

EXPLORATIONS IN THE DISCURSIVE MIND: RESEARCH

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ABSTRACT. A growing body of research investigates various aspects of the dialogical self theory and the concept of positioning. However, the majority of these studies are qualitative in nature and the empirical verification of fundamental assumptions which form the basis of the dialogical self theory is largely lacking. We review a series of newly conducted experiments which provide preliminary evidence for the hypothesis that the mind is dialogically structured and that each I-position is represented in a separate representation module, shaped in a particular social context. By experimentally activating different I-positions it is possible to demonstrate their effects on various cognitive processes and behaviour.

Keywords: discursive mind, dialogical self, positioning, I-position, shared knowledge, cognitive representation, cognitive-affective resources, discursive resources

In the article we describe several experiments which were aimed at verifying the discursive architecture of mind model's validity (for the detailed description of the model see the preceding article in this volume).

In some earlier research, initial confirmation of the empirical existence of the positioning phenomenon was obtained. It also was demonstrated that interactive positioning can be thought of in terms of social influence (Stemplewska-Żakowicz, Zalewski & Suszek, 2005). Other research (Stemplewska-Żakowicz, Walecka & Gabińska, 2006) provided initial empirical support for the thesis that knowledge structures are specific for social context. This research also gave an opportunity to test different methods of experimental positioning (Stemplewska-Żakowicz, Walecka, Gabińska, Zalewski & Suszek, 2005).

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Based on the results of this research, procedures of the further research (described below) were planned. The main aim was to verify the relevance of the discursive mind model. Two essential assumptions of this model – about the modularity of cognitive system and about the social origin of an individual’s knowledge – play a key role in other theories described before. However the third assumption – about the specificity of a person’s knowledge structures for a social context – is unique for the discursive model and differentiates the model from other contemporary concepts. The efforts in verification of the model’s relevance focus on this third assumption.

The main idea behind all the experiments is common – it is expected that experimentally manipulating one of the representation module’s (the I-position’s) characteristics will result in corresponding changes of all other properties. This effect is expected to appear for structural, functional and content properties of different modules. It is the strongest version of the thesis about the specificity of the knowledge structures for a social context. The general research idea is to put a variety of efforts to disprove this thesis. If these attempts fail to disprove the tested thesis, according to Popper’s (2002) guidelines, it may be considered as being relevant.

Nearly all experiments had repeated measurements. The tentatively called ABBA scheme was applied in all the experiments. It is a single factor experimental plan with repeated measurements. Activated I-position is the experimental factor. It may have two values, in this example they can be called position A and position B. The experimental manipulation is to activate respectively two different positions within the same participant (in the experimental group) or the same positions twice (in the control group). The order in which the positions are activated is rotated. One ABBA experiment requires about 40 participants, 20 for each experimental and control group and 10 for each rotation variation (see Figure 1).

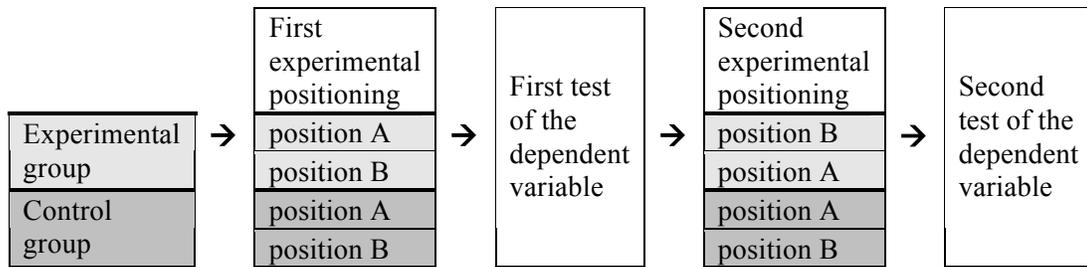
The ABBA scheme enables the verification of the thesis about the specificity of the knowledge structures for the I-positions. This thesis can be considered verified if the mean difference between the first and the second measurement is significantly higher in the experimental group (two different I-positions) than in the control group (the same I-position twice). The differences are stated in their absolute value, regardless of whether the value of a particular difference is positive or negative as it may vary between participants and the direction is not important in this hypothesis.

Stereotypes

One of the possible applications of the discursive mind model is the field of stereotypes and prejudices. Despite the fact that this field has an abundance of relevant theoretical concepts and a great deal of empirical data, the discursive mind model can

Figure 1

The ABBA scheme applied in the described experiments



offer new insights. If we assume that each of the I positions within a person has its own cognitive-affective resources, it may happen that one of the positions is biased towards a certain group and perceives it in a stereotypical way, whilst the other I-position of the same person is free of such prejudice. This hypothesis is tempting, but is it right? Two experiments were conducted to find the answer to this question.

The experiment of Antoni Syrek-Dąbrowski (2007) investigated whether the intensity in dehumanisation as an element of racism (see Goff, Eberhardt, Williams and Jackson, 2008) depends on the activated I-position. 44 members of the All-Polish Youth organisation (Młodzież Wszechpolska) famous for its extreme nationalistic and fascistic politics, took part in the experiment. The participants were randomly assigned to two groups in which two different I-positions were activated: “Me as a member of All-Polish Youth” (APY) or “Me in relation with John Paul II” (JP2). Special surveys were used in the experimental manipulation, in which the participants were asked to answer 3 questions freely (some parts of the questions were asked in both groups and are marked in bold):

- **What do you feel when you think about** John Paul II / All-Polish Youth?
- **Recall one of your personal memories from** John Paul II pilgrimages to Poland / All-Polish Youth manifestations.
- **What does** the person of John Paul II/to be a true APY member **mean to you personally?**

Then participants from both groups were asked to complete an identical task on a computer (programmed by the author using the FLX Lab software), which was to organize pictures displayed on the screen into three categories: a man, an animal or an object. 45 different pictures were randomly displayed including 15 pictures of human faces (5 Caucasian, 5 Afro-American and 5 Asian) and 15 of each: animals and objects. This task was aimed at measuring the level of dehumanisation (dependent variable), which was indicated by the reaction times when the pictures of different colour faces where shown. The operational hypothesis was that the time needed to categorize the

pictures with Asian and Afro-American faces is longer in the MW group as compared to the JP2 group.

The two-factor multivariate analysis of variation was used for the analysis in the 2 (I position: APY vs. JP2) x 3 (skin colour: white, yellow, black) experimental plan. All multidimensional effects were significant, however what is directly important for the hypothesis is the interaction effect of the activated position and the skin colour of the faces in the pictures ($F(10,33)=4.27$; $p<0.001$; $\eta^2=0.56$), which indicates that the time needed to assign a picture of a human face in different colours to the “human” category was shorter or longer depending on the I-position currently activated.

Further analysis revealed that the participants with the I-position “Me in relation with John Paul II” tended to dehumanize yellow coloured people less than the participants from the APY group ($t(35,15)=1.96$; $p<0.05$). For the pictures of black colour faces no predicted differences were found. Thus, these results provide partial support for the hypothesis.

Critically reviewing the effect which was found, it cannot be denied that it may have happened that other, simpler than discursive mechanisms worked in this experiment. The reason of a lesser dehumanisation of Asians after recalling the person of John Paul II may be found in the political correctness effect – the Pope might have reminded participants of socially endorsed values and attitudes, of which the All-Polish Youth members are aware and which do not have to be assigned to the specific I-positions. Another explanation refers to the experimental manipulation, which can be also understood as activating the social identity (All-Polish) or the individual identity (personal relation with the Pope). This first type of identity, as shown in classic research, is more responsible for the discrimination of others.

The next experiment offers more solutions to these problems, as the influence of the above mentioned factors was controlled better. The experiment conducted by Katarzyna Nowak (2008) involved the Polish stereotypes towards the minority Romani people. Here, the repeated measurement plan was applied to make sure that the predicted effects were really intra individual differences. Another difference from the Syrek-Dąbrowski (2007) experiment was the method of experimental positioning (activating I-positions). Two short descriptions of a certain person’s behaviour were shown to the participants, one of which was an example of tolerant and one of intolerant behaviour (however the word “tolerant” or any similar word was not used in this experiment). Then the participants were asked to recall a close person who could behave similarly to the described person, and then to spend some time imagining talking with this person. The aim of this manipulation was to activate two different I-positions: a tolerant person position and the intolerant person position. The experimental plan was based on the ABBA scheme.

The dependent variable was the level of negative stereotyping towards the Romani, measured with two indicators: the evaluation of adjectives' relevance in the description of the Romani people and the reaction times for these adjectives. The same indicators in reference to non-stereotypical and neutral adjectives were also measured for more control. The whole experiment was conducted on a computer and was programmed using Inquisit software. The measurement of the dependent variable was in the form of a series of questions "How well does the term X describe a Romani person" and the answers were given on a 6 point scale. These terms were 36 adjectives chosen earlier in the pilot experiment – 12 adjectives in three categories: characteristic for the Romani negative stereotype (stereotypical), contrary to this stereotype (not stereotypical) and non referring to the stereotype (neutral). The software measured both: the relevance evaluations and the reaction times of the participants. The experiment was in a two-factor 2 (tolerant vs. intolerant I-position) x 3 (stereotypical, not stereotypical and neutral adjectives) plan with repeated measurements of the first factor.

As it had been predicted, the results showed that the activated I position influenced the level of the negative stereotypes towards the Romani people. The variation analysis with repeated measurements revealed a significant interaction effect of the currently active I-position and the adjective category. This effect was discovered for both indicators – the relevance assessment ($F(2,88)=6.84; p<0.01; \eta^2=0.13$), and the reaction times ($F(2,43)=4.68; p<0.05; \eta^2=0.18$). Details are shown in the Figure 2.

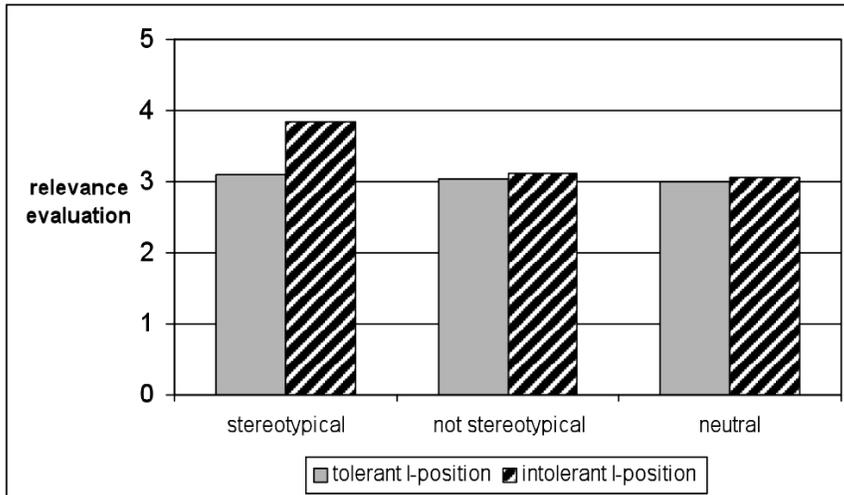
In both cases the differences between the tolerant and intolerant positions were significant only for the stereotypical adjectives. It was discovered by means of a series of Student's t-tests for dependent probes. When the tolerant position was activated, the participants remembered significantly more positive words than negative or neutral. The activation of the intolerant position implied exactly the opposite effect. This was shown in a control measurement which was analysed with similar statistical methods. This additional effect makes us more confident that the experimental manipulation was effective and the differences in the level of negative stereotype which resulted can be interpreted as being caused by activating two different I-positions.

In this case it is hard to contest research for non-equivalence of the positions as far as we are concerned with the likelihood of increasing the need of social approval or activating the social or individual identity. Yet another question can be posed: can the differences shown in this experiment be explained by a simple manipulation of positive or negative affect, which was aroused by recalling a good or bad relationship? The results of both of the described experiments need further elaboration. However it can be agreed, that the thesis about the specificity of the knowledge structures for the social context was not found false. A successful replication would bring new light to the nature of stereotypes and reinforce the point of view according to which they are a

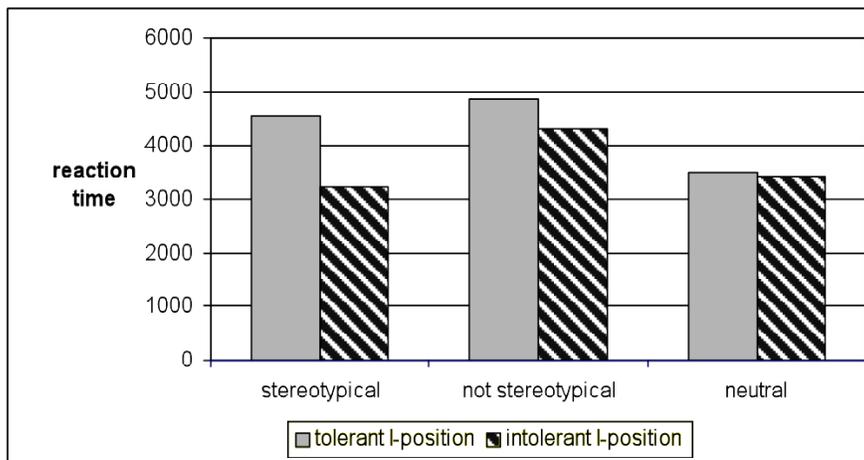
Figure 2

Mean evaluation of the adjectives' relevance in the description of the Romani people (from Nowak, 2008)

(A) mean reaction times for these adjectives



(B) in three adjectives' categories and two I-positions activated



result of the social negotiation process of giving names and a part of a shared reality (see Higgins, 2000) This would mean that a given stereotype is stored in the mind only in a certain module of representation, which contains content developed in a specific social context.

Personality

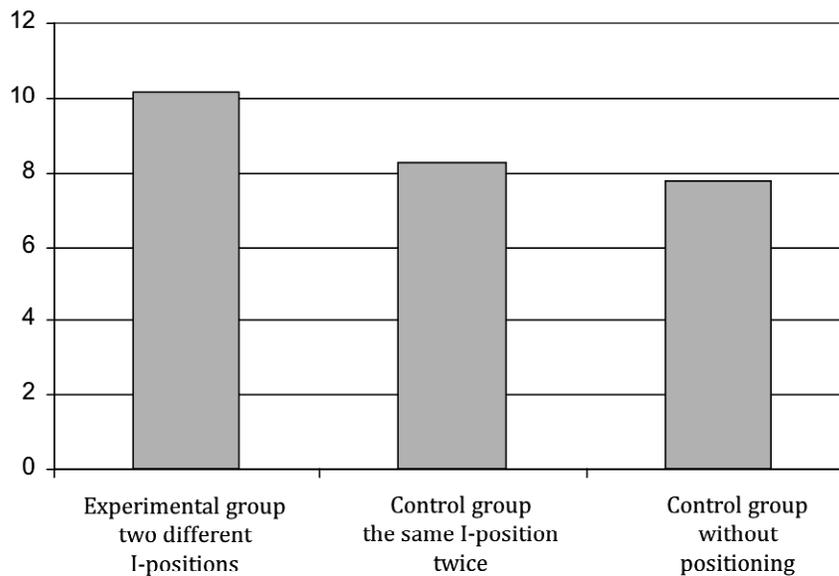
The notion of I-positions comes from a notion of the voice proposed by Bakhtin (1984) who is commonly referred to in the discursive and dialogical approach. The voice was understood by Bakhtin as a “talking personality”. Bartosz Szymczyk (2010) decided to empirically verify if we may assume that different I positions within the same person can have different personalities. For this aim he used the Big Five Model and the NEO-FFI questionnaire (Costa and McCrae, 1985) based on this model of personality. This research is widely presented in a separate article in this volume. Szymczyk’s experiment’s results incline to reconsider the problem of stability vs. variability which is essential for the whole personality psychology. Referring to personality, the model of relational mind assumes that the personal dispositions of a person are variable not only between different situations, but mostly between social contexts. Two experiments were conducted to verify this assumption.

Taking Baumeister’s (2002) theory of ego depletion and ego power as a starting point, Monika Turowska (2008) was trying to find an answer to the question of whether the I-positions have separate sources of energy. In the research with 143 students from two Warsaw colleges, participants were induced to use the energetic resources of two different I-positions to find out if it makes the total resources attainable for the ego, as understood in Baumeister’s works (2002), larger. Two experimenters manipulated their behaviour one after another in order to activate two different I-positions among the participants: “I as a competent person” vs. “I as an incompetent person”. The before described ABBA scheme was used in the experiment as well as the methods of ego depletion and the depletion measurement already tested by Baumeister (2002). An additional control group was also planned in which Baumeister’s procedure was used without the experimental positioning. The experiment started with positioning the participants in a certain I-position, after which they were asked to complete the first task aimed at causing a cognitive dissonance and by this means to deplete the ego resources. The task was to think of and write down as many arguments for introducing fees for studies as the participants could find, which was obviously contrary to their own interests as students of public universities (in Poland public schools are free). While the first experimenter was collecting the papers with the arguments, the second one appeared to substitute him and activated the same or different I-position depending on the experimental condition. Then, he asked the participants to solve anagrams. The number of correct solutions was the indicator of the dependent variable – the volume of resources attainable for the ego. It was expected, that activating a different I-position after the first task (experimental groups) would result in the restoration of the general ego resources, because the second I-position’s resources became available, as they had not been depleted during the first task. In the control groups, this effect should not occur because the second task was completed in the same I-position as the first one. The

regular ego depletion effect known from Baumeister's experiments was expected in these groups. The results are shown in Figure 3.

Figure 3

Mean number of correct anagrams in the experimental group and control groups



One-way ANOVA showed a significant main effect of the positioning variable ($F(2, 140)=5.230$; $p<0.01$). Additional analysis implied that in the experimental group, in which two different I-positions were activated, more correct anagrams were found than in the control group, in which the same position was activated twice. There were no differences between the experimental group and the neutral group and neither between the control group and the neutral one.

This result is broadly in line with expectations. However, before drawing the conclusion that the hypothesis was confirmed, further statistical analysis had been conducted which revealed that only the result from one of the experimental half-groups (distinguished on the basis of the order of position activation) is responsible for the observed differences ($F(4,138)=8.491$; $p<0.001$). Most solutions were found by people in whom the “I as an incompetent person” position was activated prior to the “competent person” position. In the second group, in which these positions were activated in a reversed sequence, the number of solutions matched the level of the control group. Hence, not only activating two different positions was found to be important, but the sequence of it.

It seems possible that the participants from the first group found more solutions to the anagrams because they were using ego resources from another position and not

because the second position is associated with a positive affect. This is supported by the fact that there were no differences between the two control groups. In one of them the participants were positioned as “I as a competent person” both times and this position can be associated with high self esteem and positive emotions. In the other group the position “I as an incompetent person” was induced twice (associated with low self esteem and negative emotions). If these characteristics of emotions had had influence, it would have been demonstrated in the differences between these two groups and no such differences were found.

Another explanation which cannot be excluded here is the mechanism of emotional see-saw, in which negative emotions are induced and quickly suppressed (Nawrat and Doliński, 2007). The influence of this mechanism on submissiveness has already been reported and in this experiment the participants were submissive to the will of the experimenter when creating solutions in the task. Hence, the results of the experiment neither allow to conclude with confidence that the I-positions have their own power resources, nor has the hypothesis about the autonomy of I-positions been disproved.

Another experiment based on the assumption of the autonomy of the I positions' resources is the one conducted by Bartosz Zalewski (2008), which examined the social influence of the particular effect of the “foot-in-the-door”. In this effect the likelihood of complying with a request is higher for a person who has already complied with a similar but smaller request of another person. This effect should be stronger if the “recipient” of the first and the second request is the same I-position. In contrast, when both requests are addressed to different I-positions, the “foot-in-the-door” effect should not take place or be weak, because the processes responsible for this effect occurred within the first position, while the second position faces the second request without this priming (it is the first request for this position). The experiment aimed at verifying this hypothesis and is described in this volume in a separate article (Zalewski, 2010).

Intelligence and School Achievement

In the field of intelligence and social context the most interesting I-positions are the ones developed during positive and negative interactions with tutors. These can be generally described as the positions of Good Student and Bad Student. Despite individual differences, which certainly refer to a specific content, effect and many other aspects of these positions, probably both of them exist in every pupil. This is because both objectively better and worse students tend to have successes and failures of their own kind from time to time. Both are sometimes unappreciated or over-appreciated by their teachers, thus all students are sometimes perceived as Good or Bad Students, which helps develop these positions in their minds.

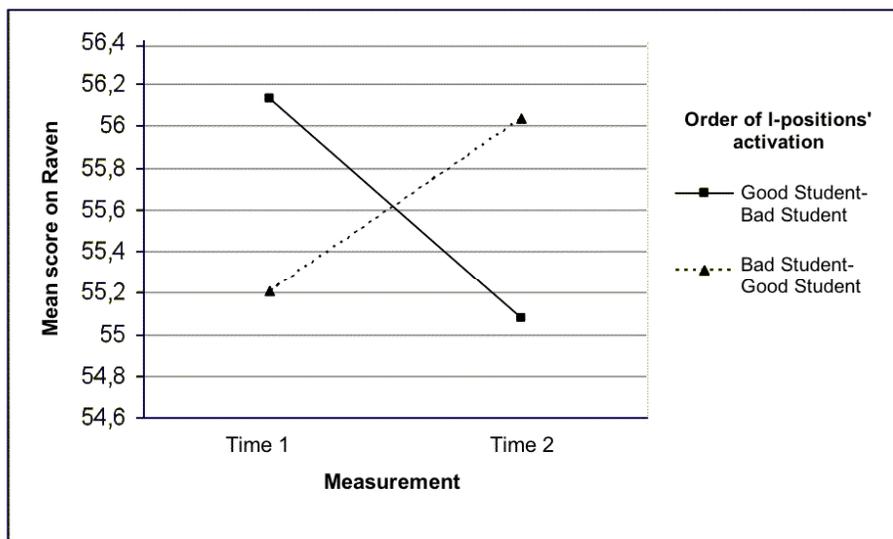
The discursive model assumes that once the position of a Good Student is activated in a given person, he or she can use the cognitive-affective resources of this

position in his or her current behaviour. It results in an increase in performance in different school competency tests, because it is in the Good Student position's resources where the majority of knowledge and skills taught in school is stored. The resources of the Bad Student are much poorer and so is the performance in tests and exams, when the position is activated. This assumption was a subject of empirical verification in two experiments on intelligence and three on school knowledge.

Agnieszka Zakrzewska (2009) conducted a one factor experiment with repeated measurements, in which 48 adult high school students were subjects of repeated (after one month) positioning in the Good Student and Bad Student positions. The sequence of activating these two positions was rotated in both classes which took part in the research. The experimental manipulation was performed with the help of tutors who gave instructions to the procedure in two different ways: emphasizing their opinion on the high (Good Students) or low (Bad Students) abilities of a given class and predicting the performance in the test tasks accordingly (after the research a profound debriefing was given to the students with the information about the aim of the experiment). After activating the positions by these means, the Standard version of Raven's Progressive Matrices was handed to the participants (in the repeated measurement a version of the test was used)

Figure 4

Activated I-position and intelligence test performance level



The results of the experiment were the subject of a two-factor analysis of variance with repeated measurements, which showed the significant effect of interaction between the measurement and the sequence of activating the I-positions ($F(1,46)=7.40$;

$p < 0.01$; $\eta^2 = 0.14$), as illustrated in Figure 4. This result means that regardless of whether the Good Student position was activated as first or second, it always caused an increase in the Raven's test results by 1 point on average. The scale of the effect is unimpressive; however it occurred on a regular basis. No difference was found between first and second measurements, which confirms the equality of the versions of Raven's tests used in the experiment. Furthermore, no difference was found between half-groups, in which a reversed sequence of activating the I-positions was used, which proves the equality between groups in terms of intelligence.

These results are in line with what was predicted. Of course the question of whether the results can be explained by simply reinforcing the pupils with supportive and encouraging feedback from the teacher, remains unanswered. However, still the hypothesis about the influence of the activated I-position on intelligence (here the non verbal) is supported.

Verbal intelligence was examined by Mariusz Solpa (2008), who used the Linguistic Test *Leksykon* (Jurkowski, 1997). In a one-factor experiment (without repeated measurement), 40 secondary school pupils were assigned to the experimental or control group. In the experimental group the Good Student position was activated by presenting the experimenter's opinion on the high abilities and good performance of the pupils, which was strengthened by non-verbal signals. In the control group, the experimenter acted in a formal and demeaning way, however – considering the age of the participants – did not address negative opinion on their competences or performance.

The results revealed differences between the two groups, which were as expected. The details are shown in Table 1.

Table 1. *Mean general results and the results on two subscales – passive and active dictionary – of the LEKSYKON test in two groups.*

Variables	Means in groups		t	p<
	Good Student (experimental group)	Bad Student (control group)		
Subscale: passive dictionary	19,13	17,16	-1,57	n.s.
Subscale: active dictionary	14,59	10,33	-2,48	0,05
Overall result	33,72	27,50	-2,31	0,05

Note: All *t*-tests had 38 *df*.

As illustrated in Table 1, when the “Good Student” position was activated, a young man performed generally better in the test of intellectual abilities than when the “Bad Student” position was activated. This particularly refers to the function of active verbal activities, which require a creative application of the resources owned. The passive functions in contrast are probably more automatic and therefore less vulnerable to the limitations of cognitive resources and emotional discomfort, which probably followed the activation of the “Bad Student” position.

Similar results were shown in three research studies based on the same experimental schemas and sharing a similar procedure, in which, instead of psychological tests of intellectual abilities, the school tests of knowledge in mathematics (Sokołowska, 2008), nature (Kiszczuk, 2008) and English (Więckowska, 2008) were used. In this research the results significance was on the level of statistical tendency ($p < 0.10$), however we mention them because the results followed the same pattern repeatedly. In the experimental tasks the Good Students performed better on average than the Bad Students, however there were no differences in the routine school tests which were conducted before by the teachers during lessons. These results were as expected.

The effects shown in the described experiments can seem similar to the Pygmalion effect. From the rich empirical data on this effect (see Rosenthal, 2002), a conclusion can be drawn that the expectations of the teachers can influence the intelligence and performance of the students at school like in a self fulfilling prophecy. At first this research was received enthusiastically, because it seemed that thanks to them the development of the students could be stimulated and the possibilities of children at school could be made more equal – simply by changing the attitude of the teachers from negative to positive. However critical opinions were presented on the methodology (Snow, 1995; Spitz, 1999), and later on it was shown that the influence of positive expectations on pupils’ performance is quite limited by the real abilities of children (Jussim and Eccles, 1992). We neither offer to go back to the former conceptualisations of the Pygmalion effect, nor put forward a new theory on it. There is one important theoretical difference between the phenomena described in the discursive mind model and the Pygmalion effect. The latter is – theoretically – based on a real, persistent and independent of context an increase or decrease in the observed competency of a student due to specific treatment by a positively or negatively biased teacher. In the discursive mind model, the increase in competence is temporary, limited to a particular relational context. An increase applies to the accessibility of the particular cognitive-affective resources, which refer to a latent I-position. This is no more the Pygmalion effect but the positioning phenomenon.

Accessibility of Semantic Categories

Because the results of the described research seemed encouraging, a further series of experiments was planned to examine the influence of positioning on the more basic phenomena of accessibility of the representations of semantic categories, in more detail and more systematically. The here-described research was a number of pilot experiments, the main aim of which was to check the efficiency of different positioning techniques, however a side effect could also be the verification of the fundamental hypothesis of the discursive mind model. This hypothesis proposes that the I-positions hold their own cognitive-affective resources – for some positions some content is more accessible than for others, which can be observed as a difference in reaction times to different words.

From a longer series of experiments, nine have been conducted so far, the results of which were combined and analysed together for the purpose of this article. The participants were 377 students of Warsaw colleges. The details of distribution in groups are shown in Table 2.

Table 2. *Number of participants in each research condition*

		POSITIONING			Overall
		imaginative	Verbal	interactive	
POSITIONS	Mo/Fa	28	39	0	67
	Mo/Fr	49	38	0	87
	Fa/Pa	35	33	0	68
	Ac/J	0	0	35	35
	Hd/Hr	0	0	40	40
	Au/Co	0	0	40	40
Overall		112	110	115	337

All experiments were programmed in E-prime software. In each particular experiment the participant took two identical series of lexical decision task (described below). The reaction times were measured (RT). The experimental plan was based on the ABBA scheme. According to the hypothesis, it was expected that when the same position is activated twice, the difference in reaction times between the first and the

second series of the task would be smaller than when two different I-positions are activated.

By putting nine experiments into one analysis we received a three-factor experimental plan. The first independent variable was a pair of positions that had these values:

- Mo/Fa (I in relation with my mother / I in relation with my father)
- Mo/Fr (I in relation with my mother, I in relation with my girl friend),
- Fa/Pa (I in relation with my father, I in relation with my partner)
- Hd/Hr (I as someone who needs help, I as someone who helps)
- Ac/J (I as someone accepted, I as someone judged),
- Au/Co (I in relation with an authority, I among friends)

The experiments for the three last pairs of positions were the basis of the master's theses of Iwona Daszczuk (2008), Katarzyna Lech (2009), and Joanna Raczyńska (2009) respectively.

The next two independent variables were the method of positioning (imaginative vs. verbal vs. interactive) and the manipulation (experimental group: two different positions vs. control group: the same position twice).

The imaginative positioning was the modified Baldwin and Holmes (1997) procedure. It is a procedure in which a participant is presented an instruction in which he or she is asked to recall a significant other person (depending on the activated position) as if he/she was with him/her at the moment. On the consecutive tables some questions which help to recall the picture of the person are shown (*“Imagine your Mother as if she was standing in front of you. Spend a while imagining her... Recall her face in your mind. Give it some time..., Try to recall the colour of her eyes and her hair. Spend some time on it...”* etc. all together 10 questions).

The verbal positioning was obtained by means of a word which the participant uses to recall the significant person (mother, father, friend or partner). This word was displayed in the top left hand corner during the lexical decision task. Earlier, before starting the experimental procedure, the participants were asked to enter one or two such words (depending on the experimental condition and the I-positions activated) into the software's dialog box.

The interactive positioning was based on manipulating the experimenters' behaviour in order to activate a particular I-position. Each participant had contact with two experimenters respectively, who changed in the middle of the experiment. In case of activating the “I as needing help” position and the “I as helping” one, before each series of lexical decision task the experimenter had a 15-minute interview with the

participant. The interview differed depending on the position. When activating the “Help needing” position the experimenter asked about trouble in learning, expressed sympathy and gave advice on where to seek help. When the “I as a helper” position was activated, the interview referred to the participant’s interests and next, he or she was asked to help in a research project, because they were told that people with similar interests are needed for this research.

In the conditions where the I-positions “I as an accepted person” and “I as a judged person”, the participant was interviewed on the many ways of spending free time. The “I as a accepted person” was treated with understanding, actively listened to and was not interrupted by the personal opinions of the interviewer. The “I as a judged person” participant was interviewed in a way in which the experimenter spontaneously expressed his own opinion and preference – both positively and negatively (i.e.: *I also adore cinema, This really was a great movie, I would never go to see it, You really liked this dumb picture?*).

When the “I in relation to an authority” position was activated, the experimenter was formally dressed (a suit, a white shirt), had a briefcase and gave instructions using formal language (*This is a scientific experiment aimed at verifying the hypothesis about the specificity of representation structures for the social context. All questions will be answered after the experiment, because, being aware of the purpose of the experiment could have a direct impact on the mental processes which are to be examined*). When the participant was completing the lexical decision task, the experimenter was working on papers from a briefcase. In the “I among friends” group, the experimenter was wearing jeans and a sweater, he had his backpack hung on a chair and he was using everyday language with elements of humour to give information on the experiment (*Here we have limited research, which aim is pretty much unclear to everyone. It is hardly possible to explain it, but if you want, I will try to do that afterwards. If I tell you now, the whole experiment would have pretty much no sense*).

The dependent variable was the ABBA effect, that is, the absolute value in reaction times to the same stimuli in both series of the lexical decision task. Both general mean values for all word categories used in the research and particular mean values for each of the categories were a subject of analysis. The words were put in 30 categories (see Table 4), taken from the LIWC software designed for text analysis (Pennebaker, Francis, & Booth, 2001). Each series consisted of 270 trials, each containing 180 words (6 from each category) and 90 non-words: senseless strings of signs created by mixing the letters of three words from each category. Each stimulus was exposed for 100 milliseconds in the centre of the screen. The participants were asked to decide whether the displayed string of letters was a word or not and confirm it by pressing one of the two keys indicated on the keyboard. The next string of letters was presented instantly after pressing one of the keys. The sequence of display was randomly assigned to each person and identical in both series.

Table 3. *Word categories used in the lexical decision task (Taken from LIWC software, Pennebaker, Francis, Booth, 2001)*

1. me	11. seeing	21. music
2. you	12. hearing	22. money
3. we	13. feeling	23. religion
4. positive emotions	14. movement	24. death
5. negative emotions	15. family	25. body
6. positive assessment	16. friends	26. sexuality
7. negative assessment	17. work	27. eating
8. causality	18. science	28. sleeping
9. possibility	19. home	29. hygiene
10. sureness	20. sport	30. swearing

The data were analysed using a three-factor analysis of variance in a plan of 6 (pair of the I-POSITIONS: Mo/Fa, Mo/Fr, Fa/Pa, Hd/Hr, Ac/J, Au/Co) x 2 (MANIPULATION: experimental group with 2 different positions vs. control group with the same position twice) x 3 (POSITIONING method: verbal vs. imaginative vs. interactive). This plan was not complete, some of the values of certain variables were not tested, for example the positions Hd/Hr, Ac/J, and Au/Co were activated only by using interactive positioning, which was on the other hand not used in the case of other positions.

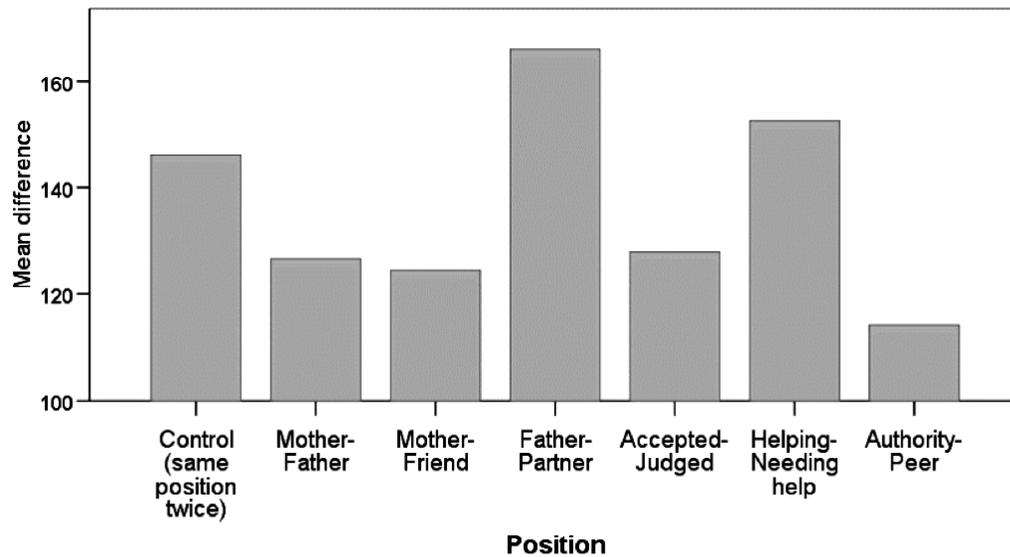
The analysis revealed:

- no main effect for the MANIPULATION variable
- Main effect of the POSITION variable $F(120,1172)=1.25$; $p<0.05$; $\eta^2=0.11$
- main effect of the POSITIONING variable ($F(30,290) =1.63$; $p<0.05$, $\eta^2=0.14$)
- interaction effect of the POSITIONING and POSITION variables ($F(60,582)=1.35$; $p<0.05$; $\eta^2=0.12$)
- interaction effect of the POSITIONING, POSITION and MANIPULATION variables ($F(60,582)=1.41$; $p<0.05$; $\eta^2=0.13$).

Figure 5 shows the mean differences in RT between two series of the lexical decision task for the control group (control conditions in which the same I-position was activated twice all together) and for different pairs of the I-positions.

Figure 5

Mean differences between reaction times for words in two series of the lexical decision task preceded by positioning



As shown in Figure 5, only for the pairs of Fa/Pa and Hr/Hd positions, the difference in RT between the two series of the lexical decision task was bigger than in the control group.

The analysis of variance tested each pair of positions individually but no significant multidimensional effects were found. In tests of one variable for all position pairs several differences between the experimental group and control group were found for certain categories of words.

To illustrate it, we show the results of two-factor analysis of variance in a 2 (POSITIONING: verbal vs. imaginative) x 2 (MANIPULATION: two different position vs. the same position twice) plan for the Fa/Pa pair of positions. It was discovered that the interaction of POSITIONING and MANIPULATION is significant only for these categories of words:

- learning ($F(35,1)=7.68$; $p<0.01$; $\eta^2=0.11$)
- work ($F(35,1)=7.78$; $p<0.01$; $\eta^2=0.11$)
- sport ($F(35,1)=4.33$; $p<0.05$; $\eta^2=0.06$)
- religion ($F(35,1)=4.68$; $p<0.05$; $\eta^2=0.07$)

- you ($F(35,1)=7.18$; $p<0.01$; $\eta^2=0.1$)
- positive assessment ($F(35,1)=4.67$; $p<0.05$; $\eta^2=0.07$)

Also a trend for the “swearing” category was found ($F(35,1)=3.20$; $p=0.08$; $\eta^2=0.05$)

For each of these categories the direction of differences was the same. For the imaginative positioning condition the expected ABBA effect occurred (the differences in RT between measurements were higher when a person was positioned twice in the same position, than when a person was positioned twice using the same method). In contrast, for the verbal positioning condition, an effect contrary to the ABBA was observed – the difference between two measurements was higher when the same I-position was activated, than when two different I-positions were evoked). This means that the accessibility of certain word categories was differentiated due to imaginative positioning (categories were differently accessible to the “I in relation with my father” position than for the “I in relation with my partner” one). However the verbal positioning caused an unexpected contradictory effect, suggesting that even with the same positioning method used, the availability of categories can fluctuate.

To conclude, the results of this series of experiments do not confirm a strong version of the hypothesis, that is the expectation of the ABBA effect to occur for all 30 categories and all pairs of positions and positioning methods. The multidimensional ABBA effect did not occur in any of the 9 experiments individually, nor if analyzed all together. Multivariate effects showed up only as interactions, implying different levels of the expected effect in particular pairs of positions and positioning methods. Yet, several (from several to over a dozen in each of the 9 experiments) univariate effects were observed in the form of the expected ABBA effect and a contradictory unexpected one as well, referring to some of the word categories. The most evident univariate ABBA effects occurred for the Fa/Pa pair of positions, but only in the condition of imaginative positioning. As expected, the availability of the categories: work, sport, learning, religion, you, positive assessment and swearing were different when the position “I in relation to my father” was activated, than it was when we evoked the “I in relation with my partner” position. This effect however was not observed for verbal positioning. Thus, it may be speculated that the verbal positioning procedure was not effective, or it induces different results than the imaginative positioning.

It would be hard to agree that the selective univariate effect does support the hypothesis, however the fact that they were observed makes it even harder to reject it completely. It may be stated that while rejecting the strong version of the hypothesis, which as we all agree is what shall be done, it would be right to offer a weaker version of it, which would take into account the differentiation which is caused by the use of a certain pair of positions and a particular method of positioning. The meaning of the reversed ABBA effect which occurred for many word categories is also worth a theoretical consideration.

How then should we interpret the lack of confirmation of the strong version of the hypothesis? The first possible interpretation suggests the misapprehension of the theoretical assumptions: maybe the I-positions do not exist at all and the model of discursive structure of the mind is misjudged. However previous research, both described in this article and previously conducted by our research team (Stemplewska-Żakowicz, Zalewski & Suszek, 2005; Stemplewska-Żakowicz, Walecka & Gabińska, 2006; Stemplewska-Żakowicz, Walecka, Gabińska, Zalewski & Suszek, 2005) and other researchers (Oleś, 2005, see also the review in Hermans and Dimaggio, 2007), allows one to presume that the I-positions exist empirically.

Thus, the second interpretation agrees that the I-positions exist, however the differences between them are subtle and not always possible to observe in experimental procedures. It may be argued that in this case of experiments, the idiographic approach would better be applied, modelled on the Daniel Cervone's research (Shadel, Cervone, Niaura, & Abrams, 2004). This would imply examining the reaction times to the words only from these categories which were tested to be important to the participant and personally associated with a certain I-position. In this research the focus was rather on finding differences between arbitrary selected categories, and it was assumed that the differences in the higher or lower accessibility of certain categories will be equal for many people (although it was predicted that the direction of the differences may vary, it was still expected that they will occur systematically among different people for the same categories). To check whether this assumption was a mistake in the procedure and ought to be corrected in the next experiments, a re-analysis of data was performed.

In the idiographic procedure proposed by Cervone and his co-workers (Cervone, Caldwell, Fiori, Orom, Shadel et al, 2008; Shadel, Cervone, Niaura, & Abrams, 2004) the material used in an experiment, for example for priming, is prepared individually, which enables observing effects which could not be observed otherwise. To check whether the expected effect can be observed for semantic categories which truly are connected with certain individual positions (this link being a highly individual difference), we decided to investigate whether the ABBA effect can be observed for categories of words of which we know that their accessibility is different for a given position within a particular person.

For the re-analysis sake, the dependent variables were constructed again. The indicator of accessibility of a certain word was the reaction time of a particular person for this word when a particular position was evoked. On the basis of the empirical distribution of reaction times for a particular person, 3 different word categories were created (dependent variables): easily accessible (1/3 words with the shortest reaction times for a particular person), hard to access (1/3 longest RTs) and moderately accessible (1/3 words with moderate RTs). The differences in the structure of data analysed in standard and idiographic analysis are presented in Table 4.

Table 4. *Differences between standard and idiographic analysis.*

CATEGORIES	ANALYSIS	IDIOGRAPHIC RE-ANALYSIS
Number of categories	30	3
Items in categories	6 words	60 words
Creating criteria	Semantic	RT in the first lexical decision task
Example	We, science, positive assessment	Short RT, Long RT, Moderate RT
Content	Planned before the experiment	Post-experimental analysis
Basis for categories	Theoretical	Empirical
Material structure	The same for every participant	Individually chosen for every participant

The reorganized data were the subject of the same statistical analysis as the originally organized data. The results showed similar but not identical main and interaction effects. They are presented in detail in Table 5.

These results indicate that some effects refer to words easily accessible in a given position (short RTs), and other – to those hard to access (long RTs). What does it mean? Given that the easily accessible words in a certain position are the ones which are specific for this position and strongly connected to it, we can conclude that there are separate patterns of relatedness for the words specific and unspecific for the given I-position. Further conclusions can be drawn when repeating the analysis for the control groups and the experimental groups separately. This analysis is shown in Table 6.

In control groups, where the same position was activated twice, statistically significant effects refer to the words, to which the participant reacted slowly, because these words do not belong to the activated I-position. On the other hand, in the experimental groups, where two different positions were activated in each measurement (and the word accessibility was determined by the reaction times in the first measurement), significant effects refer to the words to which the reaction was faster, due to the fact that these words belonged to the active positions' resources. This reinforces the model's relevance, because a change in the semantic categories' accessibility occurred due to a shift between active positions between repeated measurements. The categories specific for a certain position are easily accessible, but when the position is changed, they are not easily accessible any more and they are substituted by the easily accessible categories of a different I-position, which is now

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Table 5. Results for the three-factor MANOVA on the data reorganized in the idiographic scheme

Idiographic scheme	Multivariate effects				Univariate effects						
	Effect È	F	df	p <	h ²	RT	df	F	p <	h ²	
positions						Short			n.s.		
				n.s.		Moderate			n.s.		
						Long	5	3,12	0,02	,04	
positioning	2,65	3; 321	0,05	0,02		Short	1	4,91	0,03	,015	
						Moderate			n.s.		
						Long			n.s.		
manipulation x positioning	2,64	3; 321	0,05	0,02		Short			n.s.		
						Moderate			n.s.		
						Long	1	5,56	0,02	,02	
positions x positioning	2,13	6; 644	0,05	0,02				n.i.			
manipulation x positions x positioning						Short	2	2,54	0,08	,02	
			n.s.			Moderate	2	2,79	0,06	,02	
						Long			n.s.		

active. Yet, if we activate the same position twice, the resources specific for this position do not change, thus the categories accessibility remains indifferent.

The idiographic analysis was repeated for all 12 experiments, investigating the ABBA or reversed ABBA effect (which either is in line or contrary to the general hypothesis). The conclusions from these ideographical analyses are that the method did not influence the overall results much – still the hypothesis was confirmed in just a few of the experiments (namely 2 out of 12). However, after the ideographical analysis the pattern of the dependencies seems clearer, and some regularities appear:

The dependencies in line with the hypothesis about the specificity of the knowledge structures for the social context (ABBA effect) apply to short RTs and imaginative positioning

Long RTs and verbal positioning imply the dependencies contrary to the hypothesis (reversed ABBA effect)

As the effects in line with the hypothesis appeared for words which are specific for a certain position, it can be agreed that the model relevantly describes the real dependencies, however they are blurred by the non-specific words for a certain position

Table 6. *Idiographic analysis for the control groups and experimental groups separately (dependent variable – the absolute value of difference in RTs between two repeated measurements).*

Effect	THE SAME POSITION TWICE					TWO DIFFERENT POSITIONS				
	RT	df	F	p <	<i>h</i> ²	RT	df	F	p <	<i>h</i> ²
Positions	short			n.s.		short	2	5,37	0,01	,06
	moderate			n.s.		moderate	2	4,20	0,05	,05
	long	2	3,41	0,05	,04	long			n.s.	
Positioning	short			n.s.		short	2	3,49	0,05	,04
	moderate			n.s.		moderate			n.s.	
	long			n.s.		long			n.s.	
Positions x Positioning	short			n.s.		short	4	2,62	0,05	,06
	moderate			n.s.		moderate	4	2,80	0,05	,07
	long	4	2,12	0,05	,07	long			n.s.	

within a particular person. Thus, the verification of the model requires more precise research methods, in which only the content individually selected for every particular participant will be used. Further application of the Cervone idiographic method seems to be worth the effort and the results described above can be used for fine-tuning the procedure.

As we know that the idiographic analysis results also do not confirm the strong version of the hypothesis, we may investigate other interpretations. One of them is that the techniques of positioning which were used, are not efficient enough to make the activation of a given position last throughout the whole lexical decision task. This interpretation is agreeable, if we refer it to the theories associated with the working self concept (Markus & Kunda, 1986). If we follow them to agree that the working self consists of sets of chronically available central selves (main I-positions) relatively insensitive to the changing situation, which are placed in the context of more variable peripheral selves (position, which we manipulated in our experiments), then we realize how much variation can be explained by those central positions and how weak and latent the efforts in manipulating the peripheral positions might be. Likely, a solution to this problem would be even more personalized idiographic extraction and further manipulation with the central I-positions characteristic for a given person. The manipulation with I-positions may also seem difficult, because the positions have a partly common content range - their resources overlap, because the associations between I-positions are unique for each person (Cantor & Kihlstrom, 1987; Rosenberg,

1997). The manipulation with just one element of a “tangled web” of the mind leads to uncontrollable reactions in its different weaves. It is thus possible, that during the lexical decision task not only have we failed to hold the evoked I positions, but also the task itself activated several other different I-positions within individual participants.

Another interpretation refers to the theoretical model itself. The I-positions are dynamic constructs; the content which they store can change constantly, also as a result of every single activation of a given position. Thus, maybe it is not possible to activate the same position twice, just as “you can't step twice into the same river”. The surprising reversed ABBA effect, which occurred in some of the conditions in the semantic categories' accessibility research, could also be explained using this pattern. Following this interpretation, it has to be pointed out that the control conditions in the ABBA procedure are not appropriate. What had been expected was that when we evoked the same position, the effects should be identical. This expectation can be wrong from the theoretical point of view. This can be supported by the results of at least two from the before-described research, which show that the I-position are not unchanging mechanisms, which can be easily turned on and off, and each time resulting in the same effect. The research of Turowska and Zalewski has shown that dynamic processes inside particular positions are influenced by current experience. These processes can lead to certain changes, for example ego resources depletion or social influence vulnerability increase. Undoubtedly this is an interesting problem, worth theoretical elaborating and systematic research.

Considering all possible explanations, it seems necessary to put further efforts in research examining the influence of the positioning on semantic categories' accessibility. At this stage, the procedure is still too far from perfect to draw final conclusions. The further and more precise implementation of the ideographical approach to choosing categories is in line with the theoretical model and can bring new results showing the efficiency of positioning and its effects on the cognitive accessibility of the word categories. However re-structuring the data collected in previous experiment is not enough and it is suggested to conduct further experiments with the fully idiographic procedure.

Conclusion

Probably the biggest objection against the ideas of the discursive approach can be that the majority of the phenomena described by them can be just as well explained referring to classic theories and mechanisms, known and empirically verified in mainstream psychology. In this sense, the approach is in danger of the elevationism error (contrary to reductionism), in which simple phenomena are explained with far too complex and complicated processes. Two alternative ways of thinking, represented partly by mainstream psychology, are the ideas that the I-positions do not need to exist at all, or that the I-positions exist, however their regulative role in human functioning is

much smaller than we assumed – there are many more mechanisms involved. Both phenomenologically perceived changes in experience and changes in the observed behaviour are not proof of the existence of the separate I-positions. Even if we agree that the positions exist, we have to admit, that behind the variations of behaviour and experiencing we may find different (sometimes contradictory) needs, motives, feelings, beliefs, and values of the same Self, the same I-position. From this perspective on the results of our research, a question may be asked whether the positioning really took place here - and if yes, then was it really responsible for the results which were observed. Maybe other factors played more important roles, such as: evoking social attitudes, personal vs. social identity, affect, emotional see-saw, providing reinforcement, etc.

Conducting further experimental research on the discursive model seems indispensable. Showing evident empirical results, this research can help clarify the existing doubts, which might then contribute to developing new, promising theoretical approaches. Furthermore such experimentally verified ideas of the discursive approach may broaden mainstream approaches, which is encouraged by some representatives of the latter (see also Jost & Kruglanski, 2002). Especially some of these ideas seem to be worth theoretical and empirical elaboration, because they can also have practical implementations.

One of them was regularly observed in several of the described experiments, and can be summed up as follows: people who position others in a positive way, experience the world as better. Such teachers “have” better, more intelligent students, bosses – more effective employees, and more tolerant people meet others who are more open-minded and less negatively biased towards differences. There is more than one single truth about these people and in a different relational context all of them – pupils, employees, partners of relationships – can show their less positive face. However, the effects of the positive positioning are definitely not a misjudgement or an artefact. Positive positioning does not – metaphorically saying – turn ugly into beautiful, but allows the beauty which these people carry inside to be manifested, something that would remain hidden in worse circumstances. Frequent positive positioning of a given person could likely cause that the competent, intelligent or tolerant I-position became permanently accessible. Thanks to this, the increased abilities of this person could become his or her permanent dispositions. The probable practical application of this phenomenon seems promising and makes the effort of further detailed research even more worthy.

From the methodological perspective, tailoring the content used in the experiment for every participating person seems to be in line with the subjective approach characteristic for this model. The moderate version of the hypothesis about the specificity of knowledge structures for the social context was confirmed mostly in these experiments where the direction of the hypothesis was assumed, as in the “Good/Bad

Students' experiment on intelligence and school abilities. Thus, maybe more precise predictions can help understand the positioning process better in future experiments.

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