The role of perceived cultural distance in the acculturation of exchange students in Russia

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Abstract

This study is the first to address processes of psychological acculturation by exchange students in Russia. Using a sample of 168 exchange students in Moscow from China, North Korea, and countries in sub-Saharan Africa and in the former Soviet Union, the hypothesis was confirmed that a larger perceived cultural distance between mainstream and immigrant culture is associated with less psychological and sociocultural adaptation. The Chinese and North-Korean group reported to experience the largest perceived cultural distance and the lowest levels of adjustment, while the groups from the former USSR and (to a slightly lesser extent) Africa reported the smallest perceived cultural distance and the highest levels of adjustment. The results of a stepwise regression analysis showed that antecedent variables (perceived cultural distance, home and host domain resources, and personality) showed somewhat stronger associations with outcome variables (self-esteem, stress, and behavior in the home and the host domain) than did intervening variables (acculturation attitudes and coping).
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1. Introduction

There is virtually no research addressing processes of acculturation of temporary or permanent immigrants in Russia. The present study is the first to examine exchange students in Moscow, who come from countries that are infrequently studied in the acculturation literature, such as China, North Korea, sub-Saharan African countries, and countries from the former Soviet Union (Georgia and Armenia). We were particularly interested in the question of how perceived cultural distance influences acculturation orientations and outcomes among these students. Acculturation orientations are seen here as an intervening variable, which links antecedent conditions (such as characteristics of the main and host culture) to outcomes (psychological and sociocultural adjustment) (see Fig. 1; cf. Berry & Sam, 1997; Ward, Bochner, & Furnham, 2001).

The remainder of the introduction provides an overview of presumably relevant antecedent conditions (perceived cultural distance, ethnic vitality, friendship networks, and personality) and intervening conditions (coping and acculturation strategies) that were examined in the current study.

1.1. Antecedent conditions: perceived cultural distance, ethnic vitality, friendship networks, and personality

1.1.1. Perceived cultural distance

The perceived cultural distance between home and host cultures is viewed as an important factor in acculturation orientations and outcomes (Berry, 1992; Searle & Ward, 1990). Redmond and Bunyi (1993) examined the relation of perceived cultural distance and social integration (the ability to initiate interactions and maintain interpersonal relations with host nationals) of international students in an American university. The authors found that British, European, and South American students were more integrated than North Korean, Taiwanese, and Southeast Asian students, presumably because of the larger perceived cultural distance of the latter groups.

Nesdale and Mak (2003) assessed the efficacy of a model predicting the host country identification of members of immigrant groups (Vietnam, People's Republic of China, Hong Kong, Taiwan, Sri Lanka, and New Zealand) that varied in their cultural similarity to the host country, Australia. As expected, ethnic identification was a significant positive predictor of host country identification. The results demonstrated that New Zealanders, who considered themselves to be culturally most similar to the Australian hosts, reported to experience higher levels of acceptance by Australians and lower levels of ethnic group involvement and to have more friends compared with the groups that considered themselves to be culturally more dissimilar from the host group. In a study among exchange students at a Japanese university, Furukawa (1997a) found that a larger
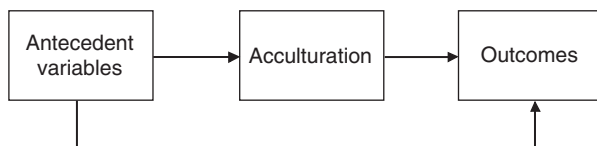

Fig. 1. Hypothetical model of processes of acculturation for analysis of this study, where acculturation is an intervening variable.

perceived cultural distance between Japan and the foreign community was associated with more psychological distress of the students. Waxin (2004) examined the impact of culture of origin on adjustment by French, German, Korean, and Scandinavian expatriate managers in India. The results showed that culture of origin has a direct effect on adjustment. A larger perceived cultural distance was associated with less adjustment. Furthermore, the culture of origin affected the way of coping with acculturative stress. Supervisory support helped Korean expatriates to adjust better, whereas Scandinavians relied more on partner support.

1.1.2. Ethnic vitality

The concept of ethnic vitality refers to ethnic institutions that can support the acculturation process, such as the availability of places of worship, shops, recreational opportunities, and educational resources. Minority networks are often mentioned as an important source of support (Berry & Sam, 1997; Ward & Kennedy, 1994). The relevance of ethnic vitality was studied in a group of young adult Moroccan Dutch by Ait Ouarasse and Van de Vijver (2004). More ethnic vitality was associated with less stress and more sociocultural (school and work) adjustment, as could be expected. Though never examined, the same relation presumably holds for exchange students.

1.1.3. Friendship networks

Bochner's Functional Model of Friendship Networks (e.g., Bochner, McLeod, & Lin, 1977) reflects a culture-learning perspective on intercultural contact. Foreign students usually have three distinct social networks, each serving a particular psychological function (cf. Wellman, 1979). The primary network consists of bonds with conationals; its function is to rehearse, express, and affirm culture-of-origin values. Another network consists of links with host nationals such as students, teachers, and counselors; its function is largely instrumental and aims at facilitating the academic and professional goals of the students. The third network consists of friendships with other non-compatriot foreign students. The function of this network is largely recreational and also provides mutual social support based on a shared experience of being foreign.

The role of friendship in satisfaction with life of exchange students was studied by Sam (2001). He examined 304 international students at a Norwegian university from Europe (mainly Nordic and Baltic countries), North America, Asia, and Africa. Factors such as the number of friends, satisfaction with finances, perceived discrimination, and information received prior to the sojourn significantly affected the students' life satisfaction in a predictable way.

1.1.4. Personality

There are many studies devoted to personality-related variables in acculturation research. According to Ward's model (Ward et al., 2001), personality-related variables influence adjustment outcomes. Ward, Leong, and Low (2004) found in two samples of sojourners in Australia and Singapore that higher levels of extraversion, agreeableness, conscientiousness, and lower levels of neuroticism were associated with more psychological adaptation. Sociocultural adaptation was linked to more extraversion and less neuroticism, and among Singaporean students, to more agreeableness and conscientiousness. There was no support for the cultural-fit hypothesis, which holds that students show more adjustment if their own personality profile is more similar to the profile of the host country;

cultural congruence was largely unrelated to sojourner adjustment. In a study of Japanese exchange students (aged 18–20 years) who had been enrolled in 1-year placement with host families in various countries, Furukawa (1997c) demonstrated that neuroticism is a significant, negative predictor of mental health during readjustment.

The role of self-esteem (as an independent variable) was examined by Al-Sharideh and Goe (1998). They were interested in how particular aspects of the social environment provided by an American university relate to the self-esteem of international students. The number of strong ties with other conationals was positively related to global self-esteem up to a specific network size (of 32 people). Beyond this threshold value, such ties became negatively associated with a student's self-esteem.

1.2. Intervening conditions: coping and acculturation strategies

1.2.1. Coping

Coping has been studied as a variable that mediates the relation between antecedent variables and acculturation outcomes. An example can be found in a study among Canadian students by Struthers, Menec, Schonwetter, and Perry (1996). They found that more academic stress and emotion-focused coping were associated with lower course grades. In a comparative study of Asian and Anglo-Australian students in Australia, Bailey and Dua (1999) tested the hypothesis that culture influences preferred coping styles and that acculturative stress is attenuated by the use of culturally relevant coping strategies. Asian students reported most stress in their first 6 months in Australia; they tended to employ collectivist coping strategies (seeking social support) more often than did Anglo-Australian students, who used more individualist coping styles (problem solving). The longer the Asian students stayed in the Australian culture, the less they used collectivist coping styles. Furukawa (1997b) found that emotion-oriented coping and concurrently measured social support predicted mental health during readjustment of exchange students.

1.2.2. Acculturation strategies

Acculturation strategies refer to ways in which immigrants deal with the cultures involved; these strategies influence acculturation outcomes (Berry & Sam, 1997; Ward et al., 2001). The most frequently used model of acculturation strategies is Berry's (1992) bi-dimensional model. This model sees identification with the host country and the country of origin as two independent dimensions, which constitute four acculturation strategies: integration, assimilation, separation (or segregation), and marginalization. Integration refers to a preference to maintain the original culture while also adopting the new culture. Assimilation refers to a loss of the original culture and complete absorption in the new culture. Separation reflects a desire to maintain key features of the original culture while rejecting the new culture. Marginalization relates to the rejection of both cultures. The relation between the four strategies and sojourner adjustment was examined by Ward and Rana-Deuba (1999). Sojourners who adopted an integrated style experienced significantly less psychological distress, while sojourners who preferred assimilation reported fewer social problems. Nesdale and Mak (2000) studied acculturation strategies among exchange students in Australia. A positive attitude toward the host country was the strongest predictor of host country identification, while a strong ethnic involvement was a negative predictor.

Acculturation strategies of French host majority and North African exchange students in Paris were investigated by Barrette, Bourhis, Personnaz, and Personnaz (2004). Acculturation orientations strongly endorsed by French undergraduates were integrationism and individualism, while segregationism, assimilationism, and exclusionism were weakly endorsed. Acculturation orientations most preferred by North African undergraduates were integrationism, individualism, and separatism, while the least preferred orientations were assimilationism and marginalization. The interactive acculturation model (Bourhis, Moïse, Perreault, & Senécal, 1997) proposes that acculturation orientations endorsed by host majority and immigrant minority members influence the quality of their intergroup relations and that intergroup relations can be harmonious, problematic, or conflictual. French majority and North African undergraduates who endorsed integrationism and individualism perceived the most harmonious relational outcomes with out-group members. French majority undergraduates who endorsed segregationism/exclusionism and North African undergraduates who endorsed separatism were more likely to perceive problematic or conflictual relations with out-group members.

1.3. The current study

This study is the first to address processes of acculturation by exchange students in Russia; more specifically, we study exchange students in Moscow from China, North Korea, sub-Saharan Africa, Georgia, and Armenia (the latter two countries were part of the former Soviet Union). Theoretical models are employed that have been developed in cross-cultural psychology. We assume that the constructs of the study can be conceived of as antecedent variables (personality, home domain resources, and host domain resources), intervening variables (acculturation orientations and coping skills), and outcomes (self-esteem, stress, and behavior in home and in host domain), as depicted in Fig. 1. The hypothesis is tested that a larger perceived cultural distance between the mainstream and immigrant culture is associated with less psychological and sociocultural adaptation. More specifically, we expect more psychological and sociocultural adjustment among immigrants from states of the former Soviet Union than among the other groups, as the former groups will experience less cultural distance.

2. Method

2.1. Participants

The sample comprised of 168 first-year exchange students (68 women and 100 men; mean age = 21.05 years, SD = 2.51) who study at different universities in Moscow; 50 students came from China (studying at Moscow State University or Moscow State University of Technology), 18 students from North Korea (Moscow State University of Economics), 15 participants from Nigeria, 9 from Zambia, 17 from Kenya, 8 from Tanzania, 6 from Zimbabwe and 9 from Cameroon (Moscow State University and Moscow State Chemical University), 20 students from Armenia (Moscow State University and Moscow State University of Technology), and 16 respondents from Georgia (Moscow State University of Technology and Moscow University of Law). The five African groups (all Blacks) were taken together in the analyses because of their cultural similarities; the

same was done for the students from Georgia and Armenia. The length of sojourn for all participants was 2 years.

Exchange students come to Russia to undertake a Master degree, which takes 5 years. The language of instruction is Russian and classes comprise of both expatriate and Russian students. Prior to the actual study, exchange students have to learn Russian in special courses for foreign students in host institutions for 1 year and they continue to study Russian during the 1st year of the regular curriculum. Every exchange student lives on campus, either alone or with a roommate. In Moscow State University, they must share the room with foreigners in order to speak more in Russian but in the other universities they could be accommodated with conationals.

2.2. Instruments

Unless indicated otherwise, measures were developed by the authors and were adaptations of instruments used in a study on Moroccan immigrants that was carried out in our research group (Ait Ouarasse & Van de Vijver, 2004). Although not further documented here, all psychological scales were unifactorial. Responses were given on a seven-point Likert scale, with answer options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The same answer options were used in the other scales (unless specified otherwise).

The first measure of the questionnaire addressed *Perceived Cultural Distance*. An example of an item is: "How similar or different do you find the religion in Russia and in your home country?" The questionnaire comprised of 22 items and responses were given on a seven-point Likert scale, with answer options ranging from 1 (*very similar*) to 7 (*very different*). The internal consistency of the scale was high (Cronbach's $\alpha = .86$).

The scale to measure *Home Domain Resources* comprised of questions about the community domain (e.g., acculturative role of the home community, its support and vitality). The questionnaire consisted of 49 items, such as "I have many friends from my own country" (community domain), "I learned valuable information from people from my country about Russian society" (acculturative role of the community of people from my country), "The community of people from my country is good at encouraging its members" (support among people from my country), and "People from my country work well together as a group" (vitality of community of people from my country) ($\alpha = .73$).

The *Host Domain Resources* Scale dealt with questions about the host country (e.g., acculturative role of study, host domain and perceived majority attitudes). The questionnaire consisted of 47 items, such as "My study brought me closer to Russian people", "I have many Russian friends" and "I think Russians try to help us" ($\alpha = .79$).

The full version of Eysenck Personality Scale, which consists of 101 items such as "I am a talkative person" (Extraversion scale), was used in this study (Psychological Measurements, MGU, Moscow, 1996). The questionnaire measures three personality traits: tough-mindedness (known in the original Eysenck scale as Psychoticism), emotionality (known in the original version as Neuroticism), and Extraversion (α of Psychoticism $= .70$, of Extraversion $= .94$, and of Neuroticism $= .55$).

Coping skills were measured by means of the Coping Strategy Indicator (Amirkhan, 1990). The scale measures three types of coping strategies: Problem Solving, Seeking Social Support, and Avoidance. Participants are asked to describe a problem they have encountered in the last 6 months and keeping that stressful event in mind, to answer how

they dealt with it. This measurement comprises 33 items such as ''Spent more time than usual alone?'' (Avoidance) and 3-point scale, with answer options ranging from 1 (*not at all*) to 3 (*a lot*) ($\alpha = .71$ for Problem Solving, .83 for Social Support, and .60 for Avoidance).

Acculturation orientations were studied as attitudes in public and private domains, such as food and family (private domains), and social contacts and language (public domains) were examined. We used the two-item measurement method (Arends-Tóth & Van de Vijver, 2004), which means that questions are asked about relevant acculturation domains for both country of origin and country of settlement. In keeping with our research in which salient differences in preferences in personal and public domains have been reported (e.g., Arends-Tóth & Van de Vijver, 2004), we asked questions related to both domains. The questionnaire consisted of 24 items measuring attitudes such as ''I like Russian food'' and ''I like food of my country'' (private domain) and ''I like to have Russian friends'' and ''I like to have friends from my country'' (public domain) (α of Attitude toward Home Domain = .70, and of Attitude toward Host Domain = .88).

Psychological outcomes were measured with a Self-esteem Scale of 15 items (with items such as ''I have a positive attitude toward myself'' and a Stress scale of 7 items (with items such as ''How often do you feel nervous?''. Responses could range from 1 (*never*) to 7 (*most of time*) (α of Self-esteem = .64 and of Stress = .48).

Sociocultural outcomes were examined by measuring self-reported behavior in public and private domains, such as food and family (private domains), and social contacts and language (public domains). The questionnaire comprised of 28 items, again using the two-item method. Fourteen items referred to the culture of origin (e.g., ''How often do you ask for help/advise of students from your country?''); another set of 14 items asked the same question with regard to Russia (e.g., ''How often do you ask for help/advise of Russian students?''). The response alternatives ranged from 1 (*never*) to 7 (*daily or almost daily*) (α of Behavior in Home Domain = .53, and of Behavior in Host Domain = .74).

Some scales had low internal consistencies, such as scales to measure Stress and Self-esteem. The general reason of the low α scores appeared to be the small within-subject variances of items of some scales. Many students from China and the North Korea chose *strongly disagree* to many items of the scales, while many participants from African countries and from countries from the former Soviet Union (Georgia and Armenia) answered *strongly agree*. The α scores of Behavior in Home Domain were also low, presumably due to the specific social situation of the students. Some items (e.g., ''How often do you eat food or meet with friends of your own country?'') did not show variation within an ethnic group. Students from African countries or from the North Korea do not have a possibility to find food or friends from their own country. There is no African or Korean community in Moscow. We decided to retain the scales with the low internal consistencies because of their theoretical relevance and the large cross-cultural variation in the scale scores, as explained in the next section.

2.3. Procedure

The first author contacted the administration of universities and the person from the university administration helped to arrange sessions to fill out the questionnaire. Exchange students were approached. Participation was voluntary; no financial reward was given. The questionnaire was given to groups of students in a classroom after lectures. The average

time to complete the questionnaire was 1 h. The questionnaire was originally developed in English. A Russian version was made using a translation back translation procedure. Versions of questionnaire in English and in Russian were available for the participants. African students filled out the questionnaire in English (although their proficiency was sufficient to fill out the Russian version), while all other students used the Russian version.

2.4. Data analysis

The data analysis employed the following statistical methods: factor analysis, multivariate analysis of variance, covariance analysis, and multiple regression analysis. Factor analysis was used to examine the dimensionality of the items of a scale. Multivariate analysis of variance (MANOVA) was used to determine whether the samples showed different scale means. The size of the cross-cultural differences was expressed in terms of proportion of variance accounted for by cultural group in the MANOVA (η^2). We adopted Cohen's proposal and used .01, .06, and .14 as cutoff values for small, moderate, and large effects. Bonferroni-corrected post hoc tests were employed to adjust the selected α level to control for overall Type 1 error rate in determining which cultural groups showed different means. Covariance analysis was used to examine the influence of perceived cultural distance on the cross-cultural differences on all scales (cf. Poortinga & Van de Vijver, 1987). We compared the size of the cross-cultural differences in the original scores with the size of these differences after correction for perceived cultural distance. The correction was done in a covariance analysis in which country was the independent variable, perceived cultural distance the covariate, and the scale scores were the dependent variables. Finally, multiple regression analysis was used to evaluate the association of predictors with all outcome variables. We used a stepwise regression procedure in which variables were entered in two steps, as suggested in Fig. 1. Background factors were entered in the fist, while acculturation and coping were added in the second step. Cultural group was not used as an independent variable in this analysis, as we were interested in the overall association across all cultural groups.

3. Results

The results are divided into two sections; the first addresses the examination of group differences in mean scores, while the second addresses the prediction of psychological and sociocultural adjustment on the basis of the antecedent and intervening variables, using a stepwise regression procedure.

3.1. Group differences in mean scores

Cross-cultural differences in means on the scales were examined in a multivariate analysis of variance with ethnic group (4 levels: African, Chinese, former USSR, and North-Korean) and gender (2 levels) as independent variables and all scales as dependent variables (i.e., Perceived Cultural Distance, Home Domain Resources, Host Domain Resources, Psychoticism, Extraversion, Neuroticism, Social Support, Problem solving, Avoidance, Attitude toward Home Domain, Attitude toward Host Domain, Self-esteem, Stress, Behavior in Home Domain, and Behavior in Host Domain). Ethnicity showed a significant multivariate effect, Wilks' $\lambda = .01$, $F(42, 436) = 47.31$, $p < .01$, $\eta^2 = .81$ (the

latter number is the partial η^2, which represents the proportion of variance accounted for by country). The mean scores of the ethnic groups are presented for each scale in Table 1. The means are standardized across the four groups so that the cell values in the table can be interpreted as deviations (z scores) from the global mean of zero. The Table shows that we observed only large effect sizes. The average effect size is .65, which is very high for cross-cultural studies (Poortinga & Van Hemert, 2001). Furthermore, the effect of gender was not significant, Wilks' $\lambda = .95$, $F(14, 147) = .56$, ns, $\eta^2 = .05$. The ethnicity by gender interaction was significant, Wilks' $\lambda = .67$, $F(42, 436) = 1.49$, $p < .05$, $\eta^2 = .12$. Univariate analyses showed that a significant interaction effect was found only on the Avoidance scale. Females' scores on this scale were higher in all groups, except for the North Korean group in which males' scores on avoidance were higher than females' scores.

3.1.1. Antecedent conditions: perceived cultural distance, ethnic vitality, and personality

The means per country are reported in Table 1. A Bonferroni post-hoc procedure was used to examine group differences (the results are also presented in Table 1); statements below about higher and lower means are based on this procedure. All four groups showed significant differences in perceived cultural distance; Chinese (0.89) showed the highest score, followed by North Koreans (0.31), Africans (0.10), and students from former Soviet countries (−1.59); the low score of the latter group was in line with expectation. The results of Home Domain Resources showed the lowest scores for the African (−0.67) and Chinese (−0.30) samples, higher scores for North Korean students (−0.08), and the highest scores for students from the former USSR (1.65). Chinese (−1.15) and North Korean (−1.00)

Table 1
Standardized mean scores for each ethnic group

Scale	African	Chinese	Former USSR	North Korean	η^2
Antecedent conditions					
Perceived Cultural Distance	0.10$_{b,c,d}$	0.89$_{a,c,d}$	−1.59$_{a,b,d}$	0.31$_{a,b,c}$	.77
Home Domain Resources	−0.67$_{c,d}$	−0.30$_{c,d}$	1.65$_{a,b,d}$	−0.08$_{a,b,c}$	.78
Host Domain Resources	0.59$_{b,c,d}$	−1.15$_{a,c}$	1.06$_{a,b,d}$	−1.00$_{a,c}$	.88
Psychoticism	0.56$_{b,c,d}$	−0.94$_{a,c,d}$	0.21$_{a,b}$	0.15$_{a,b}$	.40
Extraversion	0.73$_{b,d}$	−1.24$_{a,c,d}$	0.78$_{b,d}$	−0.73$_{a,b,c}$	.85
Neuroticism	−0.64$_{b,d}$	0.89$_{a,c}$	−0.61$_{b,d}$	1.02$_{a,c}$	.59
Intervening variables					
Attitude toward Home Domain	0.67$_{b,d}$	−1.03$_{a,c}$	0.81$_{b,d}$	−1.14$_{a,c}$	.76
Attitude toward Host Domain	0.53$_{b,c,d}$	−1.17$_{a,c,d}$	1.14$_{a,b,d}$	−0.92$_{a,b,c}$	.89
Social Support	0.87$_{b,c,d}$	−1.03$_{a,c,d}$	0.06$_{a,b,d}$	−0.39$_{a,b,c}$	.63
Problem Solving	−0.98$_{b,c,d}$	0.96$_{a,c,d}$	0.21$_{a,b,d}$	0.40$_{a,b,c}$	.68
Avoidance	0.83$_{b,c,d}$	−1.03$_{a,c,d}$	−0.01$_{a,b}$	−0.08$_{a,b}$	.61
Outcomes					
Self-esteem	0.48$_{b,c,d}$	−0.22$_{a,d}$	−0.10$_{a,d}$	−0.88$_{a,b,c}$	.20
Stress	−0.30$_{b,c,d}$	0.59$_{a,c,d}$	−0.80$_{a,b,d}$	1.05$_{a,b,c}$	.39
Behavior in Home Domain	0.78$_{b,d}$	−1.10$_{a,c,d}$	0.36$_{b,d}$	−0.44$_{a,b,c}$	.65
Behavior in Host Domain	0.11$_{b,d,c}$	−0.98$_{a,c,d}$	1.33$_{a,b,d}$	−0.35$_{a,b,c}$	.69

Note. Subscripts a, b, c, and d indicate that the post hoc test (Bonferroni) indicated that the cell average differs from the African, Chinese, former USSR, and North Korean average, respectively.

students had the lowest scores on Host Domain Resources; much higher scores were obtained by African participants (0.59) while the highest scores were obtained by Georgian and Armenian students (1.06). The highest scores on Psychoticism were obtained by African students (0.56), while students from North Korea (0.15) and the former USSR (0.21) showed lower scores; the lowest scores were found for the Chinese sample (−0.94). Students from Africa and the former USSR scored highest on Extraversion (0.73 and 0.78, respectively), the North Koreans scored much lower (−0.73) and the lowest scores were obtained by the Chinese (−1.24). For Neuroticism, the students from Africa (−0.64) and the former USSR (−0.61) showed the lowest scores, while the Chinese (0.89) and North Korean (1.02) students scored much higher.

3.1.2. Intervening variables: coping and acculturation strategies

The group differences in means on the coping variables were remarkable in that the post-hoc procedure showed that for each of the three coping strategies all pairwise comparisons of the means of the four cultural groups showed significant results (except one, as explained below). Social Support was lowest in the Chinese group (−1.03), higher for the North-Korean group (−0.39), followed by the students from the former USSR (0.06), and largest for the African students (0.87). The findings for Problem Solving mirrored this pattern; the lowest scores were obtained by the African group (−0.98), followed by the former USSR (0.21), North Korea (0.40), and China (0.96). Avoidance showed the same pattern as Social Support. The highest scores were found for the African sample (0.83), followed by students from the former USSR (−0.01) and North Korea (−0.08), and China (−1.03). The non-significant difference between the former USSR and North Korean scores was the only exception to the rule that all pairwise sample comparisons of the coping variables were significant.

The acculturation attitudes also showed large cross-cultural differences. Chinese (−1.03) and North Koreans (−1.14) had the lowest scores on Attitude toward Home Domain, much higher scores were observed for students from the former Soviet Union (0.81) and Africa (0.67). The averages of the Attitude toward Host Domain Scale were significantly different for all groups. The Chinese group (−1.17) showed the lowest mean, followed by the North Korean (−0.92), African (0.53), and former USSR group (1.14).

3.1.3. Outcomes

Compared to the other scales, psychological adjustment showed much smaller (though still highly significant) cross-cultural differences. Self-esteem was lowest for the North-Korean group (−0.88), higher for students from China and the former USSR (−0.22 and −0.10), and highest for African students (0.48). All pairwise comparisons of Stress were significant. Students from the former USSR revealed the lowest scores (−0.80), the scores of the African sample were higher (−0.30), while the Chinese mean of 0.59 was much higher; the highest scores were found for the North Korean group (1.05). Behavior in the Home Domain was lowest for the Chinese group (−1.10), higher for the North-Korean group (−0.44), and still higher for the students from the former USSR (0.36) and remarkably, for the African students (0.78). Behavior in the Host Domain was significantly different for each group. The lowest scores were found for the Chinese students (−0.98), the North Korean average was higher (−0.35), followed by the African average (0.11), while the scores of the sample from the former USSR were predictably high (1.33).

A closer examination of Table 1 reveals that the cross-cultural differences are clearly patterned. This is confirmed in a multidimensional scaling of the means of the table. A one-dimensional solution showed a low Stress value of .01. The coordinates of China, North Korea, Africa, and the former USSR were −1.21, −0.74, 0.78, and 1.17, respectively. So, it seems that all measured variables point to a single underlying dimension, with the group of the former USSR at one extreme and the Chinese group at the other extreme. In our view, perceived cultural distance is essential in understanding the differences. Students from Georgia and Armenia showed the smallest Perceived Cultural Distance with Russia. This is not surprising as they can speak Russian fluently, tend to have many Russian friends, and share the religion and various traditions with Russians. Furthermore, there are well-organized Georgian and Armenian communities in Moscow which make it possible to participate in national celebrations, go to ethnic restaurants or clubs, buy ethnic food, visit a Georgian or Armenian doctor, ask help at a social worker of their nationality, go to a national place of worship, speak the native language, and have a good contact with people of their own countries. The African group is much closer to the group from the former USSR while the Korean group is much closer to the Chinese. The groups from Africa and the USSR reported a smaller Cultural Distance, more Host Domain Resources, more Extraversion, less Neuroticism, more Social Support, less Problem Solving, more Avoidance, stronger Attitudes toward the Home and Host Domain, less Stress, and more Behaviors in both the Home and Host Domain. The Chinese and North Korean students tend to feel less related to the Russian cultural context, to be more focused on problem solving, less socially oriented and more oriented on the home culture, and to report less psychological and sociocultural adjustment.

3.1.4. Hypothesis test

The hypothesis dealt with the influence of perceived cultural distance on outcome measures. The results of the covariance analysis are presented in Table 2. As can be seen in the table, a correction for ethnic distance reduced the effect size from .62 to .52. This large reduction points to the relevance of Perceived Cultural Distance in the variables of the study. The largest reductions were achieved for Host Domain Behaviors (.53), followed by Host Domain Attitudes (.32), Home Domain Resources (.18), and Stress (.15). In general, the effects were much more salient for the culture- and acculturation-related variables than for the personality and coping scales. The findings confirm the first hypothesis in that the groups from the former USSR showed the smallest Perceived Cultural Distance and the most psychological and sociocultural adjustment. The crucial role of Perceived Cultural Distance in acculturation was demonstrated by its power to reduce cross-cultural score differences on acculturation and outcome variables.

3.2. Predicting acculturation outcomes

In order to examine the influence of antecedent and intervening variables on outcomes, stepwise multiple regression analyses were carried out in which psychological and sociocultural adjustment were the dependent variables. perceived Cultural Distance, cultural resources (both Home and Host Domain Resources), and personality (Psychoticism, Extraversion, and Neuroticism) were predictors in the first step; acculturation orientations (Attitudes toward Home and Host Domains) and coping (seeking Social

Table 2
Effect sizes before and after correction for perceived cultural distance (η^2 values)

Scale	Before correction	After correction	Difference
Antecedent conditions			
Home Domain Resources	.78	.60	.18
Host Domain Resources	.88	.80	.08
Psychoticism	.41	.37	.04
Extraversion	.86	.78	.08
Neuroticism	.59	.61	−.02
Intervening variables			
Attitude toward Home Domain	.77	.73	.04
Attitude toward Host Domain	.58	.26	.32
Social Support	.63	.61	.03
Problem Solving	.68	.69	−.01
Avoidance	.61	.58	.04
Outcomes			
Self-esteem	.20	.21	−.01
Stress	.39	.24	.15
Behavior in Home Domain	.66	.60	.06
Behavior in Host Domain	.70	.17	.53
Average	.62	.52	.11

Support, Problem Solving, and Avoidance) were added as independent variables in the second step.

The results of the analyses of the psychological adjustment variables are presented in Table 3. The first regression analysis examined stress. The first subset with antecedent variables showed a significant effect, $R^2 = .36$, $p < .01$. Significant predictors ($p < .05$) were Perceived Cultural Distance ($\beta = .22$), Psychoticism ($\beta = .19$), and Extraversion ($\beta = −.44$). Adding the intervening variables did not significantly increase the squared multiple correlation, $\Delta R^2 = .01$, *ns*. Negative predictors in the second step were Extraversion ($\beta = −.47$) and Attitude toward Home Domain ($\beta = −.26$), while Avoidance was the only positive predictor ($\beta = .20$). It can be concluded that these students experience more stress when they perceive a larger Perceived Cultural Distance, score higher on Psychoticism, lower on Extraversion, have a weaker orientation on their own culture (presumably these are the students who do not socialize with conationals), and are more inclined to avoid problems.

The second regression analysis addressed Self-esteem. The first subset with antecedent variables showed a significant effect, $R^2 = .25$, $p < .01$. The only positive predictor of the first subset was extraversion ($\beta = .50$), while negative predictors were Home Domain Resources ($\beta = −.18$), Host Domain Resources ($\beta = −.28$), and Psychoticism ($\beta = −.40$). The increase in squared multiple correlation was significant, $\Delta R^2 = .29$. Negative predictors of the second subset were Home Domain Resources ($\beta = −.16$), Host Domain Resources ($\beta = −.29$), and Psychoticism ($\beta = −.44$). Positive predictors were Attitude toward home Domain ($\beta = .26$) and Social Support ($\beta = .19$).

Table 3
Results of stepwise regression analysis with psychological adjustment as dependent variables

Predictor	Stress		Self-esteem	
	Antecedent[a]	All[a]	Antecedent[a]	All[a]
Perceived Cultural Distance	.22*	.17	−.12	−.10
Home Domain Resources	.05	.06	−.18*	−.16*
Host Domain Resources	−.06	−.02	−.28**	−.29**
Psychoticism	.19*	.07	−.40**	−.44**
Extraversion	−.44**	−.47**	.50**	.10
Neuroticism	.11	.08	−.11	.03
Attitude toward Home Domain		−.26*		.26*
Attitude toward Host Domain		.06		.18
Seeking Social Support		−.00		.19*
Problem Solving		−.06		.00
Avoidance		.20*		.03
R^2	.36**	.37*	.25**	.29**

[a] The label ''Antecedent'' refers to the antecedent variables (perceived cultural distance, resources, and personality) that were the predictors of the first set. The label ''All ''refers to the combination of antecedent variables and intervening variables (coping and acculturation variables) that were the predictors in the second step. *$p<.05$. **$p<.01$.

If we combine the results for Stress and Self-esteem, it can be tentatively concluded that both antecedent and intervening variables predict both variables. Students have fewer psychological problems when they experience less cultural distance, can rely on more home and host domain resources, and are more oriented on others. The latter orientation is reflected in three scales: Extraversion, Support Seeking, and Psychoticism. The presumed link between psychoticism and the social orientation is based on work by Digman (1997), who argued that psychoticism is the opposite of agreeableness (one of the Big Five factors).

The regression analyses of the sociocultural outcomes as dependent variable are presented in Table 4. The analysis of the Behavior in the Home Domain scale showed a significant effect in the first subset, $R^2 = .62$. Positive predictors were Psychoticism ($\beta = .24$) and Extraversion ($\beta = .68$). Host Domain Resources was a negative predictor ($\beta = −.14$). Adding the intervening variables led to a significant increase of the squared multiple correlation, $\Delta R^2 = .06$. The same variables were significant in the second step with the exception of Psychoticism that was no longer significant. Positive predictors of the second subset were Extraversion ($\beta = .24$), Attitude toward Host Domain ($\beta = .30$), Social Support ($\beta = .13$), and Avoidance ($\beta = .15$). Negative predictors were Host Domain Resources ($\beta = −.12$) and Problem Solving ($\beta = −.17$). These findings suggest that perceived cultural distance is not important for understanding individual differences in home domain behavior, while the other antecedents and intervening variables showed a significant contribution.

The antecedent conditions had a significant influence on Behavior in the Host Domain, $R^2 = .75$; the introduction of the intervening variables in the second step led to a modest, though significant increase of $\Delta R^2 = .04$. Perceived Cultural Distance was the most important predictor, as could be expected, this predictor had a negative sign ($\beta = −.53$ and −.56). Home Domain Resources was a positive predictor in both subsets: $\beta = .19$ and .20.

Table 4

Results of stepwise regression analysis with sociocultural adjustment as dependent variables

Predictor	Behavior in Home Domain		Behavior in Host Domain	
	Antecedent[a]	All[a]	Antecedent[a]	All[a]
Perceived Cultural Distance	.06	.02	−.53**	−.56**
Home Domain Resources	.01	.02	.19**	.20**
Host Domain Resources	−.14*	−.12*	.04	.04
Psychoticism	.24**	.09	−.01	−.03
Extraversion	.68**	.24*	.28**	.09
Neuroticism	−.07	.07	.04	−.11*
Attitude toward Home Domain		.03		.12*
Attitude toward Host Domain		.30*		.03
Seeking Social Support		.13*		.05
Problem Solving		−.17*		−.11*
Avoidance		.15*		−.04
R^2	.62**	.68**	.75**	.79**

[a]The label ''Antecedent'' refers to the antecedent variables (perceived cultural distance, resources, and personality) that were the predictors of the first set. The label ''All'' refers to the combination of antecedent variables and intervening variables (coping and acculturation variables) that were the predictors in the second step. *$p < .05$. **$p < .01$.

Extraversion was significant only in the first subset ($\beta = .28$). Significant intervening variables in the second subset were Attitude toward Home Domain ($\beta = .12$) and Problem Solving ($\beta = −.11$). Perceived Cultural Distance was a negative predictor which means that participants who experience a smaller perceived cultural distance, socialize more often with Russians (Behavior in Host Domain). They are more extraverted and report more home domain resources (possibly because they learn valuable information about Russian society from people of their country). We found that Home Domain Behavior is mainly predicted by personality variables (in particular the social aspects) and Host Domain Behavior mainly by Perceived Cultural Distance.

A comparison of Tables 3 and 4 yields interesting insights. Sociocultural adjustment was much better predicted than psychological adjustment. The most powerful predictor across all analyses was Extraversion (with an average absolute β of .35), followed by Perceived Cultural Distance ($\beta = .22$). It has been argued in the literature that psychological and sociocultural adjustment have their own predictors (Ward et al., 2001). The current study shows that there are also predictors that are relevant for both types of adjustment, notably Perceived Cultural Distance and Extraversion. It stands to reason that a smaller Perceived Cultural Distance fosters both kinds of adjustment. Similarly, more extraverted persons are more likely to alleviate acculturative stress by social sharing (psychological adjustment) and to be more exposed to culture learning opportunities. Finally, we found that the antecedent and intervening variables were equally relevant for predicting adjustment (average absolute $\beta = .15$ and .12, respectively); yet, the increase in squared multiple correlations by adding intervening variables in the second step of the regression analysis tended to be small and non-significant. These two findings are not at all incompatible, but point to an important aspect of our data: the size of the regression coefficients (in absolute value) of the personality scales tended to become much smaller after the introduction of

the intervening variables. By adding more variables, our prediction did not become more powerful but more detailed, due to the intercorrelations of the predictors.

4. Discussion

The main objective of this study was to examine the role of Perceived Cultural Distance in the acculturation of exchange students in Russia. The hypothesis which stated that a larger Perceived Cultural Distance to the host culture would be associated with more psychological problems and less sociocultural adaptation was confirmed. The group differences in all scales were remarkably large. The most important finding of the current study is the differentiation of the samples. The analysis of the psychological data pointed to a differentiation with the sample from the former USSR at one extreme and the Chinese group at the other extreme (with the North Korean sample fairly close to it). The African sample occupied an intermediate position on Perceived Cultural Distance, Attitude and Behavior in both domains but was closer to the group from the former USSR on Extraversion, Neuroticism, and Stress. The participants from Asian group reported the largest perceived cultural distance, the most neuroticism, most stress, least active coping strategies, and the least adjustment. In comparison with the Asian group, participants from African countries showed a smaller Perceived Cultural Distance with Russia, a lower level of Neuroticism and Stress and a higher level of Extraversion and seeking Social Support as a coping strategy. They also showed higher scores than students from Asian group on Host Domain Resources, Attitude in Host Domain and Behavior in Host Domain and the highest scores on Self-esteem. It could be argued that the strong social orientation (e.g., their high levels of Extraversion and Support Seeking) provides the key explanation of the relatively high levels of psychological adjustment of the African groups. After all, such levels are not obvious for a group that has to bridge a large cultural distance when moving to Moscow.

In our view, Perceived Cultural Distance plays a crucial role in understanding the findings of the current study. Students from Georgia and Armenia can speak Russian fluently, have the same religion as the hosts and can rely on a well-organized and developed ethnic community in Moscow; so, their community shows a large ethnic vitality. The central role of Perceived Cultural Distance is in line with earlier studies (e.g., Abe & Wiserman, 1983; Furukawa, 1997a; Ingman, Ollendick, & Akande, 1999; Nesdale & Mak, 2000; Waxin, 2004) in which it was found that Perceived Cultural Distance is an important antecedent variable in sojourner adjustment. It should be pointed out, however, that the impact of Perceived Cultural Distance was fairly focused in the present study and did not generalize to all scales. The impact was largest on culture-linked scales, such as Home Domain Resources and Behaviors; in addition, Perceived Cultural Distance differences could partly account for ethnic differences in stress. However, its impact on ethnic differences in personality, coping, and self-esteem was very small. It can be concluded that Perceived Cultural Distance was mainly linked to scales that involved the home and host culture as well as stress.

The findings of the current study are in line with previous studies among more permanent immigrants (e.g., Ait Ouarasse & Van de Vijver, 2004; Bourhis et al., 1997), which demonstrated that ethnic vitality is an important factor in psychological and sociocultural adjustment as well as coping strategies (Social Support). Furthermore, our findings are in line with studies pointing to the relevance of friendship networks of

exchange students (e.g., Bochner et al., 1977; Sam, 2001; Wellman, 1979). The extensive contacts of African participants presumably make their adaptation easier, despite the large Perceived Cultural Distance to the Russian culture. Extraversion facilitates adaptation. Similar results were obtained by Al-Sharideh and Goe (1998). Coping has been studied as a variable that mediates or moderates the relation between antecedent variables and acculturation outcomes (Bailey & Dua, 1999; Furukawa, 1997b; Struthers et al., 1996). The current study replicated this finding. Home Domain Resources and Extraversion impacted on Social Support, while Avoidance was a predictor of Home Domain Behavior. We also found some cultural differences in preferred coping strategies: Chinese and North Korean students favor a problem solving strategy and African students prefer avoidance. Our results are in line with a comparative study of Asian and Anglo-Australian students in Australia by Bailey and Dua (1999), who found that Asian students reported most stress in their first 6 months in Australia and tended to employ collectivist coping strategies more often than did Anglo-Australian students, who used more individualist coping styles. Furukawa (1997b) found that emotion-oriented coping and concurrently measured Social Support predicted mental health during readjustment of exchange students. Finally, our findings confirmed the view that acculturation attitudes are relevant for understanding acculturation outcomes (e.g., Barrette et al., 2004; Berry & Sam, 1997; Nesdale & Mak, 2000; Ward & Rana-Deuba, 1999; Ward et al., 2001). More specifically, the findings of the current study showed that Attitudes toward Host Country were predictive of psychological (Self-esteem) and sociocultural (Behavior in Home Domain) outcomes.

In summary, our findings provide a broader overall picture of acculturation process of exchange students in Russia. The present study is a step toward a better understanding of the acculturation process of exchange students. More in-depth analyses of the groups that show the most problems would be required to identify fruitful domains of counseling.

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