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The functions of internal dialogs and their connection with personality

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In previous studies, seven key functions in internal dialogs were identified: Support, Substitution, Exploration, Bond, Self-improvement, Insight, and Self-guiding. It was also established that internal dialogs vary in the intensity of these functions. The presented research aimed to test if there are configurations of personality variables that allow us to predict specific patterns of functions performed by internal dialogs. Canonical correlation analysis revealed that the higher the intensity of neuroticism and anxious attachment and the lower the intensity of openness and the tendency to spontaneously adopt the viewpoints of others, the more strongly a person's internal dialogs perform the Substitution function and the weaker the Insight and Support functions are. The reverse configuration of personality characteristics intensifies Insight and Support and minimized Substitution. The results are presented in the context of the status of dialogicality and discussed in the light of other studies on internal dialogs.

Key words: Dialogical self, internal dialog, imaginary dialog, simulation of social relationships, functions of dialog, personality traits.

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INTRODUCTION

In the Oscar-winning *Fiddler on the Roof*, the protagonist, Tevye – a poor Jew living in Tsarist Russia – plans to marry off his three daughters in keeping with tradition to ensure them safety and comfort. However, the daughters choose their future husbands themselves, against his vision. Each time Tevye considers whether to accept a daughter's choice, he starts with an argument representing his typical thinking about the situation, but immediately adds: "on the other hand" and formulates a counterargument from a different, contrary perspective, then refuting it from the former perspective again, etc. What is it, actually, that Tevye is doing?

In the literature, this phenomenon is known by many different names: self-talk (Brinthaupt & Dove, 2012), self-statements (Kamann & Wong, 1993), private speech (Winsler, Fernyhough & Montero, 2009), inner speech (MacKay, 1992), and interior monolog (Hogenraad & Orianne, 1983). In this article, it will be referred to as "internal dialog" (Hermans & Hermans-Jansen, 1995; Puchalska-Wasyl, 2015b). Unlike the other terms, "internal dialog" implies that there are (at least) two distinct communicating parties within one self. Thus, more clearly than the others, this term presupposes that the self is not monolythic. This idea is broadly accepted in the cognitive approach (Higgins, 1987; Markus & Nurius, 1986; Markus & Wurf, 1987; Ogilvie, 1987), and polypsychism (Assagioli, 2000; Rowan, 1990), but above all in the dialogical approach with its pivotal dialogical self theory (DST; Hermans, 2003; Hermans & Gieser, 2012; Hermans & Hermans-Jansen, 1995).

According to DST, a person can adopt many different viewpoints (perspectives), called I-positions here. The dialogical self is conceptualized as a dynamic multiplicity of relatively autonomous I-positions. Each I-position, shaped in a particular social context, has a voice (the voice of a culture, a community, a significant other, or one's own voice, etc.) and interacts with other I-positions resembling people in social relationships (Hermans, 2003). This makes not only external (interpersonal) but also internal (intrapersonal) dialogs possible. Internal dialog means that a person alternately adopts (at least) two different viewpoints and that utterances formulated from these viewpoints refer to one another (Puchalska-Wasyl, 2015b; cf. Hermans & Hermans-Jansen, 1995). According to DST, parties to internal dialog can be I-positions representing the person's own and/or someone else's viewpoints. This means that, for example, if I have a problem with my child I can consider it the way Tevye does, alternately adopting two personal viewpoints (e.g., "I as a traditionalist" and "I as a liberal parent"), or I can imagine my own conversation with my unruly child.

There are very few studies on the determinants of this phenomenon. They suggest that personality traits are related to the willingness to engage in internal dialogs. Using the Internal Dialogical Activity Scale (IDAS; Oleś, 2009) to assess the intensity of internal dialogs, and using the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) to measure traits, moderate correlation was found between the intensity of internal dialogical activity and Neuroticism (0.34, $p < 0.001$) as well as Openness (from 0.27, $p < 0.01$ in adolescents, to 0.54, $p < 0.001$ in middle-aged adults). The relationship with Neuroticism was also replicated using the Eysenck Personality Questionnaire – Revised (EPQ-R; 0.39, $p < 0.001$) (Brzozowski & Drwal, 1995; Oleś & Puchalska-Wasyl, 2012). Generally, the higher the level of Neuroticism and Openness, the higher the level of internal dialogical activity. This is probably modified by developmental factors, since in adolescents internal dialogicality correlates more strongly with Neuroticism than with Openness (in students, this depends on the sample), while in middle-aged samples it correlates more strongly with Openness than with Neuroticism (Oleś, Batory, Buszek *et al*., 2010). In other studies it was tested to what extent traits (NEO-PI-R) explain the intensity of internal dialogs (IDAS). A

stepwise analysis of regression revealed that 28% of the variance in IDAS scores was explained by a linear combination of Openness and Neuroticism, with five personality factors as independent variables in a regression model. An analogous analysis of regression for 30 facets revealed that 39% of the variance in IDAS scores was explained by a linear combination of four traits: Self-Consciousness, Aesthetics, Feelings, and Self-Discipline (negatively) (Puchalska-Wasyl, Chmielnicka-Kuter & Oleś, 2008). These findings are largely consistent with studies that compared personality traits (NEO-PI-R) between individuals engaging in internal dialogs and those engaging in monologs (defined in accordance with DST as the situation where only one I-position is voiced and the other is a silent listener). It was established that participants preferring inner dialogs scored significantly higher on Openness and its facets: Fantasy, Aesthetics, and Feelings, higher on Self-Consciousness as a component of Neuroticism, and lower on Assertiveness as a component of Extroversion than people preferring internal monologs (Puchalska-Wasyl, 2006, 2011).

Attempts were also made to categorize internal dialogs according to various criteria (e.g., emotional climate, interlocutors' behavior) and the personalities of their authors were compared. It turned out that traits are reflected in the way of conducting internal dialogs – for example, in the fact that the participant and his/her internal interlocutor can either cooperate in dialog for solving the problem discussed or refuse to cooperate. Individuals whose dialogs are characterized by cooperation have significantly higher scores on Openness and its two facets – Aesthetics and Actions (NEO-PI-R). These are people who actively seek new experiences as well as harmony and beauty. This manifests itself in their internal dialogs in arranging cooperation that makes it possible to find a solution to the problem discussed that is creative and harmoniously combines the needs of both parties (Puchalska-Wasyl, 2011).

The studies also sought the relations of internal dialogical activity (IDAS) with other personality variables, such as attachment styles measured by the Experiences in Close Relationships - Revised Questionnaire (ECR-R; Fraley, Waller & Brennan, 2000). Negative correlation was found between internal dialogs and the avoidant attachment style (-0.44, $p < 0.001$), while the correlation between internal dialogical activity and the anxious style was positive (0.39, $p < 0.001$). The relationship between the intensity of internal dialogs (IDAS) and empathy measured by the Interpersonal Reactivity Index (IRI; Davis, 1983) was also tested – the correlation turned out to be surprisingly weak (0.33, $p < 0.001$) (Oleś *et al.*, 2010).

Studies on the functions of internal dialogical activity are as few as those on the personality determinants of this phenomenon. Brinthaupt and Dove (2012) identified four functions of self-talk: social assessment, self-reinforcement, self-criticism, and self-management. The social assessment function refers to self-talk related to a person's social interaction (e.g., imagining how other people responded to the things one said). The self-reinforcement function reflects self-talk that focuses on positive events (e.g., feeling proud of something one has done). Self-criticism refers to self-talk concerning negative events (e.g., criticizing oneself for something one has said or done). Finally, the self-management function refers to self-regulatory self-talk (e.g., giving oneself

instructions or directions about what to do or say). In their study, the researchers showed that these four functions depend on age, family configuration (i.e., only child or sibling), and having an imaginary companion in childhood. For example, the people who had had an imaginary companion reported more frequent overall self-talk and, additionally, higher levels of self-reinforcing and self-managing self-talk than did those without an imaginary companion.

Recently, researchers have been particularly interested in the distinction (with regard to mode and outcome) between integrative and confrontational internal dialogs. In general terms, integrative dialogs aim to take into account and integrate all the viewpoints involved; consequently, they can result in creative solutions. Confrontational inner dialogs, by contrast, emphasize differences between standpoints and aim to enhance one of them and ignore or depreciate the others (cf. Borawski, 2011; Młynarczyk, 2011; Nir, 2012). As Borawski showed (2011), integrative dialogs enhance situational self-esteem and positive emotions compared to confrontational dialogs. Additionally, integrative dialogs conducted by a person preferring dialogical thinking can diminish discrepancies between his/her ideal and ought selves (Młynarczyk, 2011). Hermans's studies reveal that voicing different viewpoints involved in a given problem and attempting to consider their arguments is conducive to well-being and more adaptive psychological functioning (Hermans, 2003; Hermans & Hermans-Jansen, 1995).

Hierarchical cluster analysis was also performed on the specific functions of 649 internal interlocutors (defined in the light of DST as the I-positions identified by the participants as partners in their inner dialogs). In this way, seven groups of functions of internal dialogs were distinguished, namely: Support, Substitution, Exploration, Bond, Self-improvement, Insight, and Self-guiding (Puchalska-Wasyl, 2006; Puchalska-Wasyl *et al.*, 2008). These key functions will be discussed in greater detail further, at the presentation of the Functions of Dialogs method (FUND; Puchalska-Wasyl, 2015a). Research has also shown that there are four emotional types of imaginary interlocutors – Faithful Friend, Ambivalent Parent, Proud Rival, and Helpless Child (Puchalska-Wasyl, 2015a, 2015b; Puchalska-Wasyl *et al.*, 2008) – and, depending on the type of interlocutor, a dialog performs various key functions with different intensity (Puchalska-Wasyl, 2006, 2015a; Puchalska-Wasyl *et al.*, 2008).

Dialogs categorized according to various criteria mentioned before (e.g., emotional climate, interlocutors' behavior) have also been compared in terms of key functions. It was found, for instance, that internal dialogs in which the participant and his/her imaginary interlocutor cooperate towards solving a problem perform the Support and Bond functions significantly more often than dialogs with no cooperation between the parties (Puchalska-Wasyl, 2007).

Thus, in previous studies, the functions of internal dialogs were associated with the types of internal interlocutors and with the emotional and content characteristics of dialogs themselves. Relations have also been sought between the tendency to engage in internal dialogs and their specificity and the personality traits of their authors. However, there have been no studies to date on the relationship between personal characteristics and the functions of the dialogs a person conducts. The research presented below is an

attempt to fill this gap. Specifying this relationship seems to be legitimate and important above all in the theoretical perspective, in which the status of dialogicality is considered. What is dialogicality? Is it a personality variable? According to Mead (1934), dialogicality understood as the ability to adopt different perspectives alternately, juxtapose them, and make them interact is typically human. In the course of phylogenesis, it enabled the emergence of meanings, language as a set of symbols, and the human mind. In the light of Cooley's (1902) ideas, the role of dialogicality is also fundamental – the self comes into being by adopting someone else's viewpoint and responding to it. More recent social-cognitive theories also emphasize that a person carries internalized others inside, which considerably influences thinking and activity (Andersen & Chen, 2002; Baldwin, 1992). Referring to Vygotsky's (1978) theory as well as to data on early mother–child interactions, Oleś and Puchalska-Wasyl (2010, p. 48) claim: "Dialogicality is probably rooted in an inherited and general disposition for development which is based on interactions. Two particular abilities in this context are thinking and inner speech, emphasized by Vygotsky (1978). Thus, we are inclined to conclude that internal dialogical activity belongs to a broad set of basic anthropological features, like intentionality and self-reflection." In this sense, dialogicality goes beyond the variables included even in the broadest models of personality, such as the integrative model of personality by McCrae and Costa (1999) or the one by McAdams and Pals (2006). At the same time, different manifestations of dialogicality are operationalized and treated as personality variables; for example, the intensity of engaging in internal dialogs is treated as a trait-like personality disposition measured according to the individual differences approach (Oleś, 2009). This makes it seem particularly reasonable to seek relations between different manifestations of dialogicality and other (well-examined) personality variables. As the above review of research shows, the existence of several relationships of this kind has been confirmed. This not only helps to better understand what dialogicality is but also broadens our knowledge about personality, its elements, and their interrelations.

Internal dialogs are present in human mental life and, as research shows, they are a frequent phenomenon (Puchalska-Wasyl, 2006). If this is the case, then psychology ought to know what the results of these dialogs depend on, to what extent it is possible to influence them, and to what extent they are determined, for example by traits. Why do some people take a distance to the problem under consideration as a result of dialog and others do not? Is it possible, and if so, to what extent is it possible to make it easier for them to achieve such distance? In this context, the attempt to specify the relations between basic personality characteristics and the functions of internal dialogs is important, because knowing which functions are rooted in unmodifiable traits, we will indirectly learn which functions have other – modifiable – factors influencing them. It may be especially important to psychological practice, where the dialogical approach is already used (Hermans & Dimaggio, 2004). With such knowledge, it may be possible to better predict and/or influence the effects of counseling or psychotherapy based on the client's/patient's internal dialogical activity.

In view of the theoretical and practical considerations outlined above, the main question of the study was posed: Are there

configurations of personality variables that allow us to predict specific patterns of functions performed by internal dialogs?

In order to answer the research question, canonical correlation analysis was performed. This multivariate statistical model makes it possible to simultaneously predict multiple dependent variables from multiple independent variables. The correlational nature of this analysis makes the declaration concerning the direction of influence ultimately arbitrary, based on the researcher's expectations about predictive causality.

METHOD

Participants

A total of 122 individuals were examined. Three people (1 man) were eliminated from analyses due to missing data. The test group consisted of 119 people (61 women) with a mean age of 22.22 (SD = 1.42; range 20–30). The participants were students of various majors (e.g., journalism, economics, rhetoric, law, mechatronics, information technology) at 16 Polish universities: 86 undergraduate and 33 graduate students.

Procedure

The study was conducted in Poland. Convenience sampling was applied. The participants learned about the research project from their friends or from announcements. The study comprised two stages. In the first stage, participants were informed that the study was anonymous and voluntary and that it concerned the characteristics of imagination and their relations with personality. Next, they were instructed to think about a problematic issue of importance to them and then about a person who contributed to the occurrence of that problem. Finally, they were asked to write down an imagined dialog with that person about the problem. Afterwards, the participants completed FUND (see further), so as to determine the function of the dialog they conducted, and two other questionnaires – Integration-Confrontation (ICON; Puchalska-Wasyl, 2015a) and Figure's Emotional Climate Inventory (FECI; Puchalska-Wasyl, 2015a, 2015b), analyzed elsewhere. In the second stage, several days later, participants completed the NEO-PI-R, ECR-R, and IRI. The personality characteristics measured using these methods will be called predictors of the functions of dialogs in further analyses. Though measured later than functions, they are relatively stable, so the moment of their measurement made no difference. Moreover, in correlational analysis predictor is only a conventional term.

Measures

The functions of internal dialogs were measured using the Functions of Dialogs (FUND; Puchalska-Wasyl, 2015a), a modification of the Dialog-Monolog-Perspective Questionnaire (D-M-P; Puchalska-Wasyl, 2006). D-M-P contains a list, determined through rational analysis (cf. Burisch, 1986), of 24 functions that internal dialogical activity may perform. Participants use a 0-1 scale to indicate the occurrence (1) or nonoccurrence (0) of each function in their dialog. Hierarchical cluster analysis conducted using complete linkage clustering showed the interrelations of all the functions. This allowed us to extract seven subscales corresponding to the main groups of functions, referred to above as key functions: Support (3 items), Substitution (4), Exploration (3), Bond (2), Self-improvement (3), Insight (6), and Self-guiding (3).

The results of research using D-M-P were very promising (Puchalska-Wasyl, 2006; Puchalska-Wasyl *et al.*, 2008), but the small number of items in some subscales might have lowered their internal consistency (from 0.59 for Self-guiding to 0.84 for Support). Moreover, the 0–1 scale potentially limited measurement precision.

To remedy these difficulties, FUND was constructed. Additional items were generated through rational analysis, which took into account the meaning of the key functions previously identified in D-M-P. Based on

consistent ratings by two competent judges, 56 items describing specific functions were included in the pilot version of FUND. The measure was administered to 93 students (45 men) aged *M* = 21.69 (*SD* = 1.50; range 19–30) who had conducted an internal dialog just before about a matter of personal importance. The participants rated the intensity of each function using a scale from 1 (*strongly disagree*) to 5 (*strongly agree*), relating items to the internal dialog situation. Based on the discriminatory power of the items and the fulfilled requirement for each item to correlate higher with the scale it belonged to than with other scales, 49 items were selected to the final version of FUND – 7 items for each key function. Presented below is the psychological sense and the internal consistency coefficient of each subscale:

- Support (a source of hope, sense of security, and meaning in life); Cronbach's alpha = 0.85;
- Substitution (a substitute for real contact, argumentation practice, catharsis); α = 0.75;
- Exploration (search for new experiences, escape from dull reality); α = 0.77;
- Bond (experience of deep relation, bond with someone close, and being needed); α = 0.88;
- Self-improvement (warning against a mistake, learning from other people's mistakes, a self-evaluation criterion); α = 0.80;
- Insight (a way of gaining a new perspective, advice, and distance from a problem); α = 0.80;
- Self-guiding (a factor motivating for action and development, guidance in setting new goals, a source of a sense of control over the situation); α = 0.80.

Because the items are rated on a five-point Likert scale, the minimum score on each subscale is 7 and the maximum score is 35.

Potential personality predictors were measured using three methods presented below.

Revised NEO Personality Inventory (NEO-PI-R) by Costa and McCrae (1992) consists of 240 items rated on a five-point Likert scale (from A – *strongly disagree* to E – *strongly agree*). It measures five general factors (Neuroticism, Extroversion, Openness to Experience, Agreeableness, and Conscientiousness) and six facets for each general dimension, which makes 30 specific traits. The present study used the Polish adaptation of this method (Siuta, 2006). Cronbach's alpha coefficients for the factors are 0.86, 0.85, 0.86, 0.81, and 0.85, respectively.

Experiences in Close Relationships – Revised Questionnaire (ECR-R) by Fraley *et al.* (2000) is based on Bowlby's theory. It measures individual differences in attachment-related anxiety (i.e., how insecure vs. secure people are about the availability and responsiveness of romantic partners) and attachment-related avoidance (i.e., the extent to which people are uncomfortable being close to others vs. secure depending on others). The ECR-R contains the Attachment-Related Anxiety scale (AX) and the Attachment-Related Avoidance scale (AV), both comprising 18 assertions. Responses are rated on a seven-point Likert scale, from *strongly disagree* (1) to *strongly agree* (7). In this study, Cronbach's alpha was 0.96 for AX and 0.93 for AV. Puchalska-Wasyl's Polish translation of the method was used.

Interpersonal Reactivity Index (IRI) by Davis (1983) comprises four subscales, measuring the dimensions of dispositional empathy. The Empathic Concern (EC) subscale measures other-oriented feelings of sympathy and concern for unfortunate others. The Perspective Taking (PT) subscale assesses the tendency to spontaneously adopt the psychological viewpoints of others. The Personal Distress (PD) subscale measures self-oriented feelings of personal anxiety and unease in tense interpersonal settings. The Fantasy (FS) subscale assesses respondents' tendencies to transpose themselves imaginatively into the feelings and actions of fictitious characters in books, movies, and plays. Each subscale consists of seven items. Responses are rated on a five-point Likert scale, with two anchors: 0 – *Does not describe me well* and 4 – *Describes me very well*. In this study, Cronbach's alphas were 0.82, 0.79, 0.84, and 0.79, respectively. The method was used as translated by Kubiak – the author of the Polish translation of Davis's (2001) book.

RESULTS

To answer the research question, a canonical correlation analysis was conducted, testing multivariate relationships between eight personality components (as predictors) and seven key functions of internal dialog (as criteria). Previous studies (Oleś & Puchalska-Wasyl, 2012; Puchalska-Wasyl *et al.*, 2008) suggested the following choice of predictors: Neuroticism, Extroversion, Openness, Agreeableness, Conscientiousness (NEO-PI-R), Attachment-Related Avoidance, Attachment-Related Anxiety (ECR-R) and Perspective Taking (IRI). The criteria were measured using FUND: Support, Substitution, Exploration, Bond, Self-improvement, Insight, and Self-guiding. The analysis revealed that only Function 1 was significant, with a canonical correlation of 0.52 (*p* < 0.028) (see Table 1). This function explained 27% of total variance.

Looking at the coefficients of Function 1 (see Table 2), one can state that the first canonical variable, representing personality characteristics, explains 15.0% of the variance shared mainly by Perspective Taking (canonical loading = –0.63), Neuroticism (0.56), Openness (–0.50), and Attachment-Related Anxiety (0.35). It also explains 3.4% of the variance shared by variables from the "dialog functions" set. The second canonical variable is represented mostly by Substitution (0.63), Insight (–0.45), and Support (–0.44); it explains 12.7% of their shared variance and 4.0% of that shared by variables from the "personality characteristics" set.

Because canonical loadings having the same sign indicate a positive correlation of the variables, it can be said that the higher the Neuroticism and Attachment-Related Anxiety and the lower the Openness and Perspective Taking a person exhibits, the more strongly his or her internal dialogs perform the Substitution function and the less strongly they perform the Insight and Support functions. Thus, with this configuration of personality characteristics, dialogs simulate real contact, mainly serving to practice argumentation and relieve negative feelings

Table 1. *Canonical correlation analysis with personality predictors and key functions as criteria*

Canonical function	Canonical correlation	Canonical R^2	Wilks's λ	*p*
1	0.52	0.27	0.493	0.028
2	0.38	0.14	0.674	0.411
3	0.32	0.10	0.784	0.636
4	0.27	0.07	0.874	0.789
5	0.22	0.05	0.940	0.872
6	0.11	0.01	0.986	0.956
7	0.05	0.00	0.998	0.892

Notes: Only canonical function 1 can be interpreted because the remaining functions are not statistically significant. Function 1 describes the correlational relationship between two specific synthetic canonical variables (variates). The first canonical variable for the set of predictors is constituted mainly by: Perspective Taking (–0.63), Neuroticism (0.56), Openness (–0.50), and Anxious Attachment (0.35). The second canonical variable for the set of criteria is constituted mainly by: Substitution (0.63), Insight (–0.45), and Support (–0.44). Predictors entered in the analysis: Neuroticism, Extroversion, Openness, Agreeableness, Conscientiousness (NEO-PI-R), Attachment-Related Avoidance, Attachment-Related Anxiety (ECR-R), Perspective Taking (IRI). Criteria entered in the analysis: Support, Substitution, Exploration, Bond, Self-improvement, Insight, Self-guiding (FUND).

Table 2. *Canonical function 1*

Canonical variate	Loadings	Cross-loadings	Percentage of variance in the set variables explained by:	
			their own canonical variate	the opposite canonical variate
Predictor set:			15.0%	4.0%
Neuroticism	0.56	0.29		
Extroversion	−0.14	−0.07		
Openness	−0.50	−0.26		
Agreeableness	−0.09	−0.05		
Conscientiousness	−0.23	−0.12		
Avoidant Attachment	−0.20	−0.11		
Anxious Attachment	0.35	0.18		
Perspective Taking	−0.63	−0.33		
Criterion set:			12.7%	3.4%
Support	−0.44	−0.23		
Substitution	0.63	0.33		
Exploration	0.12	0.06		
Bond	−0.19	−0.10		
Self-improvement	−0.17	−0.09		
Insight	−0.45	−0.24		
Self-guiding	0.14	0.07		

(Substitution). When the personality configuration is the reverse (with high Openness and Perspective Taking), dialogs are mainly a form of taking a distance from a problem, looking at the problem differently, and noticing its positive sides (Insight), but they may also give hope and help find the meaning of life despite difficulties (Support).

DISCUSSION

Research results have again confirmed the importance of Neuroticism and Openness to internal dialogicality. Previous studies showed the link between these traits and the tendency to engage in internal dialogical activity. The presented research also showed only these two traits are related to the functions of an imagined dialog. In the light of the integrative model of personality by McCrae and Costa (1999) – where traits are biologically determined basic tendencies of personality and are relatively independent of external influences – it can be assumed that it is traits that influence the functions of internal dialogs, not the other way around. The authors believe that the interactions between basic tendencies and external conditions result in different personality variables called characteristic adaptations, including attachment styles and empathy. As the presented research reveals, the co-occurrence of Neuroticism and Attachment-Related Anxiety favors engaging in internal dialogs performing the Substitution function, whereas Openness combined with Perspective Taking favors dialogs bringing Insight and Support.

On the one hand, the obtained results support the already existing findings; on the other, they are surprising and inspire further research. As regards previous research, it should be noted that the results of the present study are largely consistent with those obtained by Oleś *et al.* (2010), who sought personality correlates

of internal dialogs. The method they used, the Internal Dialogical Activity Scale (IDAS), measured not only the general intensity of internal dialogs but also the intensity of their specific types (Oleś *et al.*, 2010; Oleś & Puchalska-Wasyl, 2012). The researchers established that Neuroticism correlates the most strongly with Ruminative Dialogs (RD and N: 0.44, *p* < 0.001), which cause frustration by delving into unpleasant topics. These dialogs also strongly correlate with Attachment-Related Anxiety (AX and RD: 0.53, *p* < 0.001), which, however, correlates the most strongly with the Simulation of Social Dialogs, that is, with mentally continuing or imagining an argument, a discussion, or an exchange of views (SS and AX: 0.79, *p* < 0.001). As regards Openness to Experience, it correlated the most strongly with Supportive Dialogs, which provide support and a sense of being understood (SD and O: 0.58, *p* < 0.001), with Identity Dialogs, which enhance self-knowledge and help establish the meaning of one's life (ID and O: 0.57, *p* < 0.001), and with Taking a Point of View, connected, for instance, with attempting to objectivize problems by viewing them from a new perspective (PV and O: 0.54, *p* < 0.001). The same aspects of dialogicality correlated – at a lower, moderate level – with the scores on the Perspective Taking subscale in IRI (Davis, 1983) (PT and SD: 0.31, *p* < 0.01; PT and ID: 0.34, *p* < 0.001; and PT and PV: 0.31, *p* < 0.01).

The types of internal dialogs listed above were not distinguished in IDAS based on a uniform functional criterion. However, descriptions of particular dialog types (Oleś *et al.*, 2010) allow us to infer their main functions. And so, the functions that imagining discussions or arguments (SS) – especially repeated discussions on the same difficult topics (RD) – can perform in neurotic people with anxious attachment probably coincide with Substitution. Substitution involves simulating a real conflict in order to practice argumentation and release negative feelings. As regards Supportive Dialogs (SD), which give support and a sense of being understood, Identity Dialogs (ID), which help determine the meaning of one's life, and Taking a Point of View (PV), which allows to view problems from a distance, their probable functions coincide with Support and Insight, found in my research in participants who are open and willing to adopt other people's perspective (IRI-PT).

The fact that high Openness and Perspective Taking favor the Insight function of dialog should be no surprise. Both personality characteristics give rise to an exchange of ideas with a real or imagined partner and a readiness to share ideas or create new ideas in a dialog. In this context, Hermans and Hermans-Konopka (2010, p. 175) speak of innovative dialog: "Dialog is innovative when the participants are able and willing both to recognize the perspective of the other party in its own right, and to adapt, revise, and develop their initial standpoints by taking the preceding verbal and nonverbal messages of the other into account." The authors are of the opinion that innovative dialog is "good dialog." If so, then are dialogs performing functions other than Insight bad? Is a dialog performing the Substitution function – typical in high neuroticism individuals, with anxious attachment and low openness, reluctant to adopt other people's viewpoints – worthless?

According to Hermans and Hermans-Konopka (2010), the experience of uncertainty is an intrinsic feature of a dialogical self and triggers the process of interchange between I-positions. This process aims to reduce uncertainty but may take various forms. The authors describe several possible strategies. One of them – one

that would probably be connected with Substitution in internal dialog – is giving the lead to one powerful position. Our I-position becomes dominant – and, possibly (though not always), uninterested in what the interlocutor wants to say – in those dialogs in which we practice argumentation, release negative emotions, or say what we could not say in reality. If this strategy is used temporarily rather than systematically, it may even prove to be adaptive.

In the context of the results discussed, it should be stressed that the specificity of the analysis applied in the presented research appears to suggest the alternative occurrence of Neuroticism associated with Substitution or Openness associated with Insight and Support. Still, earlier studies (Oleś *et al.*, 2010; Oleś & Puchalska-Wasyl, 2012; Puchalska-Wasyl *et al.*, 2008) show that Neuroticism and Openness together predispose to engagement in internal dialogical activity. Therefore, the intensity of the Substitution, Support, and Insight functions in a particular person's internal dialogs will probably depend on the configuration of these two traits within his/her personality.

In what way are the obtained results surprising? What is unexpected is that we can speak of relations between only two (out of five) traits and three (out of seven) key functions. Moreover, in the present study the extent to which personality characteristics explain the functions of dialogs is, in fact, relatively low. This means that the functions of internal dialogs may have determinants that are more specific than traits, attachment styles, and empathy. Some of them may even be unrelated to personality. As the existing research shows, the functions of inner dialogs differ depending on the characteristics of the internal interlocutor (Puchalska-Wasyl *et al.*, 2008). The intensity of particular functions also differs between integrative and confrontational internal dialogs (Puchalska-Wasyl, 2015a), although integration and confrontation in dialog do not exhibit associations with personality traits, attachment styles, and empathy (Puchalska-Wasyl, 2016). It is possible that the functions considered, especially Exploration, Bond, Self-improvement, or Self-guiding, largely depend on the wishfulness of the dialog and on its subject matter. The person's cognitive characteristics may also be of importance – namely, the person's capacity for inference and learning or the characteristics of imagination. However, these are merely hypotheses that need to be tested in further research.

When considering future research, it is necessary to note the limitations of the present study. The first one is that the participants of the study were Polish students. It would therefore be desirable to replicate the results in different samples. What can be regarded as the second limitation is the fact that only a certain fraction of internal dialogical activity was explored – namely, internal dialogs simulating social relations. Such dialogs are one of the possible reactions to everyday situations that are affect-laden and important for a person. These dialogs can be seen in the broader context of phenomena referred to in the literature as mental imagery. It is stressed that mental imagery is a key to understanding others by simulating their mental states – intentions, feelings, and beliefs (theory of mind; Goldman & Sripada, 2005) – and to self-evaluation (Kahneman & Tversky, 1982). It is a self-regulatory mechanism that enables and empowers our pursuit of ambitions, aims, and aspirations (Crisp & Turner, 2012). It serves a fundamental function in the selection, rehearsal, preparation, and planning of goal-directed behavior (Marks, 1999). Additionally, it helps us regulate our emotional reactions to past and possible future events, and it is a key component needed to effect behavior change (Crisp & Turner, 2012). Assuming that dialogs simulating social relations constitute a very important category of internal dialogs, it was such dialogs that I made the focus of the study. Still, one may wonder whether analyzing different kinds of dialogs would yield different results and whether or not it is legitimate to generalize the results presented here. In this context, it is worth considering further studies in which the functions of internal dialogs would be measured in different situations (at least a few) or in which participants would be asked about a typical dialog (in a typical situation). Of course, for further research, FUND can be obtained from the author of this paper.

What is the main conclusion of the presented study? It seems to be rather important, even if, for the time being (without further research), it can only be related to internal dialogs simulating social relations. The co-occurrence of openness and the tendency to spontaneously adopt the viewpoints of others promotes engagement in internal dialogs that bring Insight and Support, whereas neuroticism combined with anxious attachment promotes dialogs performing the Substitution function. It must be stressed, however, that the relationship between these three key functions and personality is relatively weak. Moreover, the remaining four functions of internal dialogs – Exploration, Bond, Self-improvement, and Self-guiding – are completely unrelated to basic personality characteristics such as traits, attachment styles, or empathy. This is a surprising finding in the context of discussion on the status of dialogicality and its relationship with personality. At present, this finding does not support any final conclusions on the matter, but it certainly argues for the need of further research in this area. It is, at the same time, an optimistic finding, because it suggests that basic unmodifiable personality characteristics do not constitute a serious obstacle to using all the functions of internal dialogs. However, this optimistic information should not impede efforts to explore other factors that may influence the functions of internal dialogical activity. Knowing these factors could help conduct an imaginary dialog in such a way that it motivates the person for development, promotes setting new goals, helps to acquire a sense of control over the situation (Self-guiding), facilitates formulating self-evaluation criteria (Self-improvement), gives an experience of bond (Bond), etc. If internal dialogs are present in human mental life, are these not the characteristics that ought to form us and our social relations?

REFERENCES

Andersen, S. M. & Chen, S. (2002). The relational self: An interpersonal social-cognitive theory. *Psychological Review*, *109*, 619–645.

Assagioli, R. (2000). *Psychosynthesis: A collection of basic writings*. Amherst, MA: Synthesis Center.

Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, *112*, 461–484.

Borawski, D. (2011). Wpływ aktywizowania myślenia dialogowego na sytuacyjną samoocenę i emocje [The influence of dialogical thinking on situational self-esteem and emotions]. In P. Oleś & M. Puchalska-Wasyl (Eds.), *Dialog z samym sobą [Dialog with oneself]* (pp. 201–223). Warsaw: Wydawnictwo Naukowe PWN.

Brinthaupt, T. M. & Dove, C. T. (2012). Differences in self-talk frequency as a function of age, only-child, and imaginary childhood companion status. *Journal of Research in Personality*, 46, 326–333.

Brzozowski, P. & Drwal, R. L. (1995). *Kwestionariusz Osobowości Eysencka. Polska adaptacja EPQ-R. Podręcznik [Eysenck Personality Questionnaire. Polish adaptation of EPQ-R. Manual].* Warsaw: Pracownia Testów Psychologicznych PTP.

Burisch, M. (1986). Methods of personality inventory development – a comparative analysis. In A. Angleitner & J. S. Wiggins (Eds.), *Personality assessment via questionnaires. Current issues in theory and measurement* (pp. 109–119). Berlin: Springer-Verlag.

Cooley, C. H. (1902). *Human nature and the social order*. New York: Schocken Books.

Costa, P. T. & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI). Professional manual.* Odessa, FL: Psychological Assessment Resources.

Crisp, R. & Turner, R. (2012). The imagined contact hypothesis. *Advances in Experimental Social Psychology*, 46, 125–182.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44, 113–126.

Davis, M. H. (2001). *Empatia. O umiejętności współczuwania [Empathy. A social psychological approach].* Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

Fraley, R. C., Waller, N. G. & Brennan, K. A. (2000). An item-response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, 78, 350–365.

Goldman, A. I. & Sripada, C. S. (2005). Simulationist models of face-based emotion recognition. *Cognition*, 94, 193–213.

Hermans, H. J. M. (2003). The construction and reconstruction of a dialogical self. *Journal of Constructivist Psychology*, 16, 89–130.

Hermans, H. J. M. & Dimaggio, G. (Eds.). (2004). *The dialogical self in psychotherapy*. Hove: Brunner-Routledge.

Hermans, H. J. M. & Gieser, T. (Eds.) (2012). *Handbook of dialogical self theory*. Cambridge: Cambridge University Press.

Hermans, H. J. M. & Hermans-Jansen, E. (1995). *Self-narratives: The construction of meaning in psychotherapy*. New York: Guilford Press.

Hermans, H. J. M. & Hermans-Konopka, A. (2010). *Dialogical self theory: Positioning and counter-positioning in a globalizing society.* Cambridge: Cambridge University Press.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94, 319–340.

Hogenraad, R. & Orianne, E. (1983). 'A penny for your thoughts': Imagery value and periodicity of interior monologue. *Journal of Mental Imagery*, 7, 51–61.

Kahneman, D. & Tversky, A. (1982). The simulation heuristic. In D. Kahneman, P. Slovic & A. Tversky (Eds.), *Judgement under uncertainty: Heuristics and biases* (pp. 201–208). New York: Cambridge University Press.

Kamann, M. P. & Wong, B. Y. L. (1993). Inducing adaptive coping self-statements in children with learning-disabilities through self-instruction training. *Journal of Learning Disabilities*, 26, 630–638.

MacKay, D. G. (1992). Constraints on theories of inner speech. In D. Reisberg (Ed.), *Auditory imagery* (pp. 121–149). Hillsdale, NJ: Lawrence Erlbaum Associates.

Marks, D. F. (1999). Consciousness, mental imagery and action. *British Journal of Psychology*, 90, 567–585.

Markus, H. & Nurius, P. (1986). Possible selves. *American Psychologist*, 41, 954–969.

Markus, H. & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299–337.

McAdams, D. P. & Pals, J. (2006). A new Big Five. Fundamental principles for an integrative science of personality. *American Psychologist*, 61, 204–217.

McCrae, R. R. & Costa, P. T. J. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 139–153). New York: Guilford Press.

Mead, G. H. (1934). *Mind, self and society: From the standpoint of a social behaviorist*. Chicago, IL: University of Chicago Press.

Młynarczyk, M. (2011). Dialogi rozbieżnych Ja [Dialogs of discrepant selves]. In P. Oleś & M. Puchalska-Wasyl (Eds.), *Dialog z samym sobą [Dialog with oneself]* (pp. 224–251). Warsaw: Wydawnictwo Naukowe PWN.

Nir, D. (2012). Voicing inner conflict: From a dialogical to a negotiatonal self. In H. J. M. Hermans & T. Gieser (Eds.), *Handbook of dialogical self theory* (pp. 284–300). Cambridge: Cambridge University Press.

Ogilvie, D. M. (1987). The undesired self: A neglected variable in personality research. *Journal of Personality and Social Psychology*, 52, 379–385.

Oleś, P. (2009). Czy głosy umysłu da się mierzyć? Skala Wewnętrznej Aktywności Dialogowej (SWAD) [Is it possible to measure the voices of a mind? The Internal Dialogical Activity Scale (IDAS)]. *Przegląd Psychologiczny*, 52, 37–50.

Oleś, P., Batory, A., Buszek, M., Chorąży, K., Dras, J., Jankowski, T., et al. (2010). Wewnętrzna aktywność dialogowa i jej psychologiczne korelaty [Internal dialogical activity and its psychological correlates]. *Czasopismo Psychologiczne*, 16, 113–127.

Oleś, P. K. & Puchalska-Wasyl, M. (2010). Between nature and culture: Dialogicality as a basic human feature. In B. Bokus (Ed.), *Studies in the psychology of language and communication* (pp. 41–51). Warsaw: MATRIX Publishers.

Oleś, P. & Puchalska-Wasyl, M. (2012). Dialogicality and personality traits. In H. J. M. Hermans & T. Gieser (Eds.), *Handbook of dialogical self theory* (pp. 241–252). Cambridge: Cambridge University Press.

Puchalska-Wasyl, M. (2006). *Nasze wewnętrzne dialogi. O dialogowości jako sposobie funkcjonowania człowieka [Our inner dialogs. On dialogicality as a way of human functioning].* Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.

Puchalska-Wasyl, M. (2007). Types and functions of inner dialogues. *Psychology of Language and Communication*, 11, 43–62.

Puchalska-Wasyl, M. (2011). Internal dialogical activity: Types and personality correlates. In R. A. Jones & M. Morioka (Eds.), *Jungian and dialogical self perspectives* (pp. 100–116). Basingstoke: Palgrave Macmillan.

Puchalska-Wasyl, M. (2015a). Coalition and opposition in myself? On integrative and confrontational internal dialogs, their functions, and the types of inner interlocutors. *Journal of Constructivist Psychology*, doi:10.1080/10720537.2015.1084601.

Puchalska-Wasyl, M. (2015b). Self-talk: Conversation with oneself? On the types of internal interlocutors. *Journal of Psychology: Interdisciplinary and Applied*, 149, 443–460.

Puchalska-Wasyl, M. (2016). Determinants of integration and confrontation in internal dialogues. *Japanese Psychological Research*, in press.

Puchalska-Wasyl, M., Chmielnicka-Kuter, E. & Oleś, P. (2008). From internal interlocutors to psychological functions of dialogical activity. *Journal of Constructivist Psychology*, 21, 239–269.

Rowan, J. (1990). *Subpersonalities: The people inside us*. Florence, KY: Routledge.

Siuta, J. (2006). *Inwentarz Osobowości NEO-PI-R Paula T. Costy Jr i Roberta R McCrae. Adaptacja polska. Podręcznik [NEO-PI-R Personality Inventory by Paul T. Costa and Robert R. McCrae. Polish adaptation. A handbook].* Warsaw: Pracownia Testów Psychologicznych PTP.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Winsler, A., Fernyhough, C. & Montero, I. (Eds.) (2009). *Private speech, executive functioning, and the development of verbal self-regulation*. New York: Cambridge University Press.