TEMPORAL DIALOGICAL ACTIVITY AND IDENTITY FORMATION DURING ADOLESCENCE

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Abstract. The study aims to explore how temporal self-dialogues contribute to identity formation during adolescence. The main hypothesis postulated that identity exploration and commitment are related to construction of integrative temporal dialogues. It was also postulated that integration of temporal I-positions causes positive change in meaning of life and emotions, both measured as states. The group of adolescents included 100 high-school students ($M = 17.92$, $SD = 1.01$), who activated various temporal voices using the 'chair instruction for a temporal dialogue' procedure. Participants were asked to define one personally important I-position in the past and one in the future, and then to conduct a dialogue between all three positions: past, present and future. The procedure contained the Ego Identity Process Questionnaire, the State Personality Inventory and the Meaning of Life Scale-State. Participants who integrated I-positions related to personal past, present and future (38%) had higher scores in Commitment (as predicted) and in Exploration (contrary to prediction) than participants who did not. In accordance with predictions, the temporal dialogues influenced meaning of life and emotions, measured as states. After the temporal dialogues, scores of the emotional state of curiosity were higher (as postulated) as well as of anxiety (contrary to prediction), while scores of the emotional state of anger were lower (as postulated) than before. Increases in meaning of life and in affective state were significant only for participants who were able to integrate the different temporal voices. The results are discussed with reference to identity formation processes and the role of meta-reflection in the dialogical self.

Keywords: adolescence, dialogical activity, I-position, identity, integration, temporal dialogues

The main aim of this study was to explore how young people's dialogical activity is related to identity formation. Adolescence is the time when young people face crucial questions for their future, like: *Who am I? What do I choose as the most important life value? How can I conceive of my past, present and future as a whole?* All of them imply confrontation with different perspectives and tend to answers which form an outline of identity (Arnett, 2000; Erikson, 1963).

What are the reasons for changes in identity and by what mechanisms do they occur? The answer to the first part of the question is not very complicated: potential life scenarios vastly outweigh real ones. In addressing the second part of this question, we

should consider the dialogical functions of the self. Internal dialogical activity and its external expression in 'trial and error' behavior can be a mechanism of change and may also lead to internal integration, which preserves the existing identity structure (Hermans, 2001; see also Oleś, Brygoła, & Sibińska, 2010). Self-dialogues seem to be especially important in inner conflicts, confrontation with different or strange ways of thinking, identity exploration and re-evaluation of personal events from different temporal perspectives. All these forms of dialogue engage an individual's mental and emotional resources and tend to reduce uncertainty or open new approaches to understanding reality (Hermans & Hermans-Konopka, 2010).

By taking a different temporal perspective (e.g. I as an adult – future perspective) an individual can overcome the constraints of the present, envisage future dreams or fears or recollect the past (e.g. I as a child – past perspective), thus changing his or her perspective on, and experience of the present. The functions of temporal self-dialogues vary according to the temporal perspective adopted and the mental or emotional resources engaged (Puchalska-Wasyl, 2007; Sobol-Kwapińska & Oleś, 2010). They can be used to solve undefined problems or to explore new ways of thinking, but they may also be used to review important life decisions or enable integration of, or detachment from, ambivalent feelings and attitudes.

Temporal self-dialogues also play a critical role in a well-known therapeutic technique, 'thinking from the future', in which the individual imagines him or herself in a specific future situation (defined exactly in time and space) and tries to reflect on his or her present or past from this special I-position. In this way the person can discover possible consequences of his or her potential decisions. Moving in time and space by means of internal dialogue imagination an individual explores the inner potential of the self being relatively free from current concerns or pressures.

Following McAdams (2001), adolescence is a period in which young people gain narrative competence, which allows them to conceive of continuity between their past, present and future. In other words, using terms of dialogical self theory, in adolescence begins a process of self - conscious formation of integrative meta-positions, which constitutes our identity. "The younger adult tends to live mainly in the present and, through intense reflection on possible interpretations of past and future positions, tries to form an integrated narrative identity (Barresi, 2012: 50). Looking for answers, generating stories, mostly inconsistent and incomprehensible, that displace each other and enter into dialogue with each other, lead to some genuinely new stories. This internal dialogical activity in adolescence may play a crucial role in identity formation. The phenomenological richness of the self leads to varied and comprehensive self-narratives (McAdams, 2001) as well as differentiated inner dialogues conducted with imagined figures and between I-positions representing different parts of the self (Hermans, 1996; Hermans & Hermans-Jansen, 1995).

Inner Temporal Dialogues

Dialogical self theory (Hermans, 1996, 2001, 2002) defines the dialogical self as a dynamic multiplicity of relatively independent I-positions, representing an extensive range of perspectives. Each position has a voice, and it is possible for the individual to adopt different points of view, perhaps according to his or her position in time and space (e.g. from home to university), and to construct a dialogue between them, for example looking for agreement or disagreement, or discussing possible solutions to a problem (e.g. how to be engaged in work vs in family life). Internal dialogical activity involves changing points of view, inner speech addressed to oneself or to an imagined figure (because in dialogue every expression is addressed to someone), and switching between I-positions – an internal dialogue. Internal dialogical activity, i.e. exchange of ideas between the various I-positions, can change and enrich the self-system.

It is possible to take I-positions rooted in the past or future as well as the present; dialogue between temporally different I-positions is referred to as 'temporal dialogue'. Hermans (1996) explained

> For example, I can imaginatively move to a future point in time and then speak to myself about the sense of what I am doing now in my present situation. This position, at some point in the future, may be very helpful to evaluate my present activities from a long-term perspective. The result may be that I disagree with my present self as blinding itself from more essential things (p. 33).

The dialogical self is able to create entirely new positions, which often reveal an alternative perspective on the world. Meta-reflection – the summarising and synthesis of different I-positions to enable one to take a bird's eye view of internal experience – allows individuals to integrate the different voices and establish continuity of their various activities (Hermans, 1996). The ability to integrate the various I-positions or voices may be a relatively invariant, trait-like characteristic or a context-dependent, state-like characteristic. But also the character of problems matters. Some I-positions are relatively easy to integrate (e.g. me as a stressed student at high school, and me a shy child) during inner temporal dialogue, whereas others are very difficult to integrate (e.g. me as a beloved child of my parents, and me as semi-adult aggressively fighting for autonomy) (Oleś, Brygoła, & Sibińska, 2010; Sibińska, 2012). Internal dialogical activity may reveal special relationships between I-positions and individual features of different I-positions fill the content of dialogues with arguments, questions, statements and expressions. The theory of the dialogical self recognizes the unity and multiplicity, as well as the continuity and discontinuity, of experience (Hermans, 2003).

Adolescence – Transition or Crisis?

Adolescence is described as a time of change and represents the transition from childhood to adulthood. Dialogical Self Theory views adolescence as a time when many

new I-positions emerge; organising and integrating them is considered one of the challenges of this developmental stage. Baresi (2012) argued that in middle and late childhood, i.e. before adolescence: "Free floating imagination, which develops at this time, becomes the key tool for representing diverse points of view and *I*-positions that vary not only across space but also across time" (p. 50). In adolescence a young person is confronted with many life opportunities, which require him or her to formulate a wide range of actual and potential I-positions. Unexpected changes in I-positions (e.g. from sweet girl to vamp, from model student to happy-go-lucky hooligan or to young researcher interested in astronomy) reflect an unstable self, which is typical of adolescence. Identity in adolescence appears to be especially sensitive to external influences and internal processes, which can be analysed in terms of changes among different I-positions (Hermans, 2001). Identity, like self, implies a certain tension caused by its internal incoherent organisation defined by various I-positions. In most young people self and identity are characterised by mutability and identity architecture fluctuates even in the absence of evident external pressures (Batory, 2010). Activated I-positions, which are relevant to identity in internal dialogue, can potentially have a big impact on self-regulation. One can reflect on one's life from a detached perspective using meta-positions, for example representing one's past or future self (Hermans, 1996). Baresi (2012) argued that

> A process of self-conscious formation of integrative meta-positions that constitute our identities as narrative selves typically begins in adolescence […] Narrative is used as a reflective strategy to integrate various primary I-positions and meta-positions, whose origins range from the distant past through to the present, into coherent meta-positions for the future. (p. 50)

Some authors have suggested that during adolescence the self develops fairly steadily (e.g. Burns, 1979); however the most popular psychosocial theory of development (Erikson, 1963) describes adolescence as a period characterised by a series of developmental shifts – identity crises – resulting eventually in the formation of a coherent identity; achieving a coherent identity is seen as the most important developmental task of adolescence. The process of identity formation is rather long and dynamic, moreover some answers to essential questions – for example *Who am I and who will I be?;* or *How can I make the right decisions?* – are only provisional, not true and permanent solutions (Arnett, 2000; Oleś, 2008).

Marcia (1966) argued that identity involves exploration and commitment. Exploration is the process of searching for answers to the identity questions posed above in the form of values, plans, goals and beliefs about the self, others and the external world. Commitment is expressed through engagement in activity which is congruent with one's self-concept and chosen values. Marcia (1966) described four clearly differentiated types of identity status, based on combinations of exploration and commitment. 'Identity diffusion' describes the status in which adolescents have not

seriously explored or made commitments with respect to specific developmental domains. 'Foreclosure' is what happens if adolescents make a commitment without exploration (e.g. continuation of parents' patterns). In 'moratorium' adolescents are actively exploring but have made no commitment, or at best an unclear commitment. 'Identity achievement' represents the status adolescents reach when they have finished active exploration and made a commitment.

There is a dearth of empirical research on temporal dialogues and formation of identity. Batory (2010) showed that constructing self-narratives focused on life history can elicit changes in adolescents' identity, and that these changes depend on the temporal perspective adopted in the self-narrative. Telling a life story from the imagined position *I as an old person* intensified identity exploration two weeks later, while commitment didn't matter; whereas constructing one's life story from the current position *I as a young person* resulted in enhanced perceptions of the meaning of life two weeks later. It is likely that retelling their story enables young people to distance or to escape from the present, and take a new perspective on their life experiences. From a dialogical perspective, activating I-positions which give one a bird's eye view of one's life can prompt a re-evaluation of one's current lifestyle and view of the world. Posing questions and constructing a possible future is likely to further intensify the exploration process. Considering one's life from either a future or a present perspective can provoke identity change (see also Brygoła & Batory, 2010). Some experimental studies showed that temporal dialogue between I-positions representing past, present and future made life seem more meaningful for emotions (measured as a state), increased state curiosity and decreased state anxiety (Oleś, Brygoła, & Sibińska, 2010). We do not know, however, whether the capacity to integrate I-positions representing past, future and present is related to the identity status of young people.

Aim and Hypotheses

Young people can engage in internal dialogues, as they attempt to answer questions, which they pose while searching for identity. Internal dialogues seem to be a feature of adolescence. The first serious review of previous experiences contributes to identity crisis. A young person starts to recognise the incoherence of his or her self-system and tries to reflect on the variety of his or her life experiences and integrate them into a unique identity (Hermans & Hermans-Jansen, 1995; Waterman, 1999). Adolescence is a period in which many new positions require a new form of organization, where "I is confronted with a diversity of actual and possible positions that lack a stable organization" (Hermans & Hermans-Konopka, 2010: 239). The exploration dimension of identity formation is a process of finding new ways of solving problems concerning goals, values and beliefs about the world. The commitment dimension of identity concerns an actual proactive attitude in seeking a path of life, profession and/or religion.

We investigated whether teenagers were able to integrate temporal dialogues and how integrative temporal dialogues were related to the exploration and commitment of identity during adolescence. We use the term 'integrative self-dialogue' to refer to dialogues ending with agreement or a new quality (Nir, 2012).

We formulated several hypotheses. Hypothesis 1 (H1): identity status is related to construction of integrative temporal dialogues. Our second and third hypotheses are based on the assumption that identity development is connected to imagined temporal activity and attempts to integrate different voices. Hypothesis 2 (H2): participants who construct integrative temporal dialogues combining different temporal I-positions will demonstrate greater commitment in comparison to participants who do not construct such dialogues. Hypothesis 3 (H3): participants who do not construct integrative temporal dialogues will demonstrate more exploration of identity in comparison to participants who construct integrative temporal dialogues combining different temporal I-positions.

We also hoped to replicate the earlier finding that life seems more meaningful immediately after temporal dialogue in adolescents (Oleś, Brygoła, & Sibińska 2010). Based on evidence that young people's temporal dialogues and attempts to integrate voiced I-positions influence their sense of meaning of life and their affective state, we formulated Hypothesis 4 (H4): dialogue between the temporal I-positions – I-in-the-past, I-in-the-future and I-in-the-present – influences the sense of meaning of life and affective state in adolescents.

Method

Participants

Data were collected over a two-year period from 100 adolescents between the ages of 16 and 18 years ($M = 17.92$; $SD = 1.01$) attending several high schools. The sample included 56 girls and 44 boys. Students were invited to participate by a psychologist or school counselor. Qualitative data, in the form of dialogues, was collected using a 'chair procedure' and quantitative data were collected by means of paper-and-pencil questionnaires.

Measures

The Ego Identity Process Questionnaire (EIPQ; Balistreri, Busch-Rossnagel, & Geisinger, 1995) measures two dimensions of identity: Exploration and Commitment. It comprises 32 items, 16 for each dimension, and respondents are required to indicate their agreement with each item using a six-point Likert scale (1: *strongly disagree* to 6: *strongly agree*). Item scores are summed to give separate Exploration and Commitment scores (range: 16-96). Both scales have high internal consistency, Cronbach's $\alpha = 0.80$ for Commitment and .86 for Exploration. Median scores for Exploration ($Me = 66.5$)

and for Commitment (*Me* = 62.0) are used to determine respondents' identity status. Following Marcia (1966), participants with scores above the median on both dimensions are classified as having an *achieved* identity, participants with scores below the median on both dimensions are classified as having a *diffused* identity, participants above the median on Exploration and below the median on Commitment are classified as in identity *moratorium*, and those above the median on Commitment and below the median on Exploration are classified as having a *foreclosed* identity.

Meaning of Life Scale – State (MLS-S; Oleś, Brygoła, & Sibińska 2010) is a thirty-item scale measuring meaning of life as a state, i.e. the extent to which one currently perceives one's life as purposeful, fruitful and challenging in a positive sense. The MLS-S was based on the Purpose in Life Test (Crumbaugh & Maholick, 1981), but the MLS-S emphasises current state of mind, while PLT measures rather stable beliefs and a general attitude towards one's own life. Participants respond to items using a five-point Likert scale (1: *I definitely do not agree* to 5: *I definitely agree*) and a total score (range: 30-150) is used. The scale has high internal consistency, Cronbach's α = .95.

State Personality Inventory (SPI; Spielberger & Reheiser, 2003) consists of 40 items measuring four emotional states: anxiety, anger, depression and curiosity (10 items per state). Responses are given on a four-point scale pertaining to the intensity of current affect. A Polish language version of the scale was prepared by Wrześniewski and Oles. Internal consistency for the various subscales is as follows: anxiety: Cronbach's α = .75; anger: Cronbach's α = .68; depression: Cronbach's α = .85; curiosity: Cronbach's α = .75.
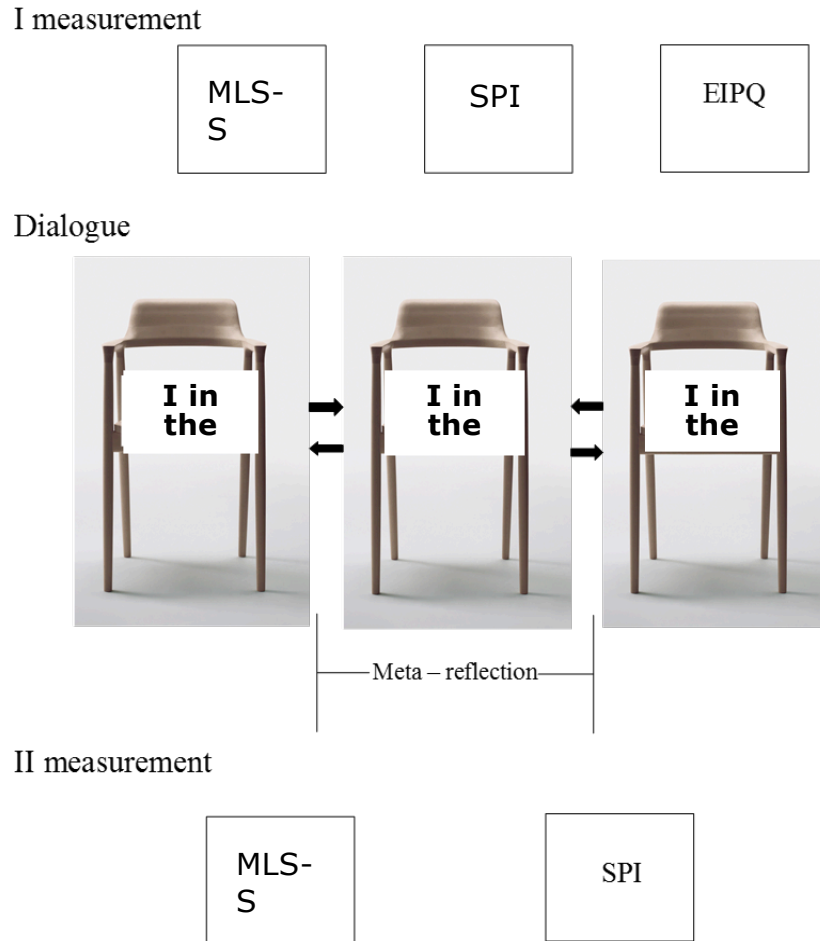
Procedure

The procedure consisted of three stages. First participants completed three questionnaires: MLS-S, EIPQ and SPI. Next they constructed temporal self-dialogues by following the *Chair instruction for temporal dialogue* procedure (see description below). In the final stage they completed the MLS-S and SPI again.

Thus participants completed the MLS and SPI before and after the dialogical procedure. Before the *Chair instruction* participants were required to complete the EIPQ to verify two dimensions of identity: Exploration and Commitment (see Figure 1)

Figure 1.

Schema of the research procedure showing the first and second measurements and the *Chair instruction for temporal dialogue.*

I measurement

| MLS-S | SPI | EIPQ |

Dialogue

| I in the | → ← | I in the | ← → | I in the |

├── Meta – reflection ──┤

II measurement

| MLS-S | | SPI |

Note: MLS-S: Meaning of Life Scale-State; SPI: State Personality Inventory; EIPQ: Ego Identity Process Questionnaire

      The *Chair instruction for temporal dialogue* is a method introduced by Sibińska (2012). Three chairs symbolising the past, present and future are used to help subjects create a temporal dialogue. Young people were asked to take a specific I-position and to construct a temporal self-dialogue by changing chair (and hence I-position). The physical changing of chair is intended to emphasise the change in temporal I-position. The procedure is based on therapeutic techniques used in, for example, Gestalt therapy, where an individual can work on his or her relationship with another by assuming the position of that person; one might also take a specific temporal and spatial perspective

on oneself, in order to examine an internal conflict or consider the effects of an important life decision.

In our study participants were asked to sit on a chair symbolising the past and to recall an important moment from their past (i.e. one relevant to their identity). They were instructed to recall as much of the detail of the experience as possible – their emotions at the time, the socio-psychological context – and then to formulate from this historical I-position a message to their present self (present I-position, e.g. *You can't turn the clock back. The worst thing is that I can't find the answers*). Then they repeated the procedure, changing chair, so as to assume a future I-position and formulate a message from their future self to their present self (e.g. *Don' t be afraid. Sometimes love needs help, you can't give up*). At the end of this first round they were asked to sit in the middle chair, which symbolised the present (thus assuming a present I-position) and respond to the messages from their past and future voices. Participants were allowed to make up to three rounds (i.e. to sit in each chair three times and thus assume each of the temporal I-positions three times). The instructions for temporal voice activation were: *There are three chairs in front of you. Each of them represents a certain time in your life. The chair in the middle represents your current self or life situation, which we will call the present-I, the chair on your left represents a particular time in your past of your choosing and it will be called I-in-the-past, and the chair on your right represents a particular time in your future of your choosing, which we will call I-in- the-future. Please take the seat representing the past…*

Afterwards, the participants were invited to reflect on what they had done and then immediately afterwards they answered this complex question: *What is the result of listening to all those images of yourself and can they somehow be combined into one consistent message?* In this way we assessed the extent to which participants were able to integrate the perspectives emerging from different temporal I-positions, a task which requires meta-reflection on the content and form of the previously created temporal dialogues.

Results

Our first hypothesis refers to the possibility of an association between the ability to integrate utterances from different temporal I-positions and an individual's identity status in terms of two dimensions, exploration and commitment. We used meta-reflection – operationalised at the end of the procedure as the formulation of a message from the present I-position synthesising the messages from the past and future I-positions or expressing a new understanding based on a comparison of the past, present and future I-positions – as an indicator of temporal voice integration. Qualitative evaluation of the degree of temporal integration expressed in the meta-reflection task was performed by five independent judges. The integration of temporal voices was diagnosed on the basis of a formulation of a common message representing the

combination of the voices or showing a new quality derived from dialogue (meta-reflection). The independent judges were familiar with the procedure and, in relation 4 to 1, they qualified the dialogues into particular groups. Meta-reflections were dichotomously coded as showing *integration*, or *lack of integration*. According to these assessments, only 32% of participants integrated the voices (integration group), whereas 68% (non-integration group) did not. There was no group difference in gender distribution ($\chi^2(1) = 0.312$, $p < .61$). Below we present two abbreviated dialogues, illustrating the difference between the meta-reflective responses of the two groups. The first example consists of extracts from the dialogue constructed by 18-year old Mark[1], who was not able to integrate the various temporal voices; the second dialogue, created by 18-year-old Patrick, is an example of integration of the various voices in the meta-reflective component.

Case study 1: Poorly integrated dialogue, Mark, 18 years old

I-in-the-past (description): *I'm taking my school exams. I don't want to do it. I'm looking for some pleasures. I'm not learning. I have fights with my parents.*

Present -I: *It is not cool what you're doing.*

I-in-the -past: *So what? I will do what I like.*

Present-I: *But you don't think about what comes next.*

I-in-the-past: *Because I don't want to. I will worry in good time.*

Reflection: *No need to think. It's not worth it.*

I-in-the-future (description): *I'm the boss of a sport club. I'm great, healthy and I have money. I love parties and having a good time.*

Present-I: *Keep doing this! What you do is great!*

I-in-the-future: *I know and I'm going to keep things like this.*

Present-I: *So let's do it!*

Reflection: *No way! It must be a success!*

Meta-reflection: *Chill out! Everything is fine!*

Case study 2: Highly integrated dialogue, Patrick, 18 years old

I-in-the-past (description): *One of the moments I remember the most and I think about, is my transition from middle school to high school. I completely didn't know who I was, it was a terrible collision with all these new people, such variety.*

Present-I: *Finding yourself in the new reality was difficult, but you've managed.*

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[1] Participants' names have been changed.

I-in-the-past: *You're right. But being someone, as I thought then, someone ordinary, looking for a place in the new reality, looking for an answer who I am – it was very tiring.*

Present-I: *Did you manage to find the answer?*

I-in-the-past: *I think I did. I have the impression that throughout my time at school teachers have had a great impact on me. I still do not know who I am and what I can do, but I feel I want to move on.*

Reflection: *Looking for my place in the world is a fascinating process, which doesn't scare me so much now.*

I-in-the-future (description): *I am a mathematician. The real one. I'm revising theories supported by evidence. I feel it is my destination, having time for my pleasures. I'm not watching TV with my beer, but I'm travelling around interesting places looking for the world's logistic. I know who I am and I live life to the full.*

Present-I: *Bright future! It seems you're very satisfied with what you're doing.*

I-in-the-future: *Yes, and you're taking small steps to achieve these goals, your attention to your scientific career will pay off.*

Present-I: *It is so nice to hear that. But still I'm not so sure about what to choose in the future.*

I-in-the-future: You'll *find your destiny in spite of the future seeming to be a long way off. The most important thing is to be yourself.*

Reflection: *Thinking about the future gives me strength and faith. In spite of the difficulties I have, I feel satisfied.*

Meta-reflection: *It takes a lot of time to find yourself in the world. The most important thing is to be yourself and to know what you want from life.*

The difference between the two aforementioned cases seems clear. Mark, when asked for reflection and meta-reflection, showed enthusiasm (…It must be a success!; Chill out! Everything is fine!), his expressions were emotional but not especially reflective. On the other hand, Patrick reflected on his future (Thinking about the future gives me strength and faith…) and, when asked for meta-reflection, gave something original and new, an important message or life motto (…to be yourself and to know what you want from life). In the first case 'meta-reflection' had a quality similar to any other statement in his dialogue, whereas in the second case meta-reflection was formulated from the bird eyes' view, it had a different quality in comparison to any other statement. Who was the author of a such philosophical thinking, or in other words, which particular I-position was employed? As Hermans and Hermans-Konopka (2010)

argue, "…I is able to "leave" a specific position, to rise above it, and even to look at a number of positions and their interrelationships from a certain distance" (p. 110). Using a meta-position Patrick could construct an integrative perspective for a few personal meanings.

In most cases the judges decided without any doubt if the person constructed an integrative temporal dialogue due to meta-reflection, showing great coherence in their assessments. Roughly two thirds of cases were classified as not revealing any integration (68), whereas only about a third of cases (32) were considered to show evidence of integration of temporal voices. We assessed group differences with respect to the two identity dimensions. Consistent with H1, we found an overall group difference in identity (MANOVA: $F(2) = 75.43$, $p < .001$, $\eta^2 = .61$). The integration group had higher Commitment scores ($F(2,97) = 97.34$, $p < .001$, $\eta^2 = .498$) – the difference in means was approximately 2SDs, which is pretty high – and higher Exploration scores ($F(2,97) = 8.54$, $p < .005$, $\eta^2 = .08$) than the non-integration group (see Table 1). These results confirmed hypotheses 1 and 2, but not hypothesis 3.

Table 1. Descriptive statistics for Commitment and Exploration dimensions of identity (EIPQ)

Group Scale	Integration (N=32)		No Integration (N=68)		Total (N=100)	
	M	SD	M	SD	M	SD
Commitment	68.84	11.13	49.00	8.45	55.35	13.18
Exploration	58.81	10.37	53.28	8.02	55.05	9.16

Note. EIPQ: Ego Identity Process Questionnaire.

H3 was not only not confirmed, but the results went in the opposite direction, as the integration group had higher Exploration scores, indicating that adolescents who were able to integrate different temporal voices were more engaged in exploration of identity. Participants who did not integrate the different temporal voices were less engaged in exploration of identity (contrary to hypothesis 3), as well as being much less committed to an identity – which implies a generally lower level of maturity.

H4 was also confirmed. After temporal dialogue between past, present and future I-positions, participants reported that their life seemed more meaningful, and this

applies to the whole group; they also reported higher levels of curiosity and anxiety and lower levels of anger (see Table 2). These effects could be attributed to the dialogical procedure, in which they engaged between the two evaluations.

Table 2. Descriptive statistics for meaning of life scores and affective state scores before and after inner temporal dialogue

Variable	Before dialogue		After dialogue		Difference	
	M	*SD*	*M*	*SD*	*t*(2,98)	*p* <
Meaning of life	85.43	12.97	92.01	14.04	-17.64	.001
Anxiety	15.91	4.83	16.90	4.70	-3.26	.002
Curiosity	27.24	6.21	28.14	5.64	-2.60	.01
Anger	16.44	4.07	15.48	4.03	3.28	.001
Depression	15.75	4.17	15.59	3.93	0.54	ns

Interestingly enough, a group comparison revealed that the dialogical procedure only increased anxiety levels in the non-integration group (before: $M = 16.68$ $SD = 5.41$, after $M = 17.88$, $SD = 5.04$, $t = -3.78$, $p < .001$).

Discussion

This study explored the role of temporal dialogues in identity formation in adolescence. We explored adolescents' construction of temporal dialogues and the relationship between integration of different temporal perspectives and identity development during adolescence. On the basis that the self is dialogical and polyphonic, and that there are many different I-positions, defined by their temporal and spatial relationship to the present self, we argue that each I-position offers a different and important perspective on an individual's identity. Telling one's own story from different perspectives is a way of organising a large number of experiences and setting goals, plans and aspirations. Constructing a chronology of one's personal story enables one to make sense of it (McAdams, 2001). Adolescence is a period of identity formation, during which individuals pose existential questions, try to answer them, express doubts and reflect on their life history; it is in some senses a first review of gains and losses (Oleś, 2015; Waterman, 1999). Inner dialogue, negotiation and discussion, and dreams

about the future are typical of this developmental period. According to our results, only 32% of the participants constructed integrative temporal dialogues. They confronted different temporal voices and integrated different temporal perspectives into a coherent message. The question is: Is it a matter of intelligence or reflection? Were they intelligent enough to make meaningful connections between pieces of dialogue or were they reflective enough to construct the integrative dialogues, conclusive and/or implying important personal message? One answer doesn't exclude the other; however the participants were asked about (meta)reflection on their personal meanings, thus they used rather narrative mode of thinking than paradigmatic mode (Bruner, 1990). They rather reflected their feelings, beliefs and intentions (narrative mode), than solved logical problem of possible synthesis of personal meanings (paradigmatic mode).

Moreover, when interpreting this result one should take into account that adolescence is a period during which ways of thinking change, one's temporal perspective widens; the future is more salient, yet still uncertain, and the path to the future may seem difficult because of problems and obstacles in the present. The adolescent also has a history of past experiences, which may not be easy to come to terms with or integrate into an understanding of one's current personal situation. Under the pressure of current problems and dilemmas finding bridges between past, present and future can seem difficult.

Our results showed that adolescents who constructed integrative temporal dialogues were much more committed to their identity, i.e. they were more engaged in activities consistent with that identity (consistent with H2); they were also exploring new identities more intensively than their peers who did not construct integrative temporal dialogues (contrary to H3). Thus, the participants who integrated different temporal voices had in their disposal inner dialogues as a medium of exploring important personal dilemmas. If it is true, adolescents could benefit from inner temporal dialogue; by means of activating past, future and present I-positions they could clarify goals and values significant for their perception of the meaning of life. Our results suggest that teenagers can construct integrative temporal dialogues, and they can use I meta-positions for self-reflection. Dialogical self theory posits that identity formation is characterised by polyphony and self-dialogue, but that meta-reflection is the critical factor (Hermans & Hermans-Jansen, 1995).

In general the results support H1; they demonstrated that there is a relationship between aspects of identity – commitment and exploration – and the creation of integrative temporal dialogues. We also found that participants who constructed integrative temporal dialogues had higher Commitment and Exploration scores, and that these scores increased after the dialogical procedure. In the terms of Marcia's (1966) identity status paradigm and the psychological phases of Exploration and Commitment (see also Berzonsky & Adams, 1999; Oleś, 2015), we can conclude that the adolescents who constructed integrative temporal dialogues were on the best way to an *achieved*

identity, so they had almost finished a period of identity formation. However, the roughly two thirds of participants (68%) who did not integrate the temporal voices did not appear to be particularly actively engaged in identity exploration – their EIPQ Exploration scores were lower than those of the integration group. This suggests that the integration group was generally more mature than the non-integration group. Moreover, only the non-integration group showed an increase in state anxiety after the dialogical procedure. Temporal dialogue can elicit anxiety, when it involves activation of important I-positions which are difficult to integrate. But the opposite may be also true: anxiety (caused by emotional crises) can prevent adolescents from smoothly integrating different time related I-positions. Our suggestion is that integrative temporal dialogue can enhance perceptions of the meaning of life (see Nir, 2012).

This account is consistent with the notion that *achieved* identity is linked to ability to integrate I-positions, which develops, during adolescence, in parallel with the formation of a coherent identity. This account is based on Erikson's (1963), Marcia's (1966) and Hermans's (1996) theories. As Giddens (1991) noted, identity is not a gift that is given to us; hence we posit that self-reflection can be specified as the integration of voices, or in other words, the integration of voices seems an important aspect of self-reflection. Contemplating the past or future causes one to view the present from a broader perspective of, for example, life values or meanings of important life events. Actions, events and relationships in the present, which seem important and urgent (e.g. the struggle for personal autonomy, completing school, first love, peer relationships), may take on an entirely different aspect when perceived from a broader temporal perspective, perhaps losing their importance or even seeming undesirable rather than desirable. Summing up, we found that construction of integrative temporal dialogue is connected with aspects of identity.

The increase in the meaning of life found (according to hypothesis 4) replicates previous results and provides further evidence that temporal self-dialogues have a positive influence on meaning of life (Oleś, Brygoła, & Sibińska 2010). The reduction in anger after temporal dialogue is also understandable, given that temporal dialogues also enhance curiosity measured as emotional state. The most unexpected finding was the increase in anxiety after temporal dialogue. We suggest that enhancing the activation of the different temporal I-positions by linking the shift in perspective to a change in physical position (moving from one chair to another) might induce an existential sense of anxiety related to the uncertainty surrounding one's future, a phenomenon rather typical of adolescence. Moreover, the imagined picture of emerging adulthood with its various demands as well as the transition towards it while confronting voiced I-positions might raise some difficult, unresolved or irresolvable (at the moment), personal problems. It should be noted that increase of anxiety was typical for the non-integration group, thus participants who did not construct integrative dialogues felt stronger anxiety after such a trial than before. Personal confrontation with

I-positions representing one's own past and future probably brought uncertainty (expressed as anxiety), provided that the person could not grasp the common meaning of these different voices.

The main limitations of this study are the relatively small sample and the use of questionnaires to probe the very delicate phenomenon of identity formation. Questionnaire research are not free from possible biases, like for example influence of social approval or tendency to emphasize personal problems (of identity formation), and such possible biases were not controlled. Moreover, internal conflicts experienced by adolescents could influence their answers to the questionnaire, augmenting the variance of error.

Last but not least, both processes of identity formation and development of self-reflection or dialogicality are influenced by current culture (Arnett, 2000; Hermans & Dimaggio, 2007). For example, to find a proper link between virtual world and reality becomes a great challenge for larger and larger part of adolescents. Moreover, young people have to face the problems of their own culture, and to meet global changes and challenges. Some adolescents develop bi- or multi-cultural identities, such that their identity is rooted partly in their own country and partly in the global world or another culture (Hermans & Hermans-Konopka, 2010). These dynamics, although promoting maturity of many young persons, may have for others a disorganising impact on the process of identity formation as well as on the unity and integration of a multiplicity of voiced I-positions. Some ongoing processes ongoing in society and culture (e.g. globalisation) might make it harder to integrate different selves or I-positions and might, thus, slow down the process of identity formation.

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