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Abstract

There is a need for a better acknowledgement of the pre- and postmigration factors that influence postmigration psychological adaptation of ethnic migrants. In the present study, first, we examined the effects of pre-acculturative stress, anticipated sociocultural difficulties, and anticipated discrimination on ethnic migrants' ($N = 153$) psychological well-being in the postmigration stage. These pre-migration factors were expected to influence postmigration acculturation experiences (i.e., perceived acculturative stress, sociocultural difficulties, and discrimination), which, in turn, were expected to be decisive for postmigration well-being. Second, we examined how the concordance between these premigration and postmigration factors affects postmigration well-being. According to the first set of results, (1) the effect of anticipated sociocultural difficulties on psychological adaptation is mediated by perceived sociocultural difficulties and acculturative stress in the postmigration stage, and (2) the effects of pre-acculturative stress and anticipated discrimination are present in terms of their impact on subsequent postmigration experiences (stress and discrimination, respectively), which are further associated with postmigration well-being. The second set of results, in turn, shows that ethnic migrants' psychological adaptation is highest (1) when both anticipated and perceived sociocultural difficulties are low and correspond with each other (but not when they anticipated more sociocultural difficulties than they experienced after migration), (2) when they both anticipate and perceive low levels of ethnic discrimination, and (3) when their perceived acculturative stress after migration is lower than pre-acculturative stress. The implications of the results for premigration interventions are discussed.

Keywords

pre-acculturation, perceived discrimination, acculturative stress, sociocultural difficulties, psychological adaptation, ethnic migrants

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Due to the scarcity of longitudinal research, little is still known about the extent to which stress experienced by recent migrants is actually rooted in challenges faced after migration and not in the premigration stage, which may also influence psychological adaptation and the way people see their lives after migration. Thus, quite recently, researchers have started to emphasize the need to study the prerequisites of acculturation in the premigration period (e.g., Bhugra, 2004; Bürgelt, Morgan, & Pernice, 2008; Chou, 2009; Ryan, Leavey, Golden, Blizard, & King, 2006; Tabor & Milfont, 2011; Tartakovsky, 2007, 2009), namely pre-acculturation (e.g., Jasinskaja-Lahti & Yijälä, 2011; Yijälä & Jasinskaja-Lahti, 2010). For example, Tartakovsky (2007, 2009) has measured both pre- and postmigration psychological well-being among the immigrant adolescents from Russia and Ukraine to Israel. He found premigration well-being to be the most important predictor of their postmigration well-being during the first 3 years after migration. However, the importance of premigration assessments is not limited to the baseline assessment of psychological well-being. The present study aims to develop a theoretical model of the psychological adaptation of ethnic migrants and to longitudinally test it in a sample of ethnic migrants from Russia to Finland. Specifically, we argue for the need to better understand the interplay between the premigration expectations and postmigration experiences in the formation of psychological adaptation after migration. The theoretical background of this study combines a multidimensional view on acculturation with organizational psychological and sojourner literature on expectation confirmation. Besides our theoretical and empirical objectives, we aim to provide immigration authorities with better means to promote immigrant adaptation starting from the premigration stage.

Psychological Adaptation of Ethnic Migrants

Between the years 1990 and 2011, Russian nationals of Finnish descent as well as their spouses and dependants had the right to apply for Finnish repatriate status in order to migrate to Finland. These migrants are mostly Ingrian Finns—descendants of Finns who emigrated from Finland to Russia between the 17th and the beginning of the 20th century. Many of these Finns were relocated to Siberia and other parts of the Former Soviet Union during and after the World War II, which led to ethnic dispersion, nationally mixed marriages, and monolingualism in Russian. Today, Finland's ca. 55 500 Russian-speaking inhabitants constitute the country's largest group with immigrant background (24% of people with other than Finnish, Swedish, or Sami as their mother tongue; Statistics Finland, 2012).

Despite their (at least partly) Finnish background and Lutheran religion, their "Finnishness" is largely questioned by the national majority group in Finland (Jasinskaja-Lahti, Liebkind, Jaakkola, & Reuter, 2006). Mainly because of historical reasons (e.g., wars between Finland and the Soviet Union in 1939-1940 and 1941-1944), the relationship between the Finnish majority and the Russian-speaking minority has been and still is quite problematic and involves substantial prejudice and discrimination toward the Russian speakers (e.g., EU-MIDIS, 2009; Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2006). In fact, in a longitudinal study, these migrants were shown to be consistently among the least welcome groups of immigrants together with the Somalis and the Arabs (Jaakkola, 2005). Besides historical tensions, the problems encountered by Ingrian Finns arise from their Russian monolingualism, lack of analogy between Russian and Finnish professional qualifications, and linguistically closed social networks, which resemble the hardships encountered by migrants from FSU to other countries of ethnic migration (Heleniak, 2006; see also Special Issue on Diaspora migration by Brenick & Silbereisen, 2012). Thus, it is clear that more insight is needed about the obstacles of adaptation among ethnic migrants.

As pointed out by Rudmin (2009) in his critical overview, perceived ethnic discrimination and low socioeconomic status in the new country often explain to a large extent the level of

immigrants' well-being. In line with this notion, negative acculturation experiences have also been found to negatively affect the adaptation of ethnic migrants in Finland (e.g., Jasinskaja-Lahti, Mähönen, & Liebkind, 2012). However, their psychological well-being is challenged not only by ethnic discrimination as such but also by the discrepancy between their overly positive premigration expectations and postmigration experiences (Noguchi, 2005; Tartakovsky, 2008, 2009). This discrepancy has partly been related to the great interest in ethnic roots and attraction to the ancestral homeland among ethnic migrants before the migration (Noguchi, 2005), which is followed by disillusionment after the migration (Tartakovsky, 2009). Consequently, this type of migration has often been found to be psychologically demanding (Lerner, Kertes, & Zilber, 2005; Mirsky, Baron-Draiman, & Kedem, 2002; Ritsner & Ponizovsky, 1999). However, due to the lack of longitudinal studies, the impact of pre-acculturation expectations and acculturation experiences on later psychological well-being is still unclear.

Acculturation and Adaptation

The traditional definition of *acculturation* refers to changes in individual experiences as a result of being in contact with other cultures (Graves, 1967). In the core of research on acculturation are the predictors of postmigration *adaptation* (e.g., see Rudmin, 2009)—that is, ways in which people rearrange their lives and adjust to their new home country (Sam, 2006). In previous research, the changes and experiences related to acculturation have typically been studied along three theoretical lines: one has focused on stress (see Berry, 2006), one on social and cultural learning (e.g., Furnham & Bochner, 1982; Masgoret & Ward, 2006), and one on cognitive processes related to acculturation (see, e.g., Arends-Tóth & Van de Vijver, 2006; Liebkind, 2006). These long lines of research have been brought together in the multidimensional approach to acculturation outlined by Ward, Bochner, and Furnham (2001), in which the first dimension relates to affective changes, especially those related to distress; the second dimension to socio-cultural changes, such as day-to-day activities and language use; and the third dimension to cognitive changes in identification and values. However, we argue that compared to the other two dimensions, the third (i.e., cognitive) dimension has been given insufficient attention within acculturation psychology, as it has not been properly defined to include the complex social-psychological processes related to changes in identities, intergroup attitudes, and intergroup behavior (see also Liebkind, Jasinskaja-Lahti, & Mähönen, 2012; Verkuyten, 2005).

In addition, recently, the conceptualizations of acculturation and adaptation have been further developed to better encompass the dynamic, multidimensional, and partly domain- and context-specific nature of these phenomena (see, e.g., Chirkov, 2009; Jasinskaja-Lahti, Horenczyk, & Kinunen, 2011; Sam & Berry, 2010). Particularly, more research has been called to acknowledge the dynamic nature of acculturation changes, with some researchers introducing an additional developmental dimension of acculturation (e.g., Berry, Phinney, Sam, & Vedder, 2006; Oppedal, 2006). In the present study, we respond to this need of acculturation research by including the premigration period in the analysis of acculturation changes and their adaptation outcomes. We aim to simultaneously test the effects of all three types of premigration expectations and anticipations (i.e., stress, sociocultural difficulties, and discrimination) on postmigration psychological adaptation among ethnic migrants. Importantly, previous research has attested that immigrants with elevated levels of psychological stress symptoms also may face other difficulties, such as prejudice or sociocultural difficulties (e.g., Jasinskaja-Lahti, 2008; Jasinskaja-Lahti, Liebkind, & Solheim, 2009; Masgoret & Ward, 2006). Thus, in our analysis, we acknowledge that the different dimensions of acculturation may be interrelated so that difficulties in one dimension correlate positively with difficulties in others (see also Berry, 2006; Masgoret & Ward, 2006). Finally, for the sake of clarity, it should be noted that due to the interrelatedness of the three dimensions of

acculturation, they have been approached in previous research in various roles. In some studies, the affective, sociocultural, and cognitive changes and experiences have been regarded as outcomes of the acculturation process, whereas in others, they have been used as predictor variables (see, e.g., Ataca & Berry, 2002; Liebkina, Jasinskaja-Lahti, & Solheim, 2004; Neto, 2006; Ward & Kennedy, 1999). The present study represents the latter group of studies, as it focuses on the key pre- and postmigration determinants of psychological well-being—the most widely studied acculturation outcome of all (see Rudmin, 2009).

Premigration Expectations and Their Fulfillment

In recent literature on the acculturation of voluntary migrants in general (e.g., Tabor & Milfont, 2011) and ethnic migrants in particular (e.g., Yijälä & Jasinskaja-Lahti, 2010), researchers have pointed out that there is a reason to seriously consider the preparation toward the upcoming migration as a period that demands psychological adjustment. Moreover, these studies have stressed the importance of separate pre- and postmigration assessments of acculturative stress (e.g., Berry, 2006), as the level of the latter largely depends on the level of the former (e.g., Tartakovsky, 2007). However, it should be noted that the initial phase after migration is not always stressful: For example, researchers have not found high levels of stress among recent Jewish migrants from Russia to Israel and Germany (e.g., Mirsky, Slonim-Nevo, & Rubinstein, 2007).

Research among sojourners has shown that despite of premigration preparations, international transition can still be experienced as stressful after migration and that adaptation difficulties can come as a surprise (Black, 1992; Black & Gregersen, 1990; Rogers & Ward, 1993; Stroh, Gregersen, & Black, 1998; Ward, 1996). According to Ward et al. (2001), there is often a mismatch between expectations and reality, when expectations are either surpassed or unmet (p. 76). However, the relationship between expected and actually confronted psychological and socio-cultural difficulties and their consequences for psychological well-being after migration remains unclear. Some researchers have argued that the direction of the discrepancy between expectations and experiences and the evaluation of its consequences are of a greater importance than the discrepancy per se (Black & Gregersen, 1990; Rogers & Ward, 1993). For example, in Rogers and Ward's (1993) study, discrepancies between expectations and experiences were associated with psychological well-being among secondary school students only when experiences were more challenging than was originally anticipated. Also more generally speaking, the existing stress and coping literature highlights the negative consequences of unexpected stress (see, e.g., Averill, 1973; Monat, Averill, & Lazarus, 1972).

In contrast, social psychological research on anticipated intergroup relations has shown that people overestimate rather than underestimate the negativity of future interactions with outgroup members (Mallett, Wilson, & Gilbert, 2008; Shelton & Richeson, 2005). However, also in this field, there is very little research on the extent to which negative expectations about future interactions with outgroup members match actual experiences (Mallett et al., 2008). Indeed, expectations can eventually become self-fulfilling prophecies (Shelton & Richeson, 2006). People who have negative expectations about social interactions tend to avoid, rather than approach, members of other groups (Mendoza-Denton, Downey, Davis, Purdie, & Pietrzak, 2002; Shelton & Richeson, 2005), and even when intergroup contact is enacted, they perceive its quality as poor (Mendoza-Denton et al., 2002; Shelton, Richeson, & Salvatore, 2005; Shelton, Richeson, & Vorauer, 2006).

Importantly for the present study, within the field of organizational psychology, Brown, Venkatesh, Kuruzovich, and Massey (2008) have proposed and tested three alternative models on the relationship between expectations and experiences based on the met expectations theory (Porter & Steers, 1973). *The ideal point model* suggests that any difference between expectations

and experiences, regardless of the direction, leads to dissatisfaction, while the *disconfirmation model* suggests that negative disconfirmation leads to dissatisfaction. The third model, in turn, suggests that *only experiences* matter for satisfaction, regardless of expectations. In this study, these three alternative hypotheses will be tested: We examine the independent and joint effects of pre-acculturation (i.e., pre-acculturative stress, anticipated discrimination, and anticipated sociocultural difficulties) and acculturation factors (i.e., acculturative stress, perceived discrimination, and sociocultural difficulties) on the psychological adaptation of ethnic migrants in the postmigration stage.

In organizational psychological research, the evidence for these alternative models seems mixed. For example, Irving and Montes (2009) found that met expectations were not always associated with high levels of satisfaction, and exceeded expectations were in some cases negatively associated with satisfaction. Brown et al. (2008), in turn, found most support for the third model showing the importance of experiences for job satisfaction. Among the migrant group studied here, Mähönen, Leinonen, and Jasinskaja-Lahti (2012) recently found the effects of expectation confirmation on life satisfaction and mood to be domain-specific: In the economic domain, migrants' expectations, experiences, and their interrelationships did not affect these psychological outcomes in the postmigration stage, while in the social domain, the more expectations were exceeded by actual experiences, the better were life satisfaction and the general mood of migrants. However, the multidimensional nature of the acculturation process was left unexamined in that study. In the present study, we acknowledge that the direction and extent of expectation-experience mismatches can be different depending on the dimension of acculturation studied. However, given the scarcity of previous research, more specific hypotheses about the optimal relationship between migrants' expectations and actual acculturation experiences for their psychological adaptation cannot be formulated at this stage.

Aims, Research Questions, and Hypotheses

The theoretical model of pre- and postmigration factors predicting ethnic migrants' psychological adaptation developed for the purpose of this study (see Figure 1) takes into account the complex interrelatedness of pre-acculturation factors and postmigration experiences along three different dimensions. We operationalize psychological adaptation as psychological well-being and approach the affective dimension of the acculturation process through the stress experienced in the pre- and postmigration stages, the behavioral dimension through anticipated and perceived sociocultural difficulties, and the social-psychological dimension through anticipated and perceived discrimination. In this study, we include the premigration stage into the analysis of postmigration psychological adaptation among ethnic migrants. By doing so, we aim to disentangle the effect of premigration expectations and anticipatory adjustment from that of actual acculturation experiences on ethnic migrants' postmigration well-being.

First, we examine if the effect of premigration anticipations/experiences on ethnic migrants' postmigration psychological adaptation is direct or indirect, via acculturation experiences (Research Question 1). As pointed out by Preacher and Hayes (2004), the relationship between X and Y can be *mediated* or *indirect*. While mediation implies an initial significant effect of X on Y, indirect effect does not: It is possible that X first affects M, which further affects Y. In fact, a mediated effect can be considered as a special case of indirect effects with only one intervening variable—thus, with a model including multiple intervening variables, it is more appropriate to speak about indirect effects (Preacher & Hayes, 2004). In the present study, we examine both possible *longitudinal direct and indirect effects of premigration factors* and *cross-sectional effects of postmigration experiences* on postmigration psychological adaptation. Furthermore, the hypotheses related to the expected relationships between the pre- and postmigration predictors of psychological adaptation are based on

Figure 1. Theoretical Model Tested in the Study.

previous empirical research attesting to the interrelationships between discrimination and stress, discrimination and sociocultural adaptation, and sociocultural adaptation and stress (e.g., Ataca & Berry, 2002; Liebkind et al., 2004; Neto, 2006; Ward & Kennedy, 1999). More specifically, we hypothesize that anticipated discrimination in the premigration stage is not only related to more perceived discrimination but also to increased acculturative stress and sociocultural difficulties (Hypothesis 1). Anticipated sociocultural difficulties are, in turn, expected to produce more acculturative stress and predispose migrants to perceive more discrimination after migration (Hypothesis 2). Pre-acculturative stress is similarly expected to increase migrants' perceptions about sociocultural difficulties and discrimination (Hypothesis 3). Simultaneously, we take into account the effects of the baseline level of psychological well-being and length of residence in the new home country on postmigration psychological adaptation.

Second, we examine what is the effect of the relationship between premigration factors and postmigration experiences on ethnic migrants' psychological adaptation after migration (Research Question 2). Following Brown et al. (2008), we formulate three alternative hypotheses. First, according to the ideal point model, migrants' psychological adaptation is a function of the congruence between pre-acculturation factors and acculturation experiences in the postmigration stage. The greater the congruence between pre-acculturation factors and acculturation experiences, the higher is the level of psychological adaptation in the postmigration stage (Hypothesis 4). Second, according to the disconfirmation model, migrants' psychological adaptation is a function of the direction of the difference between pre-acculturation factors and acculturation experiences. Positive disconfirmation (i.e., acculturation experiences positively exceeding pre-acculturation experiences and anticipations) is expected to increase the psychological adaptation of migrants and negative disconfirmation to decrease it (Hypothesis 5). Finally, we test whether the psychological adaptation of migrants is solely determined by their acculturation experiences in the postmigration stage, irrespective of their anticipations and experiences in the premigration stage (Hypothesis 6).

Method

Participants and Procedure

The present study is a part of the longitudinal INPRES (Intervening at the Pre-Migration Stage: Providing Tools for Promoting Integration and Adaptation Throughout the Migration Process)

research project on the integration of immigrants from Russia to Finland. Participation in the study was voluntary, and written consents were obtained from each participant.

The baseline data ($N = 224$; 68.3% females) was collected in Russia in spring 2008 among potential Ingrian-Finnish migrants (and their family members; $n = 192$) who attended Finnish language courses as a part of their immigration training program. The sample also included those potential migrants who had already passed the Finnish language test needed for remigration permit ($n = 32$). The mean age at baseline was 44.4 years ($SD = 15.0$ years, range 19 to 85 years). Most participants were married or cohabiting (62.1%) and had children (74.6%). Most of them had full-time employment (55.4%), while only 4% were unemployed at the time of baseline data collection. The baseline participants had applied for the remigration permit, on average, 12 years ago.

The participants were tracked using the Finnish population register for the collection of the follow-up data (between autumn 2009 and spring 2010). At that time, the participants had stayed 3 to 15 months ($M = 9.5$, $SD = 4.0$) in Finland. Thus, the sample of the present study represents quite recent ethnic migrants. The follow-up data consisted of 153 respondents, representing 68% of the baseline sample, and 90% of all the Ingrian-Finnish baseline participants migrated to Finland by August 2010. The mean age in this sample was 45.4 years ($SD = 14.3$). The majority of participants were females (71.9%), and they were married or cohabiting (61.4%). Despite their high level of education prior to migration (46% had attended high school or university and only 16% had no education beyond secondary school), they had not yet been employed in Finland but were typically unemployed (45%), on pension (13%), or studying (12%) at the time of the second wave of data collection. Defining the socioeconomic status of the sample is difficult, as the participants are simultaneously highly educated and suffer from unemployment. With both indicators showing very little variance, controlling for socioeconomic status would not add value to the present analysis, even though socioeconomic status is worth taking into account when interpreting the results of the study.

To examine possible selection bias due to sample attrition, t tests on relevant demographic factors and baseline variables were performed. The participants who took part in both rounds of data collection did not differ from respondents participating only in the baseline stage of the study.

Measures

The participants filled in the survey questionnaires in Russian. All scales were derived from existing research literature, and they are widely used in empirical research on immigrant and sojourner acculturation and adaptation. The scales were professionally back-translated from original English or Finnish versions. The reliabilities of the scales are presented in Table 1.

Psychological adaptation. The outcome of the study, psychological adaptation, was operationalized through three commonly used indicators of psychological well-being: life satisfaction, general mood, and somatic complaints (General Well-Being Index [GWBI]; Gaston & Vogl, 2005). The 22-item GWBI measure contained three dimensions: general mood/affect (13 items; e.g., "Have you felt in firm control of your actions, thoughts or feelings?"), life satisfaction (6 items; e.g., "Has your daily life been filled with things that interest you?"), and somatic complaints/physical health (3 items; e.g., "Have you felt tired, worn out, or exhausted?"). Participants responded on a 5-point scale (1 = *not at all* to 5 = *very much*). The negatively phrased items were reversed, and higher scores of the three composed variables reflected better psychological well-being.

Length of residence. On the basis of the Finnish population register, we computed a variable indicating the time the participant had stayed in Finland at the time of the follow-up data collection (expressed in months).

Anticipated/perceived sociocultural difficulties/adaptation. Migrants' anticipated (T_1) and perceived sociocultural difficulties (T_2) were measured by using the sociocultural adaptation scale by Ward and Kennedy (1999). Sample items included the following: finding food you enjoy, using the transport system, and making yourself understood. Of the 29 items of the original scale, only 26 were presented (the deleted items were dealing with someone who is unpleasant, dealing with people staring at you, and worshipping). In addition, at T_1 , one item as well as the introductory question was rephrased to fit the premigration context. On a 5-point scale, participants rated the expected/perceived difficulty of different aspects of life in Finland (1 = *extreme difficulty* to 5 = *no difficulty*), with higher scores reflecting less sociocultural difficulties or better adaptation.

(Pre)acculturative stress. The level of pre-acculturative stress as experienced in the premigration stage (T_1) and acculturative stress as experienced in the postmigration stage (T_2) was measured by asking the participants to rate the severity of the migration experience compared to other stressful events and situations in their lives. An introductory question ("How stressful would you rate ..."; see Aldwin & Revenson, 1987) was followed by three items developed to suit the context of ethnic migration in this study (i.e., leaving Russia, moving to Finland, and adaptation in Finland). The participants answered to these questions using a 7-point scale (1 = *not severe at all* to 7 = *the most severe event I have faced*) by Terry (1994).

Anticipated/perceived discrimination. Two pre-existing measures of perceived discrimination (Schmitt, Spears, & Branscombe, 2003), validated also in the intergroup context of this study (Jasinskaja-Lahti et al., 2009), were adapted for use in the pre- and postmigration stages. Response options of all four items ("Finns will have/have a positive attitude towards my ethnic background," "I will be/have been treated fairly in Finland," "I will experience/have experienced discrimination in Finland," "My ethnic background will be/is appreciated in Finland") ranged from 1 = *strongly disagree* to 5 = *strongly agree*, with higher scores denoting higher levels of anticipated (T_1) and perceived (T_2) discrimination (positive items reversed).

Data Analysis

To address the first research question on the impact of premigration anticipations and postmigration experiences on psychological well-being and to test the hypothesized patterns of both direct and indirect relationships, a structural equation modeling (SEM) approach was employed. The modeling was conducted with Maximum Likelihood estimation and using the Amos 18.0 software package (Arbuckle, 2009). The hypothesized model (see Figure 1) included three input, exogenous variables; three mediating, endogenous variables; and one dependent, endogenous variable. Due to the relatively small sample size, we used observed indicators for all variables in the model and thus conducted a path analysis instead of a full SEM. The model included both longitudinal relationships (between premigration factors at T_1 and postmigration factors and the outcome variable at T_2) and cross-sectional relationships (between postmigration factors and the outcome variable at T_2). In addition to the hypothesized paths, the model included two covariates of psychological well-being at T_2 (psychological well-being at T_1 and length of residence). Finally, the covariances between the disturbances of the endogenous variables were estimated. Indirect effects were analyzed with bootstrapping method, in which bootstrap estimates are computed by taking a large number of samples from the data and computing the indirect effects and standard errors in each sample (Preacher & Hayes, 2004). According to Hayes (2009), the bootstrapping method has several advantages over the conventional tests of mediation, such as the Sobel test, particularly when analyzing multiple mediation in small and medium size samples.

To address the second research question related to the joint effects of premigration anticipations and postmigration experiences on ethnic migrants' psychological well-being, polynomial regression analysis and response surface methodology were used. Following recent

Table 1. Descriptive Statistics of the Variables Used in the Study ($N = 153$).

Variable	T_1			T_2			Paired t Test	
	M	SD	α	M	SD	α	t	df
Length of residence				9.49	3.97			
Pre-/perceived acculturative stress	3.52	1.57	.88	3.14	1.33	.86	2.94**	139
Anticipated/perceived discrimination	2.04	.66	.74	2.22	.74	.83	-2.59*	147
Anticipated/perceived sociocultural difficulties	4.09	.50	.93	4.02	.54	.93	1.81	148
General well-being	3.87	.55	.93	3.91	.52	.93	-.91	145

* $p < .05$. ** $p < .01$.

recommendations (Brown et al., 2008; Shanock, Baran, Gentry, Pattison, & Heggstad, 2010), this method was chosen to tap the possible nonlinear relationships and graph the results of polynomial regression analyses in a three-dimensional space. This technique has more explanatory potential compared to traditionally used difference scores and regression analyses (Shanock et al., 2010), and it overcomes the methodological problems related to the use of difference scores, including reduced reliability, ambiguity, confounded effects, untested constraints, and dimensional reduction (for discussion, see Cafri, van den Berg, & Brannick, 2010; Cohen, Nahum-Shani, & Doveh, 2010). In total, we conducted three polynomial regression analyses, in which the outcome variable (i.e., psychological well-being at T_2) was regressed on expectations and experiences of the predictor variable (i.e., anticipated/perceived discrimination, pre-acculturative/acculturative stress, and anticipated/perceived sociocultural difficulties), the interaction between the pre- and postmigration assessments of the predictors, and the squared terms for each of these predictors. The polynomial regression models included the same covariates (i.e., psychological well-being at T_1 and length of residence) as the SEM model.

Results

The reliabilities, mean values, and standard deviations of the variables used in the study as well as the paired t test statistics for differences between T_1 and T_2 assessments are presented in Table 1. There was no difference between the anticipated and actually experienced sociocultural difficulties. As regards stress, even though the scale means represent only estimates of the psychological phenomena studied (Blanton & Jaccard, 2006) and thus need to be interpreted with caution, the scores obtained indicated relatively moderate experiences of pre-acculturative stress among the immigrants studied. After migration, the participants reported, on average, lowered level of acculturative stress when compared to the premigration stage. The respondents had experienced more ethnic discrimination after migration than they had anticipated in the premigration stage. The means of GWBI were, in turn, relatively high and stable over time. The bivariate correlations of the variables used are presented in Table 2. All variables in the study, except for length of residence and pre-acculturative stress, correlated significantly with the outcome variable, psychological well-being (GWBI).

To answer our first research question, we employed SEM approach and discovered that our theoretical model (see Figure 1) did not fit the data adequately, $\chi^2(6, N = 153) = 19.47, p = .003$; CFI = .96; AIC = 115.47; RMSEA = .12 (.06 to .18, 90% CI). The results suggested a clear need for modifying the model and pointed to the existence of indirect rather than direct paths from premigration factors to postmigration psychological adaptation. There is a reason to assume that as migration represents a significant life change event, the short-term and time-specific

Table 2. Pearson's Correlations (*r*) of the Variables Used in the Study (*N* = 153).

Variable	1	2	3	4	5	6	7	8	9
1. Months in Finland									
2. Pre-aculturative stress (T_1)	-.18*								
3. Anticipated discrimination (T_1)	-.08	.36**							
4. Anticipated sociocultural adaptation (T_1)	.18*	-.58**	-.45**						
5. General well-being (T_1)	.08	-.26**	-.19*	.28**					
6. Perceived acculturative stress (T_2)	-.06	.43**	.22**	-.39**	-.12				
7. Perceived discrimination (T_2)	-.06	.07	.23**	.08	-.18*	.27**			
8. Perceived sociocultural adaptation (T_2)	.11	-.38**	-.28**	.48**	.41**	-.46**	-.36**		
9. General well-being (T_2)	.11	-.14	-.21**	.23**	.53**	-.37**	-.39**	.52**	

* $p < .05$. ** $p < .01$.

Figure 2. Path Diagram Presenting the Results of the Structural Equation Model.

Note: The regression coefficients presented are standardized betas, significant at least at the $p < .05$ level. The model includes two covariates of psychological well-being at T_2 (psychological well-being at T_1 and length of residence), with only the former being a statistically significant predictor ($.42, p < .001$) of the dependent variable.

associations are more evident than the long-term effects of premigration factors on postmigration outcomes (see, e.g., Jasinskaja-Lahti et al., 2012; Mähönen & Jasinskaja-Lahti, 2012). In terms of longitudinal relationships between the T_1 and T_2 predictors of psychological adaptation, no statistically significant relationships occurred between T_1 predictors and perceived discrimination at T_2 (except for the autoregressive path from anticipated to perceived discrimination). Although these relationships were hypothesized, it nevertheless seems that anticipated and perceived ethnic discrimination differ from the two other acculturation stressors in that they depend on the treatment received from host nationals, on the immediate and situational attributions to discrimination of the individual, and on the presence of other stressors (i.e., feelings of distress and sociocultural difficulties). This result does not, however, contradict our assumption about the interrelatedness of the three acculturation dimensions, as there were clear cross-sectional relationships between the three dimensions at each time point. Also taking into consideration the relatively small sample of the study, we decided to simplify the model by removing statistically nonsignificant paths to the extent that they were not needed to be controlled for in the longitudinal analysis of psychological well-being. As a result of this modification, the length of residence was the only statistically nonsignificant ($p = .06$) predictor of psychological well-being at T_2 that

Table 3. Results of the Polynomial Regression Analysis on the Effects of Anticipated and Perceived Sociocultural Difficulties on Psychological Adaptation (GWBI) (*N* = 145).

Step 1	Step2	B
GWBI T_1		.50***
Length of residence T_2		.01
	GWBI T_1	.36***
	Length of residence at T_2	.01
	Anticipated sociocultural difficulties	-.08
	Perceived sociocultural difficulties	.35***
	Anticipated $\times$ Anticipated	-.10
	Anticipated $\times$ Perceived	-.05
	Perceived $\times$ Perceived	-.09
	R^2	.41
	<i>F</i>	13.75***
	Surface tests	
	a_1	.27**
	a_2	-.24
	a_3	-.43**
	a_4	-.14

Note: The regression coefficients presented are unstandardized betas. For information on surface test coefficients, see Table 3.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 3. The Effects of Expectation Confirmation Related to Sociocultural Difficulties on Psychological Well-Being.

Figure 4. The Effects of Expectation Confirmation Related to Acculturative Stress on Psychological Well-Being.

Table 4. Results of the Polynomial Regression Analysis on the Effects of Anticipated and Perceived Acculturative Stress on Psychological Adaptation (GWBI) ($N = 145$).

Step 1	Step 2	B
GWBI T_1		.50***
Length of residence T_2		.01
	GWBI T_1	.54***
	Length of residence at T_2	.01
	Pre-acculturative stress	.07**
	Perceived acculturative stress	-.13***
	Pre-Stress $\times$ Pre-Stress	-.02
	Pre-Stress $\times$ Perceived Stress	-.04*
	Perceived Stress $\times$ Perceived Stress	.00
	R^2	.44
	F	14.23***
	Surface tests	
	a_1	-.06
	a_2	-.05
	a_3	-.20***
	a_4	.02

Note: The regression coefficients presented are unstandardized betas. For information on surface test coefficients, see Table 3.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5. Results of the Polynomial Regression Analysis on the Effects of Anticipated and Perceived Discrimination on Psychological Adaptation (GWBI) ($N = 136$).

Step 1	Step 2	B
GWBI T_1		.50***
Length of residence T_2		.01
	GWBI T_1	.42***
	Length of residence at T_2	.01
	Anticipated discrimination	-.10
	Perceived discrimination	-.15**
	Anticipated $\times$ Anticipated	.07
	Anticipated $\times$ Perceived	.03
	Perceived $\times$ Perceived	-.06
	R^2	.39
	F	12.39***
	Surface tests	
	a_1	-.25***
	a_2	.03
	a_3	.05
	a_4	-.02

Note: The regression coefficients presented are unstandardized betas. $a_1 = (b_1 + b_2)$, where b_1 is beta coefficient for expectations and b_2 is beta coefficient for experiences. $a_2 = (b_3 + b_4 + b_5)$, where b_3 is beta coefficient for expectations squared, b_4 is beta coefficient for the cross-product of expectations and experiences, and b_5 is beta coefficient for experiences squared. $a_3 = (b_1 - b_2)$. $a_4 = (b_3 - b_4 - b_5)$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

was kept in the revised model as a theoretically relevant covariate. When comparing the fit statistics of the revised model and the original one, it is notable that the χ^2 change was not statistically significant (χ^2 change (6, $N = 153$) = 1.50, *ns*), but as the other fit indices were much more appropriate than in the originally estimated model (χ^2 (12, $N = 153$) = 20.97, $p = .051$; CFI = .97; AIC = 104.97; RMSEA = .07 (.00 to .12, 90% CI)), we decided not to continue a further modification of the model. The final results are presented in Figure 2.

As regards effect size, the empirical model explained 44% of the variance in migrants' postmigration psychological well-being. We found evidence for the autoregressive effects of T_1 predictors on T_2 predictors of psychological well-being. In line with Hypotheses 1 and 2, there were also longitudinal effects of anticipated sociocultural difficulties/adaptation and pre-acculturative stress on their postmigration levels: The higher the participants' anticipated socioculturation adaptation, the less stress they experienced, and the more pre-acculturative stress they experienced, the lower was their sociocultural adaptation after migration. Also at T_2 , as expected, the disturbances of the three predictor variables covaried statistically significantly at least at the $p < .05$ level (sociocultural adaptation – acculturative stress: $r = -.31$; acculturative stress – perceived discrimination: $r = .28$; sociocultural adaptation – perceived discrimination: $r = -.36$). As can be seen from Figure 2, there was a direct significant relationship between premigration experiences and postmigration psychological well-being only in the case of acculturative stress. Surprisingly, the more participants experienced pre-acculturative stress, the higher was their psychological well-being in the postmigration stage. However, this result suggests a possible suppressor or interaction effect.

Next, to properly examine if the effects of premigration factors on postmigration psychological well-being were direct or indirect, we tested the total indirect effects (see Hayes, 2009) of anticipated sociocultural difficulties, pre-acculturative stress, and anticipated discrimination at T_1 on psychological well-being at T_2 with the bootstrap method. Mean bootstrap estimates were calculated based on 5,000 bootstrap samples with 95% confidence intervals. According to the results, low level of anticipated sociocultural difficulties at T_1 was the only premigration factor that had a significant indirect effect (.15, $p < .001$) on psychological well-being at T_2 , via perceived sociocultural difficulties/adaptation and acculturative stress. Pre-acculturative stress, in turn, had only a direct effect on psychological well-being at T_2 . Finally, we found no direct or indirect effects of anticipated discrimination on psychological well-being at T_2 . However, both pre-acculturative stress and anticipated discrimination were positively associated with the subsequent levels of acculturative stress and perceived discrimination in the postmigration stage, and these were further negatively associated with psychological well-being at T_2 (see Figure 2).

To answer our second research question on the effects of the concordance/discordance between pre- and postmigration factors on ethnic migrants' psychological well-being after migration, we conducted polynomial regression with response surface analysis. As regards the testing of the alternative hypotheses, Hypothesis 4 was confirmed related to *sociocultural difficulties* (see Figure 3 and surface test value a1 in Table 3): Ethnic migrants' well-being was highest when both anticipations and experiences were positive and in line with each other. However, we also found some evidence supporting Hypothesis 5 (see surface test value a3 in Table 3): Ethnic migrants' psychological well-being was low when they anticipated less sociocultural difficulties than they experienced after migration. As regards *acculturative stress*, Hypothesis 5 was confirmed (see Figure 4 and surface test value a3 in Table 4): The level of ethnic migrants' psychological well-being was highest when perceived postmigration stress was lower than was anticipated in the premigration stage. Finally, in case of *discrimination*, Hypothesis 4 was confirmed (see Figure 5 and surface test value a1 in Table 5): Ethnic migrants' psychological well-being was highest when they had both anticipated and perceived low levels of ethnic discrimination. Thus, we found no evidence to support Hypothesis 6, which would have

Figure 5. The Effects of Expectation Confirmation Related to Ethnic Discrimination on Psychological Well-Being.

suggested that ethnic migrants' psychological well-being after migration would be determined solely by their postmigration experiences, regardless of their premigration experiences and anticipations.

Discussion

Due to the lack of longitudinal studies and methodologically robust testing of expectation confirmation in previous research, the present study aimed at increasing our understanding of the pre- and postmigration determinants of psychological adaptation among ethnic migrants. More specifically, the study was, to our knowledge, the first (1) to longitudinally test the direct and indirect effects of premigration factors on postmigration psychological adaptation and (2) to show how the concordance or discordance between premigration expectations/experiences and postmigration experiences affects psychological adaptation after migration. In addition, the study aimed at contributing to the theoretical development of the multidimensional approach to acculturation by simultaneously and longitudinally assessing affective, behavioral, and social psychological predictors of psychological adaptation. Finally, the study also employed a methodological approach new to the field of acculturation psychology (i.e., polynomial regression with response surface analysis) in order to disentangle the interrelationship between pre- and postmigration factors. In sum, our findings attested that the level of psychological adaptation of ethnic migrants shortly after migration is highest (1) when both anticipated and perceived sociocultural difficulties are low and correspond with each other, (2) when migrants both anticipate and perceive low levels of ethnic discrimination, and (3) when their actual acculturative stress after migration is lower than the level of pre-acculturative stress.

As regards our specific findings, first, we found with structural equation modeling only little evidence speaking for the direct effects of pre-acculturative factors on ethnic migrants' postmigration psychological adaptation. Pre-acculturative stress was the only premigration factor directly affecting postmigration psychological adaptation. Such direct effects were not found in the case of anticipated discrimination or anticipated sociocultural difficulties. However, the pre-acculturative factors turned out to be decisive for postmigration acculturation experiences, which, in turn, were all significant predictors of postmigration psychological adaptation, supporting previous research on the role of expectations in predicting actual psychological and behavioral outcomes (Black, 1992; Black & Gregersen, 1990; Stroh et al., 1998). More

specifically, as regards the affective dimension of acculturation, in line with previous research (Bhugra, 2004; Ryan et al., 2006; Tartakovsky, 2007), we found pre-acculturative stress to predict stress experienced in the postmigration stage. Also, our results related to the social psychological dimension of acculturation supported the assumed links between anticipated discrimination and perceived discrimination in the postmigration stage (e.g., Shapiro & Neuberg, 2008; Shelton et al., 2006). As regards the behavioral dimension of acculturation, in contrast to the results of Rogers and Ward (1993), also expectations and experiences of sociocultural difficulties were positively related.

We argue that the pattern of our longitudinal findings stems from intrapersonal psychological consistency and/or the so-called Markov chain (i.e., the fact that postmigration experiences are more proximal determinants of the outcome measured in the postmigration stage). However, the premigration factors were important to be included in the study as they predicted the levels and the quality of postmigration experiences and also participated in the interplay between pre-acculturation experiences/expectations and postmigration acculturation experiences. In fact, by looking at these interrelationships with polynomial regression analysis, we were able to identify most optimal relationship between pre- and postmigration acculturation for ethnic migrants' psychological adaptation after migration.

Indeed, the second set of results obtained showed that they are not only postmigration experiences but rather the extent to which they confirm or disconfirm premigration experiences and expectations that affect psychological adaptation in the postmigration stage. In a previous study by Rogers and Ward (1993), expectations had predictive power only when considered in terms of their discrepancy from actual experience: psychological distress increased in case of negative disconfirmation (i.e., more sociocultural difficulties were experienced than anticipated). Similarly, also in this study, the psychological well-being of ethnic migrants was low when they had anticipated less sociocultural difficulties than they experienced. However, our nonlinear analyses allowed us to identify that the pattern of results is different when predicting high levels of psychological well-being: It was found to be highest when both their anticipations and experiences of sociocultural difficulties were low and in line with each other. As regards the other two dimensions of acculturation (i.e., social-psychological and affective), we found evidence of both confirmation and disconfirmation of premigration experiences/expectations. Ethnic migrants' psychological well-being in the postmigration stage was highest when they both anticipated and perceived low levels of ethnic discrimination, and when their acculturative stress was lower than was pre-acculturative stress before migration.

In contrast to the intergroup forecasting error found in previous research (Mallett et al., 2008), the group studied anticipated lower (and not higher) levels of ethnic discrimination than they actually perceived in the postmigration stage. This result may relate to the group studied, namely ethnic migrants, who have been found to have very positive expectations about their life in their future homeland also in other contexts of ethnic (re)migration (e.g., Israel; see Tartakovsky, 2009). Related to this, also their expectations regarding sociocultural difficulties after migration were highly optimistic and also quite realistic—at least when assessed after a relatively short period of time in the new country. Despite these positive anticipations, the respondents experienced upcoming migration as a relatively stressful event. However, their average stress level decreased after migration, and there was no difference between T_1 and T_2 assessments of psychological well-being, even though a decrease in well-being is typical for the postmigration stage (e.g., Kirkcaldy et al., 2005; Lerner et al., 2005; Ritsner & Ponizovsky, 1999; Ward, 2001). These positive findings may be explained by the different role of affective dimension as compared to the other two acculturation dimensions: Decreased psychological stress may be seen as a reactive response to ethnic migrants' positive acculturation experiences in the behavioral dimension of acculturation after migration (cf., Jasinskaja-Lahti, 2008).

In future research, the interrelationships between different dimensions of acculturation should be optimally studied with one or two premigration assessments and at least two postmigration assessments. In a similar vein, it must be stressed that the suggested causal directions between acculturative stress and well-being in the postmigration stage should be interpreted with caution. Furthermore, even though we tried in the present study to avoid a possible confounding effect of the predictor (acculturative stress) and the predicted variable (psychological well-being) by assessing the former through primary stress reactions (i.e., experience of stress specifically related to migration) and the latter with more secondary and general well-being markers (i.e., mood, life satisfaction, and psychosomatic complaints), it may be the case that the overlap in the contents of these measures is responsible for the obtained direct (and not indirect) effect of preacculturative stress on postmigration psychological adaptation. Another potential point of criticism concerns the lack of a control group, which would have been needed in order to make strong conclusions about changes resulting from migration.

As regards our suggestions for future research testing the proposed model in other immigration contexts, it should be noted that the group studied may differ from other immigrant and ethnic (re)migrant groups in that they did not only have contact experiences with future hosts already before migration but also were involved in premigration training during their long wait before actual migration. This might, in part, explain why their expectations were found to be not only quite positive but also quite realistic. However, we argue that the relationships obtained in this study are in line with previous research and consequently relevant in predicting postmigration psychological adaptation also in other groups of voluntary migrants.

Furthermore, in order to obtain a more detailed description of acculturation expectations, experiences, and their interrelationship among ethnic migrants, a qualitative approach is called for (for a recent example, see the longitudinal discursive analysis of identity construction by Varjonen, Arnold, & Jasinskaja-Lahti, *in press*). In addition, to reach a more specific understanding of the adaptation process of migrants, large longitudinal samples are needed to depict possible differences between age groups and generations.

Finally, a social and acculturation psychological approach proposed here could also be complemented with an intra-individual approach in order to see whether and how the personality characteristics of individual migrants affect their acculturation process. It may be the case that personality traits, such as neuroticism, are responsible for the transsituational stability of experiences among migrants. Indeed, the migration process is not just about changes but also about stability: Recent research on the present group studied has been indicative of the stability of values (Lönnqvist, Jasinskaja-Lahti, & Verkasalo, *in press*) over the course of migration.

As regards the development of immigrant recruitment and reception programs, integration policies, and counseling services, our results point to the importance of understanding premigration experiences and anticipations and how they—along with postmigration acculturation experiences—lead to psychological adaptation. Our results on the decrease of acculturative stress after migration resonate with the critique presented by Rudmin (2009): Migration as such should not be seen as something pathological and inevitably stressful. However, it seems that the premigration stage might be the most stressful phase of the acculturation process, followed—in the best case—by an unexpectedly smooth adaptation to the new home country. Our results thus give a reason to recommend investments in research-based premigration interventions that promote the formation of adaptive acculturation profiles. More specifically, such interventions should be aimed at creating positive but realistic expectations regarding the intergroup context of the receiving society and the sociocultural adjustment of ethnic migrants. On the basis of the results obtained, overoptimism is not adaptive, and disillusionment is likely to have detrimental effects on psychological well-being after migration. Also importantly, premigration interventions should aim at relieving preacculturative stress. Our previous study (Jasinskaja-Lahti & Yijälä, 2011) on

the determinants of pre-acculturative stress suggests that positive premigration contacts with future host nationals accompanied with accurate information, language training, and promotion of self-efficacy help to alleviate pre-acculturative stress. In the postmigration stage, in turn, societies need to focus especially on promoting positive intergroup relations between newcomers and the national majority group and supporting the development of sociocultural skills required for active participation in the society. These are efficient ways also to promote the psychological adaptation among ethnic migrants and, most likely, also among other groups of immigrants.

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