

Predictors of Cultural Adjustment: Intergroup Status Relations and Boundary Permeability

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We examined intergroup predictors of cultural adjustment among Asian international students in Australia. Sociostructural beliefs (status, legitimacy, and permeability) and initial adjustment were assessed ($N = 113$) at Time 1, and measures of adjustment were obtained ($N = 80$) at Time 2 eight weeks later. International students who perceived their cultural group to be relatively low in status experienced lower levels of psychological adjustment. Also, as expected, the effects of status were moderated by perceptions of both the permeability of intergroup boundaries and the legitimacy of the status differential. At high levels of legitimacy, perceptions of permeable group boundaries were associated with better psychological, sociocultural, and academic adjustment among international students perceiving their group to be low in status, but lower levels of adjustment among students who perceived their group to be high in status. At low levels of legitimacy, irrespective of group status position, perceived permeability was not related to adjustment.

KEYWORDS cross-cultural adjustment, international students, social identity theory

EVERY year governments and foundations around the world support a large number of student exchanges in overseas educational institutions, with the aim of enhancing commercial, diplomatic, and cultural relations

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between countries. It has been estimated that worldwide, at any point in time, there may be up to 1.5 million students and scholars attending tertiary institutions abroad (Larsen, Martin, & Morris, 2002). International exchange is encouraged because benefits may accrue to those who experience intercultural contact—cross-cultural experience is thought to broaden one's perspective, promote personal, academic, and professional growth, and result in a greater mutual understanding (Furnham & Bochner, 1986). Moreover, intercultural exchange has benefits at the national level—international students not only contribute to revenue through tuition fees, but also through tourism and the purchasing of goods and services. However, international exchange may be associated with as many costs as benefits. The demands of the host culture might be totally at odds with that experienced in the native country (Ozby, 1994). Intercultural contact may, at worst, be perceived as a threat to one's cultural identity and, to a lesser degree, as a stressful and confusing experience (Sandhu & Asrabi, 1994). Increased understanding of the cultural transition experiences of international students is needed in order to preserve the benefits of cultural exchange and to promote future exchanges and links within the international community.

Contemporary research on cross-cultural adjustment has strived to identify the psychological, behavioral, and attitudinal changes that occur when individuals and groups (e.g. immigrants, refugees, guest workers, international students) encounter continuous intercultural contact. Clinical (Feinstein & Ward, 1990), social learning (Befus, 1988), and social cognition (Weissman & Furnham, 1987) perspectives have identified a range of *individual-level* variables, including personality characteristics, social support, the acquisition of culturally appropriate skills, and past cross-cultural experience as predictors of cultural adjustment. However, although prominent cross-cultural theorists (e.g. Berry, 1997) have suggested that aspects of the social context (e.g. institutional attitudes, status) are important in adjustment, research on cultural transition and adjustment

has tended to neglect the *group-level* or *intergroup* dimension of the cross-cultural experience (cf. Bourhis, Moise, Perreault, & Senécal, 1997; Lalonde & Cameron, 1993; Moghaddam & Perreault, 1991). The aim of the present study was to investigate the adjustment of international students from an intergroup perspective, emphasising the role that intergroup status relations and perceptions of the intergroup context play in the prediction of adjustment. An integrative approach was adopted, combining insights from cross-cultural research and social psychological theory, specifically social identity theory (Tajfel & Turner, 1979), in order to provide a broader perspective on the adjustment of international students.

Social identity theory

Social identity theory (Tajfel & Turner, 1979) addresses the social self—the component of the self-concept that derives from group membership. Fundamental is the concept of *social identity*, which is defined as a combination of the individual's knowledge of membership in social groups and an emotional or value component attached to group membership (Tajfel, 1972). According to social identity theory, individuals seek to belong to groups that provide them with a positive social identity (Tajfel & Turner, 1979), and are motivated to maintain positive distinctiveness through intergroup comparisons. Favorable comparisons with outgroups accord high status to the ingroup, whereas unfavorable comparisons with outgroups lead to low status and, in order to attain a positive social identity, people are motivated to associate with high status groups, and to dissociate from low status groups. Moreover, because the self is defined in important ways by membership in social groups, the loss of an identity or changes to the meaning of an identity—such as those involved in cross-cultural exchange—are likely to impact upon both the individual self (e.g. in terms of subjective well-being and adjustment) and the social self (e.g. in terms of the identity management strategies adopted).

Ingroup status

In line with social identity theory, research has found that differences in group status are associated with differential outcomes at both the group and individual level. At the group level, members of low status groups evaluate their group less positively (R. J. Brown & Wade, 1987), favor the ingroup less in outcome allocations (Sachdev & Bourhis, 1987; Turner & Brown, 1978), identify less strongly with their group (Ellemers, Van Knippenberg, & Wilke, 1990), and seek to dissociate themselves from the ingroup more than members of high status groups (Ellemers, Van Knippenberg, de Vries, & Wilke, 1988). At the individual level, members of low status groups have lower self-esteem (B. B. Brown & Lohr, 1987), experience more anxiety during intergroup contact (Stephan & Stephan, 1985), and experience more aversive psychological consequences as a result of perceiving discrimination (Schmitt & Branscombe, 2002).

In response to a negative social identity, social identity theory proposes that group members may engage in three main identity management strategies: individual mobility, social creativity, and social competition (Tajfel & Turner, 1979; see also Hogg & Abrams, 1988; Van Knippenberg & Ellemers, 1993). However, according to social identity theory, Sociostructural variables, such as the perceived permeability of group boundaries and the legitimacy and stability of the status differential, impact upon group members' engagement in either individual-oriented (i.e. individual mobility) or collective-oriented (i.e. social creativity and social competition) identity management strategies.

Permeability of intergroup boundaries

Social identity theory makes a clear distinction between social structures in which individual mobility is considered feasible, and structures in which there is a predominant belief that group boundaries are impermeable (Tajfel, 1974; Tajfel & Turner, 1979). Perceptions of permeable boundaries reflect the extent to which group members believe that the intergroup boundaries are open and, in principle, the extent to which the social boundaries that

separate their own group from another group can be crossed. In contrast, impermeable boundaries are those perceived to be in a fixed or closed state, implying that changing one's low status group membership is not possible.

When group boundaries are perceived to be permeable, Tajfel and Turner (1979) proposed that the dominant identity enhancement strategy of low status group members is to engage in individual mobility strategies. Indeed, Ellemers et al. (1990) observed that members of low status groups faced with permeable boundaries disidentified with the low status group and showed anticipatory identification with the high status group (see also Clément & Noels, 1992). In contrast, when group boundaries are perceived to be impermeable, individual mobility or 'passing' becomes an unrealistic aspiration. If this occurs, members of low status groups can enhance their social identity only through the collective strategies of social competition or social creativity directed at improving the status of their present group as a whole (see e.g. Jackson, Sullivan, Harnish, & Hodge, 1996; Lalonde, 1992; Wright, Taylor, & Moghaddam, 1990). In addition, impermeability can engender perceptions of social disadvantage or discrimination among low status group members (Lalonde & Cameron, 1993). Moreover, in research on employee adjustment to organizational mergers, there is consistent evidence that perceptions of high levels of intergroup permeability are linked to more positive outcomes among members of the low status merger partner (Terry, Carey, & Callan, 2001). Thus, boundary permeability has an impact beyond the endorsement of individual or collective identity management strategies.

Legitimacy of intergroup status relations

In addition to permeability, Tajfel (1974, 1975) proposed that perceptions regarding the legitimacy of the status differential are an important determinant of identity management strategies. An illegitimate low status position is likely to give rise to mutual solidarity (i.e. strong ingroup identification and ingroup bias) and collective attempts to change the status quo, an

argument that has received support in both field and laboratory settings (e.g. Caddick, 1982; Ellemers, Van Knippenberg, & Wilke, 1992; Lemaine, 1974; Moghaddam & Perreault, 1991; Taylor, Moghaddam, Gamble, & Zellerer, 1987; Turner & Brown, 1978).

In addition to independent effects for permeability and legitimacy, it is likely that permeability and legitimacy considerations interact to influence choice of identity management strategy. Members of a group who perceive that a low status position is legitimate should engage in individual action, and perceptions of open group boundaries are likely to have positive effects for these group members. In contrast, for members of groups perceiving that their low status position is illegitimate, perceptions of open boundaries might be perceived as threatening, because this situation might undermine members' collective efforts at identity maintenance and protection. There is support for the proposed interplay between permeability and legitimacy considerations on identity management strategies in laboratory studies (see e.g. Taylor et al., 1987, Experiment 2); however, the interactive effects among different socio-structural beliefs have been examined much less frequently in naturalistic settings (cf. Johnson, Terry, & Louis, 2005; Mummendey, Klink, Mielke, Wenzel, & Blanz, 1999).

Social identity theory and individual-level experiential outcomes

Social identity theory is notable in its attempt to incorporate and articulate the relationship between microsocial aspects related to individual psychological processes associated with group membership and macrosocial aspects related to the structure of wider society. That is, beliefs about the sociostructural context of intergroup relations—a central feature of the perspective—determine responses (i.e. individual vs. collective) to the social context, an argument that has received extensive support (e.g. Ellemers et al., 1990; Lalonde & Silverman, 1994; Moghaddam & Perreault, 1991; Turner & Brown, 1978). However, there has been a relative paucity of research examining how

beliefs about the social context impact upon individual-level outcomes such as subjective well-being and adjustment. In recent years, researchers have begun to address the way in which aspects of group membership, such as position within the group (i.e. peripheral group membership) and levels of perceived discrimination and prejudice, affect individual functioning (see e.g. Garstka, Schmitt, Branscombe, & Hummert, 2004; Jetten, Branscombe, Spears, & McKimmie, 2003). However, in the same way that beliefs about the social context impact upon choice of identity management strategy, beliefs about status, permeability, and legitimacy should impact upon adjustment and well-being. The aim of the present study was to broaden the focus of research on sociostructural beliefs by examining the interplay among perceptions of relative group status, intergroup permeability, and the legitimacy of the status position on multiple aspects of adjustment (i.e. psychological, sociocultural, and academic) among international students.

The present study

A number of commentators (e.g. Berry, 1997; Furnham & Bochner, 1986; Lalonde, Taylor, & Moghaddam, 1992) have observed that immigrant, refugee, and sojourner groups frequently identify with, or are identified by others as belonging to, social categories that have some negative valance (e.g. 'foreigner'). Individuals may experience discrimination on the basis of their group membership, with deleterious consequences for self-esteem (see e.g. Schmitt, Spears, & Branscombe, 2003). Moreover, when intergroup social comparisons are made in the new context, low status is often conferred on these groups. According to social identity theory, perceptions of low relative group status and devalued group membership should be associated with lower levels of adjustment (psychological, sociocultural, and academic) to acculturation. However, the effects of perceived group status should be dependent on beliefs about the nature of the relations between the international student's own group and relevant outgroups. Thus, a social identity approach to

understanding variation in international students' cultural adjustment places the emphasis not on individual characteristics and skills, but on the interplay between students' perceptions of the relative status of their cultural group and their beliefs about the sociostructural characteristics of the intergroup context.

The present research tested several predictions. It was proposed that the more international students perceived their cultural group to be relatively low in status within the majority Australian society, the worse would be their scores on measures of psychological, sociocultural, and academic adjustment. However, the effect of status perceptions should vary as a function of beliefs about the permeability and legitimacy of the social structure. It was proposed that when students perceived that the group was legitimately low in status, increasing perceptions of permeability (i.e. openness of group boundaries) would be associated with more positive adjustment scores. In contrast, when students perceived that the group was legitimately high in status, it was predicted that increasing perceptions of permeability would be associated with less positive outcomes. Finally, it was predicated that, irrespective of status beliefs, differential perceptions of legitimacy and permeability would not be related to adjustment.

Method

Design

The study employed a two-wave longitudinal design. At Time 1, perceptions of relative group status, permeability, and legitimacy were assessed, as were a number of background variables. At Time 2, eight weeks later, the outcome measures (psychological, sociocultural, and academic adjustment) were assessed. Measures of initial adjustment were also obtained at Time 1. Even in a longitudinal design, evidence of a relationship between a predictor and an outcome variable obtained at a subsequent point in time may reflect response consistency effects associated with the influence of stable dispositional variables (see Zapf, Dormann, &

Frese, 1996). Data on initial adjustment was used to control for this potential influence, and then the effects of the predictors were examined.

Participants

A total of 113 Asian university students (66 males, 45 females, 2 unspecified) from 14 Asian countries participated in the study. Respondents were recruited through the first-year participant pool at the University of Queensland, and through various international student organizations in Brisbane, Australia. Respondents ranged in age from 17 to 41 years ($M = 22.50$, $SD = 3.75$). Length of residence in Australia averaged 34.10 months ($Mdn = 17$ months)—country of origin was spread across Asia. Only 18% of the sample had some form of prior cross-cultural experience. Approximately 70% of the respondents were enrolled in undergraduate studies. Of the original sample, 71% ($n = 80$) completed the second phase of the study. Comparison of this sample with the respondents who provided data only at Time 1 ($n = 33$) revealed no significant differences between the two groups on any of the Time 1 predictor or outcome variables.

Measures

With the exception of legitimacy and the background variables of length of residence and previous travel experience, all measures were examined using multiple-item scales. Both questionnaires were presented in English, which was considered reasonable given that the students had passed English language requirements for university entry. Table 1 shows descriptive data—means, standard deviations, and reliabilities—for the focal measures. All the multi-item measures had adequate levels of reliability.

Perceived group status To assess perceptions of the relative status of their cultural group within Australian culture, participants indicated, on a 9-point scale, the overall status of their cultural group relative to other groups within the Australian culture (1 *much lower in status* to 9 *much higher in status*), and whether compared to

Table 1. Descriptive data for study variables

Variable	Mean	SD	Cronbach's alpha
<i>Predictor variables</i>			
Perceived status (T1)	5.22	1.37	.69
Perceived legitimacy (T1)	5.32	2.68	^a
Perceived social permeability (T1)	4.09	1.55	.90
Perceived resource permeability (T1)	4.81	1.45	.70
<i>Outcome variables</i>			
Psychological adjustment (T1)	3.65	0.42	.88
Psychological adjustment (T2)	3.62	0.35	.84
Sociocultural adjustment (T1)	3.75	0.77	.96
Sociocultural adjustment (T2)	3.78	0.65	.94
Academic adjustment (T1)	5.19	1.09	.62
Academic adjustment (T2)	4.97	1.07	.68

^a Cronbach's alpha not computed—single item measure.

Notes: T1: Time 1; T2: Time 2 (eight weeks after Time 1). All scale scores computed as mean item scores.

other cultural groups at university their group was, 1 (*low in status*) to 9 (*high in status*).

Perceived legitimacy As in previous research (e.g. Terry & O'Brien, 2001), a single item was used to assess the legitimacy of the status position: participants indicated on a 9-point scale whether their judgments of their group's relative status (see above) reflected the way things should be (1 *not at all*, 9 *very much so*).

Perceived permeability Participants' perceptions of the openness of intercultural group boundaries were examined using five items developed from the work of Terry et al. (2001). Three items assessed perceived access to social, university/academic-related, and typical activities engaged in by Australian students (e.g. 'If you wanted to, how easy would it be for you to become involved in social activities with Australian students?'; 1 *extremely easy*, 7 *extremely difficult*), whereas the other two items assessed perceived access to resources and opportunities available to Australian students (e.g. 'How much access do Asian students have to the resources that are available to Australian students?'; 1 *none at all*, 7 *a great deal*). A principal components analysis with varimax rotation yielded a two-factor solution (with eigenvalues greater than 1) that accounted for 82% of variance. The three items assessing

access to social and other activities loaded on the first factor (factor loadings ranged from .88 to .91), whereas the two items designed to assess access to resources and opportunities loaded on the second factor (factor loadings ranged from .87 to .91). On this basis, two separate measures of permeability—resource and social permeability—were used in the analyses.

Psychological adjustment Depressive symptomatology is used frequently as an outcome variable in research on cultural adjustment (e.g. Leong & Ward, 2000). This variable was assessed using the short form of the Beck Depression Inventory (BDI; Beck & Beck, 1972), which has been validated for use with samples of Asian students (Dion & Giordano, 1990). On a scale from 1 to 4, the 13 items assessed the extent to which the individual had experienced depressive symptoms in the last seven days—higher scores reflected lower levels of adjustment. Responses to the BDI were recalculated such that high scores indicate better psychological adjustment.

Sociocultural adjustment Searle and Ward's (1991) Sociocultural Adjustment Scale was also used to assess sociocultural adjustment. The 28-item scale comprises three subscales that focus on the degree of difficulty experienced in relation to dealing with everyday situations (e.g.

shopping), and both the practical (e.g. different foods), and more cognitive-based aspects (e.g. understanding the Australian world view) of living in a different culture. Intercorrelations among the proposed subscales were high at both Times 1 and 2 (.65 to .84)—thus, the total scale score was used in all analyses. Each item was responded to on a 5-point scale (1 *no difficulty*, 5 *extreme difficulty*), and responses were rescored such that high scores reflect better adjustment.

Academic adjustment The academic adjustment scale comprised two items developed by Mallinckrodt (1988; e.g. 'I am certain that I will complete my stay here at university'), a third item developed by Dunkel-Schetter and Lobel (1990; 'My grades and GPA (Grade Point Average) are a constant source of worry for me), and a fourth item developed for use in the present study ('Overall, how well do you think you've adjusted to university?'). All items were responded to on a 7-point scale and responses were rescored such that higher scores denoted higher levels of academic adjustment.

Background information Several individual-level background variables were assessed: English language competency, length of residence in the host culture, and previous travel experience. The latter two variables were assessed using single items that asked students to indicate how long they had been in Australia (in months), and if they had previously lived away from their home country for an extended period of time (1 *no*, 2 *yes*). English language competency was assessed using eight items ($\alpha = .94$) adapted from Clark (1981). The items assessed, on a 5-point scale (1 *with great difficulty*, 5 *with great ease*), students' perceptions of their English language competency in four areas: writing, reading skills, aural comprehension, and aural communication skills.

Results

Data analysis overview

Given that the predictors were all assessed using continuous measures, the main and interactive effects of perceived group status, perceived per-

meability (resource and social), and perceived legitimacy of the status differential were tested using regression analyses (Aiken & West, 1991). After controlling for Time 1 adjustment (Step 1), the main effect terms for all the predictor variables (status, resource permeability, social permeability, and legitimacy) were entered into each of the regression equations (Step 2). Next, in order to limit the number of terms in any one analysis, a set of two-way interaction terms (involving resource or social permeability) was entered into each model (Step 3). The relevant three-way interaction term (Status \times Resource Permeability \times Legitimacy or Status \times Social Permeability \times Legitimacy) was entered at the final step. Separate analyses were performed for each outcome measure. In order to prevent multicollinearity between the predictors and the interaction terms from influencing the stability of the analyses, the two- and three-way interaction terms were based on centered scores (see Aiken & West, 1991). All significant interactions were followed up with simple slope analysis (analogous to performing simple main effects in analysis of variance designs).

Table 2 displays the bivariate correlations among the predictors and the outcome variables. Moderate correlations among the outcome measures suggested that these measures were assessing related but distinct aspects of cultural adjustment. There were also moderate correlations (average $r = .15$) between the predictor variables; however, there was no instance where the intercorrelation between any two predictors approached the mean scale reliability (see Campbell & Fiske, 1959).

Preliminary analyses revealed no systematic differences in mean scores or strength of the bivariate correlation between the predictors and the outcome variables as a function of respondents' place of origin (i.e. region of Asia—South Asia, South-East Asia, etc.). Preliminary regression analyses also examined the effects of previous travel, length of residence in the host culture, and English language competency. Control of the individual-level predictors did not change the results of the main analyses (i.e. R^2 increased by a maximum of 4%, and the same group-related predictors

Table 2. Bivariate correlations among variables

Variable	1	2	3	4	5	6	7
1. Status	(.69)						
2. Social permeability	.06	(.90)					
3. Resource permeability	.07	.36**	(.70)				
4. Legitimacy	.18	.12	.12	^a			
5. Psychological adjustment	.16	.05	.14	.02	(.84)		
6. Sociocultural adjustment	.04	.32*	.27**	.01	.40**	(.94)	
7. Academic adjustment	.02	.41**	.33**	.01	.51**	.40**	(.68)

* $p < .05$; ** $p < .01$ (two-tailed test).

^a Cronbach's alpha not computed—single item measure

Notes: Reliabilities are given in parentheses along the main diagonal. Due to pairwise deletion of missing data, maximum $n = 107$.

remained significant). In addition, Predictor \times Background Variable interactions, entered after the main effects, failed to account for a significant increment of variance in any of the outcome variables. However, a shorter length of residence in the host culture and no previous travel experience were associated with relatively lower levels of adjustment.

Effects of perceived status, resource permeability, and legitimacy

Psychological adjustment The results of the analysis examining the main and interactive effects of perceived status, resource permeability, and legitimacy on Time 2 psychological adjustment are shown in Table 3. After control of Time 1 adjustment scores, none of the subsequent steps of the analysis accounted for a significant increment of variance in Time 2 adjustment. However, when all the variables were entered into the regression equation, there was a significant main effect of perceived status. As predicted, there was a positive relationship between status and psychological adjustment—the more favorably students perceived the relative status of their own cultural group, the better their subsequent psychological adjustment. There was also a significant positive relationship between resource permeability and psychological adjustment, indicating that the more international students perceived the intercultural group boundaries to be open (in terms of access to resources), the better their adjustment.

Sociocultural adjustment After controlling for Time 1 adjustment, the two-way and three-way interaction terms accounted for significant or marginally significant increments of variance in sociocultural adjustment scores, but the main effects did not (see Table 3). When all variables were entered into the equation, there were significant Status \times Resource Permeability and Resource Permeability \times Legitimacy interactions, which were qualified by a significant Status \times Resource Permeability \times Legitimacy interaction.¹ Further analysis revealed that the Status \times Resource Permeability interaction was significant at high levels of legitimacy ($\beta = -.30$, $t = -2.44$, $p < .05$), but not at low levels of legitimacy ($\beta = -.16$, $t = -1.33$, *ns*). As shown in Figure 1, there was evidence that at high levels of perceived legitimacy, high perceived resource permeability was associated with better sociocultural adjustment for participants perceiving their cultural group to be relatively low status ($\beta = .54$, $t = 2.33$, $p < .05$), but not for participants perceiving their cultural group to be relatively high status ($\beta = -.02$, *ns*).

Academic adjustment The main effects accounted for a marginally significant increment of variance in Time 2 academic adjustment, but the interactions did not (see Table 3). When all the variables were entered into the equation, there were weak ($p < .10$) main effects of both social and resource permeability, indicating that high levels of perceived permeability were associated with better academic adjustment.

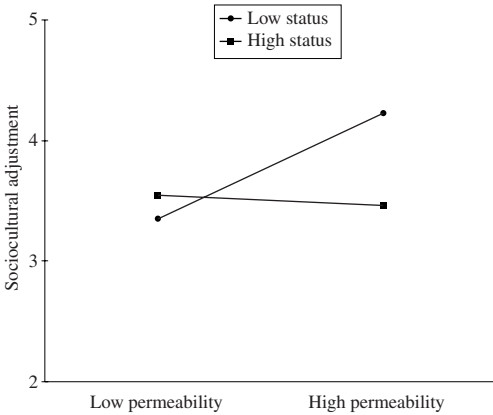


Figure 1. Interaction between perceived group status and resource permeability on sociocultural adjustment at high levels of legitimacy.

Effects of perceived status, social permeability, and legitimacy

Psychological adjustment The results of the analyses examining the main and interactive effects of perceived status, social permeability, and legitimacy on Time 2 adjustment are shown in Table 4. After control of Time 1 psychological adjustment, the three-way interaction accounted for a significant increment of variance in Time 2 psychological adjustment, but the main effects and the two-way interactions did not. Consistent with previous analyses, there were significant positive relationships between perceived status and adjustment and perceived resource permeability and adjustment. There were also significant Status × Legitimacy and Social Permeability × Legitimacy interaction effects, which were qualified by the significant Status × Social Permeability × Legitimacy interaction. Further analysis of this interaction revealed that the Status × Social Permeability interaction was significant at high levels of legitimacy ($\beta = -.12, t = -4.54, p < .001$), but not at low levels of legitimacy ($\beta = .03, t = 1.58, ns$). At high levels of perceived legitimacy, there was evidence that the perception of high levels of social permeability was associated with better psychological adjustment for those perceiving the relative

Table 3. Hierarchical multiple regression analyses predicting measures of adjustment from status, resource permeability and legitimacy

Step	Predictor	Psychological adjustment (T2)				Sociocultural adjustment (T2)				Academic adjustment (T2)			
		R ²	R ² ch	F	β	R ²	R ² ch	F	β	R ²	R ² ch	F	β
1.	Adjustment (T1)	.41	.41	50.65***	.70***	.54	.54	83.28***	.71***	.52	.52	78.31***	.65***
2.	Status	.47	.06	1.82	.19*	.56	.02	.80	-.03	.57	.05	2.11+	-.03
	Social permeability				-.14				.06			.14*	
	Resource permeability				.19*				.10			.12+	
	Legitimacy				-.05				-.12			-.02	
3.	Status × Resource permeability	.50	.03	1.51	.17	.60	.04	2.21+	-.23*	.57	.00	.11	.01
	Status × Legitimacy				-.01				-.10			.04	
	Resource permeability × Legitimacy				.13				.19*			.02	
4.	Status × Resource permeability × Legitimacy	.50	.00	.24	-.05	.63	.03	5.01*	-.20*	.59	.02	2.40	.15

+ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

status of their cultural group to be low ($\beta = .25$, $t = 2.23$, $p < .05$), but with lower levels of adjustment for those perceiving the relative status of their cultural group to be high ($\beta = -.36$, $t = -2.62$, $p < .01$) (see Figure 2).

Sociocultural adjustment There were no significant main or interactive effects in the analysis predicting sociocultural adjustment (see Table 4). After control of Time 1 adjustment, none of the subsequent steps of the analysis accounted for a significant increment of variance in Time 2 sociocultural adjustment.

Academic adjustment As shown in Table 4, the main effects and the interactions (two-way and three-way) contributed to the prediction of Time 2 academic adjustment scores. Consistent with the earlier analysis on academic adjustment, there were weak ($p < .10$) main effects of perceived social permeability and resource permeability. There was also a significant two-way interaction effect (Status \times Social Permeability), which was qualified by a significant three-way (Status \times Social Permeability \times Legitimacy) interaction. Further analysis of this interaction revealed that the Status \times Social Permeability interaction was significant at high

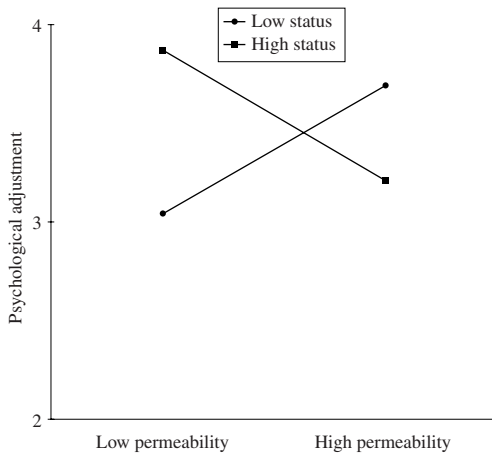


Figure 2. Interaction between perceived group status and perceived social permeability on psychological adjustment at high levels of legitimacy.

Table 4. Hierarchical multiple regression analyses predicting measures of adjustment from status, social permeability and legitimacy

Step	Predictor	Psychological adjustment (T2)			Sociocultural adjustment (T2)			Academic adjustment (T2)		
		R ²	R ² ch	β	R ²	R ² ch	β	R ²	R ² ch	β
1.	Adjustment (T1)	.41	.41	.70***	.54	.54	.83	.52	.52	.67***
2.	Status	.46	.06	1.82	.56	.02	.80	.57	.05	2.11 ⁺
	Social permeability			-.08						.20 ⁺
	Resource permeability			.20*						.16 ⁺
3.	Legitimacy			-.14						-.11
	Status \times Social permeability	.49	.03	1.35	.57	.01	.55	.62	.05	2.78*
	Status \times Legitimacy			-.22*						-.30**
4.	Social permeability \times Legitimacy			-.19*						-.09
	Status \times Social permeability \times Legitimacy	.58	.08	13.06**	.57	.01	.88	.65	.03	6.39*
	\times Legitimacy			-.46***						-.29*

⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

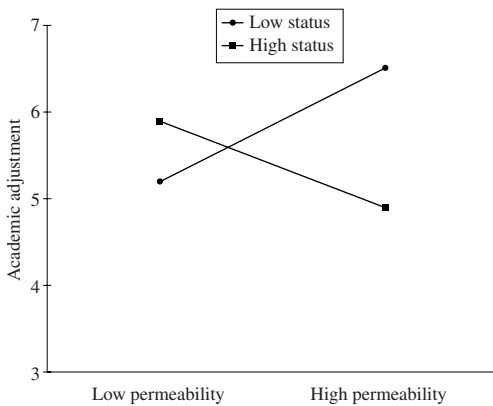


Figure 3. Interaction between perceived group status and perceived social permeability on academic adjustment at high levels of legitimacy.

levels of legitimacy ($\beta = -.27$, $t = -3.93$, $p < .001$), but not at low levels of legitimacy ($\beta = -.02$, $t < 1$, *ns*). As perceptions of legitimacy increased, increasing social permeability was associated with better academic adjustment at low levels of perceived status ($\beta = .31$, $t = 2.41$, $p < .05$), but lower levels of academic adjustment at high levels of perceived status ($\beta = -.25$, $t = -2.10$, $p < .05$).

Discussion

Adopting an intergroup perspective, the present study was designed to examine the predictors of cultural adjustment among international students. Specifically, the study examined the main and interactive effects of perceived relative group status, perceived permeability, and perceived legitimacy of the status differential on measures of psychological, sociocultural, and academic adjustment. Overall, the study supported the utility of an intergroup perspective and, more specifically, a social identity theory perspective on the predictors of cultural adjustment. As such, the research not only extends recent empirical research on the cultural adjustment of international students, which has typically been conducted at the individual level, but also social identity research by examining the proposed higher-order

interactions among sociostructural beliefs in a longitudinal field study. Finally, an important contribution of the present research was the examination of the impact of sociostructural beliefs, used typically to predict the likelihood of individual-oriented versus collective-oriented behavioral responses to status differentials, on individual-level experiential outcomes such as adjustment.

In partial support of predictions, there was evidence that international students who perceived their cultural group to be relatively low in status within the host culture reported lower levels of psychological adjustment than students perceiving a relatively equal or high status position. The fact that a negative effect of status was evident only on the measure of psychological adjustment is consistent with the assumption that perceptions of an inferior group membership will have a negative impact primarily on a person's sense of self and psychological well-being (see e.g. B. B. Brown & Lohr, 1987).

In addition to the main effect of status on psychological adjustment, there was evidence on all three measures of adjustment that the effect of perceived relative status was moderated by perceptions of both permeability of group boundaries and the legitimacy of the status differential. Thus, the impact of sociostructural beliefs does extend beyond the endorsement of individual and collective identity management strategies (see e.g. Ellemers et al., 1993; Taylor et al., 1987) to affect individual well-being and adjustment. As perceptions of legitimacy increased, the perception of open group boundaries was associated with better psychological, sociocultural, and academic adjustment among those students who perceived their cultural group to be relatively low in status. These results indicate that, for members who perceive that the low status of their group is legitimate, the perception of open group boundaries should have positive effects, because permeability signals that individual goals are likely to be achieved. Although past experimental research has revealed interactive relations among status, permeability, and legitimacy (e.g. Taylor et al., 1987), the replication

of these results in a realistic intergroup context strengthens support for the argument that the positive effects of permeability will be most marked among members who perceive their group to be devalued or legitimately low in status (see e.g. Garstka et al., 2004; Terry et al., 2001).

In contrast, for international students who perceived their group to be legitimately high in status, increasing openness of group boundaries was associated with lower levels of psychological and academic adjustment.² According to social identity theory, group members who perceive that they have already achieved positive distinctiveness from comparison groups are likely to be oriented toward the collective maintenance of their current social identity and status protection motives (Ellemers, Doosje, Van Knippenberg, & Wilke, 1992). In the context of a cultural transition, perceptions of open group boundaries may be particularly threatening to these individuals, because of the realistic possibility that other members of the group may be tempted to engage in efforts to enter the majority host culture, thus threatening the vitality of the group. Indeed, acculturation research has indicated that minority group members who are satisfied with their group membership are more likely to hold negative attitudes toward assimilation (Piontkowske, Florack, Hoelker, & Obdrzalek, 2000) and to show increased antipathy toward other groups (e.g. Zick, Wagner, van Dick, & Petzel, 2001). It should be noted, however, that this argument could not be examined in the present research because group-level strategies (e.g. identity protection) or outcomes (e.g. collective self-esteem, Luhtanen & Crocker, 1992) were not assessed. If group-level outcomes had been assessed, we would expect to have found positive outcomes for individuals who perceived that their group was legitimately high in status and that group boundaries were permeable.

In line with expectations, no differential effects of permeability and legitimacy were found on adjustment for individuals who perceived that the social structure was illegitimate. In future research, it is important to uncover

the underlying processes and the outcomes for such individuals. In particular, we need to determine how sojourning groups respond when they perceive that the social structure is illegitimate, the potential collective strategies available to international students, and whether sojourning individuals even engage in collective strategies. One possibility is that these individuals report higher levels of identification with their cultural group, which is associated with higher personal or collective self-esteem. Another possibility is that these individuals display intensified social contact with fellow group members (i.e. mutual solidarity), but do not attempt to change a status quo that, for them, is temporary and irrelevant.

Overall, the present results provide support for predictions derived from social identity theory and illustrate that perceptions of the openness of intergroup boundaries have differential effects depending on perceptions of group status. Moreover, these results clarify the conditions under which these effects may occur by finding a consistent role for perceptions of the legitimacy of the status differential. The results also extend past research on the nature of beliefs about permeability by drawing a distinction between two aspects of permeability—resource permeability and social permeability. Within social identity research, permeability has been conceptualized in different ways, such as the ability to pass as a member of the other group (e.g. Mummendey et al., 1999), the ability to become a member of the other group (e.g. Ellemers et al., 1990), or the ease of interaction with members of the other group (e.g. Terry et al., 2001). The distinction observed between social and resource permeability in the present research is important, suggesting that in a realistic intergroup context, there may be different types of permeability with differential influence on adjustment depending on the context of the change. In terms of our research on adjustment during a cultural exchange, social permeability might be particularly important given that the highlights of a study abroad experience are the broadening of one's horizons, personal growth, and an understanding of another world view (Furnham & Bochner,

1986)—factors that are likely to be found through immersion in the new culture's social life, rather than through access to its resources.

Overall, the present research demonstrates the importance of taking into account the intergroup context when examining the predictors of cultural adjustment among international students, a conclusion that is strengthened by the fact that the longitudinal design of the research meant that the potential confounding effects of initial levels of adjustment were controlled. By extending current models of cultural adjustment from the individual level to the group level, the present study opens the way for more integrated and complete analyses of intercultural phenomena among international students and other cultural groups. From the perspective of social identity theory, the study offers support for its predictions in a natural context, where groups are real, intergroup contact is frequent, and subjective intergroup relations are rich and multifaceted. In particular, the study helps to clarify the nature of the complex interplay among perceived group status, permeability, and legitimacy in a realistic intergroup context, an area that, to date, has been restricted by its reliance on laboratory studies (cf. Mummendey et al., 1999). In the future it would be of interest to examine how perceptions of the intergroup context and beliefs about permeability, legitimacy, and stability change over time and the way this impacts upon adjustment.

The present study also extends previous research by demonstrating links between beliefs about the nature of intergroup relations—used typically to predict group-level outcomes such as intergroup anxiety, intergroup bias, and collective esteem—in the prediction of individual outcomes. Indeed, this study emphasizes the need to recognize that intergroup relations and individual outcomes are closely intertwined. Future research that complements the focus on individual outcomes adopted in the present research with a focus on group-level outcomes is needed in order to understand the many possible routes to adjustment and coping available to individuals engaged in intergroup contact and intercultural exchange.

At the applied level, the findings of the present study suggest that for some international students (namely those perceiving that their cultural group has a legitimate low status position), better adjustment is likely to be achieved through efforts directed toward increasing links with the host culture, given that there was evidence that the adjustment of these students was enhanced by open intergroup boundaries. For other students (namely those perceiving that their cultural group has a legitimately high status position), collective efforts to maintain and protect their own culture identity may be important to adjustment, given that the perception of highly open group boundaries was associated with relatively lower levels of adjustment. Encouraging the development of a common superordinate identity among international and host students—a cognitive representation in which different cultural groups are perceived to exist independently within a more inclusive superordinate entity (i.e. university student)—may be one way through which this can be achieved (Gaertner, Rust, Dovidio, Bachman, & Anastasio, 1996).

Notes

1. As recommended by Aiken and West (1991), preliminary analyses were performed on all significant three-way interactions in order to determine the most appropriate way to interpret the three-variable interactions. Analysis of the Permeability \times Legitimacy interaction as a function of status failed to show clear results. However, there was clear evidence across all significant three-way interactions that status and permeability interacted as a function of legitimacy. Accordingly, all three-way interactions were interpreted in this manner.
2. It should be noted that the negative effects of permeability for those who perceived that their group held a high status position did not emerge on the measure of sociocultural adjustment. However, in line with social identity theory, status and identity protection motives that highly permeable group boundaries activate are a response primarily to the possibility of losing a positive sense of self. Thus, perceptions of high permeability are likely to have a negative impact on those adjustment processes that are linked

more closely to sense of self in international students—that is, salient cultural group membership (reflected in psychological adjustment) and student group membership (reflected in academic adjustment). In contrast, sociocultural adjustment is more external and context-dependent and may be related less directly to the students' sense of self.

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