainty – $F(2.87) = 3.218$, $p < 0.045$; necessity – $F(2.87) = 5.919$, $p < 0.004$.

To determine the level of significance of the differences identified between the low-anxious group (la), the repressors (r) and the high-anxious group (ha), Tukey's

HSD test was used. The results are given in Table 6, with statistically significant results at $p < 0.05$ shown in bold type.

Statistically significant differences in the level of dogmatism, measured by the overall Dogmatism Quotient, were identified between the high-anxious and low-anxious groups and between the group of repressors and the low-anxious group. The measure of the effect size, expressed using Cohen's index ($d = 0.79$ and $d = 0.94$), indicates large differences between the studied groups. However hypothesis H₂ was not confirmed. The following dimensions proved to be especially significant:

- allness–not allness (r-la);
- necessity–possibility (ha-la, r-la);
- certainty–uncertainty (ha-la).

Table 6. Statistical significance results for particular dimensions of the Dogmatism Quotient

Group	Difference	Lower confidence bound	Upper confidence bound	Statistical significance
Allness				
ha-r	-0.053	-0.160	0.053	0.459
ha- la	0.054	-0.052	0.160	0.450
r-la	0.107	0.001	0.214	0.047
Necessity				
ha-r	-0.018	-0.130	0.095	0.926
ha- la	0.131	0.018	0.244	0.018
r-la	0.149	0.036	0.262	0.006
Extremeness				
ha-r	-0.011	-0.081	0.059	0.921
ha- la	0.046	-0.024	0.116	0.272
r-la	0.057	-0.013	0.127	0.134
Alwaysness				
ha-r	-0.081	-0.238	0.075	0.435
ha- la	0.077	-0.080	0.233	0.476
r-la	0.158	-0.001	0.316	0.050
Certainty				
ha-r	0.012	-0.074	0.098	0.941
ha- la	0.095	0.009	0.181	0.026
r-la	0.083	-0.003	0.169	0.060
Dogmatism Quotient				
ha-r	-0.011	-0.085	0.064	0.938
ha- la	0.102	0.027	0.176	0.004
r-la	0.112	0.038	0.187	0.001

Source: authors' work.

Table 7. Correlations between variables

	DQ	ALW	ALL	EXT	CE	NE	EXC	SA	TA
DOGMATISM QUOTIENT									
Pearson Correlation	1	0.40	0.44	0.57	0.89	0.57	0.31	0.11	-0.01
Significance (2-tailed)		0.01	0.01	0.01	0.01	0.01	0.01	0.30	0.94
ALWAYSNESS									
Pearson Correlation	0.40	1	0.37	0.36	0.23	0.57	-0.02	0.10	-0.11
Significance (2-tailed)	0.01		0.01	0.01	0.05	0.01	0.86	0.34	0.30
ALLNESS									
Pearson Correlation	0.44	0.37	1	0.29	0.25	0.43	0.12	0.22	-0.13
Significance (2-tailed)	0.01	0.01		0.01	0.05	0.01	0.26	0.05	0.24
EXTREMENESS									
Pearson Correlation	0.57	0.36	0.29	1	0.48	0.32	0.02	0.15	-0.05
Significance (2-tailed)	0.01	0.01	0.01		0.01	0.01	0.87	0.17	0.62
CERTAINTY									
Pearson Correlation	0.89	0.23	0.25	0.48	1	0.38	0.19	-0.04	0.03
Significance (2-tailed)	0.01	0.05	0.05	0.01		0.01	0.08	0.74	0.81
NECESSITY									
Pearson Correlation	0.57	0.57	0.43	0.32	0.38	1	0.15	0.18	-0.05
Significance (2-tailed)	0.01	0.01	0.01	0.01	0.01		0.15	0.10	0.62
EXCLUSION									
Pearson Correlation	0.31	-0.02	0.12	0.02	0.19	0.15	1	0.12	0.00
Significance (2-tailed)	0.01	0.86	0.26	0.87	0.08	0.15		0.26	0.97
SOCIAL APPROVAL									
Pearson Correlation	0.11	0.10	0.22	0.15	-0.04	0.18	0.12	1	-0.54
Significance (2-tailed)	0.30	0.34	0.05	0.17	0.74	0.10	0.26		0.01
TRAIT ANXIETY									
Pearson Correlation	-0.01	-0.11	-0.13	-0.05	0.03	-0.05	0.00	-0.54	1
Significance (2-tailed)	0.94	0.30	0.24	0.62	0.81	0.62	0.97	0.01	

The results of the analysis of the last dimension, exclusion–inclusion – which was removed from the model of dogmatism – were also found to be significant: $F(2.86) = 4.519$, $p < 0.014$. Tukey's HSD test showed that significant differences occurred between the high-anxious and low-anxious groups and between the group of repressors and the low-anxious group.

To better understand the relationships between the variables, a correlation table is given below, with statistically significant results shown in bold type.

Discussion

The results confirmed hypothesis H_1 : the DQ is lower among low-anxious persons and higher among high-anxious persons and repressors. However, hypothesis H_2 was not confirmed: differences in DQ values between high-anxious persons and repressors proved to be insignificant. These results show that only low-anxious persons differ from high-anxious persons and repressors, whose texts exhibit a certain structural similarity. Analysis of the dimensions of dogmatism shows that the speeches of low-

anxious persons, compared with those of high-anxious persons and repressors, appear to be more individualized and detailed (dimension allness–not allness). Low-anxious persons are more flexible in their judgments and ready to adjust them (dimension necessity–possibility). They also more frequently express their doubts, uncertainty and indecision (dimension certainty–uncertainty). They consider various possibilities and are ready to assimilate them. The dimension of allness–not allness shows that repressors have a tendency to make frequent and excessive generalizations, and their judgments are characterized by stereotypization and lack of individualization. Like high-anxious persons, they often place emphasis in their texts on the dimension of obligation, linked to pressure, compulsion and lack of possibility of choice. Their judgments are characterized by isolation and closure to influence. For high-anxious persons, there is also a high level of certainty in their statements and of belief in their correctness.

Our study has confirmed, in a new way, the previously discovered pattern whereby repressors exhibit more similarities to high-anxious persons than to low-anxious persons (see Myers, 2000; Myers, 2010; Newton

& Contrada, 1992, for reviews). This fact casts doubt on their self-characterization, in which they deny their own susceptibility to anxiety. Analysis of the formal structure of subjects' texts showed that repressors and high-anxious persons exhibit a high level of dogmatism, significantly higher than that of low-anxious persons. This suggests that the high level of dogmatism is not dependent on the level of either defensiveness or trait anxiety. This assumption was confirmed by the correlations, calculated using Pearson's method, between results obtained on the Marlowe-Crowne Social Desirability Scale and the Spielberger Trait Anxiety Scale, and the Dogmatism Quotient and its subdimensions – no significant correlations were found. Hence the high level of dogmatism was probably a result of the state of anxiety. Interestingly, it is not important whether this is conscious anxiety (as in the case of the high-anxious subjects) or unconscious anxiety (as in the case of the repressors). An interesting direction of study, therefore, would be to investigate the relationship between the dogmatization of text structure and the state of anxiety tested by more objective methods, including measurements of physiological and behavioural indicators, for example heart rate or facial expressions of fear. It could be experimentally checked whether the intensity of stress/anxiety/fear influences the level of dogmatization of text structure. Personality variables (high-anxiousness, low-anxiousness, repressiveness) could be treated and tested as a covariate.

The finding that persons with a high state of anxiety (conscious or repressed) exhibit a higher level of dogmatism in their texts than low-anxious persons is in accordance with the results of the classic work of Rokeach (1960), continued by such researchers as Rappaport (1979), Redfering (1979) and Johnson (2010). In Rokeach's view, those features of a belief structure which are externalized in the texts of persons with a high level of anxiety, such as excessive generalization, rigidity, feeling of compulsion, closure to influence, isolation of views and strong belief in their correctness, form a complex of defensive reactions which serve to protect against anxiety. A dogmatic belief structure imposes a certain order, giving an illusory sense of having control over reality and one's own emotions.

An alternative explanation of our results relates to the question of whether repressors avoid threatening stimuli in an automatic and unconscious way, or intentionally and consciously. Many researchers assume that repressors perform unconscious defensive self-deception strategies. However, some researchers (Baumeister & Cairns, 1992; Darkshan and Eysenck, 1999, 2005) state that people described as repressive may consciously use impression management strategies. Darakshan and Eysenck (1999) carried out research using the Self Deception Scale and the Impression Management Scale, which are components of the Balanced Inventory of Desirable Responding (Paulhus, 1984). High values of the self-deception motive and the impression management motive were obtained for the repressors. The value for impression management recorded for the repressors was higher than those recorded for the high-anxious and low-anxious groups. The value for self-

deception recorded for the repressors was higher than in the high-anxious group and similar to the low-anxious group. Repressors can be characterized by both a tendency towards self-deception and a conscious tendency to portray themselves in a positive light. These two tendencies strongly correlated with each other in the repressors group.

Therefore, their high scores for dogmatism may be the result of a conscious tendency to portray themselves as more self-confident and convinced of their statements. This assumption has never been studied in the context of dogmatism. How might a study be constructed to differentiate between conscious and unconscious lexical choices? It would be possible to compare texts that have been previously prepared, e.g. in writing, with spontaneous speech. The first should reflect conscious, intentional choices; the latter – more involuntary, automatic and unconscious choices.

In our view, however, the increased level of dogmatism in texts is the result of a state of anxiety. It is not the result of intentional impression management. A high level of dogmatism was also discovered in the texts of high-anxious persons, who are characterized by a low susceptibility to motives of social approval, impression management and self-deception.

To confirm this thesis we can compare the pattern of results obtained in our study with that obtained in a study of patients diagnosed with paranoid schizophrenia (Obrębska & Nowak, 2011; Obrębska, 2013). Anxiety in schizophrenia is primarily disintegrative, and triggers a feeling of chaos and being lost. It is interesting to note that the average levels of dogmatism in the texts of schizophrenia patients, particularly those with positive symptoms of the disease, were found to be close to the level of dogmatism of high-anxious persons and repressors. The average score for healthy persons is close to that for low-anxious persons. Hence anxiety seems to be crucial for dogmatism.

Persons with a tendency to react with anxiety in situations of social exposure, namely high-anxious persons and – as it turned out – repressors also, coped with the anxiety being felt by means of a certain cognitive rigidity, externalized in the frequent selection of dogmatic expressions. Low-anxious persons, in situations of social exposure, did not react with such a high state of anxiety, and consequently their texts were characterized by greater openness, plasticity and expressed uncertainty.

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