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CONSTRUCTING A NARRATIVE IN THE STANDARD UNEXPECTED TRANSFER TEST IN ADOLESCENCE AND ADULTHOOD

The aim of the presented research was the replication and extension of the research by Nelson, Plesa and Henseler (1998), which was the basis for examining the nature of the theory of mind or mentalizing ability (that is, the ability to attribute mental states to other people in order to explain and predict their behaviors) in adolescents and adults. Specifically, its experience-like versus theory-like character. The test, an unexpected transfer task (the Max story), was completed by 827 people aged 13 to 75 (average 21.9). Half of them were supposed to solve the task with a shorter version of the story (including only the facts), and the other half were given the longer version (including descriptions of emotions, beliefs of the protagonist and explanations of ongoing events). All of the answers were then categorized applying Nelson's classification and two other types of analysis. Gender, age and fields of interest were taken into account during analysis of the participants' answers. The Polish respondents rarely answered in a narrative way (only 13%, in contrast to Nelson's result of 46%). Despite the fact that age was not a factor corresponding to a narrative answer, it was proven that older respondents did indeed assume the first person perspective when justifying Max's behavior. Women, more often than men, appealed to the knowledge and the protagonist's way of thinking. The respondents' fields of interest did not seem to diversify the obtained results, nor did the version of the story. The results do not allow us to draw unambiguous conclusions about the nature of the adult's theory of mind, but they form the basis for analyzing the methodology of research on theory of mind.

Key words: theory of mind, narrative, unexpected transfer test

Introduction

Theory of mind, sometimes called mentalization or mindreading, is the ability to impute unobservable mental states (e.g. wishes and beliefs) to oneself and to others in order to explain and predict behavior. Most previous studies have focused on describing the developmental changes of the mentalizing ability during childhood (see research review: e.g. Białecka-Pikul, 2002; Carpendale & Lewis, 2006;

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Doherty, 2009). Recently, there have been some attempts to describe the evolution of the mature theory of mind, that is, theory of mind in adulthood (Robinson & Apperly, 2001; Białecka-Pikul, 2005).

On the other hand, there have been some studies on the level of performance in advanced theory of mind tasks, based on various materials. These included stories (Maylor, Moulson, Muncer & Taylor, 2002), short movies that required deducing feelings and thoughts (Sullivan & Ruffman, 2004), the Baron-Cohen "Mind in the Eyes" test (Phillips, MacLean & Allen, 2002), picture tasks (Saltzman, Strauss, Hunter & Archibald, 2000). No matter which technique was applied, the ability to mentalize was consistently lower for older participants. Studies of certain brain areas related to the theory of mind are in line with these findings (Apperly, Samson, Chiavarino & Humpreys, 2004).

It seems that older people handle social skills very well, which allows us to assume that they are able to infer the mental states of other people based on social and emotional information (Carstensen, Isaacowitz & Charles, 1999). Happe, Winner and Brownell (1998) used some stories in their research that required recognizing subtle signs of sarcasm, deception and breaking the social rules. The results obtained from a group of older adults were much better than those obtained from younger people.

The study of age-related changes leads to questioning the basic premise of the study, mainly the question about the essence of the theory of mind. Is understanding states of mind a construction of theories? That is, do we create, in our mind, a solid system of claims that demands logical conclusions based on empirical proof? Or is this rather a kind of narrative which facilitates interpreting social situations and constructing demands (e.g. Astington & Olson, 1995; Nelson et. al., 1998)?

The "theory of theory" (Gopnik &Wellman, 1994), "the theory of simulation" (Harris, 1992) and the "theory of inborn modules" (Leslie, 1994) assume that the theory of mind is a solid system of claims, requiring logical conclusions based on empirical proof. Despite the differences in these conceptions, they all try to explain the development of mentalizing ability in terms of constructing theories (or even having them inborn) by an individual – not visible, inner constructions, which aim to explain and predict behaviors.

Bruner (2006) criticizes this way of thinking about the theory of mind. Referring to his ideas, Nelson et al. (1998) reflects critically on the aforementioned classical concepts of the theory of mind. These authors claim that understanding the everyday social world requires the understanding of some complex social issues, and that is why thinking based only on theoretical constructions may not be enough in such cases. They claim that logical-causal interpretation of human behaviors, based on states of mind, is a product of narrative interpretations. Nelson (1996) thinks that mind develops mainly in a social and cultural environment, one that is individual for every child. A child acquires knowledge from his/her physical, social, cultural and linguistic environment with great plasticity. Dressing up or eating are those activities that appear first in his/her event-activity representations. From those

representations, other scripts and representations emerge. They are based on imitation of activities performed by other people (mostly people who are important to the child, like the mother or siblings), such as those during games and singing of songs. Practicing the activities performed by and with other people in this way creates the basis for understanding those people.

In "experiential theory of mind" (Nelson, 1996), the emphasis is put on practicing instead of possessing theoretical knowledge. A child's model of a social world comes into existence based on seeing and trying to understand the actors and their actions (me – an actor, other person – also an actor). That is why Nelson et al. (1998) do not agree with the idea that theories (in a scientific understanding) are responsible for our everyday perception of the world. Much more important are practices, those co-created with adults. In those practices, people play different roles, with their own aims around which the action takes place. Scientific understanding assumes a process of logical deduction, and as Nelson states, this kind of a process is not necessary in order to understand the minds of other people. In order to understand other people, we concentrate more on narrative and interpretative schemes.

Nelson et al. (1998) conducted a study in order to check whether adults would provide logical arguments and reflect on empirical proof when explaining certain actions of another person, or if they would rather create a narrative form that includes references to unobservable mental states in the protagonist. As this study became the basic inspiration of the research presented here, it is crucial to show it in detail.

Rationale of the study

The participants in Nelson et al.'s study (1998), 80 adult students enrolled in undergraduate psychology courses[1], were first told a story about Max. The story, a test of an unexpected transfer task (Wimmer & Perner, 1983), is about a boy named Max, who put a chocolate in the fridge and then left the house to play. While he was absent, his mother took the chocolate out of the fridge and then put it in a cupboard. Max then returned home and wanted to eat his chocolate. After hearing the story, the people who took part in the study where asked to answer two questions: "Where will Max look for the chocolate?" and "Why will he look there?". The answers to the first question were classified as: correct ("where he left it"), incorrect ("somewhere else"), and the third group were answers that included the correct answer (e.g. "the fridge") but also pointed to other places for a possible search (correct + search & find). The answers to the second question that justified the answers to the first one were classified as: logical-causal, narrative-interpretative,

[1] It is hard to infer from the description of the method, …"Participants were eighty adult students, enrolled in undergraduate psychology courses."… whether the respondents were students of a psychology course only, or students of psychology and some students of other departments who were attending psychology classes. The authors of the present research assumed it was the second group.

or being a partial repetition of the story. Almost 44% of the examined people gave logical-causal answers, meaning they referred to Max's previous actions ("Max is going to look for the chocolate in the fridge, because he left it there"), to perception ("because it was the last place he has seen it"), to thinking and knowledge ("because he thought it was there"; "because he did not know his mother moved it"). The rest of those examined gave narrative-interpretative answers. Those answers included references to the feelings, motivations and characteristics of the story's protagonist, and were a script of the situation or a reflection of the respondent's own experience.

In the analyses aimed at defining the differences between people giving logical-causal answers and those giving narrative-interpretative answers, gender and age were taken into consideration. As proved later, gender was not a factor diversifying the answers (it should be taken into account that 76.25% of the sample were women), but age was. Young people, younger than 25 years old, statistically more often tended to give logical-causal answers than older people. According to the authors, the results of the study show two different ways of interpreting Max's actions. There is a logical-causal theory of mind, or a narrative structure, that describes certain behavior by referring to the protagonist's emotions or the situational context; that kind of division would correspond to the two different ways of thinking distinguished by Bruner (1986), which are paradigmatic and narrative. From the perspective of the experiential theory of mind (Nelson 1996), logical-causal answers are a component of a wider, interpretative scheme; the basis for interpreting the behaviors of other people (e.g. Max's) is the knowledge coming from experience, which would have a narrative form. In the discussion of the results, it was emphasized that younger people, having attended school not so long ago, more often presented a logical way of thinking, the approach promoted in the course of their education. Older people, on the other hand, may be far away from school's requirements and concentrate more on their own life experience, which becomes their model for explanation.

The study by Nelson et al. (1998), in spite of providing great input into the research on the mature theory of mind, still has a lot of weaknesses. The authors themselves asked in the discussion why so many people created narrative when there was a much simpler answer. In the authors' opinion, the respondents, who were students attending a psychology course, could have thought they were expected to present a complex answer, particularly one that referred to the world of the protagonist's experiences. Astington (1998) criticizes the results of this study and stresses that a big and empty sheet of paper might suggest a complex answer is required. What is more, if a questioned person gave a complex answer to the first question ("Max is going to look in the fridge and then in the cupboard"), it would probably result in a broad answer to the second question, as a substantiation for the previous answer. Astington (1998) also criticizes the way of classifying the possible justifications for the protagonist's actions. In her opinion, the answers

described as narrative-interpretative might just as well be seen as explanations based on the theory, which stands for logical-causal answers. Wellman (1990), for instance, claims that theory of mind in adult people is a complex structure, a kind of a system of conclusions, including aims, intentions, emotions and motivations.

In addition to the aforementioned weaknesses of the study in question, our attention was drawn to two different issues. Firstly, the surveyed people probably felt obliged to provide complex answers not only because of the fact that the study was conducted during classes making up part of a psychology course, but also because of the form of the study: The participants received an almost empty sheet of paper, with only two questions on it. Giving a short answer would require less time than reading the story itself, which might be a factor that somehow forced those people to write more than they would have done in a spontaneous manner. Secondly, in our opinion, the answers that refer to the perception or thoughts of the protagonist, those classified by Nelson as logical-causal answers, should have been put in a separate category. This kind of solution is supported by studies on the relationship between the theory of mind and cognitive verb use. Hall, Scholnick and Hughes (1987) suggest that vocabulary referring to cognition is used for presenting the continuum of internal processes, such as: 1) perception (the speaker refers to an experience that he registered by perception), 2) cognition (the speaker knows the experience), 3) reminder (reference to previously remembered facts), 4) understanding (reference to comprehending or a causal context), 5) meta-cognition (the speaker focuses on the awareness of mental acts) and 6) evaluation (the speaker refers to the attitude and the belief that a particular statement is true). This kind of evolutionary outcome, in the meaning of mental verbs, was determined based on studies in which both children and adults took part. Using a multidimensional scale, it was proven that the cognitive verbs differ depending on the dimension called "informative processes", beginning with external data (notice, see), through memory (remember, understand) up to outcome functions (deciding, explaining). Claiming that Max will look in the fridge because he must think that this is the place where the chocolate is, a questioned person refers to mental states, despite the fact that he or she might just as well have justified the answer by recalling Max's actions (because he left it there). Based on this, it is assumed that it was right to distinguish a category of mental answers which were answers referring to knowledge and cognition.

In summary, three basic goals of the study were developed. First, in order to conclude whether the result obtained by Nelson et al. (1998) is not just an artifact, and it is correct to claim that adults tend to respond to unexpected transfer tests in a narrative manner, the study was repeated with a bigger group of young people as well as adults. This time the procedure was altered (see: Techniques). Secondly, the aim of the study was to determine how gender, age and fields of interest influence the way people answer the questions. Pointing at gender and age as a diversifying factor is also a replica of the idea by Nelson et al. (1998). Our study also took into consideration an additional variable related to fields of interest. Mainly, we as-

Table 1. Number of people in the study, including age and gender

Gender		Age		
Women	Men	14-17	18-24	>24 years old
456 (55%)	371 (45%)	314 (38%)	361(44%)	151 (18%)

sumed that the ratio of narrative answers would be lower for students of technical universities and exact science students than for philologists, arts students or social science students[2]. Thirdly, an attempt was made to ascertain whether the way of presenting the events in the story about Max might be a factor that modifies the tendency of the respondents to give narrative answers. Two versions of the story were created: A shortened one (with no emphasis on the mental states of the protagonist and connections between events), and the longer version (which included descriptions of the unobservable protagonist's mental states and explanations of ongoing events).

Method

Participants

827 people aged 13-75 (average 21.9) took part in the study (see Table 1).

Techniques

A classic theory of mind test was used, that of an unexpected transfer task (Wimmer & Perner, 1983) in the form of the story about Max, constructed in two different versions: A shortened version and the longer version. Underneath the story were two questions: "Where will Max look for the chocolate?" and "Why will he look there?"[3].

The answers to the first question were classified as correct, incorrect, or "correct + search & find" (including the correct answer but also pointing to other places for a possible search). The answers to the second question, the one about justification for Max's actions, were then classified into nine groups. Classifications proposed by Nelson such as logical-causal and narrative-interpretative were used, as well as our own proposed categories - behavioral, mental and narrative answers. In particular we treated answers referring to mental states separately. Table 2 presents three ways of classifying the answers, along with examples[4].

Additionally, we ran one more analysis. We differentiated between answers which justified Max's behavior by assuming the first-person perspective (answers

[2] Junior high school students and senior high school students were asked to say what type of class they were in.

[3] The appendix quotes both versions of the story literally.

[4] It is worth mentioning that 25% of collected data was assessed by two competent judges and the agreement was 0.74 to 0.91 for the two proposed ways of classification.

Table 2. Types of answers justifying Max's actions

Classification by Nelson et al. (1998)	Our classification	Categories	Examples
Logical-causal answers	Behavioral answers	Action	"Because he put it there", "He put it there himself"
		Perception	"Because the last place he saw it was the fridge"
	Mental answers	Thinking	"He looked there because he thought his mum had hidden it from him"
		Knowledge	"He did not know that his mother had moved the chocolate to the sideboard"
Interpretative-narrative answers	Narrative answers	Script	"Because he knows that his mother always puts it there"
		Motivation	"he decided that he was going to eat it later", "he wanted to eat the chocolate"
		Emotions	"the missing chocolate will be an unpleasant surprise for him", "he got upset"
		Features of the protagonist	"he likes sweets very much", "he is addicted to chocolate"
		Own experience	"Because I would look everywhere. My search would not end with the fridge."

being the reflection of the respondent's own experience, category "own experience") and those which assumed Max's perspective (all other categories of answers).

Procedure

The study was conducted in groups, at high schools and universities, during classes. Only the adults received a test notebook to fill in at home. On the first page of the notebook (B4 size) there was some information about the study and a formal request to participate, and below that there was the story about Max (the shortened or the longer version). Underneath the story was an empty space (12x8cm in size), for the respondent to write down answers to the two questions. After answering the two questions, each participant had to do some other tasks, mainly a Test of Metaphors, contained on the following pages of the notebook (Białecka-Pikul, 2002). The respondents were supposed to write down their pseudonym along with their gender, age and the type of school they attended (including class orientation or field of study), on the last page of the notebook. The study lasted 20-40min.

Results

To the first question; "Where will Max look for the chocolate?": 688 people (83%) answered correctly, 93 people (11%) expanded the correct answer by pointing to some new places of search, and 46 people (6%) answered incorrectly.

Table 3. Number and percentage of each type of answers, according to the three types of classification

Classification by Nelson et al. (1998)	Number (percentage)	Our classification	Number (percentage)	Categories of answers	Number
Logical-causal answers	718 (87%)	Behavioral answers	546 (66%)	Action	506
				Perception	40
		Mental answers	172 (21%)	Thinking	59
				Knowledge	113
Interpretative-narrative answers	109 (13%)	Narrative answers	109 (13%)	Script	53
				Motivation	21
				Emotions	3
				Features of the protagonist	15
				Own experience	17

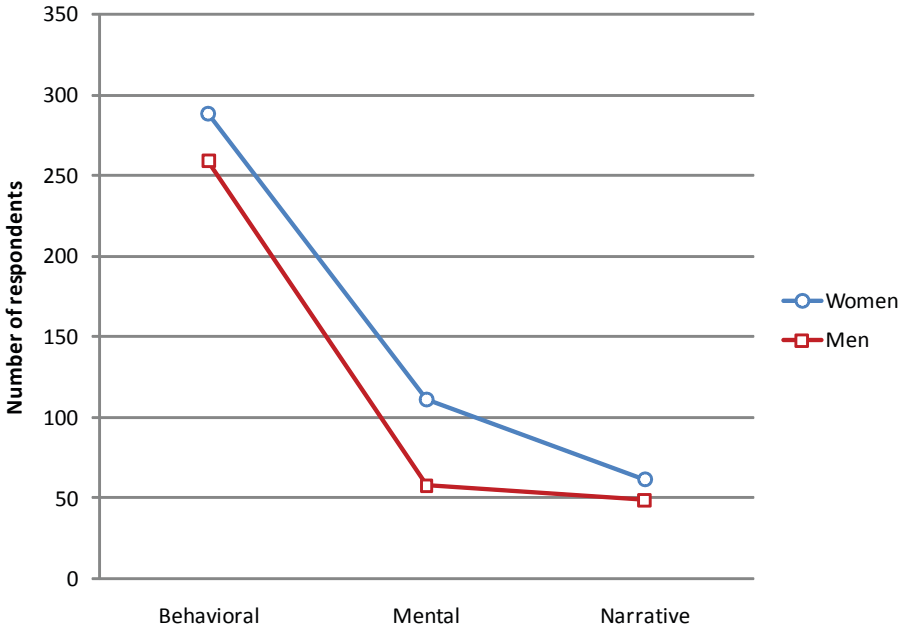
Most of the respondents answered in a logical-causal or behavioral manner when justifying Max's actions, so they referred either to Max's actions or to the place he had last seen the desired item (see Table 3). Despite that, 13% of the respondents gave narrative-interpretative answers, and if we consider referring to knowledge or the protagonist's way of thinking, then this gives us 34% (not 13%).

Let us try to determine what common features people giving answers in a narrative form have.

Firstly, the people who constructed a narrative, indeed more often than those people answering in a behavioral and mental way, claimed that Max, after checking the fridge (the correct answer), would look elsewhere (Pearson's $\chi^2 = 357.6$, df = 4, $p < 0.05$). That statistical difference would also be maintained if the classification of Nelson et al. (1998) were applied (Pearson's $\chi^2 = 33.69$, df = 2, $p < 0.05$), which is when we compare narrative and logical-causal answers. Thus, the constructors of a narrative provided a complex answer even to the first question.

Secondly, age as a continuous variable did not prove to be a variable diversifying people based on the number of justifications they provided, what is more, it was not even a factor related to the types of those justifications. However, when different types of answers, in those nine categories, were analyzed, it was found that the older people tended to choose the 'own experience' category more often, so they assumed the first person perspective ("I would look…") ($F(72,4867,7) = 29.07$; $p < 0.001$). Also, when the results were analyzed with a division into three age groups (14-17, 18-24, >24 years old), there appeared to be a significant relation between age and the answer (Pearson's $\chi^2 = 16.44$, df = 4, $p < 0.05$). Thorough analyses have confirmed that the difference in results in those three age groups is an effect of the age differ-

Figure 1. Relationship between the gender of the respondents and the types of answers they provided



ence between the youngest group and the students ($\chi^2 = 11.92$, df = 1, $p < 0.05$), but also between the youngest group and the oldest group ($\chi^2 = 8.28$, df = 1, $p < 0.05$), but only when referring to the logical-causal and mental groups of answers, the youngest group gave less than others logical-causal answers and more than other two groups mental answers. There is no relation between age and the different number of narrative answers (Pearson's $\chi^2 = 1.21$, df = 2, $p = 0.54$).

Thirdly, gender proved to be a variable diversifying the obtained results. Women, in comparison to men, justified Max's actions by giving more than one possible explanation (Pearson's $\chi^2 = 13.24$, df = 5, $p < 0.05$), and those answers were mostly provided in a narrative form (Pearson's $\chi^2 = 8.76$, df = 2, $p < 0.05$). When this relation was measured by applying the classification of Nelson et al. (1998), no gender-related difference was found (Pearson's $\chi^2 = 0.19$, df = 1, $p > 0.05$). The factor that is responsible for differences in answers related to gender are answers classified as mental answers (see Figure 1).

Next, fields of interest was also not a variable diversifying the number of justifications given, or even the types of those justifications. When we narrow down the comparison to university students and high school students, there are significant differences in answers resulting from the orientation of their classes or their fields of study (in the case of students) ($H(2) = 8.03$, $N = 431$, $p < 0.05$). However,

the result is the effect of the difference (on the margin of statistical significance, $p = 0.06$) between general oriented and exact science students, with no difference between arts students and exact science students.

Additionally, let us consider what other characteristics are provided by the analysis of the answers given by the people constructing narrative or referring to emotions. Respondents who did not refer in their answers to perception or action, often referred to knowledge ("because he knows it is there") and the thinking of the protagonist ("because he thinks it is there") as justification of his behavior, in contrast to those categories which were described as narrative ($Q = 14$, $p < 0.05$). It is also easily noticeable that those respondents more often referred to knowledge, and the difference between the number of references to knowledge compared to the number of references to thinking is relevant ($Q = 16.95$, $p < 0.05$).

Only 13% of participants answered in a narrative form. Most of the answers were in the form of a script ($Q = 13.83$, $p < 0.05$), e.g. "Because mother always hides the sweets there" or "Usually the sweets were hidden there". Those answers constitute nearly half of all the narrative answers (48%). It was also found that people who gave answers classified as scripts (53 people) often gave an incorrect answer (as many as 41%) to the question "Where will Max look for the chocolate?" (they pointed to places other than the fridge). At the same time, it was apparent that people who created narrative did not tend to assume their own perspective, but in most cases simply answered assuming Max's perspective ($Q = 51.61$, $p < 0.05$).

Another thing is that the longer version of the story (the one which refers to the protagonist's consciousness) did not yield an increased number of answers justifying Max's actions (Pearson's $\chi^2 = 0.55$, $df = 1$, $p = 0.45$) or narrative answers ($\chi^2 = 2.91$, $df = 2$, $p = 0.23$).

Discussion

A typical theory of mind test was used in the study – the story about Max. The aim was to examine whether adults would explain the behavior of the protagonist by referring to his actions, referring to state of mind or constructing longer narrative forms. Variables such as age, gender and fields of interest were supposed to help accurately describe the people who created narratives. Additionally, presenting a shortened and a standard version of the story to the respondents was an experiment, the aim of which was to check whether referring to the thoughts and beliefs of the protagonist would encourage forming a narrative in explanations of his actions.

The results obtained from this study basically support the criticism of the results obtained by Nelson and co-workers (1998). Polish adolescents as well as adults rarely answered in an interpretative-narrative form (13%, not 46%), and the changes introduced in the procedure of the study (presenting the story in short form, less empty space for providing the answers, conducting the study outside the

context of a psychology course) probably changed the results significantly. We also emphasize that the introduction of a different classification of the answers (than the one proposed by Nelson et al. 1998) allowed to prove that the answers even for a simple task like this one are different for men and women. Basically, this result seems to be important and in agreement with the data on differences in the cognitive and linguistic functioning of women and men (Kimura, 2006). Women, on one hand, answered mostly by justifying the actions of the story's protagonist (longer answers), but on the other hand, most of those answers referred to knowledge. Men rarely provided mental answers. This result is relevant, because it shows the weakness of the classification proposed by Nelson et al. (1998). Thus, it is possible that the lack of difference between men and women in the study by Nelson et al. (1998) was the result not only of the small number of male respondents in their study (as suggested by Nelson), but also of the classification that was used.

It is worth considering what are other common features of people who constructed narratives. Indeed, as Astington (1998) suggested, the people who more often constructed a narrative in response to the question: «Where is Max going to look for his chocolate?» gave longer and more complex answers (first in the fridge, but then…). So they had to simply build a narrative in order to justify their own answers. Neither age nor field of interest proved to be a variable diversifying the number or types of answers. The analysis of the individual types of answers shows the tendency of older people, more often than younger people, to choose answers that refer to their own experience. Experiences related to the respondents' education might also have had some influence on those results. Currently a lot of importance is given to the ability to draw conclusions based on facts and then answer according to those facts. Some ten years ago, it was the norm at schools for students to refer to their own thoughts, particularly in such tasks as forming a narrative. Students were asked about their own feelings and reflections.

Dividing fields of interest into three groups: arts, exact science, and general studies, it was only proven that significant differences occur among university students and high school students in the case of the general studies and exact science groups. Previously students had been divided into arts students and science students. This is why only the results of the high school students interested in sciences show that they more often give logical-causal and behavioral answers. It is difficult to speculate if, in this situation, the field of study does not reflect the respondents' true fields of interest, or maybe the technique that was used was too simple and not sensitive enough to detect such differences.

Before we return to the analysis of the technique itself, we emphasize that a relatively large group of the respondents provided mental answers, more often referring to the knowledge of the protagonist rather than his mental processes as arguments justifying his acts. This may indicate that adolescents and adults perceive the social world in terms of other people's internal states, constructing simple and static explanations of their behavior. At the same time, respondents who created

a narrative using the category of a script, wrote «because usually», «because every mother…». These two results prove that the study did not conclusively decide whether the mature theory of mind is a logical-causal construction or a narrative. Even though only 13% of the respondents provided narrative answers, quoting one of them encourages us to think even more about the mature theory of mind.

Question: Where will Maxi look for the chocolate?
Answer: First in the fridge, then he might look in the sideboard.
Question: Why will he look there?
Answer: The first one is obvious. In the next phrase I used the word "might" because Max may be a child (here I refer to my own experience) who is simply addicted to sweets, and he was probably thinking about the chocolate on his way home. He will look in the sideboard because many homes have specific places for particular types of products. Moreover, if he really fancies some chocolate, he will search the whole kitchen.

Finally, considering the conditions and the technique itself, let us point out some other merits of the study. The story about Max is a task constructed for children which, when applied to adults, has a lower apparent validity. As Lillard (1998) claims, to infer a conclusion about the explanation of some social situations by adults, one would have to use several stories which would be set in different contexts and refer particularly to those situations which the respondents may often experience themselves.

The results we obtained seem to support this suggestion.

Maybe for both adolescents and adults, a technique that would be more encouraging would be assigning a task in which they might assume the stance of a protagonist who battles with some problems that are closer to their own everyday experience. The results show that the respondents rarely assumed such a stance ("In this situation, I would look…"), which is an argument for such an interpretation. Going further, one could think not about altering the technique, but using a different one (Dilemmas may be a better method for studying theory of mind in adults (see Robinson & Apperly, 2001; Białecka-Pikul, 2005)).

Weighing up a possible modification of the technique for researching theory of mind in adults, all the results obtained from this study have to be taken into account. As it turned out, the standard version of the story (the one that included descriptions of the protagonist's emotions) was not correlated with an increased number of answers justifying Max's behavior, neither did it contribute to the narrative form of the provided answers (no matter which classification system was used). This result coincides with the data obtained in the study by Feldman, Bruner, Renderer and Spitzer (1990). These authors, studying narrative competence in adults, used two different versions of a very similar story, one of which was just a simple abstract and the other was expanded with some descriptions of emotions. The participants of the study were divided into two groups. Each group was acquainted with one

version of the story. The narrative they provided did not differ much between groups (neither based on the story itself, nor the mental verbs used).

Summarizing, it can be said that despite the fact that the results do not relay much new information about the theory of mind in adolescents and adults, they are a step forward in improving the methodology for such research.

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Appendix

Shortened version of the story

Imagine a boy named Max and his mother. One day, Max's mother returns home after doing the shopping. Among other things, she has bought a bar of chocolate. Max helps her put the things she bought in the places they belong. Max puts the chocolate in the fridge and then leaves the house to play outside. During his absence, his mother moves the chocolate to the sideboard, where she also keeps the sugar and the flour. Then she leaves for work. After that, Max gets back home and wants to eat the chocolate.

Standard version of the story

Once there was a boy named Max, who lived with his mother. One day, his mother planned to bake a chocolate cake. Max likes chocolate cake very much. So she went to do the shopping, and when she got back, Max helped her carry the stuff she had bought from her car to their house. After Max unpacked the stuff, he put a bar of chocolate in the fridge, and thought about eating it later. Max likes chocolate very much, but he did not know that his mother had planned to bake a chocolate cake. Then the phone rang and a friend asked Max to go and play football with him. Max's mother agreed, so Max left the house. At that moment, his mother started preparing the cake. She took the chocolate out of the fridge and then it occurred to her that she had forgotten to buy any eggs. She quickly put the chocolate in the sideboard, where she keeps the sugar and the flour, and went to buy some eggs. While she was absent, Max got back home and wanted to eat the chocolate.