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A HIERARCHICAL (MULTICOMPONENT) MODEL OF IN-GROUP IDENTIFICATION: EXAMINING IN RUSSIAN SAMPLES

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The aim of this study is to examine the validity and reliability of the Leach et al. model of in-group identification in 2 studies of Russian samples. In study 1, the confirmatory factor analysis revealed that the hierarchical model of in-group identification, which included the second-order factors of self-definition (individual self-stereotyping, and in-group homogeneity) and self-investment (satisfaction, solidarity, and centrality) fitted the data well for all four group identities (ethnic, religious, university, and gender) and was a better fit than the alternative models. In study 2, we examined the construct validity and reliability of the Russian version of in-group identification measure. Results show that these measure have adequate psychometric properties. In short, our results show that the Leach et al. model is reproduced in Russian culture. The Russian version of this measure can be used in future in-group research conducted using Russian-language samples.

JEL Classification: Z.

Keywords: identity, identification, social identity, group.

Introduction

Research into in-group identification has expanded in recent decades, with the recognition that group membership is a major influence on individual experience and behavior. According to social identity theory (Tajfel, 1978; Tajfel, & Turner, 1986) and self-categorization theory (Turner et al., 1987) identification with in-groups is an important part of individual self-concept and determinates individuals attitudes and behavior, because when they are aware of their membership of social groups they think and behave as members of these groups.

There are many conceptualizations and much operationalization of the in-group identification in the literature. Leach et al. (2008) reviewed different approaches to the conceptualization of in-group identification and distinguished five main components: individual self-stereotyping, in-group homogeneity, solidarity, satisfaction, and centrality. Individual self-stereotyping is the degree to which an individual perceives herself or himself as similar to an in-group prototype. In-group homogeneity is the degree to which an individual perceives her or his in-group as relatively homogeneous and distinct from relevant out-groups. Solidarity refers to a sense of belonging, a psychological attachment to the in-group, and coordination with other group members. Satisfaction refers to the positive evaluation of the in-group. Centrality is the salience and importance of in-group membership. Based on this analysis, Leach et al. (2008) developed a hierarchical model of in-group identification, which consists of these five components integrated into two more abstract, higher-order dimensions: self-definition and self-investment (see Figure 1). Leach et al. (2008) operationalized this hierarchical model using a measure of 14 items. Most of these items were close adaptations of those used in previous narrowly hierarchical approaches. The authors validated their measure through seven studies using different groups (University, Dutch, and European). Results showed that their proposed first- and second-order factors fit their data well and the scale was shown to have high internal consistency, concurrent validity, construct validity, and discriminant validity. An independent structure examination conducted by Howard & Magee (2013) showed that the model has an acceptable fit to different types of in-groups: country, state, university, and online group.

This hierarchical model of in-group identification is important because it was created by combining multiple approaches, and a measure based on this model can be used for studying identification with any group types. This model is widely used in psychological research. In recent years, the Leach et al. (2008) measure of in-group identification was used in at least 20 studies to measure identification with different types of groups: ethnic, national, and racial in-group (Leach, Mosquera, Vliek, & Hirt, 2010; Philpot, & Hornsey, 2011; Danel et al., 2012; Giamo, Schmitt, & Outten, 2012; Koval, Laham, Haslam, Bastian, & Whelan, 2012; Shepherd,

Spears, & Manstead, 2013; Wang, Minervino, & Cheryan, 2013; Stürmer, Benbow, Siem, Barth, Bodansky, & Lotz-Schmitt, 2013), gender in-group (Kenny & Garcia, 2012; Good, Moss-Racusin, & Sanchez, 2012; Correia, Alves, Sutton, Ramos, Gouveia-Pereira, & Vala, 2012), students in-group (Leach et al., 2010; Becker, 2012; Cruwys et al., 2012; Correia et al., 2012), online in-group (Howard & Magee, 2013; Howard, 2014), army (Sani, Herrera, Wakefield, Boroch, & Gulyas, 2012), real experimental in-group (van Veelen, Otten, & Hansen, 2013; Hartmann & Tanis, 2013), supporters of mental health advocacy (Gee & McGarty, 2013), and organizational in-group (Smith, Amiot, Callan, Terry, & Smith, 2012). But with the exception of two studies, (Danel et al., 2012; Correia et al., 2012) the Leach et al. (2008) measure was used only on English-language samples. Danel et al. (2012) and Correia et al. (2012) translated items into Polish and Portuguese respectively, but did not make a structural examination. Today the measure exists only in the English version.

Group identification is a very popular research topic around the world, including in Russian-speaking countries. The Leach et al. (2008) model of in-group identification and measure would be very useful and popular in countries where the questions of ethnic, national and another types of identification have not been sufficiently studied. The aim of this study is to examine the Leach et al. (2008) model of in-group identification using three different Russian samples. Two studies were conducted. In study 1, we focused on the validity of the hierarchical model. We used confirmatory factor analysis (CFA) on four different in-groups (ethnic, religious, university, and gender). In study 2, we examined the construct validity of the five components of in-group identification by assessing the component correlations with different measures of in-group identification.

Study 1

Method

Participants

Three samples were employed. The first sample included 226 undergraduate students of the Higher School of Economics (86 male, 135 female (5 people did not specify their gender), M_{age} = 18.13, SD = 1.18 (5 people did not specify their age)). For students, participation in the survey was part of a course in psychology. They completed a paper-and-pencil questionnaire. The second sample included 146 people who identified themselves as Russians (58 male, 88 female, M_{age} = 33.1, SD = 11.8). The third sample included 249 people who identified themselves as Orthodox (143 male, 106 female, M_{age} = 30, SD = 8.6). In the second and third

samples, participants completed an online questionnaire. Links to the survey were placed on specialized websites dedicated to psychology and Russian culture.

Procedure and measures

All participants completed a structured questionnaire that included a 14-item measure based on a hierarchical model of in-group identification (Leach et al., 2008). The items were translated into Russian. The Russian version of the items can be found in the appendix. Each item was scored on a 7-point scale, ranging from 1 (*absolutely disagree*) to 7 (*absolutely agree*). We created four versions of the measure for each in-group: Russians, Orthodox, gender, and students of the Higher School of Economics. Participants from the student sample completed two 14-item measures: one about the in-group of students of the Higher School of Economics, and one about the gender in-group.

Results and Discussion

We performed CFAs, with Mplus 6.12 (estimator − MLMV), to examine how well the proposed measurement model fitted the Russian version of 14 items of in-group identification. We estimated the proposed measurement model separately for four types of in-groups: Russians, Orthodox, university, and gender. First we examined the first-order model, which consists of five components: individual self-stereotyping, in-group homogeneity, solidarity, satisfaction and centrality (Model A). Table 1 shows that Model A fitted the data well for all four group identities. The fit indices (excluding TLI in the case of the gender in-group) exceeded the benchmark of .930, and both of the main residual indices fell below the benchmark of .080 for models of this sample size (see Hu & Bentler, 1999). In all four in-groups, Model A showed the best fit to the data. Following Leach et al. (2008) we compared Model A with three alternative first-order models of measurement (Model B = all items loading on one common factor: identification; Model C = items loading on two components: self-definition and self-investment; Model D = items loading on two components: cognitive/self-categorization and affective ties/social identity). The fit of all three alternative models was worse. Because the alternative models were based on the same data, but are not nested, they can be compared using the Akaike information criterion (AIC) index (Byrne, 2011). As shown in Table 1, Model A has the lowest AIC in all four samples, which means Model A is the best first-order model.

Table 1. The Fit of Models of In-Group Identification

Measurement model	χ^2, p	df	RMSEA [90% CI]	CFI	TLI	SRMR	AIC
Russians							
Stage 1: first-order models							
Model A	90.56, p = .029	67	.049 [.017, .073]	.970	.959	.049	5801.92
Model B	231.70, p = .000	77	.117 [.100, .135]	.804	.768	.082	6119.58
Model C	177.78, p = .000	76	.096 [.078, .114]	.871	.845	.073	5991.71
Model D	172.81, p = .000	76	.093 [.075, .112]	.877	.853	.064	5981.07
Stage 2: second-order models							
Model E	98.59, p = .017	71	.052 [.023, .075]	.965	.955	.059	5807.45
Model F	106.05, p = .006	72	.057 [.032, .079]	.957	.945	.063	5821.58
Model G	98.60, p = .017	71	.052 [.023, .075]	.965	.955	.054	5808.22
Orthodox							
Stage 1: first-order models							
Model A	98.09, p = .008	67	.043 [.023, .061]	.949	.931	.046	8540.13
Model B	243.77, p = .000	77	.093 [.080, .107]	.729	.679	.077	8824.51
Model C	171.98, p = .000	76	.071 [.057, .085]	.844	.813	.067	8673.51
Model D	219.98, p = .000	76	.087 [.074, .101]	.766	.720	.080	8764.16
Stage 2: second-order models							
Model E	102.29, p = .009	71	.042 [.022, .059]	.949	.935	.047	8537.77
Model F	111.15, p = .002	72	.047 [.028, .063]	.936	.920	.053	8552.55
Model G	111.10, p = .002	71	.048 [.030, .064]	.935	.916	.053	8553.94
University							
Stage 1: first-order models							
Model A	113.00, p = .000	67	.056 [.038, .074]	.953	.937	.049	8456.26
Model B	381.90, p = .000	77	.135 [.122, .149]	.690	.634	.105	8960.96
Model C	236.04, p = .000	76	.099 [.085, .113]	.837	.805	.082	8677.28
Model D	266.14, p = .000	76	.108 [.094, .122]	.807	.769	.109	8737.59
Stage 2: second-order models							
Model E	122.84, p = .000	71	.058 [.040, .075]	.947	.932	.058	8464.27
Model F	144.60, p = .000	72	.068 [.052, .084]	.926	.907	.072	8506.83
Model G	128.20, p = .000	71	.061 [.044, .078]	.942	.926	.065	8477.54
Male & female							
Stage 1: first-order models							
Model A	127.91, p = .000	67	.065 [.048, .082]	.933	.909	.058	8986.81
Model B	456.03, p = .000	77	.152 [.138, .165]	.581	.505	.123	9552.81
Model C	280.12, p = .000	76	.112 [.098, .126]	.774	.730	.095	9234.68
Model D	312.26, p = .000	76	.121 [.107, .135]	.739	.687	.127	9284.53
Stage 2: second-order models							
Model E	129.56, p = .000	71	.062 [.045, .079]	.935	.917	.059	8980.78
Model F	158.40, p = .000	72	.075 [.059, .091]	.905	.879	.077	9029.23
Model G	147.52, p = .000	71	.071 [.055, .087]	.915	.892	.082	9011.92

Note. *df* = degrees of freedom; RMSEA – root-mean-square error of approximation; CFI – comparative fit index; TLI – Tucker-Lewis index; SRMR – standardized root-mean square residual; AIC – Akaike information criterion.
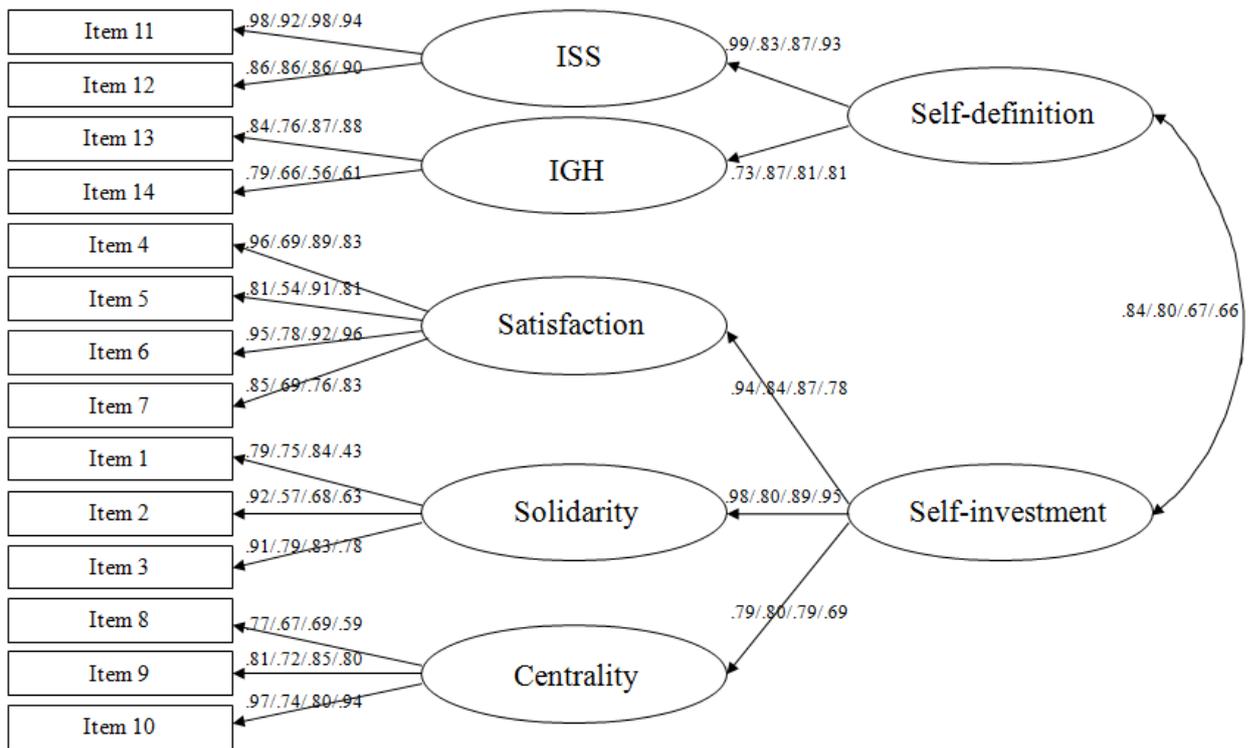
Figure 1. Hierarchical (multicomponent) model of in-group identification. Standardized item loadings are presented in the following order: Russian/Orthodox/University/Male & female. ISS – individual self-stereotyping; IGH – in-group homogeneity.

Second, we examined the hierarchical model (Model E), which included the second-order factors of self-definition (i.e., individual self-stereotyping and in-group homogeneity) and self-investment (i.e., satisfaction, solidarity, centrality). This model is shown in Figure 1. Model E fitted the data well for all four group identities (Table 1). The fit indices (excluding TLI in the case of the gender in-group) exceeded the benchmark of .930, and both of the main residual indices fell below the benchmark of .080 for models of this sample size. In all four samples Model E had the lowest AIC, which means Model E is the best second-order model.

As shown in Figure 1, all standardized item loadings exceeded .50 (excluding the first item loading factor in the gender in-group), with many above .80, and differed significantly from zero ($p < .05$). Each of the five components loaded onto the expected second-order factor. These loadings exceeded .60, with many above .80, and differed significantly from zero ($p < .05$). The second-order factors of self-definition and self-investment were strongly and significantly related (.66–.84, all $p < .05$). All these parameters confirm that Model E, with five components and two second-order factors, was well defined by its items and was better than the two alternative models (Model F = five-components: individual self-stereotyping, in-group homogeneity, solidarity, satisfaction and centrality, and one dimension: identification; Model G = alternative five-component/two-dimensional: self-definition (i.e., individual self-stereotyping, in-group homogeneity, and centrality) and self-investment (i.e., satisfaction, solidarity)).

In addition, we computed the scale scores for each component. All five scales were of moderate or high reliability, Cronbach's α varies between .65–.93 (see Table 2). Correlations between the five components were moderate or high but in all four in-groups inter-correlations were higher if the components referred to the same dimension. Satisfaction, solidarity, and centrality have higher correlations with each other than with individual self-stereotyping or with in-group homogeneity, but correlations between individual self-stereotyping and in-group homogeneity were higher than their correlations with satisfaction, solidarity, and centrality (see Table 2). This confirms the hierarchical conceptualization proposed by Leach et al. (2008) and the results of the CFA. Therefore, the results support the use of this subscale, and confirm that the Russian version of the measure has a satisfactory factor structure.

Table 2. Descriptive Statistics and Inter-correlations for Five Components of In-Group Identification

Component	M	SD	α	1	2	3	4	5
Russians								
1. Individual self-stereotyping	5.20	1.58	.91	–				
2. In-group homogeneity	5.00	1.39	.77	**.67****	–			
3. Satisfaction	5.87	1.34	.93	.66**	.52**	–		
4. Solidarity	5.68	1.38	.90	.69**	.55**	**.79****	–	
5. Centrality	5.25	1.69	.89	.68**	.60**	**.74****	**.72****	–
Orthodox								
1. Individual self-stereotyping	3.43	.89	.88	–				
2. In-group homogeneity	2.97	.91	.67	**.56****	–			
3. Satisfaction	4.44	.68	.73	.46**	.38**	–		
4. Solidarity	4.33	.80	.73	.44**	.44**	**.51****	–	
5. Centrality	3.92	.94	.74	.42**	.39**	**.54****	**.44****	–
University								
1. Individual self-stereotyping	4.40	1.31	.90	–				
2. In-group homogeneity	4.03	1.18	.65	**.50****	–			
3. Satisfaction	5.89	1.12	.92	.41**	.31**	–		
4. Solidarity	5.27	1.13	.83	.42**	.30**	**.67****	–	
5. Centrality	4.93	1.33	.82	.44**	.40**	**.64****	**.50****	–
Male & female								
1. Individual self-stereotyping	4.46	1.46	.91	–				
2. In-group homogeneity	4.24	1.39	.69	**.59****	–			
3. Satisfaction	5.84	1.20	.91	.39**	.24**	–		
4. Solidarity	4.96	1.08	.70	.36**	.22**	**.47****	–	
5. Centrality	5.34	1.27	.81	.39**	.23**	**.47****	**.37****	–

Note. In the Orthodox sample we used a 5-point scale. Therefore, means and standard deviations are lower than in the student and Russian samples. Bold correlations are those of scales that refer to the same dimension. ** $p < .01$

Study 2: Examining Validity

We performed additional studies to examine the convergent and divergent validity of the Russian version of the measure of in-group identification. As part of the same survey session, two of the three Study 1 samples (undergraduate students of the Higher School of Economics and people who identified themselves as Russians) completed several additional measures related to the in-group identification.

Method

Participants and Measures

Sample 1

146 people who identified themselves as Russians in Study 1 completed several additional measures.

Multigroup Ethnic Identity Measure (MEIM). To gauge the convergent validity of the Leach et al. (2008) measure, we used MEIM (Phinney, 1992). This scale consists of 12 items scored on a 4-point frequency scale and comprises two subscales: Affirmation and Belonging, and Identity Search. Participants completed the Russian version of the MEIM (Tatarko & Lebedeva, 2011). Participants were asked to indicate their identification as Russians (as opposed to immigrants from Central Asian countries). As Leach et al. (2008) suggested, the Affirmation and Belonging subscale (α = .92) includes items similar to the solidarity, centrality, and satisfaction components and the Identity Search subscale (α = .84) includes items similar to the centrality and satisfaction components.

Self–Group Overlap. This graphical scale was used for assessing individual inclusion of themselves in their in-group (Schubert & Otten, 2002). Seven pictures, with two circles on each, showed different degrees of overlap. The first circle represented the participant, the second circle represented the in-group (Russians). Participants were asked to choose the pair that best describes the overlap between him or her and the in-group. This choice was translated into 7-point scale. The higher scores indicate higher overlap. Swann, Gomez, Seyle, Morales, & Huici (2009) showed that group identification is associated with fusion, defined as "a powerful union of the personal and social self wherein the borders between the two become porous without diminishing the integrity of either construct" (Swann, Jetten, Gomez, Whitehouse, & Bastian, 2012, p. 443). It means that a highly identifying person fuses with a group. As Leach et al. (2008) suggested, the inclusion of the self in the in-group should be associated especially with individual self-stereotyping.

Positivity of Ethnic Identity Scale. This scale consists of 4 items scored on a 5-point

frequency scale. Positivity of ethnic identity refers to positive emotions based on ethnic group membership (Tatarko & Lebedeva, 2011). We expect that the Positivity of ethnic identity subscale (α = .61) should be associated with satisfaction and solidarity components.

Sample 2

226 undergraduate students of the Higher School of Economics from Study 1 completed several additional measures.

Group Entitativity Measure (GEM-in). GEM-in (Gaertner & Schopler, 1998) is the modification of the Inclusion of Other in the Self scale (Aron, Aron, & Smollan, 1992) and is composed of six diagrams. On each diagram there are five similar circles representing in-group members. On the first diagram the circles are far apart; on the last diagram they overlap. Gaertner and Schopler (1998) suggest that GEM-in is sensitive to changes in both intragroup similarity and interdependence. We expect that perceived group entitativity should be associated with in-group homogeneity and solidarity.

Brief Scale of In-Group Emotions. Emotions associated with membership of the in-group were measured by adapting a version of Brief Scale of Ethnical Membership Emotions (Tatarko & Lebedeva, 2011). We changed the focus of this single-item scale from ethnic membership to university and gender group membership: "What do you feel about the fact of belonging to the Higher School of Economics/male or female group?" Participants had to choose one of 5 responses: 1 – offense, 2– offense embarrassment, 3 – no feelings, 4 – quiet confidence, 5 – pride. We expect that emotions should be associated especially with the satisfaction component.

Self–Group Overlap. The first circle represented the participant, the second circle represented the in-group (in the first case, students of the Higher School of Economics, in the second case, the male or female group).

Intention to leave. The Intention to leave in-group was assessed only for university and was measured by 2 items (α = .83): "If I had the opportunity to study at another university, I would have done it" and "I often think that my choice of university was wrong, and it would be nice to study at another university". Each item was scored on a 7-point frequency scale, which ranged from 1 (*absolutely disagree*) to 7 (*strongly agree*). When individuals identify with a group, they are less likely to intend to leave the group (Abrams, Ando, & Hinkle, 1998; Riketta, 2005). We expect that the intention to leave the in-group should be negatively associated with satisfaction and centrality components.

Results and Discussion

Table 3 shows the correlations between the five components of in-group identification and the different measures related to in-group identification. Following Leach et al. (2008) we

calculated the partial correlations which control for satisfaction, because satisfaction is a general and strong component of in-group identification and tends to correlate most highly with the different scales.

Table 3. Correlations of five components of in-group identification with different measures related to the in-group identification used in Study 2

Measure	ISS	IGH	Satisfaction	Solidarity	Centrality
Russians					
Ethnical identity (Identity Search)					
r	.55**	.54**	.59**	.62**	.71**
pr	.26**	.33**	–	.30**	.46**
Ethnical identity (Affirmation and Belonging)					
r	.60**	.58**	.72**	.71**	.70**
pr	.21**	.32**	–	.31**	.30**
Positivity of identity					
r	.35**	.27**	.52**	.46**	.38**
pr	.05	–.00	–	.18*	–.05
Self–Group Overlap					
r	.46**	.40**	.50**	.44**	.50**
pr	.15!	.19*	–	.10	.19*
University					
Group Entitativity					
r	.31**	.32**	.49**	.41**	.28**
pr	.11!	.23**	–	.15*	–.01
In-Group Emotions					
r	.33**	.23**	.60**	.42**	.55**
pr	.07	.06	–	.09	.27**
Self–Group Overlap					
r	.32**	.23**	.40**	.39**	.24**
pr	.22**	.14*	–	.22**	.02
Intention to leave					
r	–.23**	–.17*	–.59**	–.39**	–.28**
pr	.07	.06	–	.05	–.23**
Male & female					
Group Entitativity					
r	.22**	.27**	.19**	.29**	.20**
pr	.17*	.23**	–	.20**	.15*
In-Group Emotions					
r	.32**	.20**	.46**	.28**	.37**
pr	.12!	.05	–	–.02	.11
Self–Group Overlap					
r	.36**	.18**	.29**	.29**	.24**
pr	.28**	.14*	–	.23**	.10

Note. ISS – individual self-stereotyping; IGH – in-group homogeneity. Satisfaction controlled in partial r (pr). $^!$ $p < .10$, * $p < .05$, ** $p < .01$

All components are moderately correlated with the subscales of MEIM (Phinney, 1992). We expected that the Affirmation and Belonging subscale would correlate with the solidarity, centrality, and satisfaction components, and the Identity Search subscale would correlate with the centrality and satisfaction components of in-group identification. As shown in Table 3, the statistically significant correlations are between the Affirmation and Belonging subscale and the satisfaction (.72), in-group homogeneity (.32), solidarity (.31), centrality (.30) and individual self-stereotyping (.21) components. The Identity Search subscale has statistically significant correlations with the satisfaction (.59),centrality (.46), in-group homogeneity (.33), solidarity (.30), and individual self-stereotyping (.26) components. These correlations indicate that Leach's et al. (2008) items and MEIM measure the close constructs. At the same time the moderate correlation level suggests that the five components of in-group identification and Phinney's measures of ethnic identification are not the same; they measure similar but distinct aspects of identification. The correlations between Phinney's scales and the components of in-group identification differ from the correlations obtained by Leach et al. (2008). These differences may be due to the non-equivalence of the English and Russian forms of the measures.

The satisfaction component has a middle-level correlation with the Positivity of Identity subscale (.52), positive feelings about the in-group (.60 in the university in-group, .46 in the gender in-group), and intention to leave the in-group (–.59). Consistent with the theoretical conceptualization, the satisfaction component refers to a positive evaluation of the in-group and it means that the person who is satisfied with his or her membership has positive feelings about membership and is intending to stay in the group (Stryker & Serpe, 1982). These correlations suggest a convergent validity of the satisfaction component scale. Moreover, the satisfaction component has significant correlations with self-group overlap (.50 in Russian in-group, .40 in university in-group, .29 in gender in-group), with group entitativity (.49 in university in-group, .19 in gender in-group). These correlations have a lower level and this may be because satisfaction is a general and strong component of in-group identification and tends to correlate most highly with all facets of the identification.

The individual self-stereotyping component correlates with self-group overlap (.22 in university in-group, .28 in gender in-group). Since self-group overlap in the graphical measure is a visual metaphor for self-categorization (Schubert & Otten, 2002) these correlations suggest convergent validity of the self-stereotyping component scale. The in-group homogeneity component correlates with perceived group entitativity (.23 in university in-group, .23 in gender in-group). Since the perceived group entitativity is theoretically close to group homogeneity (Hamilton, Sherman, & Castelli, 2002; Pickett & Perrott, 2004) these results suggest the convergent validity of the in-group homogeneity component. The solidarity component is

associated with perceived group entitativity (.15 in the university in-group, .20 in the gender in-group) and self-group overlap (.22 in the university in-group, .23 in the gender in-group). Solidarity refers to a sense of belonging, a psychological attachment to the in-group, and coordination with other group members. Lickel, Hamilton, Wieczorkowska, Lewis, Sherman, & Uhles (2000) demonstrated that the importance of the group to group members, and the interaction among group members are significant parts of the perception of group entitativity. In another words, solidarity is similar to group entitativity. Moreover, self-group overlap as a degree of unity among group members also describes the relationship between group members and attitudes to a group (Schubert & Otten, 2002). All these results confirm the convergent validity of the solidarity component. The centrality component correlates with intention to leave the in-group (–.23) and emotions about in-group (.27 in the university in-group). Centrality is the salience and importance of in-group membership. Brewer (1988) argues that there are two main needs of group members: the desire to preserve their identity and the desire to belong to the group. It means that higher salience and importance of in-group membership (the centrality component) associates with less intention to leave the group.

There are unexpectedly low-level correlations with in-group homogeneity (.19) and centrality (.19) in the Russian sample, with solidarity (.22) and in-group homogeneity (.14) in the university sample and solidarity (.23) in the male & female sample. These correlations may be due to differences in the understanding of overlap by participants.

Differences in the correlations between the five components of in-group identification and different measures suggest divergent validity of the five scales. In Study 2, the Russian version of the Leach et al. (2008) measure was shown to have adequate convergent and divergent validity.

General Discussion

The main goal of this study was to examine the Leach et al. (2008) model of in-group identification and to provide convergent and divergent validity of the Russian version of the measure. In meeting this goal, we conducted two studies on different types of social groups. The results of Studies 1 and 2 showed two consequences.

First, the Leach et al. (2008) hierarchical model of in-group identification is replicated in the Russian samples. The first- and second-order factors exist in the Russian samples and the theoretical second-order model is the best-fitting model. Moreover, we also obtained evidence of cross-validity through factorial invariance by the type of the group and between the three samples analyzed. Our findings are consistent with the theoretically five-component/two-

dimensional structure of the in-group identification construct. We can, therefore, assume that the Leach et al. model may be culturally universal, because it holds for the Dutch sample (Leach et al., 2008), and was replicated in the American (Howard & Magee, 2013) and Russian samples. However, as these three can be classified as Western cultures, proof of the cultural universality of the model needs further studies conducted in different cultures. These results suggest that the hierarchical model of in-group identification can be a useful tool in future research.

Second, the Russian version of the Leach et al. (2008) measure of in-group identification has the same factor structure in different types of in-groups. A CFA analysis provides evidence of the reliability and validity of the items. This measure was shown to have excellent internal reliability, high internal consistency, satisfactory convergent validity, and divergent validity. All items showed their highest factor loadings with the dimensions, suggesting that the 14 items of the Russian version of the Leach et al. (2008) measure of in-group identification are quite adequate. Overall, we conclude that the Russian version of this measure shows adequate psychometric properties, and can be used in future in-group research conducted in Russian-language samples.

Our study is not without limitations. The validation of the Russian version of the Leach et al. (2008) measure of in-group identification is not complete. There are a lot of alternative constructs that could have been measured in order to check the validity of the measure. The present study used data from a cross-sectional design. A longitudinal design could be employed in future research to investigate test-retest reliability.

The Russian version measure of in-group identification has been investigated only in four types of in-groups. This and previous research investigated in-group identification with groups categorized by Lickel et al. (2000) as "social groups". Usually these are large groups, with a lower degree of similarity, solidarity and interaction between group members (such as race, ethnicity, and gender). In contrast, there are two other types of group: the intimacy group (such a family or two people in a romantic relationship) and task-oriented groups (for instance, committees and work groups). Lickel et al. (2000) demonstrated that identification with different types of groups is varied. This means that the model of in-group identification needs to be validated with intimacy and task-oriented groups.

References

Abrams, D., Ando, K., & Hinkle, S. (1998). Psychological attachment to the group: Cross-cultural differences in organizational identification and subjective norms as predictors of workers' turnover intentions. *Personality and Social Psychology Bulletin, 24*(10), 1027–

1039.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*(4), 596–612.

Becker, J. C. (2012). The System-Stabilizing Role of Identity Management Strategies: Social Creativity Can Undermine Collective Action for Social Change. *Journal of Personality and Social Psychology, 103*(4), 647–662.

Brewer, M. B. (1988). A dual process model of impression formation. In R. S. Wyer & T. K. Srull (Eds.), *Advances in social cognition* (Vol. 1, pp. 1–36). Hillsdale, NJ: Lawrence Erlbaum Associates.

Byrne, B. (2011). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. L.: Routledge Academic.

Correia, I., Alves, H., Sutton, R., Ramos, M., Gouveia-Pereira, M., & Vala, J. (2012). When do people derogate or psychologically distance themselves from victims? Belief in a just world and ingroup identification. *Personality and Individual Differences, 53*(6), 747–752.

Cruwys, T., Platow, M. J., Angullia, S. A., Chang, J. M., Diler, S. E., Kirchner, J. L., . . . Wadley, A. L. (2012). Modeling of food intake is moderated by salient psychological group membership. *Appetite, 58*(2), 754–757.

Danel, D. P., Fedurek, P., Coetzee, V., Stephen, I. D., Nowak, N., Stirrat, M., . . . Saxton, T. K. (2012). A Cross-Cultural Comparison of Population-Specific Face Shape Preferences (Homo sapiens). *Ethology, 118*(12), 1173–1181.

Gaertner, L., & Schopler, J. (1998). Perceived ingroup entitativity and intergroup bias: an interconnection of self and others. *European Journal of Social Psychology, 28*(6), 963–980.

Gee, A., & McGarty, C. (2013). Aspirations for a cooperative community and support for mental health advocacy: a shared orientation through opinion-based group membership. *Journal of Applied Social Psychology, 43*, E426–E441.

Giamo, L. S., Schmitt, M. T., & Outten, H. R. (2012). Perceived Discrimination, Group Identification, and Life Satisfaction Among Multiracial People: A Test of the Rejection-Identification Model. *Cultural Diversity & Ethnic Minority Psychology, 18*(4), 319–328.

Good, J. J., Moss-Racusin, C. A., & Sanchez, D. T. (2012). When Do We Confront? Perceptions of Costs and Benefits Predict Confronting Discrimination on Behalf of the Self and Others. *Psychology of Women Quarterly, 36*(2), 210–226.

Hamilton, D. L., Sherman, S. J., & Castelli, L. (2002). A group by any other name: The role of entitativity in group perception. In W. Stroebe & M. Hewstone (Eds.), *European review of*

social psychology (Vol. 12, pp. 139–166). New York: Wiley.

Hartmann, T., & Tanis, M. (2013). Examining the Hostile Media Effect as an Intergroup Phenomenon: The Role of Ingroup Identification and Status. *Journal of Communication, 63*(3), 535–555.

Howard, M. C. (2014). An epidemiological assessment of online groups and a test of a typology: What are the (dis)similarities of the online group types? *Computers in Human Behavior, 31*(0), 123–133.

Howard, M. C., & Magee, S. M. (2013). To boldly go where no group has gone before: An analysis of online group identity and validation of a measure. *Computers in Human Behavior, 29*(5), 2058–2071.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.

Kenny, D. A., & Garcia, R. L. (2012). Using the Actor-Partner Interdependence Model to Study the Effects of Group Composition. *Small Group Research, 43*(4), 468–496.

Koval, P., Laham, S. M., Haslam, N., Bastian, B., & Whelan, J. A. (2012). Our Flaws Are More Human Than Yours: Ingroup Bias in Humanizing Negative Characteristics. *Personality and Social Psychology Bulletin, 38*(3), 283–295.

Leach, C. W., Mosquera, P. M. R., Vliek, M. L. W., & Hirt, E. (2010). Group Devaluation and Group Identification. *Journal of Social Issues, 66*(3), 535–552.

Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., Ouwerkerk, J. W., Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology, 95*(1), 144–165.

Lickel, B., Hamilton, D. L., Wieczorkowska, G., Lewis, A., Sherman, S. J., & Uhles, A. N. (2000). Varieties of groups and the perception of group entitativity. *Journal of Personality and Social Psychology, 78*(2), 223–246.

Philpot, C. R., & Hornsey, M. J. (2011). Memory for intergroup apologies and its relationship with forgiveness. *European Journal of Social Psychology, 41*(1), 96–106.

Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A New Scale for Use with Diverse Groups. *Journal of Adolescent Research, 7*(2), 156–176.

Pickett, C. L., & Perrott, D. A. (2004). Shall I compare thee? Perceived entitativity and ease of comparison. *Journal of Experimental Social Psychology, 40*(3), 283–289.

Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior, 66*(2), 358–384.

Sani, F., Herrera, M., Wakefield, J. R. H., Boroch, O., & Gulyas, C. (2012). Comparing social

contact and group identification as predictors of mental health. *British Journal of Social Psychology, 51*(4), 781–790.

Schubert, T. W., & Otten, S. (2002). Overlap of Self, Ingroup, and Outgroup: Pictorial Measures of Self-Categorization. *Self and Identity, 1*(4), 353–376.

Shepherd, L., Spears, R., & Manstead, A. S. R. (2013). 'This will bring shame on our nation': The role of anticipated group-based emotions on collective action. *Journal of Experimental Social Psychology, 49*(1), 42–57.

Smith, L. G. E., Amiot, C. E., Callan, V. J., Terry, D. J., & Smith, J. R. (2012). Getting New Staff to Stay: The Mediating Role of Organizational Identification. *British Journal of Management, 23*(1), 45–64.

Stryker, S., & Serpe, R. T. (1982) Commitment, identity salience, and role behavior: Theory and research example. In W. Ickes & E. S. Knowles (Eds.), *Personality, roles, and social behavior* (pp. 199–218). New York: Springer-Verlag

Stürmer, S., Benbow, A. E. F., Siem, B., Barth, M., Bodansky, A. N., & Lotz-Schmitt, K. (2013). Psychological foundations of xenophilia: The role of major personality traits in predicting favorable attitudes toward cross-cultural contact and exploration. *Journal of Personality and Social Psychology, 105*(5), 832–851.

Swann, W. B., Gomez, A., Seyle, D. C., Morales, J. F., & Huici, C. (2009). Identity Fusion: The Interplay of Personal and Social Identities in Extreme Group Behavior. *Journal of Personality and Social Psychology, 96*(5), 995–1011.

Swann, W. B., Jetten, J., Gomez, A., Whitehouse, H., & Bastian, B. (2012). When Group Membership Gets Personal: A Theory of Identity Fusion. *Psychological Review, 119*(3), 441–456.

Tajfel, H. (1978). Social categorization, social identity, and social comparison. In H. Tajfel (Ed.), *Differentiation between social groups. Studies in the social psychology of intergroup relations* (pp. 61–76). London: Academic Press.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup conflict. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago, IL: Nelson-Hall.

Tatarko, A. N., Lebedeva, N. M. (2011). Metody ehtnicheskoj i krosskul'turnoj psikhologii [Methods of ethnic and cross-cultural psychology]. Moscow.: NRU HSE, 2011.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group*. Oxford: Blackwell.

van Veelen, R., Otten, S., & Hansen, N. (2013). Social identification when an in-group identity is unclear: The role of self-anchoring and self-stereotyping. *British Journal of Social*

Psychology, 52(3), 543–562.

Wang, J., Minervino, C., & Cheryan, S. (2013). Generational differences in vulnerability to identity denial: The role of group identification. *Group Processes & Intergroup Relations, 16*(5), 600–617.

Appendix

Russian version of items measuring in-group identification

1. Я чувствую свою связь с [ингруппа]

2. Я солидарен с [ингруппа]

3. Я ощущаю свою приверженность [ингруппа]

4. Я рад, что являюсь частью [ингруппа]

5. Я думаю, что [ингруппа] есть чем гордиться

6. Мне приятно быть частью [ингруппа]

7. Принадлежность к [ингруппа] делает меня счастливым

8. Я часто думаю о том, что я [представитель ингруппы]

9. Принадлежность к [ингруппа] накладывает отпечаток на мою личность

10. Принадлежность к [ингруппа] – важная часть моего представления о себе

11. У меня много общего со среднестатистическим [представитель ингруппы]

12. Я похож на среднестатистического [ингруппа]

13. У [представителей ингруппы] много общего между собой

14. Все [представители ингруппы] очень похожи друг на друга

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