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MEASURING ADOLESCENT INDIVIDUAL VALUES WITH RATING AND CONSTANT-SUM SCALES

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The main goal of the studies described in this article is to examine the relationship between a) the extent of the differences of the value hierarchy for adolescents revealed by different methods and b) the risk factors for problem behavior. The first study is tests the hypothesis that larger differences correspond to greater conflicts in relationships between adolescents and their parents. The second study examines the relationship between a) the extent of the differences of the value hierarchy for adolescents revealed by different methods and b) various kinds of adolescent behavior assessed by teachers. The peculiarities of using the constant-sum scale and the discrepancy index between value hierarchies gained by using ratings and constant-sum scales are discussed.

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Introduction

There has been a long-lasting discussion in the literature on the method effect in value research (Shrum, McCarty & Loeffler, 1990; Krosnick & Alwin, 1988). Most of the published studies compare the results gained with ranking and rating scales (Alwin & Krosnick, 1985; Rankin & Grube, 1980). While some authors argue that there is no difference between value hierarchies gained with different methods (Rankin & Grube, 1980), others show that method itself affects the results (Krosnick & Alwin, 1988). Sven Ove Hansson (2001) points out that the personal expression of values depends upon the method or the procedure used to elicit them. The measure of the difference itself has rarely been the focus of research. There have not been enough studies examining the discrepancy between the results of different methods eliciting values while the measurement of the agreement of different methods is widely used in clinical psychology and medicine (Bland & Altman, 1999; Choudhary & Nagaraja, 2005).

In earlier research it was found that rating and constant-sum scales elicit different value hierarchies for a sample of delinquent adolescents (Podolskiy, 2012). No such effect was found for non-delinquents (Podolskiy, 2012) suggesting the following question: Does the discrepancy in value priorities gained by the rating and constant-sum scales associate with more problem behavior in adolescents? To be more precise, do adolescents who show less agreement in value priorities measured by different scales tend to experience more risk factors associated with problem behavior?

The reasons for the low agreement between value priorities measured by the rating and constant-sum scales in the sample of delinquents could be: a) social desirability (the desire to present a good picture of oneself), 2) low motivation (filling out questionnaires without effort and attention), 3) a low differentiation between values. The differences in the results gained by the rating and constant-sum scales might associate with other risk factors for problem behavior. Family conflicts and misbehavior at school are among common risk factors predicting delinquency (Hawkins et al., 1992).

This research looks at how the discrepancies between the results gained by using the rating and constant-sum scales (the discrepancy index) relate to the risk factors for problem behavior. Two hypotheses are tested: 1) The discrepancy index positively correlates with parent-adolescent conflict and negatively with cooperative relationships (study 1), 2) the discrepancy index positively correlates with socially desirable behaviors and negatively correlates with egoistic or selfish behavior.

The constant-sum scale

The constant-sum scale (Dudek & Baker, 1956) is widely used in marketing research (McDaniel & Gates, 1998). It presupposes that a respondent is presented with a list of values and the task is to distribute a certain number of points between them.

However, the constant-sum scale has not been used in the study of values. There are several reasons for using such a scale in additional to rating and ranking scales. The first is to increase the differentiation between values, which is a problem when ratings are used. The desirable nature of values makes respondents use the positive end of the scale much more often than a negative one. That diminishes the differentiation between values and affects the statistical analysis of the data. The constant-sum scale presupposes a strict choice between values as the number of points to be distributed is limited. The second is that the results of a direct assessment of values are often affected by the social desirability bias. One of the ways to decease socially desirable answers is to implement indirect evaluation (Mumford et al., 2002). In the case of a constant-sum scale, the task to count the number of points serves as an interfering activity and switches the focus of attention from direct evaluation. Table 1 sums up main differences between the rating scale and the constant-sum scale.

Tab. 1. Comparing the rating and constant-sum scales

Issue	**Rating scale**	**Constant-sum scale**
Task	To rate the listed values according to their personal importance	To distribute points among listed values according to their personal importance
Approach	Direct evaluations of each value	Dual activity: value prioritization and math task
Rules	To follow the scale limitations (does not provide the possibility for choice, does not have a measure of motivational involvement in the task solving)	To distribute a particular number of points (provides a room for choice and gives an opportunity to assess involvement in solving the task: the extent of exceeding the number of points).
Participant activity	Single value evaluations	Quasi systematic pair-wise comparisons
Scale type	Passive: one dimension (from not important to vary important), subjects adopt to the scale.	Active: several dimensions, subjects construct the personal scale (different strategies are used: compromise and extreme)

The instructions for the constant-sum scale are the following: “Here you see different values that are important for most people and here you have 30 points. Distribute these points among items that you value most. The maximum points you can assign to one item is 10 (that means that the item is very important to you) and the minimum is 0 (that means that the item is not important to you). When you finish please check that you have not exceeded 30 points”.

In the constant-sum scale, maximum and minimum amount of points are fixed. Maximum amount of points (10) awarded to a particular value-item means that it is of high importance for the respondent. Respectively, the minimum amount of points (0) means that the item is not important. Making each choice (how many points this or that value would get) an adolescent has to account for all the values (in the rating scale the subject assesses the importance of one value in a time). For the constant-sum scale, he or she has not only to choose the most important personal value (which will get more points), but at the same time to assess its relative importance to other values (how many points from 0 to 10 it will get), which combines choice and flexibility.

The advantage of the constant-sum scale is that the respondent is able to assign the same number of points to values that are of equal importance. It also presupposes pair-wise comparisons between value-items not single items evaluations.

Scales used to measure values in empirical studies

The two most frequently used scales to measure values are the ranking and rating scales. Some researchers suggest that ranking provides more comprehensive results than ratings (Alwin & Krosnick, 1985). Others argue that the reliability of both methods is more or less equal (Rankin & Grube, 1980). Some authors (Krosnick & Alwin, 1988) argue that the differences in the predictive validity of both methods are in the differentiation in respondent ratings. According to them, if respondents who were low in differentiation between personal importance of values are excluded from the sample, the data of the remaining subjects in case of ranking and rating will be similar.

The rating scale is widely used in research on values. Respondents are asked to rate each value item depending on its subjective importance. The rating scale is relatively easy to administer in a group or individual format and it is not time consuming. It permits equal importance of close values and longer list of values can be presented.

At the same time as values represent positive and desirable goals or end-states respondent ratings tend to group at the positive end of the scale. As a result many values are not differentiated (Rankin & Grube, 1980). This causes two important difficulties for the researcher: 1) revealing exactly which values are actually important for the respondent and 2) weakening the correlations between variables (for example values and other variables measured) in the data-set. These problems can be avoided by using a large sample, although this in many cases might be a problem in itself.

The rating task lacks a choice as an important construct. In real life values rarely appear separately but more often in a dilemma context (Kohn, 1977). Some values appear in

contradiction to each other and a decision is made according to the relative importance of each value involved. Respondents can rate several values equally high (or low) as they do not have an elaborated concept about these values or simply have not distinguished these values as the task itself does not stimulate such a differentiation.

In a ranking task respondents are asked to rank a particular number of values according to personal importance. In this case respondents are forced to differentiate between each value (Rokeach & Ball-Rokeach, 1989). A ranking task ignores the possibility that a respondent values several items at the same level. So the hierarchy of ranked values can differ from the internal representation. A ranking test is more complicated for respondents, therefore a limited list of items is used. Ranking data also has limitations concerning statistical analysis as it is not interval scale.

To overcome the problems of using ranking and ratings, alternative rating procedures are used. One method which can potentially help is a rank-then-rate procedure (Shrum, McCarty & Loeffler, 1990). This provides more differentiated data but other problems appear: 1) the ranking task administered before rating influences the dispersion of ratings; 2) it is time consuming and complicated to administer. The most-least rating procedure is another alternative (McCarty & Shrum, 1997). The respondents choose the most important values from the list and then the least important and after that rate all the values.

Krosnick and Alwin (1988) showed that educational level impacts value distribution in a rating task. Consistent with these results McCarty and Shrum (2000) showed that less educated respondents tend to exhibit more end-piling in their value ratings.

In the study of Mumford et al. (2002) direct and indirect methods were compared. Direct measures rely on consciously articulated values, while indirect measures allow both conscious and unconscious values to operate. Without specifying a well-articulated hierarchy, one might expect these two types of measures to correlate but not highly. Moreover, because direct measures focus on personal and social ideals, they may be more useful in assessing social trends. By contrast, because indirect measures focus on choices made by the individual, indirect measures may provide a better assessment of individual differential preferences.

Study 1

The first study examines the association between the discrepancy index and parent-adolescent relationships.

Sample

Fifty-four adolescents studying in a Moscow secondary school participated in the study (mean age 14.4; girls 51%).

Method

The adolescents completed the questionnaires during the class hours. They were asked to fill out three scales: a parent-adolescent relationship scale, which consisted of 10 items, a rating values scale and a constant-sum value scale (presented in counterbalanced order). The rating and constant-sum scales consisted of the same value-items.

Parent-adolescent relationship scale

The parent-adolescent relationship was evaluated by 10 items based on the parent-adolescent relationship scale elaborated by Troyanovskaya (2010) and the family communication scale (Barnes & Olson, 1982). The selected items represented two factors: conflicting and cooperative relationships between parents and adolescents. Reliability analysis showed α=0.85 for the cooperative scale and α=0.80 for conflict scale.

Items of parent-adolescents relationship scale

Item 1 Do not accept my arguments in solving family issues
Item 2 Show that they are grateful when I help them
Item 3 Support me in my decisions
Item 4 Do not discuss family issues with me
Item 5 Appreciate me to have personal point of view
Item 6 Are critical towards my ideas
Item 7 Force me to agree with them without arguing their point of view
Item 8 Punish me if I do not obey their orders
Item 9 I ask parents' opinion about the problems I meet
Item 10 Accept my point of view on family issues

The constant-sum scale

The constant-sum scale consists of 15 items selected from SVS 57-items version (Schwartz, 1992). Items were selected on the bases of importance for adolescents (Podolskiy, 2012). The items cover 7 of the 10 motivational types of values proposed by Schwartz (1992): benevolence (mature love, true friendship), universalism (a world at peace, social justice, responsibility), self-direction (creativity, freedom), achievement (success, capability, intelligence), power (wealth, social power) and security (healthy, family security).

Rating scale

The rating scale consisted of 15 value-items equal to that in the constant-sum scale. Respondents were asked to rate each value on an 8 point scale from -1 opposed to my values, to 7 supreme importance. For the further analyses, the data were recorded on a scale from 0 to 8.

Results

The factor analysis of the parent-adolescent relationship scale was conducted (the maximum likelihood extraction method and the oblimin rotation). A two factor solution was determined by the eigenvalue >1 and scree plot examination. Kaiser-Meyer-Olkin (KMO) measure was 0.79 showing sampling adequacy (Table 2).

Tab. 2. Factor structure of parent-adolescent relationship questionnaire

	Factors	
Items	1	2
Item 10	**0.84**	-0.25
Item 5	**0.79**	-0.26
Item 3	**0.74**	-0.28
Item 2	**0.72**	-0.16
Item 9	**0,61**	-0.29
Item 7	-0.36	**0.88**
Item 4	**-0.51**	**0.76**
Item 1	-0.18	**0.71**
Item 6	-0.24	**0.63**
Item 8	-0.09	**0.48**

The factor structure confirmed the structure of the scale. The first factor (cooperation) including such items as “I ask parents’ opinion about the problems I meet” and “My parents accept my point of view on family issues”. The second factor (conflict) includes “My parents force me to agree with them” and “My parents are critical of my ideas”. Factor scores indicated whether adolescents perceive their relationships with parent as cooperative or conflicting.

The results correspond to the other studies indicating that adolescents place high importance on family security, true friendship and mature love (Karandashev, 2004). To evaluate the pattern of correlations between the rating and constant-sum scales, vector correlations were calculated. The first vector was represented by the mean scores for the rating scale and the second vector was represented by the means for the constant-sum scale. The higher the correlation between the two corresponding means, the closer the value priorities revealed by two scales are. Spearmen rho correlation coefficient was 0.703 (p=0.003) suggesting that adolescents

show high correspondence in value priorities measured by the rating scale and the constant-sum scale. That result corresponds to the previous studies using both methods in a sample of secondary school students (Podolskiy, 2012).

Tab. 3. Descriptive statistics of the rating and constant-sum scale

List of Values	Rating scale				Constant-sum scale			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Wealth	0.16	1.41	0.73	0.26	0	1.80	0.44	0.49
Social Power	0.14	1.21	0.66	0.30	0	2.00	0.37	0.59
Pleasure	0.32	1.38	0.89	0.28	0	2.40	0.71	0.65
Healthy	0.26	1.41	1.08	0.22	0	4.67	0.94	0.79
Freedom	0.69	1.58	1.13	0.18	0	3.03	1.03	0.82
Creativity	0.17	1.34	0.92	0.30	0	2.00	0.55	0.58
A world at peace	0.29	1.29	0.89	0.27	0	2.00	0.61	0.52
Social justice	0.34	1.58	1.03	0.21	0	1.86	0.60	0.50
Responsible	0.16	1.61	0.98	0.24	0	2.33	0.53	0.49
Mature love	0.49	2.14	1.17	0.30	0	3.90	1.41	0.93
Family security	0.61	2.14	1.23	0.20	0	3.90	1.12	0.86
True friendship	0.45	2.14	1.22	0.25	0	3.33	1.29	0.77
Intelligent	0.27	1.72	1.09	0.22	0	1.40	0.47	0.40
Successful	0.27	1.47	1.07	0.17	0	2.16	0.53	0.46
Capable	0.34	1.46	0.94	0.22	0	2.40	0.42	0.46

The subsequent analysis was aimed at revealing adolescents with larger rate of discrepancy between the results gained by two methods. The discrepancy index between value priorities that were elicited by the rating and constant-sum scales was computed for each participant. In order to do so ranks of values were calculated for each subject. The index was calculated as the sum of the differences between the ranks of correspondent values measured by two methods (min=22, Max=87, Mean=53,08, SD=17,07).

The discrepancy index, as expected, positively correlated with conflicting parent-adolescent relationships ($r=0.35$, $p=0.014$) but no significant correlation with cooperative style was found indicating that the first hypothesis was only partly supported. Though there is some evidence for the hypothesis that the discrepancy index associates with a risk for problem behavior none of the measures used deal with behavior variables. In order to examine the relationship between the discrepancy index and the risk for problem behavior the second study was conducted.

Study 2

The second study determines the external validity for the discrepancy index between individual value priorities from the rating and constant-sum scales. A teacher assessment of student behavior was used as an external indicator of the potential risk of problem behavior.

Teacher ratings are widely used as measures of student behavior (Touliatos & Lindholm, 1980). The advantage of using teacher ratings compared to self-reported behavior is that a teacher can evaluate student behavior in various types of situations and report less socially desirable results.

Sample

Twenty-eight adolescents (mean age 13,7; girls 50%) participated in the study. The participants were recruited from a secondary school in Moscow.

Method

Adolescents completed the instruments during class hours. Participants filled out the same versions of rating and constant-sum scales as in the first study. Two teachers evaluated the behavior of each student in both classes. One of the teachers was a class teacher and the other was a subject teacher. Before the evaluation in order to provide both teachers with the same understanding of the scale each teacher received the following instruction: "Please compare the behavior of the students of the class with the average behavior of students of that age".

The following behaviors were selected for ratings:

1. Thinks creatively
2. Tells the truth
3. Has many friends
4. Does well at school
5. Is positively oriented towards others
6. Does what he/she want to do without paying attention the norms and rules of the school

The teachers were asked to assess each student's behavior with a 5-points scale ranging from 1 ("student does not demonstrate such behavior") to 5 ("student very often demonstrates such behavior"). The correlation between teacher ratings was significant (at least at $p<0.05$ level, and varied from 0.43 to 0.78) which shows a more or less equal understanding and interpretation of the evaluated behavior and the scale used. The mean score of the two teachers was used as a general teacher score for each student.

Items 1, 3, and 4 are expected to correlate with corresponding values from the list of values presented for the students (creativity, true friendship and intelligence, respectively). Items

2 and 6 represent moral type of behavior but expected to be negatively correlated (as "telling the truth" is considered morally right while "doing what he/she wants to do without paying attention the norms and rules of the school" is considered as selfish or egoistic behavior).

Results

1. Correlations between the values assessed by the rating and constant–sum scales, and behaviors evaluated by the teachers.

It was expected that behaviors that were assessed by teachers would correlate with the level of importance of respected values ("thinks creatively" with the value of creativity; "has many friends" with the value of friendship and "does well at school" with the value of intelligence). Correlations between the values and behaviors varied depending on the scale used. For the constant-sum scale a significant positive correlation was found between the value "intelligent" and "does well at school" ($r=0.41$, $p=0.03$) and between "true friendship" and "has many friends" ($r=0.42$, $p=0.02$). No correlation between creativity and "thinks creatively" was found. For the rating scale a significant positive correlation was found only between value of creativity and "thinks creatively" ($r=0.39$, $p=0.04$), but not for other value-behavior pairs.

2. Multimethod correlation matrix

A multimethod correlation matrix (Schwartz et al., 1999) was used to check whether the discrepancies between the value-behavior correlations are due to the difference in the value constructs. Such a matrix presents the correlations among a number of constructs measured using different methods. If the same constructs are measured using each method, the single-trait/multimethod correlations should be more positive than the multitrait-multimethod correlations. For example, the correlation between value X measured using method A and value X measured using method B should be higher than the correlation between X measured using method A and any other value assessed using method B. If the traits are conceptually different, the single-trait/multimethod correlations should be more positive than the single-method/multitrait correlations. For example, the correlation between X measured using method A and B should be more positive than the correlation between X measured using method A and Y measured using method A.

In general monotrait-heteromethod correlations (on the diagonal) are higher than any other heterotrait-heteromethod correlations (in columns or rows). The correlations between values measured with the rating and constant-sum scales are presented in table 4. Among the exceptions there are "world at peace", "mature love", "intelligent" and "success".

Intercorrelations between “true friendship”, “capable” and “family security” are high but not the highest among other correlations.

Tab. 4. Monotrait-heteromethod correlations (bold) comparing to heterotrait-heteromethod correlations

CS / Rating	WE	PO	PL	HE	EX	CR	PE	JU	RE	LO	FS	TF	IN	SU	CA
WE	**0.52**	0.18	0.18	-0.15	-0.12	-0.08	0.07	-0.01	-0.45	0.01	-0.14	-0.26	-0.14	-0.51	-0.29
PO	0.46	**0.59**	0.26	0.19	0.06	-0.15	-0.02	0.15	-0.25	-0.13	0.08	-0.05	-0.20	-0.19	-0.28
PL	0.40	0.29	**0.61**	-0.18	-0.20	-0.12	-0.17	-0.20	-0.30	-0.17	0.20	0.12	-0.13	-0.06	-0.08
HE	-0.01	-0.06	-0.10	**0.35**	0.03	-0.03	-0.13	-0.23	-0.24	-0.29	-0.02	-0.22	0.04	0.18	-0.01
EX	0.01	-0.07	0.01	0.21	**0.48**	0.13	0.12	-0.08	-0.03	-0.01	-0.21	-0.38	0.02	0.03	0.12
CR	-0.27	-0.24	-0.36	-0.13	0.18	**0.37**	0.11	-0.18	0.26	0.07	0.23	0.03	-0.05	-0.20	-0.01
PE	-0.53	-0.41	-0.47	-0.21	0.04	0.19	**0.11**	0.22	0.13	0.03	-0.24	-0.27	0.25	0.08	0.20
JU	-0.06	-0.04	-0.27	0.19	0.13	-0.02	0.13	**0.40**	-0.17	-0.17	-0.17	-0.23	-0.25	0.03	-0.34
RE	-0.28	-0.11	-0.34	-0.01	-0.19	0.18	0.27	0.20	**0.62**	-0.10	0.19	0.13	0.34	0.00	0.28
LO	-0.12	0.17	0.02	-0.15	-0.23	0.01	-0.06	0.05	0.51	**0.14**	0.23	0.59	0.19	0.11	0.33
FS	0.13	-0.15	0.12	0.11	0.09	0.04	0.06	-0.17	0.26	-0.05	**0.38**	-0.12	-0.04	0.12	0.18
TF	0.05	0.01	0.21	0.15	0.04	-0.27	-0.02	-0.18	0.35	0.26	0.29	**0.57**	0.07	0.36	0.26
IN	-0.26	-0.27	-0.07	-0.14	-0.01	0.11	-0.20	0.01	-0.04	0.30	-0.38	-0.10	**0.14**	0.12	0.04
SU	-0.31	-0.09	0.02	0.01	-0.07	-0.13	-0.24	0.02	-0.32	-0.06	-0.43	-0.11	0.06	**0.11**	-0.14
CA	0.06	0.05	-0.04	0.01	-0.05	-0.25	0.05	0.11	-0.53	0.02	-0.29	-0.06	-0.34	-0.10	**-0.38**

Rating – rating scale data, CS – constant-sum scale data. WE – Wealth, PO – power, PL – Pleasure, HE – hedonism, EX – Exciting life, CR – Creative, PE – World in peace, JU – Social justice, RE – Responsible, LO – Mature love, FS – Family security, TF – True friendship, IN – Intelligent, SU – Success, CA – Capable.

It can be supposed that the value-behavior relationship might be affected by the nature of the value-construct. A more detailed analysis of that issue may be relevant in future studies with more respondents and wider types of behaviors measured (Bardi & Schwartz, 2003).

3. Descriptive statistics of the rating and constant-sum scales

Descriptive statistics of the rating and constant-sum scales are presented in table 5. In general, the results correspond to the data gathered in study 1.

To evaluate the degree to which the pattern of correlations between the rating and constant-sum scales, correlations were calculated. Spearmen rho was 0.777 (p=0.001) suggesting that adolescents show high a correspondence in value priorities measured by the rating scale and constant-sum scale.

The discrepancy index between value priorities that were elicited by the rating scale and constant-sum scale was computed as before. The index was calculated as the sum of the

differences between the ranks of correspondent values (min=28, Max=79, Mean=47.79, SD=12.55). The discrepancy index positively correlates with transgressing behavioral norms (r=0.43, p=0.024) and negatively with telling the truth (r=-0.48, p=0.012), having many friends (r=-0.45, p=0.019) and establishing positive relationships with others (r=-0.42, p=0.028).

Tab.5. Descriptive statistics of the rating and constant-sum scales

List of Values	Rating scale				Constant-sum scale			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Wealth	0.16	1.41	0.74	0.29	0	1.81	0.40	0.52
Social Power	0.17	1.21	0.65	0.30	0	2.00	0.26	0.51
Pleasure	0.32	1.38	0.88	0.32	0	2.40	0.67	0.70
Healthy	0.49	1.41	1.10	0.21	0	2.16	0.86	0.61
An exciting life	0.69	1.5	1.14	0.19	0	3.03	1.14	0.89
Freedom	0.17	1.34	0.95	0.32	0	1.86	0.57	0.54
Creativity	0.32	1.29	0.85	0.27	0	1.60	0.57	0.52
A world at peace	0.34	1.29	0.95	0.23	0	1.86	0.66	0.55
Social justice	0.33	1.61	1.04	0.23	0	1.50	0.62	0.44
Mature love	0.67	2.14	1.19	0.31	0	3.90	1.41	0.91
Family security	0.61	2.14	1.22	0.25	0	3.90	1.29	0.91
True friendship	0.45	2.14	1.23	0.30	0	3.33	1.27	0.83
Intelligent	0.27	1.72	1.07	0.28	0	1.30	0.51	0.37
Successful	0.27	1.47	1.08	0.22	0	2.16	0.50	0.48
Capable	0.34	1.21	0.91	0.21	0	1.00	0.34	0.34

Correlations between the discrepancy index and various types of behaviors assessed by the teachers are shown in table 6. Adolescents with a larger discrepancy index tend to show less socially desirable behavior as assessed by the teachers, which may viewed as a risk factor for future delinquency.

Tab.6. Correlation between student behavior assessed by teachers and the discrepancy index

Student's behaviors assessed by teachers	**Index of discrepancy**
Thinks creatively	-0.09 ns
Tells truth	-0.48
Has many friends	-0.45
Does well at school	-0.17 ns
Is positively oriented towards others	-0.42
Does what he/she want to do without paying attention the norms and rules of the school	0.43

Discussion

The studies explore the association between the differences of value priorities measured by two different methods and the risk factors for problem behavior. Previous studies show that value priorities of delinquent adolescents measured by a rating scale are very similar to that of non-delinquents (Romero, 2001). But when using a constant-sum scale there were large differences between delinquents and non-delinquents (Podolskiy, 2012).

Analyzing the differences in results of rankings and ratings Krosnick (1988) suggested that the explanation could be the motivation to differentiate between values for ratings. It was shown that less educated respondents tend to differentiate less between values which leads to end-piling. The constant-sum scale decreases that effect in the delinquent sample which leads to different results using different methods. Ordinary adolescents are better able to differentiate between values and are more motivated towards participating in self-reporting procedures. The differences in results gained by different methods might also work for an ordinary sample to reveal adolescents that are prone to problem behavior.

In this paper two measures for the risk factor for problem behavior were measured: conflicting parent-adolescent relationships assessed by adolescents (study 1) and selfish behavior, considered to be a risk factor for problem behavior, which was assessed by teachers (study 2).

The first study shows that there is a significant positive association between different value priorities elicited by different methods (the discrepancy index) and the rate of conflicting relationships with parents. Conflicting parent-adolescent relationships do not as such presuppose adolescent problem behavior but may lead to it (Peterson, 1974). The results of the second study reveal a positive relationship between the discrepancy index and egoistic behavior of adolescents as assessed by their teachers. Adolescents with a high index tend to tell the truth less, behave in a more selfish way and perceive others less positively than their peers.

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