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Voices Inside Me: The Relationship Between Neuroticism and the Tendency to Engage in Internal Dialogue in the Context of Time Perspective

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The aim of this study was to examine the relationship between neuroticism, internal dialogues, and time perspective. Time perspective was examined as a moderator and mediator of the link between neuroticism and internal dialogues. One hundred and thirteen Polish people (aged 20 to 40 years) participated in this study. Our results suggest that in subjects with a high level of neuroticism, the Carpe Diem perspective functioned as a buffer, reducing the strength of the relationship between neuroticism and ruminative dialogues. Moreover, our findings provide evidence for the role of unbalanced time perspective in explaining the positive association between neuroticism and internal dialogues.

People sometimes talk to themselves, either aloud or mentally. Their interlocutors in these internal conversations are sometimes imaginary figures of significant others, persons met in the past, or people with whom future plans may be formed (Kross et al., 2014). In the psychological literature, this phenomenon is referred to as self-talk, internal monologues, or internal dialogues (see Brinthaup, Benson, Kang, & Moore, 2015; Brinthaup, Hein, & Kramer, 2009; Hermans, 1996, 2003; Hermans & Kempen, 1993; Oleś, Brygoła, & Sibińska, 2010; Oleś & Puchalska-Wasył, 2010; Puchalska-Wasył, 2016). It seems that in general such internal conversations, as with self-narratives, help provide coherence and meaning to life experiences (see Bandura & Cervone, 1983; Conway, Singer, & Tagini, 2004; Hermans, 1996; Hermans et al., 1992; Hermans & Kempen, 1993; McAdams, 2013; Nutt-Williams & Hill, 1996; Oleś, 2009). It is stressed that internal monologues and dialogues perform important functions in daily life (Brinthaup et al., 2009; Diaz & Berk, 1992; Hardy, 2006; Hermans, 1996; Hermans et al., 1992; Hermans & Kempen, 1993; MacKay, 1992; Mahoney, 1993; Nutt-Williams & Hill, 1996). Speaking to oneself, especially when self-instructions are considered, can be an important and beneficial aspect of self-regulation (Berk, 1992;

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Brinthaup & Kang, 2012; Morin, 1993; Vygotsky, 1987). Carver and Scheier (1998) regard this kind of “meta-monitoring” of one’s own behavior and progress as a means of achieving various goals (see Bandura & Cervone, 1983; Nutt-Williams & Hill, 1996). The important role of confronting in one’s mind different points of view, as a process of assimilating negative experiences, has also been mentioned (Honos-Webb & Stiles, 1998). Scholars have examined the benefits of internal dialogical activity in a range of activities; Hardy (2006), for example, investigated the supportive function of internal conversations for people practicing sports.

Due to self-talk’s influence on emotions, thoughts, and behaviors, it is crucial to understand the relation between a tendency to self-talk and other key personality features. What is rather puzzling for scholars investigating adaptive functions of internal dialogues is the significant positive relationship between the tendency to engage in internal dialogues and neuroticism, as found in numerous studies (e.g., Oleś, 2009; Oleś & Puchalska-Wasył, 2012; Puchalska-Wasył, Chmielnicka-Kuter, & Oleś, 2008). It is also worth noting that Kendall and Hollon (1989) and Schwartz and Caramoni (1989) found a positive association between internal dialogues and levels of depression and anxiety. Researchers point out that self-talk may negatively impact a person’s self-perception and the perception of others (Nutt-Williams & Hill, 1996). Meichenbaum (1977) described human dysfunction as being caused mainly by destructive internal dialogues. There may be a particularly negative internal conversation occurring in states of anxiety, fear, depression, anger and when a person experiences a sense of failure (Beck & Emery, 1985; Nutt-Williams & Hill, 1996).

How can we explain this: that self-talk can have a positive as well as negative impact on a person’s psychological functioning? Most importantly, we need to pay attention to the kinds of internal conversations people may have. As with real-life conversations, dialogues with imagined persons may encompass a range of characters, emotional tone, and overarching purpose. In the literature on the subject, we divide self-talks quite simply into those with negative statements, *negative self-talk*, and those with positive statements, *positive self-talk* (Schwartz & Caramoni, 1989; Treadwell & Kendall, 1996). Within negative self-talk there are hostile automatic thoughts and destructive self-related ruminations (Kendall, Howard, & Hays, 1989; Snyder, Crowson, Houston, Kurylo, & Poirier, 1997). The dysfunctional properties of self-talk are the main focus of cognitive-behavioral therapists (see Beck, 1976; Brinthaup et al., 2015; Glass & Arnkoff, 1994). Schwartz and Caramoni (1989), in their states-of-mind model (SOM), offer five categories of self-talk: (a) *positive dialogues* in which the majority of thoughts are positive; (b) *negative dialogues* in which the majority of thoughts are negative; (c) *conflicted dialogues*, which focus on worries and conflicts; (d) *positive monologues*, which have positive statements; and (e) *negative monologues*, with negative statements. Brinthaup et al. (2009) distinguished self-talk that enables practicing social skills, as used in situations of success and feeling pride, and the kind of internal conversation that deals with failure and self-criticism. In general, internal conversations across various situations have been significantly positively linked with self-centeredness, having automatic self-statements, obsessive-compulsive tendencies, and a need for cognition. The tendency to self-talk as a means of practicing social skills and critical self-talk in situations of failure has been found to correlate significantly negatively with self-esteem and significantly positively with automatic negative self-statements. Reassuring self-talk in crises was found to correlate significantly positively with self-esteem and automatic positive self-statements (Brinthaup et al., 2009).

In this article, we examine internal dialogues as theorized by Hermans (1996, 2003; see also Hermans & Kempen, 1993; Hermans, Kempen, & van Loon, 1992) and operationalized by Oleś (2009). According to Hermans (1996, 2003) the self is a dynamic multiplicity of the I-positions. Internal dialogues has been defined as the activity of many of the I-positions in the mental representations that resemble laced social interactions (Oleś, 2009). It can be said that these dialogues are imaginary interactions between imaginary persons, representing different points of view. Oleś (2009) divides internal dialogues by the purposes they serve. There are (a) *identity dialogues*, trying to answer questions regarding one's personality and identity; (b) *supportive dialogues*, for which the objective is to provide support and comfort; (c) *ruminative dialogues*, in which one reminisces about various hurtful life experiences (often occurring without intention or the ability to stop them); (d) *dissociative dialogues*, which focus on situations of disagreements or conflicts; (e) *simulations of real dialogues*, aimed at practicing social skills; and (f) *taking on different points of view*, judging a situation from various perspectives.

Puchalska-Wasył, Chmielnicka-Kuter, and Oleś (2008) found a significant positive correlation (.28; $p < .001$) between neuroticism and a general tendency to have such internal dialogues. Further, all categories of internal conversations investigated by Oleś (2009) correlated significantly positively with neuroticism. Neuroticism was found to have the strongest correlation with ruminative and dissociative dialogues (Oleś & Puchalska-Wasył, 2012). The explanation given is that situations of tension and negative emotions suggest that personality organizations typical of neuroticism predispose the person to lowered mood, while also encouraging feelings of uncertainty. This can lead to ruminations about different and even contrasting points of view (Hermans & Hermans-Konopka, 2010; Oleś & Puchalska-Wasył, 2010). Likewise, it is in difficult life situations that a person is more likely to seek support from other people, as well as contact and conversation with them, even if imaginary.

In this article we look at time perspective in search of an explanation of the positive relationship between neuroticism and internal dialogical activity, as defined by Oleś (2008)—namely, we suppose that attitude toward time both influences the strength of this relationship and explains the positive relationship between neuroticism and internal dialogues. Although having an internal talk with various “persons” is linked to a temporal dimension (as usually one converses with people from the past or the future), the research conducted to date has not examined the relationship between internal dialogical activity and time perspective. Time perspective is a basic dimension of psychological time, a preference for a specific period of time in thought and action. Our analyses are devoted to time perspective as theorized by Zimbardo and Boyd (1999). According to these authors, time perspective is formed through the process of locating individual experience in the past, present, or future. They distinguished five basic types of time perspective: (a) *past-negative*—a focus on the negatively evaluated past; (b) *past-positive*—a focus on the positively evaluated past; (c) *future*—a focus on plans; (d) *present-hedonistic*—a focus on current pleasures; and (e) *present-fatalistic*—passivity in the present, linked with the belief that people have no influence on their future. In the present article we distinguish one more type of time perspective—the Carpe Diem perspective, understood as a tendency to focus on the present, combined with perceiving every “here and now” as a valuable and unique segment of time (Sobol-Kwapińska, 2016; Sobol-Kwapińska & Jankowski, 2016). The literature shows that time perspective affects many aspects of life, such as social relationships, well-being, aggressiveness, and health-seeking behaviors (e.g., Barber, Munz, Bagsby, & Grawitch, 2009; Klingeman, 2001; Sobol-Kwapińska, 2016;

Stolarski, Matthews, Postek, Zimbardo, & Bitner, 2014; Stolarski, Zajenkowski, & Zajenkowska, 2016; Zhang & Howell, 2011; Zimbardo & Boyd, 1999, 2008; Zimbardo, Keough, & Boyd, 1997).

We expected that a kind of buffer decreasing the strength of the relationship between neuroticism and internal dialogical activity as defined by Oleś (2009) would be the *Carpe Diem* present time perspective (a tendency to focus on the “here and now,” combined with a belief in the worth and uniqueness of the present). Attention on the present, combined with perceiving the current moment as valuable, reduces the frequency of mentally returning to the negative past or thinking ahead into the uncertain future (Sobol-Kwapinska, 2016; Sobol-Kwapińska & Jankowski, 2016). Internal dialogues usually involve mentally evoking other people with whom one came in contact in the past, as well as making plans about the future and, in general, dwelling on uncertain future events (see Hermans & Hermans-Konopka, 2010). We thus predicted that a focus on the present would decrease the intensity of the relationship between neuroticism and internal dialogical activity as defined by Oleś (2009).

In researching the relations between time perspective and various areas of human functioning, it is worth examining complex time perspectives such as one’s relationship toward the present, as well as the past and the future. One form of such a complex time perspective is termed *balanced time perspective* (Boniwell, Osin, Linley, & Ivanchenko, 2010; Drake, Duncan, Sutherland, Abernethy, & Henry, 2008; Stolarski, Bitner, & Zimbardo, 2011; Stolarski et al., 2014; Zimbardo & Boyd, 2008). The concept of balanced time perspective, also known as optimal time perspective, was formulated based on research results indicating that past positive and future perspectives are linked to people’s productive and adaptive psychological functioning. Contrarily, past negative and fatalistic perspectives are linked to maladaptive functioning (see Zimbardo & Boyd, 1999, 2008). Zimbardo and Boyd’s (2008) notion of balanced time perspective may be described as the coexistence of a strong past positive perspective, a quite strong future perspective, with a poor past negative and a poor fatalistic perspective (Boniwell et al., 2010; Drake et al., 2008; Stolarski, Bitner, & Zimbardo, 2011; Stolarski et al., 2014). A balanced time perspective provides one with flexibility in adjusting to the requirements of current situations (Boniwell et al., 2010; Drake et al., 2008; Stolarski et al., 2011; Stolarski et al., 2014; Zimbardo & Boyd, 2008). This time perspective makes it easier to function effectively: It allows a future focus when there is a need to plan work, helps one relax when it is time to rest, and enables one to learn and grow from prior experiences.

The algorithm designed by Stolarski et al. (2011) is the one most frequently used to calculate an index of balanced time perspective. The research results indicate a positive relation between balanced time perspective (as so described) and many important aspects of psychological functioning, including life satisfaction, sense of purpose, well-being, positive affect, self-actualization, ability to postpone gratification, and optimism (Boniwell et al., 2010; Drake et al., 2008; Stolarski et al., 2011; Stolarski et al., 2014; Zimbardo & Boyd, 2008).

In Stolarski’s (2016) investigation the balanced time perspective was a moderator of a relationship between personality and subjective well-being. If there was a strong balanced time perspective, the relationship between personality and subjective well-being was weaker than in the case of a poorly balanced time perspective. These results suggest that a strong balanced time perspective causes subjective well-being to occur relatively independent of fixed personality traits. In Sobol-Kwapinska’s (2016) as well as Sobol-Kwapinska and Jankowski’s (2016) research the balanced time perspective index was used, based on the model proposed

by Stolarski et al. (2011). However, these authors broadened the model by introducing the *Carpe Diem* perspective. In Sobol-Kwapinska's (2016) research the unbalanced time perspective was a significant mediator of the relationship between neuroticism and self-esteem, life-satisfaction and life engagement. The resulting co-dependencies were attributed to the fact that neurotic people tend to fixate on a given time period (particularly a negatively evaluated one), which is itself linked to a tendency to feel negative emotions. Based on such habits, they have difficulty adjusting to the demands of current situations, in which one must maintain a flexible attitude, moving attention from one given time frame to another (see Holman & Silver, 1998).

In the present study we postulated that the unbalanced time perspective mediates a positive relationship between neuroticism and internal dialogues as defined by Oleś (2009), especially ruminative and dissociative self-talk. Neuroticism is linked to a prevalence of negative emotions, anxiety, rigidity, and trouble keeping a distance from currently experienced negative responses. Research indicate that past negative perspective and fatalism correlate positively significantly and future and past positive perspective correlate significantly negatively with neuroticism (Przepiórka, Sobol-Kwapińska, & Jankowski, 2016; van Beek, Berghuis, Kerkhof, & Beekman, 2010; Zhang & Howell, 2011; Zimbardo & Boyd, 1999, 2008). Generally speaking, the tendency to experience negative emotional states is linked positively with negative time perspective and negatively with positive time perspective. As previous research has showed, neuroticism is positively correlated with unbalanced time perspective (e.g., Sobol-Kwapińska, 2016; Stolarski, 2016). Unbalanced time perspective, above all, is a strong focus on negative past and passive, fatalistic behavior toward the present, along with the conviction that one has little influence on current events. The tendency to experience negative emotions induces a person to mentally return to unpleasant past events and recall the circumstances and people involved in them. Reliving such situations, in turn, causes individuals to engage in mental conversations with people from the past and also with themselves, especially to explain something, make accusations, express regret, apologize, and so on (see Hermans, 1996, 2003; Oleś, 2009; Puchalska-Wasył, 2016). Negative emotions can increase one's passiveness and feeling of helplessness. This may give rise to the need to hide in an internal world of imaginary persons or to escape to imaginary relationships that can supplant real-life ones.

Exploratory questions were also formulated regarding the moderating influence of the remaining types of time perspective on the relationship between neuroticism and various forms of internal dialogue.

METHOD

Participants

The participant group consisted of 113 subjects (55 women and 58 men, ages 20 to 40 years; $M = 25.78$, $SD = 6.02$). The study was conducted in Poland. The research subjects were from the cities of Lublin, Rzeszów, and Warszawa. Most of them had secondary education (43%) or university education (42%); others had primary education. Participation was voluntary. The participants received a set of questionnaires directly from a psychologist and completed them at home. Ethical standards for research were met.

TABLE 1
Means (*M*), Standard Deviations (*SD*), and Reliability Coefficients (Cronbach's α) for the Variables

<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>Cronbach's α</i>
N	12.16	5.84	.82
IDAS	134.22	31.20	.92
DA	17.78	5.25	.79
ID	17.63	5.12	.83
SD	2.34	5.47	.77
RD	23.69	6.62	.81
DD	13.24	4.18	.74
SS	25.20	8.17	.58
PV	16.48	4.52	.57
ZTPI			
PN	2.92	.77	.81
PH	3.38	.54	.77
F	3.46	.58	.68
PP	3.59	.63	.65
PF	2.68	.62	.73
CD	38.62	5.88	.84

Note. N = Neuroticism; IDAS = Internal Dialogical Activity Scale; DA = Pure Dialogical Activity; ID = Identity Dialogues; SD = Supportive Dialogues; RD = Ruminative Dialogues; DD = Dissociative Dialogues; SS = Simulation of Social Dialogues; PV = Taking a Point of View; ZTPI = Zimbardo Time Perspective Inventory; PN = Past-Negative; PH = Present-Hedonistic; F = Future; PP = Past-Positive; PF = Present-Fatalistic; CD = Carpe Diem.

Measures

We used self-report Likert-type questionnaires. Low scores indicated a low level of the variable.

Internal Dialogues

The Internal Dialogical Activity Scale (IDAS; Oleś, 2009) was used to measure the tendency to engage in internal dialogues. It consists of 47 items, making up seven scales. Answers are given on a 5-point scale (1—*strongly disagree*, 2—*disagree*, 3—*no opinion/don't know*, 4—*agree*, 5—*strongly agree*). The subscales are as follows: Pure Dialogical Activity (DA) (six items, e.g., “I often talk to myself”) measures the general tendency to engage in mental conversations; Identity Dialogues (ID) (six items, e.g., “Sometimes I discuss with myself who I really am”) measures the tendency to engage in internal dialogues that concern the question of “Who am I?”; *Supportive Dialogues* (SD) (seven items, e.g., “I usually have several answers to the question Who am I?”) measures the tendency to engage in internal dialogues with an imaginary figure who provides encouragement and support; *Ruminative Dialogues* (RD) (nine items, e.g., “I often beat my thoughts”) measures the tendency to engage in internal dialogues on difficult and painful issues that are usually hard to free oneself of; *Dissociative Dialogues* (DD) (five items, e.g., “Sometimes I argue with that part of myself that I do not like”) measures the tendency to engage in mental conversations on conflictual issues; *Simulation of Social Dialogues* (SS) (seven items, e.g., “Sometimes I keep talking to other people in my thoughts”) measures the tendency to engage in internal conversations that consist in sharing one's views with an imaginary interlocutor; and *Taking*

TABLE 2
Correlations Between Internal Dialogues and Other Variables

	<i>IDAS</i>	<i>DA</i>	<i>ID</i>	<i>SD</i>	<i>RD</i>	<i>DD</i>	<i>SS</i>	<i>PV</i>
N	.38***	.39***	.27**	.30***	.34***	.30***	.23**	.33***
PN	.47***	.34***	.29**	.28**	.50***	.47***	.30**	.30**
PH	.02	-.03	.10	.01	-.10	.01	.02	.14
F	-.13	-.19	-.11	-.03	-.16	-.12	.06	-.14
PP	-.13	-.11	-.08	-.01	-.15	-.14	-.06	-.07
PF	.26**	.22*	.14	.15	.24**	.24**	.13	.32***
CD	.13	.13	.22*	.23**	-.04	.08	.08	.20*

Note. N = Neuroticism; IDAS = Internal Dialogical Activity Scale; DA = Pure Dialogical Activity; ID = Identity Dialogues; SD = Supportive Dialogues; RD = Ruminative Dialogues; DD = Dissociative Dialogues; SS = Simulation of Social Dialogues; PV = Taking a Point of View; PN = Past-Negative; PH = Present-Hedonistic; F = Future; PP = Past-Positive; PF = Present-Fatalistic; CD = Carpe Diem.

*** $p < .001$,

** $p < .01$,

* $p < .05$.

a Point of View (PV) subscale (six items, e.g., “I like to predict what other people will say and respond to their thoughts”) measures the tendency to engage in internal dialogues in which a different point of view on various issues is taken. Reliability α Cronbach coefficients are displayed in Table 1.

Time Perspective

The Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) was used to measure time perspective. It consists of 56 items, grouped into five scales and rated on a 5-point Likert scale (from 1 = *very untrue* to 5 = *very true*). The scales are as follows: *Past-Positive* (nine items, e.g., “I like family rituals and traditions that are regularly repeated”) measures focus on the positively evaluated past; *Past-Negative* (10 items, e.g., “Things rarely work out as I expected”) measures focus on the negatively evaluated past; *Present-Hedonistic* (15 items, e.g., “I often follow my heart more than my head”) measures focus on pleasure in the present; *Present-Fatalistic* (nine items, e.g., “Often luck pays off better than hard work”) measures passivity in the present linked with the belief that life is determined by fate; and *Future* (13 items, e.g., “It upsets me to be late for appointments”) measures focus on plans. In this study, we used the Polish translation of the ZTPI (Przepiórka et al., 2016).

Carpe Diem Perspective

The Carpe Diem time perspective was measured by means of the Carpe Diem Scale (Sobol-Kwapinska, 2016). This instrument consists of 12 items (e.g., “The present is very important for me”) and a 5-point rating scale (from *strongly disagree* to *strongly agree*). High scores indicate a tendency to focus on the present and holding the belief that this is an important time.

TABLE 3
Correlations Between Neuroticism and Forms of Time Perspective

	<i>N</i>	<i>PN</i>	<i>PH</i>	<i>F</i>	<i>PP</i>	<i>PF</i>	<i>CD</i>
<i>N</i>	–	.56***	.01	–.05	–.08	.36***	.02
<i>PN</i>		–	.13	–.15	–.28**	.44***	–.04
<i>PH</i>			–	.02	.43***	.31***	.47***
<i>F</i>				–	.27**	–.35***	.19*
<i>PP</i>					–	–.04	.42***
<i>PF</i>						–	.05
<i>CD</i>							–

Note. *N* = Neuroticism; *PN* = Past-Negative; *PH* = Present-Hedonistic; *F* = Future; *PP* = Past-Positive; *PF* = Present-Fatalistic; *CD* = Carpe Diem.

*** $p < .001$,

** $p < .01$.

* $p < .05$.

Neuroticism

Neuroticism was measured by the Neuroticism (*N*) scale (24 items) of Eysenck, Eysenck, and Barrett's (1985) Eysenck Personality Questionnaire-Revised (EPQ-R). We used the Polish adaptation of this instrument (Jaworowska, 2012). The Neuroticism scale measures the propensity for emotional instability, worry, guilt, tension, irritability, and somatic complaints.

RESULTS

Descriptive Statistics and Correlations Between Variables

The descriptive statistics for the investigated variables are presented in Table 1.

All measures met Cronbach's alpha criterion except the two subscales *Simulation of Social Dialogues* and *Taking a Point of View*. Table 2 and Table 3 contain correlation coefficients between the investigated variables.

The obtained results, similar to those of previous studies (Oleś, 2009; Oleś & Puchalska-Wasył, 2012; Puchalska-Wasył et al., 2008), show a significant positive relationship between neuroticism and the general tendency to engage in internal dialogues. Neuroticism was most strongly related to ruminative dialogues, although other types of internal dialogues significantly correlated with it as well. Also, supportive and identity dialogues, simulation of social dialogues, and taking various points of view all were significantly positively correlated with neuroticism. With respect to the relationship between type of internal dialogue and time perspective, ruminative dialogues were most strongly associated with past-negative and present-fatalistic perspectives. The tendency to focus on the negative past correlated significantly positively with all types of internal dialogue and with the general tendency to engage in internal dialogical activity. Fatalistic attitudes toward the present were associated with a general tendency to have internal dialogues, taking a point of view, ruminative and dissociative dialogues, and pure dialogical activity. Also worth noting are the relations between the Carpe Diem perspective and internal dialogues. Focus on the "here and now," combined with

TABLE 4
Results of Moderation Analysis With Neuroticism as the Independent Variable, Internal Dialogues as the Dependent Variable, and Carpe Diem Perspective as the Moderator

<i>Dependent variable</i>	R^2_{ch}	B	t	p	95% PU	<i>Interaction</i>					
						B_L	p_L	B_M	p_M	B_H	p_H
Internal dialogical activity	.05	-.04	-2.43	.017	-.076 – -.008	.61	<.001	.37	.001	.14	.348
Supportive dialogues	.04	-.03	-2.23	.03	-.06 – -.003	.45	.001	.27	.001	.09	.44
Ruminative dialogues	.05	-.04	-2.44	.016	-.08 – -.007	.61	<.001	.37	<.001	.14	.35

awareness of the value and uniqueness of the present moment, was significantly positively associated with identity and supportive dialogues, as well as with taking an alternative point of view. Moreover, neuroticism correlated significantly positively with past negative and fatalistic perspectives.

Moderation Analysis Results

To examine the influence of time perspective on the relationship between neuroticism and internal dialogues, we performed moderation analyses (Hayes, 2013) with neuroticism as the independent variable, the general tendency to engage in internal dialogues and forms of internal dialogues as dependent variables, and the types of time perspective as successive moderating variables. We made altogether 48 moderation analyses. Eight moderations, referring to the eight internal dialogues measures, were analyzed for each form of time perspective.

Of the time perspectives entered into analysis, only the Carpe Diem perspective was a significant positive moderator of the relationship between neuroticism and internal dialogues (see Table 4). In the case of a strong Carpe Diem perspective there was no significant association between neuroticism and the general tendency to engage in internal dialogues. In the case of a weak Carpe Diem perspective, there was a significant positive association: the higher the neuroticism, the more frequent the internal dialogues. The analysis of the results' distribution (see Figure 1) shows that when neuroticism was low and there was also a poor Carpe Diem perspective, there was a lower level of internal dialogue activity than with low neuroticism and a strong Carpe Diem perspective. In turn, if neuroticism was high, with either a strong or weak Carpe Diem perspective, there was a higher level of the internal dialogues activity than if neuroticism was low.

With respect to particular forms of internal dialogues, the Carpe Diem perspective was an important moderating variability between neuroticism and supportive dialogues. If the Carpe Diem perspective was poor or medium, there was a significant dependence between neuroticism and supportive dialogues. When the Carpe Diem was strong, there was a lack of significant dependence between those variables (see Table 4). The results' distribution shows interesting dependencies (Figure 2). In the case of low neuroticism and poor Carpe Diem perspective, there was less supportive dialogue than when neuroticism was low and Carpe Diem perspective strong. If neuroticism was strong, an increase in supportive dialogue was similar to a situation where Carpe Diem perspective was either poor or strong.

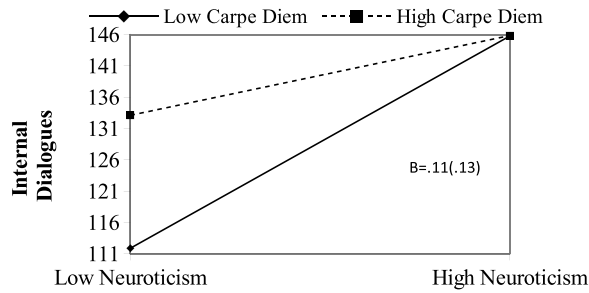


Figure 1 Interaction effects of neuroticism and Carpe Diem perspective on predicting internal dialogues. *Note:* low (1 SD below mean); high (1 SD above mean).

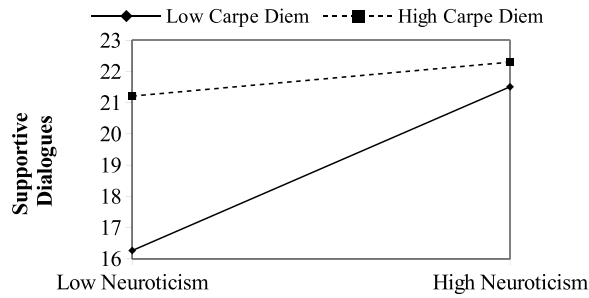


Figure 2 Interaction effects of neuroticism and Carpe Diem perspective on predicting supportive dialogues. *Note:* low (1 SD below mean); high (1 SD above mean).

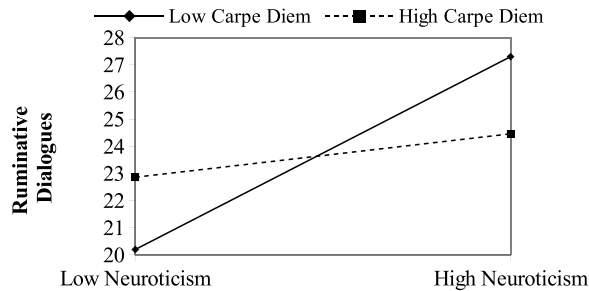


Figure 3 Interaction effects of neuroticism and Carpe Diem perspective on predicting ruminative dialogues. *Note:* low (1 SD below mean); high (1 SD above mean).

Similarly, the Carpe Diem perspective significantly moderated the dependence between neuroticism and ruminative dialogues (Figure 3). If the Carpe Diem perspective was poor or medium, there was a significant positive dependency between neuroticism and ruminative dialogues. When Carpe Diem was strong, there was a lack of significant dependence between those variables (see Table 5). The results distribution analysis indicates that a strong Carpe Diem perspective lessened increasing ruminative dialogues for highly neurotic people; however, if both neuroticism and Carpe Diem perspective were low, there was a lower level of

TABLE 5
 Results of Mediation Analysis for Neuroticism as the Independent Variable, Internal Dialogues as
 Dependent Variables, and Balanced Time Perspective as the Mediator

Dependent variable	Overall relationship			Direct relationship			Indirect relationship		
	B	SE	95% PU	B	SE	95% PU	B	SE	95% PU
Internal dialogical activity	1.87	.50	.89–2.86	1.36	.53	.30–2.42	.51	.30	.03–1.19
Pure dialogical activity	.33	.08	.16–.50	.25	.09	.07–.44	.07	.04	.007–.18
Ruminative dialogues	.36	.11	.15–.58	.20	.11	–.02–.41	.17	.07	.05–.33
Dissociative dialogues	.20	.07	.06–.33	.13	.07	–.02–.27	.07	.04	.01–.16

ruminative dialogue than in a situation of low neuroticism and strong Carpe Diem perspective (Figure 3).

Mediation Analysis Results

To check whether the balanced time perspective explains the relationship between neuroticism and internal dialogical activity, we performed mediation analyses (Hayes, 2013) with neuroticism as the independent variable, forms of internal dialogues as dependent variables, and balanced time perspective as the moderator. The bootstrapping method with biased corrected confidence estimates was used, and a 95% confidence interval of the indirect effect was obtained, with 1000 bootstrap resamples (Preacher & Hayes, 2004, 2008).

A balanced time perspective index (DBTP; Stolarski et al., 2011), modified by adding the Carpe Diem scores (DBTP-M index; see Sobol-Kwapinska, 2016; Sobol-Kwapinska & Jankowski, 2016) was used. We applied the following formula to calculate the DBTP-M index, with optimal values *Past-Positive* (4.6), *Present-Hedonistic* (3.9), *Future* (4.0), *Past-Negative* (1.95), *Present-Fatalistic* (1.5) (Stolarski et al., 2011), and *Carpe Diem* (4.60) (Sobol-Kwapinska, 2016; Sobol-Kwapinska & Jankowski, 2016):

$$DBTP - M = \sqrt{\sum_{i=1, \dots, 6} x_i^2}$$

where $x_1 = oPast-Negative - ePast-Negative$; $x_2 = oPast-Positive - ePast-Positive$; $x_3 = oPresent-Fatalistic - ePresent-Fatalistic$; $x_4 = oPresent-Hedonistic - ePresent-Hedonistic$; $x_5 = oFuture - eFuture$; and $x_6 = oCarpe Diem - eCarpe Diem$.

The lower the DBTP-M index, the greater was the balanced time perspective. The DBTP-M index correlated significantly with neuroticism ($r = .35$; $p < .001$), general tendency to engage in internal dialogues (IDAS; $r = .34$; $p < .001$), and also with pure dialogical activity (PDA; $r = .32$; $p < .001$), ruminative dialogues (RD; $r = .45$; $p < .001$), and dissociative dialogues (DD; $r = .32$; $p < .001$). A mediation analysis was conducted where neuroticism was modeled to predict the general tendency to engage in internal dialogues, pure dialogical activity, ruminative dialogues, and dissociative dialogues, either directly or indirectly, via unbalanced time perspective (DBTP-M) (see Figure 4 and Table 5). Results indicate that the indirect effects of unbalanced time perspective were statistically significant. Unbalanced time

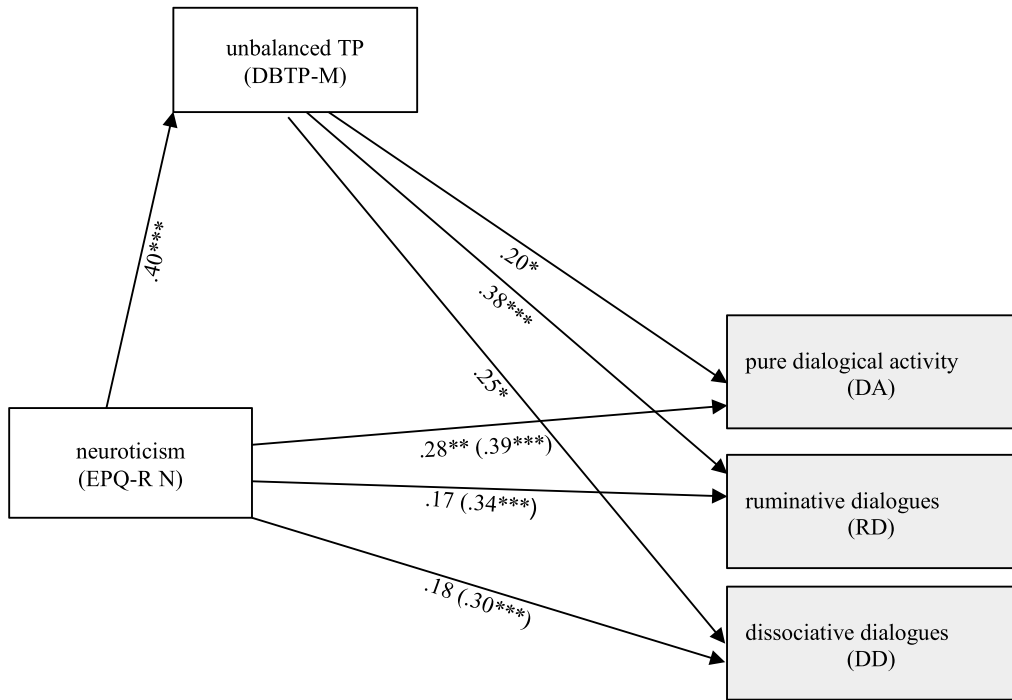


Figure 4 Path analysis for the effect of neuroticism on pure dialogical activity, ruminative dialogues, and dissociative dialogues via unbalanced TP (DBTP-M). Coefficient in brackets is the total effect. $^{***}p < .001$; $^*p < .05$.

perspective was the strongest mediator in the relationship between neuroticism and ruminative dialogues.

DISCUSSION

The aim of the current research was to analyze the relations between neuroticism, forms of internal dialogue as defined by Oleś (2009), and time perspective. The study confirmed our expectation that Carpe Diem perspective would be a significant moderator of the relationship between neuroticism and internal dialogues as defined by Oleś (2009). In persons with a high level of neuroticism, the Carpe Diem perspective functioned as a buffer, reducing the strength of the relationship between neuroticism and ruminative dialogues. It may be said that a focus on the present, perceived as a valuable and unique use of time, reduces ruminative dialogues. Scholars point out that a person is inclined to engage in internal dialogues, particularly in situations involving the experience of uncertainty as well as tension and difficulties (Hermans & Hermans-Konopka, 2010; Oleś et al., 2010). It can therefore be said that in individuals with a high tendency to feel negative emotions, an increased perception of the present as productive and beneficial, and a focus of attention on current activities can prevent negatively tinged self-talk. The Carpe Diem perspective probably helps in redirecting attention away

from negative internal experiences troubling the mind, and toward the external world (see Sobol-Kwapińska, 2016).

Regarding other forms of internal dialogue, the Carpe Diem perspective moderated links between neuroticism and supportive dialogues. Contrary to assumptions, this perspective did not diminish an increase in supportive dialogues for neurotics; rather, it boosted an increase in supportive dialogues for people of low neuroticism level. For both cases—greater or less neuroticism—the supportive dialogues' increase was even larger in people with a strong Carpe Diem perspective, compared to people with a weaker Carpe Diem perspective. These results of the moderation analysis, as with the correlation analysis, point to a strong link between the Carpe Diem and adaptive dialogues (in particular, those of a supportive nature). Perhaps an attentional focus on the present, viewed as valuable, causes internal dialogue topics to touch on current and valuable issues. The internal dialogues of a person usually circle around his or her emotions, behaviors, and thoughts evaluation. This is why internal conversations in conjunction with the Carpe Diem perspective lead to a positive assessment. In other words, what comes into the mind is viewed as important and worthwhile, even more so because emotions of sadness, regret (linked to the past), and fears or worries (connected to the future) are pushed out (see Sobol-Kwapinska, 2016).

As we expected, unbalanced time perspective explained the associations between neuroticism and general tendency to internal dialogues as defined by Oleś (2009). With respect to forms of internal dialogue, the unbalanced time perspective mediated the relationship between neuroticism and ruminative and dissociative dialogues. These results indicate that neuroticism influences positively the tendency to have ruminating and dissociative dialogues, perhaps by causing a rigid approach to time perspective. A neurotic person may feel safer with the past time domain. Due to this, internal conversations may take the form of recurring dialogues about prior events, escaping his/her control, as well as dialogues of negative emotional character or reminiscence about unpleasant past conflicts. A person surrenders to such thoughts even more so as he or she tends to be passive and feel a lack of influence on those events. These results are another empirical proof of maladaptive properties of unbalanced time perspective (see Boniwell et al., 2010; Drake et al., 2008; Sobol-Kwapinska, 2016; Stolarski et al., 2011; Stolarski et al., 2014).

It is important to point out the interesting correlational dependencies between neuroticism, time perspective, and internal dialogues as presented by Oleś (2009). The results of our investigation, just as did his own research, revealed a significant dependence between neuroticism and internal dialogues. Also, the past negative and fatalistic perspectives correlated significantly with the general tendency to engage in such internal dialogues and with particular forms of this. However, the past positive and future perspectives were not significantly linked to internal dialogues activity when viewed in this way. These results confirm the supposition that internal dialogues as defined by Oleś (2009) are triggered more frequently in moments of stress than in states of peace and joy.

We may look at our findings also within the context of the time perspective's regulatory functions. Matthews and Stolarski (2014) bring our attention to the role of time perspective in modulating emotions, both in narrow meaning (e.g., changes in current mood) and in a broader sense (e.g., related to personal narratives on one's life up to the present and, as well, future predictions). Time perspective plays an important role in the process of emotional regulation as it focuses one's attention on a particular time domain. Following our research results, time perspective also appears to direct internal dialogues and produce an increase of

such activity. Most importantly, neuroticism is a tendency to experience negative emotions, and therefore, time perspective may be quite essential in dealing with the consequences of this personality trait (see Sobol-Kwapinska, 2016).

Our investigation's outcomes suggest the Carpe Diem perspective is helpful in mitigating a tendency to engage in detrimental ruminating dialogues. Recognizing variables that influence the quality of internal conversations can play a major role in deriving effective psychological treatments. The research shows that even subtle changes in the quality of internal conversations can impact the ability to self-regulate thoughts, feelings, and behaviors in socially stressful situations (Kross et al., 2014). Moreover, the results of the presented research constitute another confirmation of the adaptive role of the balanced time perspective, in this instance modifying a tendency to fall into negative emotional states (see Zimbardo, Sword, & Sword, 2012).

There are some limitations to the present study. One is that we used only self-report methods. It would be worthwhile in the future to conduct experimental research to analyze the relationships discussed. Moreover, the size of the participant group was small. Despite these limitations, the results of our study shed new light on the relations of neuroticism with internal dialogues as defined by Oleś (2009) and time perspective.

Summing up, the results show that attitude toward time affects the strength of the relationship between the tendency to feel negative emotions and internal dialogical activity, and unbalanced time perspective mediates the positive relationship between neuroticism and the general tendency to engage in this kind of internal dialogues.

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