

First-Year Students' Adjustment to University Life as a Function of Relationships With Parents

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One understudied aspect of first-year students' transition to university is their relationship with parents. This study investigates the contributions that perceived parenting style, current relationships with parents, and psychological well-being variables make toward perceived overall adjustment to university, from both socio/emotional adaptation perspectives and actual academic achievement. Data were collected from a sample of 408 (116 males and 292 females) first-year students attending university in a large metropolitan Canadian city. Results indicated that mutual reciprocity and discussion with parents, as well as the psychological well-being variables, have direct links to adjustment to university. There was an indirect, positive relationship between authoritative parenting and adaptation variables. Furthermore, the predictor variables differed by both gender and outcome measures. Interpretation of these results, their congruence within the context of the theoretical frameworks, and practical implications are discussed.

There is a growing body of evidence suggesting that attending university for the first time entails a transition in young peoples' lives that incorporates a great deal of stress. Although some students experience this transition as a challenge to personal growth, others are overwhelmed by the changes and experience emotional maladjustment and depression (Cutrona, 1982; Hammen, 1980; Lokitz & Sprandel, 1976). Pantages and Creedon (1978) found

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that as many as 40% of students encounter serious difficulty and fail to complete their degrees. Even students who are successful at completing their degrees may undergo significant stress during university study (Zitzow, 1984). The primary purpose of this study is to identify some of the factors of students' lives that may facilitate adaptation to university life, and to focus on one specific and often neglected area, namely, their relationships with their parents.

Three major sociological models have been proposed to focus on student development in university (Chickering, 1969; Tinto, 1975, 1993; Weidman, 1989). These theories seem to represent an evolving process and provide a basic foundation for the present, more psychologically oriented, study. Borrowing from Chickering's (1969) first systematic framework for investigating undergraduate growth, we have incorporated his central theme of identity development. This theme is reflected in Chickering's seven "vectors of development": achieving a sense of competence, managing emotions, developing autonomy, establishing one's own identity, interacting with others with increasing tolerance, developing a sense of purpose, and clarifying a personal and consistent set of beliefs. From Tinto's (1975, 1993) theory of student attrition, we expand on his concept of background characteristics (e.g., gender and socioeconomic status) that students bring with them to university, plus incorporate his distinction between the academic and social domains of university life. From Weidman's (1989) more explicit model of undergraduate socialization, we elaborate on the emphasis on extra-institutional socializing forces as predisposing background variables that shape adjustment to university. Weidman was the first to incorporate into his model parental socialization, which he operationally defined as socioeconomic status, family lifestyle, and parent-child relationships.

Although some of the above theory has been tested empirically (i.e., Pascarella & Chapman, 1983), Weidman (1989) himself offered the criticism that, in this area of research, authors seldom develop conceptual frameworks or adequately operationalize them to provide explanations for relationships observed between variables. Moreover, none of the previous models demarcate specific elements of the parent-child relationship, which may contribute to adaptation to university. Therefore, our task was to identify, and to test empirically, a number of relevant parent-child variables. The potential importance of certain variables was based on theoretical considerations and previous findings (Maccoby & Martin, 1983; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Wintre, Yaffe, & Crowley, 1995).

RELATIONSHIP WITH PARENTS AND ADAPTATION TO UNIVERSITY

There has been ample evidence to dispel the historical notion of adolescence as characterized as a period of “storm” during which parental ties are rejected. For example, it has been demonstrated that greater independence and self-confidence are achieved by individuals who maintain a close relationship with their parents (Maccoby & Martin, 1983). Studies have also shown that family support is an important buffer throughout one’s life (Caplan, 1982) and particularly during the transition to university (Henton, Lamke, Murphy, & Haynes, 1980; Hoffman & Weiss, 1987; Holahan & Moos, 1981; Rice, Cole, & Lapsley, 1990).

However, although there has been research into parental contribution to adaptation to university (i.e., Cutrona, Cole, Colangelo, Assouline, & Russell, 1994; Holahan, Valentiner, & Moos, 1994), these investigations have tended to reflect more generalized constructs (e.g., parental support) or focus on specific issues, such as attachment (Kenny & Donaldson, 1991; Rice & Whaley, 1994), ego identity status (Frank, Pirsch, & Wright, 1990), and religion (Hunsberger, Pancer, Pratt, & Alisat, 1996). Furthermore, although models of parental facilitation of academic achievement in younger students have been developed (i.e., Steinberg et al., 1992), an overall model illustrating components of parent contributions to academic achievement and social/psychological well-being of university-age students has not been formulated. In an effort to identify which variables in parent-student relationships may serve to enhance the transition, we chose to investigate parenting style as a retrospective measure, as well as several measures of the perception of current relationships with parents, including mutual reciprocity, parental support, discussion with parents concerning university, and autonomy. The general model to be investigated is that parenting styles are linked to current relationships with parents, which in turn are related to psychological well-being, which is associated with adaptation to university.

PARENTING STYLE

Baumrind (1967, 1971) identified a typology that separates parenting style into three distinct categories: authoritative parents (who are both demanding and responsive to their children), authoritarian parents (who are demanding but unresponsive), and permissive or laissez-faire parents (who

do not place high demands but are responsive). Several positive outcomes have been associated with authoritative parenting, including, for example, better academic performance (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Steinberg et al., 1992; L. H. Weiss & Schwarz, 1996), and increased competence, autonomy, and self-esteem (Baumrind, 1989, 1991; Buri, 1989; Steinberg, Elmen, & Mounts, 1989). However, most of these studies were conducted with younger elementary and high school students and not with undergraduates (cf. Slicker, 1998). Furthermore, in Lewis's (1981) reinterpretation of Baumrind's theory, she suggested that it is not the high control found in authoritative families that creates an independent sense of self, but rather the reciprocal communication typical of authoritative families. In a study of undergraduates, Yaffe and Wintre (1996) found that perceptions of mutual reciprocity with parents were positively correlated with authoritative parenting, negatively correlated with authoritarian parenting, and not correlated with permissive parenting. These findings strongly support Lewis's (1981) theory, and indicate a potential pathway for predicting positive academic and emotional/social outcomes of undergraduate students. Consequently, it is hypothesized that parenting style will be indirectly predictive of academic achievement and social/psychological well-being. Specifically, it is predicted that an authoritative parenting style will be linked to facilitative perceptions of current relationships with parents (i.e., the establishment of mutuality, increased parental social support, more discussion with parents, and greater autonomy), which will be directly associated with psychological well-being, which in turn will be directly and positively related to social adaptation and academic achievement in the first year of university (cf. Tinto, 1975, 1993).

PERCEPTION OF CURRENT RELATIONSHIPS WITH PARENTS

Mutual Reciprocity

Research has shown that mutual reciprocity is an important factor in relationships between parents and their offspring (Kafka & London, 1991; White, Speisman, & Costos, 1983; Youniss & Smollar, 1985). In this context, mutual reciprocity is used to describe relationships wherein individuals perceive each other as relative equals, respect each other's point of view, and are involved in ongoing and open communication.

Using the Perception of Parental Reciprocity Scale (POPRS) (Wintre et al., 1995), designed to tap the developmental transformation in parent-child rela-

tions as predicted by the social relations theory of Youniss (1980), Wintre, Yaffe, and Friedman (1996), we found that students who perceived greater degrees of mutuality in their relationships with their parents were less likely to be identified as depressed. The construct of mutual reciprocity is consonant with aspects of Chickering's (1969) vector in which he identifies the emergence of relationships based on mutual respect and the recognition of the importance of interdependence. This construct of mutual reciprocity is also implied in the vector that accentuates the ability to act with tolerance. It is predicted that mutual reciprocity will enhance students' overall adjustment to university.

Parental Social Support

Perceived parental social support was of interest, given findings that parental support is related to a higher grade point average in university (Cutrona et al., 1994). Interestingly, similar relationships between social support from friends or from romantic partners were not found. The positive outcome associated with parents' expressed belief in their children's competence and abilities, or what is termed as "reassurance of worth" by Cutrona, is reflected in Chickering's (1969) theory as facilitating the emergence of one's own identity. If parental social support was related to academic achievement, it could be hypothesized to be related to overall adjustment as well.

Discussion With Parents

Pancer, Pratt, Hunsberger, and Alisat (1995) found that student discussion of issues with parents was indirectly linked to better university adjustment. In another study, Cutrona et al. (1994) demonstrated that students whose parents shared their interests and concerns performed better academically. It is hypothesized that discussion of specific university issues with parents will contribute to overall adaptation and academic achievement, as suggested by Chickering's (1969) vectors of developing a sense of purpose and clarifying a personally valid set of beliefs.

Autonomy

According to Greenberger (1982), one requirement for psychosocial maturity is the capacity of a person to function adequately as an individual, separate from the influence of parents. She considered this to be indicated by the following three components: self-reliance, a healthy sense of identity, and work orientation. Steinberg et al. (1989) formulated a model demonstrating

that authoritative parenting has a positive impact on psychosocial maturity (conceptualized as largely rooted in a healthy sense of autonomy), which in turn increases the likelihood of school success. Specifically, the research found that creating a healthy orientation toward work mediated the influence of parenting style on school success. However, Steinberg and his colleagues were primarily investigating academic achievement and sampling the behaviors of 10- to 16-year-old students who, at best, were just beginning to transform their relationships with their parents (Wintre et al., 1995). Thus, it is important to investigate the appropriateness of their model with university students and to extend the model to include social adaptation as well as academic achievement. The potential importance of autonomy is reflected in all seven of Chickering's (1969) vectors. Therefore, although autonomy is not strictly a parenting variable, it is an index of parent-child relationships that is expected to have a positive impact on adjustment to university.

Psychological Well-Being

Although Chickering (1969) included his vector of managing emotions, and Weidman (1989) refers to intrapersonal variables, neither identifies the specific emotional variables implicated in their models. Based on empirical and clinical evidence (Pascarella & Terenzini, 1991), it was decided to ascertain the participants' degrees of depressive symptomatology, their overall self-esteem, and the amount of stress that they were experiencing at testing time.

It was predicted that there will be positive intercorrelations among the predictor variables identifying current relationships with parents (e.g., reciprocity, parental social support, discussion with parents, and autonomy). Furthermore, according to the proposed model, it was hypothesized that current relationships with parents and psychological well-being (depression, perceived stress, and self-esteem) will mediate the relationship between parenting style and the outcome measures of university adaptation and achievement.

METHOD

Participants

All participants attended a large, commuter university in a major metropolitan Canadian city. The student body of the university (approximately 26,000 full-time and 15,000 part-time undergraduates, and 3,500 graduate

students) is composed of a diverse range of cultures and ethnic backgrounds, reflecting the multicultural policy of Canada.

Initially, data were collected in several introductory psychology classes during the first week of the fall term, again during February and March, and finally, their student records were accessed at the end of the academic year. Of the 1,072 unmarried participants that were recruited during their first psychology class, a total of 408 (116 males and 292 females) remained at the end of the study (i.e., participated twice and completed first year). Participants ranged in age from 17 to 27 years ($M = 19.15$, $SD = 1.28$), 79.3% of their families were intact, 75.6% lived at home with their families, and 17.3% lived in residence halls.¹ Although this percentage of students living at home is high, it should be noted that contrary to popular opinion, students commuting to university have become the norm in North America (Slade & Jarmul, 1975; Stewart, Merrill, & Saluri, 1985).

This sample was representative of a wide range of students. There were 60 various areas of study identified as majors by the participants (including 22.4% who declared psychology as their major). Culturally, although 77.8% of the participants were born in Canada, the remainder identified 41 countries of origin. In regard to parents' countries of origin, only 29.4% of the fathers and 30.8% of the mothers were born in Canada. In total, 66 countries of origin were identified for both fathers and mothers. Although 69.2% of the sample's primary language spoken at home was English, students identified 42 different languages and combinations of languages spoken at home. Furthermore, although 117 different cultures were mentioned by participants, 70.2% indicated that they did not consider themselves to be members of a visible minority. In terms of family finances, 61.9% of the students considered their family to be of average means, and 29.9% considered their family to be above or well above average means.

Measures

The following specific measures were administered during the first data collection:

Parental Authority Questionnaire (PAQ) (Buri, 1991). Three 10-item scales were constructed based on Baumrind's (1971) definitions of authoritarian, authoritative, and permissive prototypes. Buri (1991) reported the following Cronbach's alpha values for each of the six scales: .85 for mother's authoritarianism, .82 for mother's authoritative, .75 for mother's permissiveness, .87 for father's authoritarianism, .85 for father's

authoritativeness, and .74 for father's permissiveness. Buri (1991) also demonstrated discriminant validity, as indicated by statistically significant divergent responses between the scales, as well as indications of criterion-related validity.

The Perception of Parental Reciprocity Scale (POPRS) (Wintre et al., 1995). This 43-item measure examines the degree of perceived reciprocity in the parent-child relationship from the offspring's perspective and is based on the developmental theory of Youniss (1980; Youniss & Smollar, 1985). In addition to a Cronbach's alpha of 0.95, indications of construct validity, discriminant validity, and criterion validity have been established (Wintre et al., 1995).

Social Provisions Scale-Present Version (SPS-P) (Cutrona, 1989). This 12-item scale was designed to tap the six provisions of social relationships as theorized by R. S. Weiss (1974) and combined to form a global support scale. Cutrona (1989) reports reliability for the scale from .81 to .91 across a range of samples and extensive evidence for validity among both adult and adolescent populations.

Discussion with parents (Pancer et al., 1995). Participants rate the extent to which they have discussed what university life would be like with their parents. Aspects such as classes and social life are included in the four items. The reliability of these items was assessed as part of this study and met acceptable criteria to be used as a short scale.

Autonomy Scale of the Psychosocial Maturity Inventory (Greenberger, Josselson, Knerr, & Knerr, 1974). This measure is composed of three 10-item subscales that reflect self-reliance, a healthy sense of identity, and work orientation. Cronbach's alphas for these subscales are .76, .81, and .78, respectively. Greenberger et al. (1974) cite several studies that offer indications of discriminant validity, concurrent validity, and construct validity. Although the scale was developed to be used with younger populations (e.g., Steinberg et al., 1989), Greenberger (personal communication, August 2, 1995) reported that, in principle, the scales could be useful at this age.

Beck Depression Inventory (BDI) (Beck, Ward, & Mendelson, 1961). The BDI was developed as a scale for assessing the presence of depressive symptoms and their depth or severity. The scale's 21 items cover the range of affective, behavioral, cognitive, and somatic symptoms that commonly are

thought to constitute unipolar depression. The BDI has been proven to be a reliable ($\alpha = .9$) and valid measure (e.g., Beck & Beamesderfer, 1974; Hammen, 1980).

Self-Esteem Scale (Rosenberg, 1965). This widely used 10-item scale taps into the self-acceptance aspect of self-esteem. This scale has been reported to have high reliability and a test-retest correlation over 2 weeks of .85 (Silber & Tippett, 1965). Substantial convergent, discriminant, and predictive validity have also been reported (Rosenberg, 1965; Silber & Tippett, 1965; Tippett & Silber, 1965).

Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983). This 14-item scale is a measure of the degree to which situations in one's life are appraised as stressful. Cronbach's alpha values obtained in three samples were .84, .85, and .86. Regarding validity, the PSS correlated with life-event scores, depressive and physical symptomatology, use of health services, social anxiety, and smoking-reduction maintenance (Cohen et al., 1983).

Student Adaptation to College Questionnaire (SACQ). In addition to several scales that were administered a second time (POPRS, BDI, Self-Esteem Scale, and PSS), the second data collection included the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1986, 1989). This 67-item scale, measuring the quality of adaptation to university life, assumes that adjustment to university is multifaceted in that it requires adaptation to a variety of demands. The domains included academic adaptation, social adaptation, personal-emotional adaptation, and goal commitment/institutional attachment. The SACQ also yields a full-scale score as an index to overall adaptation to university. On two separate samples, Cronbach's alphas yielded, respectively, .91 and .92. Convergent validity has been demonstrated through the statistically significant correlations that have been established between the subscales and a variety of relevant variables, such as grade point average, involvement in social activities, attrition, election to an academic honor society, and appeals for psychological services (Baker & Siryk, 1984).

The final data collection entailed accessing the participants' student records and obtaining their graduating high school average (in Ontario this is referred to as the Ontario Academic Credit [OAC] average) and their grade point average (GPA) at the end of their first year. This latter variable provided an objective measure of their academic adaptation to university.

RESULTS

The means, standard deviations, and reliability scores (Cronbach's alpha) for each of the variables can be found in Table 1. All of the scales demonstrated means and variability that were consistent with past findings. Both the criteria of normal distribution and lack of skewness were met for all outcome and predictor variables. Furthermore, the predictor variables were shown to share linear relationships with the outcome variables.

With regard to the four variables that were included in both data collections, there were no significant differences in POPRS, whereas BDI, PSS and Self-Esteem yielded significant increases over time, $t(407) = -5.57, p < .05$; $t(407) = -6.60, p < .05$; $t(405) = 2.21, p < .05$, respectively. To employ as much of the data collected as possible, it was decided to use an average of the two POPRS scores for each participant. With regard to the significant differences for BDI, Self-Esteem, and PSS, however, new variables for each were calculated. By subtracting the Time 1 value from the Time 2 value, variables representing the change across time were obtained. Although the use of difference scores has been questioned by Cronbach and Furby (1970), they themselves have identified that this is primarily an issue when making decisions about individuals.

Analyses for Adjustment to University

The overall purpose of this study was to investigate a variety of factors that were thought to contribute to first-year students' adjustment from two perspectives: the students' perception of their overall adaptation to university and their academic achievement. The measures under investigation were organized into four blocks: parenting styles, current relationships with parents, psychological well-being, and adjustment variables. As described, the overall SACQ was used to assess perceived adaptation.² It should be noted that the SACQ subscale of academic adaptation and GPA represent distinct constructs. The former is a subjective measure of students' perceptions of their ability to adapt to the academic rigors of university. GPA, however, provides an objective measure of students' actual academic achievement. Although these two should be related, the correlation is only moderate ($r = .38$).

Table 1 also presents the correlations between predictor variables themselves as well as between predictor variables and outcome variables. To summarize, there appear to be some significant relationships between POPRS, SPS-P, discussion with parents, and SACQ scores. There is a solid relationship between BDI, Self-Esteem, and PSS on one hand, and SACQ scores on

TABLE 1: Pearson Product-Moment Correlations Among Variables, Means, Standard Deviations, and Cronbach's Alphas

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Mother authoritarian	—	-.49	-.53	.51	-.18	-.25	-.43	-.36	-.25	-.16	-.17	-.17	.25	.18	-.15	-.17	.23	.19	-.14	-.09
2. Mother authoritative		—	.31	-.29	.50	.14	.65	.59	.44	.20	.27	.21	-.23	-.17	.24	.18	-.27	-.24	.20	<i>ns</i>
3. Mother permissive			—	-.30	.10	.55	.22	.17	.11	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
4. Father authoritarian				—	-.52	-.57	-.46	-.39	-.23	-.08	-.16	-.12	.23	.20	-.12	-.12	.19	.20	-.15	<i>ns</i>
5. Father authoritative					—	.34	.63	.53	.37	.14	.26	.15	-.23	-.19	.18	<i>ns</i>	-.22	-.17	.20	<i>ns</i>
6. Father permissive						—	.20	.15	.08	-.11	<i>ns</i>	<i>ns</i>	-.07	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
7. POPRS							—	.76	.52	.26	.38	.27	-.36	-.36	.32	.32	-.34	-.36	.37	<i>ns</i>
8. SPS-P								—	.51	.23	.38	.23	-.32	-.29	.29	.23	-.30	-.24	.26	<i>ns</i>
9. Discussion with parents									—	.21	.28	.21	-.22	-.16	.19	.17	-.19	-.11	.21	<i>ns</i>
10. Self-reliance										—	.64	.59	-.35	-.32	.50	.47	-.40	-.34	.38	<i>ns</i>
11. Identity											—	.53	-.54	-.50	.62	.61	-.50	-.44	.49	<i>ns</i>
12. Work orientation												—	-.33	-.25	.37	.36	-.37	-.32	.35	.11
13. BDI–Time 1													—	.70	-.59	-.54	.65	.49	-.52	-.09
14. BDI–Time 2														—	-.45	-.61	.54	.70	-.71	-.18
15. Self-esteem–Time 1															—	-.74	-.57	-.43	.42	<i>ns</i>
16. Self-esteem–Time 2																—	-.57	-.60	.59	.13
17. Stress–Time 1																	—	.64	-.54	<i>ns</i>
18. Stress–Time 2																		—	-.70	-.11
19. SACQ																			—	.24
20. Grade point average																				—
Mean	29.03	33.51	24.14	31.59	31.37	24.05	126.3	28.55	11.70	32.87	32.23	29.82	8.42	9.92	32.48	36.88	25.16	27.33	383.5	5.25
SD	7.55	7.23	5.53	8.62	7.90	6.00	33.88	4.43	4.48	4.48	5.33	4.79	6.70	7.57	5.33	5.35	8.08	8.09	65.01	1.72
Cronbach's alpha	.86	.86	.73	.90	.89	.78	.95	.85	.89	.74	.82	.74	.85	.88	.88	.89	.81	.87	.93	

NOTE: All reported correlations are significant beyond the .05 level, two-tailed. POPRS = Perception of Parental Reciprocity Scale, SPS-P = Social Provisions Scale–Present Version, BDI = Beck Depression Inventory, and SACQ = Student Adaptation to College Questionnaire.

the other, with BDI and PSS correlating negatively and Self-Esteem possessing a positive relationship with SACQ scores. The variables of self-reliance, identity, and work orientation have positive correlations with SACQ scores. Finally, parenting style does not appear to be strongly related to SACQ scores, especially with regard to the permissiveness scale.

With respect to GPA, there was a positive correlation with work orientation, a negative correlation with BDI (both at Times 1 and 2) and PSS (Time 2), a positive correlation with Self-Esteem (Time 2), and a negative correlation with maternal authoritarianism.

Multiple Regression Analyses

It was also necessary to examine whether certain demographic variables contributed to the proposed models. The demographic variables were investigated prior to the regression analyses to increase the participants-to-variables ratio of the regression analyses by eliminating any nonsignificant factors. One-way analysis of variance was conducted for each of parental marital status, immigrant generational status-Canadian (IGS-C) (a category developed to integrate data on the students' and parents' place of birth; Wintre et al., 1997), mother's and father's education (i.e., post-high school education), and family finances, with SACQ and GPA as the dependent variables. The five analyses of variance did not reveal significant differences between these groups with regard to the SACQ, but, as will be discussed, this was not the case for GPA.

However, a *t* test did establish that gender contributed differentially to the SACQ, $t(405) = 2.47, p < .05$, with males ($M = 396.15, SD = 61.42$) scoring significantly higher than females ($M = 378.57, SD = 65.81$). Although there was no significant difference between genders found for GPA scores, to retain a consistent methodology it was decided to conduct separate analyses by gender for both outcome measures. Also, this method of analysis eliminates the necessity of investigating interactions based on gender.

The regression models used a modified block entry best described as a sequential-regression-by-category method. Initially, all variables within each category (parenting style, current relationship with parents, and psychological well-being) were entered to determine the greatest amount of explained variance with the fewest variables. The statistically significant predictors were then combined to form a single, unified model.

In addition to reporting the overall explained variance in each model, the unique contribution of each of the variables is also presented.³ Also, for each of the models, residuals were examined and found to be normally distributed

and, based on the R^2 values, not correlated with predicted values. The non-standardized regression coefficients (B), standard errors ($SE B$), the standardized regression coefficients (β), and the significance levels for both university adaptation and academic achievement can be found in Table 2.

Overall SACQ: Males

A five-variable model was constructed, $F(5, 99) = 25.12, p < .0005$, which accounted for almost 56% of the explainable variance. The largest variable in this model was the change in stress from Time 1 to Time 2, reflecting an increase in stress across time and a constraint on adaptation ($R^2 = .0679$). This was followed by the negative effects of initial stress in the autumn term ($R^2 = .0543$), the positive effects of a more advanced sense of identity ($R^2 = .0443$), the negative effects of an increase in depressive symptomatology over time ($R^2 = .0288$), and the positive contribution of mutual reciprocity with parents ($R^2 = .0176$).

Overall SACQ: Females

A six-variable model was constructed, $F(6, 274) = 78.10, p < .0005$. The explained variance for this model was approximately 63%. The largest variable in this model was the change in depressive symptomatology from Time 1 to Time 2, representing an increase across time that impedes adaptation ($R^2 = .0496$). This was followed by the negative effects of all of the following: initial depressive symptomatology in the autumn term ($R^2 = .0429$), initial stress in the autumn term ($R^2 = .0345$), and an increase in stress from Time 1 to Time 2 ($R^2 = .0213$). This was followed by the positive effects of self-esteem in the winter term ($R^2 = .0122$), and a slight positive contribution from the degree of discussion of issues with parents ($R^2 \approx .0100$). Note that three of the significant variables in the overall SACQ model for the female participants are congruent with three of the significant variables in the overall SACQ model for the male participants, namely initial stress and the change over time in both stress and depressive symptomatology.

Indirect Effects of Parenting Style as Mediated by Other Predictor Variables

Given that parenting style variables made no direct contributions to the SACQ in the previous regression models, potential indirect effects of parenting style were considered. Specifically, it was predicted that authoritative

TABLE 2: Summary of Regression Analysis for Variables Predicting Adaptation to University (SACQ) and Academic Achievement (GPA)

<i>Variable</i>	<i>B</i>	<i>SE B</i>	β
Adaptation to university: males (<i>N</i> = 105)			
POPRS	0.3148	0.1585	.1521*
Identity	3.4956	1.1088	.2893**
BDI-difference	-2.0457	0.8040	-.1885*
Stress	-2.5835	0.7399	-.3191***
Stress-difference	-3.2341	0.8281	-.3271***
Adaptation to university: females (<i>N</i> = 281)			
Discussion with parents	1.4469	0.5707	.0952*
BDI	-3.3385	0.5914	-.3386****
BDI-difference	-3.6164	0.5961	-.3067****
Self-esteem winter	1.8647	0.6205	.1535**
Stress	-2.7251	0.5383	-.3368****
Stress-difference	-2.0424	0.5132	-.2158***
Academic achievement: males (<i>N</i> = 103)			
OAC	0.0979	0.0189	.3775****
SACQ-academic	0.0317	0.0042	.5518****
Education-father	0.1111	0.0431	.1876*
Academic achievement: females (<i>N</i> = 237)			
Mother authoritarian	-0.0258	0.0096	-.0967**
Stress	0.0340	0.0102	.1964**
OAC	0.0986	0.0133	.3997****
SACQ-academic	0.0194	0.0031	.3685****
Education-mother	0.0799	0.0323	.1333*
Discussion with parents	-0.0448	0.0179	-.1404*

NOTE: POPRS = Perception of Parental Reciprocity Scale, BDI = Beck Depression Inventory, OAC = Ontario Academic Credit, SACQ = Student Adaptation to College Questionnaire, and GPA = Grade Point Average.

* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0005$.

parenting would facilitate positive aspects of relationships with parents (i.e., mutual reciprocity, parental support, discussion with parents), a sense of autonomy (as informed by self-reliance, identity, and work orientation), and psychological well-being. Furthermore, it was predicted that authoritarian parenting would have an indirect negative impact on adaptation as mediated by these same variables. The nonstandardized regression coefficients (*B*), standard errors (*SE B*), the standardized regression coefficients (β), and the significance levels for these variables can be found in Table 3.

TABLE 3: Summary of Regression Analysis for Parenting Style Variables Predicting Other Variables

<i>Variable</i>	<i>B</i>	<i>SE B</i>	<i>β</i>
POPRS			
Father authoritative	2.0265	.1762	.4616****
Mother authoritative	1.9079	.1859	.4120****
SPS-P			
Mother authoritative	0.2551	.0283	.4120****
Father authoritative	0.1378	.0310	.2346****
Father authoritarian	-0.0967	.0241	-.1867***
Discussion with parents			
Mother authoritative	0.1741	.0330	.2941****
Father authoritative	0.1341	.0313	.2385****
Self-reliance			
Mother authoritarian	-0.1441	.0333	-.2571****
Mother permissive	-0.1620	.0450	-.2137***
Identity			
Mother authoritative	0.1144	.0430	.1597**
Father authoritative	0.1055	.0407	.1554**
Work orientation			
Father authoritarian	-0.0751	.0295	-.1369*
Mother authoritative	0.0730	.0354	.1111*
BDI			
Father authoritative	-0.1421	.0425	-.1728****
Mother authoritarian	0.1150	.0433	.1372**
Self-esteem			
Mother authoritative	0.1230	.0348	.1749****
PSS			
Father authoritative	-0.1603	.0535	-.1551**
Mother authoritarian	0.1590	.0545	.1508**

NOTE: POPRS = Perception of Parental Reciprocity Scale, SPS-P = Social Provisions Scale-Present Version, BDI = Beck Depression Inventory, and PSS = Perceived Stress Scale.

* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0005$.

Parenting Style, Relationship With Parents, Autonomy, and Psychological Well-Being

Authoritative parenting style contributed positively, and authoritarian parenting style contributed negatively, to variables measuring current relationships with parents. In regressing POPRS on parenting style, a two-variable model was constructed, $F(2, 365) = 268.27$, $p < .0005$, which accounted for 59.51% of explained variance. Father authoritativeness ($R^2 = .1467$)

accounted for slightly more variance than mother authoritativeness ($R^2 = .1169$). In regard to parental support (SPS-P), a three-variable model was constructed, $F(3, 369) = 108.65, p < .0005$, which accounted for 46.9% of the explained variance. Significant predictors (in descending order) were mother authoritativeness ($R^2 = .1169$), father authoritativeness ($R^2 = .0284$), and lack of father authoritarianism ($R^2 = .0232$). In regressing degree of discussion with parents on parenting style, a two-variable model was constructed, $F(2, 363) = 51.64, p < .0005$, with mother authoritativeness ($R^2 = .0597$) and father authoritativeness ($R^2 = .0393$) together accounting for 22.15% of explained variance.

The three psychosocial maturity variables that reflect an achieved sense of autonomy were tested in separate models. Regressing self-reliance on parenting style variables yielded a two-variable model, $F(2, 396) = 10.36, p < .0005$. The explained variance was 4.97%. The predictors for self-reliance were the lack of maternal authoritarianism ($R^2 = .0450$) and lack of maternal permissiveness ($R^2 = .0311$). Regarding identity, a two-variable model was constructed, $F(2, 373) = 15.64, p < .0005$. The explained variance was 7.74%. The two predictors were maternal authoritativeness ($R^2 = .0175$) and paternal authoritativeness ($R^2 = .0171$). Finally, in terms of work orientation, a two-variable model was constructed, $F(2, 372) = 7.99, p < .001$. The explained variance was 4.12%. The two predictors were a lack of paternal authoritarianism ($R^2 = .0167$) and maternal authoritativeness ($R^2 = .011$).

Regarding parenting style and psychological well-being, it was deemed more appropriate to employ initial scores for these analyses in order to assess the relationship between these two variables independent of the university experience. In regressing the BDI on parenting style, a two-variable model was constructed, $F(2, 373) = 11.88, p < .0005$, with an explained variance of 5.99%. It appears that the two parenting styles that evoke a significant degree of depressive symptomatology are a lack of authoritativeness from father ($R^2 = .0282$) and the presence of mother authoritarianism ($R^2 = .0178$). In relation to self-esteem, a single-variable, yet significant model was constructed, $F(1, 397) = 12.52, p < .0005$. The explained variance for this was 3.06%. Again, mother authoritativeness was the significant, positively contributing variable. In terms of perceived stress, a two-variable significant model was constructed, $F(2, 373) = 11.46, p < .0005$, with the same variables as in depressive symptomatology, with an explained variance of 5.79%. A lack of paternal authoritativeness ($R^2 = .0227$) and the presence of maternal authoritarianism ($R^2 = .0215$) appeared to be the two parenting style factors that were related to a perception of stress.

To summarize, authoritativeness was positively related to relationships with parents in every model, with the exception of a lack of any relationship

with self-reliance. It is especially important that the two authoritative parenting styles can positively account for almost 60% of the variance in mutual reciprocity. The association of authoritative parenting with psychological well-being, although relatively small, also emphasizes the beneficial nature of an authoritative parenting style.

Academic Achievement Based on GPA

The same procedure employed in developing the model for student adaptation was used in assessing the contributing factors to academic achievement. The previous predictor variables were used, plus graduating high school (OAC) averages and parental level of education. Given that the GPA scores were attained at the end of the academic year (Time 3), it was reasoned that the original outcome variable (SACQ) could serve as a predictor. However, the relatively low relationship between SACQ and GPA ($r = .24$) recommended consideration of the relationships between the specific SACQ subscales and GPA. Only two subscales were significantly correlated to GPA, Personal-Emotional Adaptation ($r = .14$) and Academic Adaptation ($r = .38$), so both subscales were included as potential predictors. The unstandardized regression coefficients (B), standard errors ($SE B$), the standardized regression coefficients (β), and the significance levels for both males and females can be found in Table 2.

GPA: Males

A three-variable model was constructed, $F(3, 99) = 30.36, p < .0005$, and the explained variance for this model was 47.91%. The predictor variables were (in descending order) perceived academic adaptation ($R^2 = .3033$), OAC average ($R^2 = .1414$), and paternal level of education ($R^2 = .0350$). It should be noted that the variables that were previously found to be related to males' academic adaptation (increased stress over time, work orientation, and initial stress) can be considered indirectly related to GPA.

GPA: Females

A six-variable model was constructed, $F(6, 230) = 23.12, p < .0005$. The explained variance for this model was 37.62%. The predictor variables were (in descending order) OAC average ($R^2 = .1479$), perceived academic adaptation ($R^2 = .1034$), initial stress ($R^2 = .0298$), lack of maternal authoritarianism ($R^2 = .0197$), lack of discussion with parents about university issues ($R^2 =$

.0169), and maternal education ($R^2 = .0165$). Note that the variables that were previously found to be related to females' academic adaptation (increased depressive symptomatology over time, work orientation, stress in the winter term, self-esteem in the winter term, and initial depressive symptomatology) can be considered indirectly related to GPA.

DISCUSSION

The purpose of this study was to investigate the roles of parenting styles and current relations with parents, in conjunction with psychological well-being variables, on students' adjustment to university. The latter construct was defined as both the subjective ratings of adaptation to university and the objective measure of academic achievement. The four models that were constructed from correlational relationships and multiple regression analyses contained unique combinations of variables. The distinctiveness of each of the models is an indication that adjustment is multifaceted. In particular, the predictive models for males and females differed substantively. Also, the large proportion of explained variance for each of the models is an indication of the apt inclusion of the various predictor variables and the theoretical soundness of the study. Furthermore, the fact that models with so few variables were able to explain such high proportions of variance provides a strong indication of adherence to Kerlinger's (1973) objective of achieving parsimony.

The role of parents was confirmed to provide a small, yet significant, contribution in most aspects of their children's adjustment to university. Even in instances where perceived parenting style did not contribute directly to the explained variance of the models, it contributed indirectly through other predictor variables.

Overall SACQ

There were parallels between the factors that contributed to male and female adaptation. It was the proportions between these factors and the ways in which the variables combined that distinguished the genders. The five variables of the model that explained almost 56% of the variance in overall adaptation for males were change in stress, initial stress, possessing a sense of identity, the change in depressive symptomatology, and perceived mutual reciprocity. The six variables of the model that explained 63% of the variance for female overall adaptation were change in depressive symptomatology, initial depressive symptomatology, initial stress, change in stress, positive

self-esteem in the winter term, and degree of discussion with parents concerning university issues.

The psychological well-being variables generally were most important in contributing to the models, even for male participants whose behavior is commonly thought of as being less contingent on emotions than that of their female counterparts (O'Leary & Smith, 1988). The importance of psychological well-being is congruent with Chickering's (1969) vector of managing emotions. He believed that the emergence of negative emotions would manifest itself through the challenge of dealing with the questioning of inculcated values. It is understandable that if the perception of stress increases with continued exposure to university, this too will be related to feeling more depressed and unable to cope. In fact, an increase over time in depressive symptomatology significantly predicted poorer overall adaptation for both genders. This is in contrast to the finding that initial depressive symptoms were only significantly related to females', but not to males', adaptation to university. In addition, the significance of initially perceived stress accentuates the importance of minimizing students' initial feelings of being overwhelmed at the outset of their university experience. The final psychological well-being variable, self-esteem in the winter, was a significant positive predictor of female university adaptation. Apparently, female students with a greater sense of self-esteem following 6 months in university experienced a higher degree of adaptation, regardless of their initial perception.

With regard to parenting variables, we also see differential effects by gender. Mutual reciprocity was the one parental relationship variable that remained a significant contributor to male adaptation. Even though previous research (Wintre et al., 1995) had demonstrated no gender differences in perception of parental reciprocity among university-age participants, and there was none in this sample either, males appeared to benefit differentially from perceived reciprocity regarding overall adaptation to university. However, for females, the significant parenting variable was discussion with parents about university. This result is congruent with findings that late adolescent females have been reported as more likely than males to feel connected to parents in terms of empathy, communication, and closeness (Frank, Avery, & Laman, 1988), supporting the finding that it is not simply an issue of emotional closeness but intellectual closeness as well (Schulthesis & Blustein, 1994). The positive contribution of a parental relationship component in the models for both males and females, despite the presence of several other variables accounting for relatively large percentages of the explainable variance, indicates that the role of parental relationships should not be dismissed as a predictor of university adjustment in their children.

Interestingly, although identity development was central to Chickering's (1969) theory and spans all seven vectors of his model, identity was only a significant predictor for male adaptation. Furthermore, of the correlations between the three autonomy subscales and the three measures of relationship with parents, the highest correlation was between identity and mutual reciprocity (with a shared variance of 14.54%), and these two variables were uniquely identified as predictors in the model for the males.

Indirect Effects of Parenting Style as Mediated by Other Predictor Variables

Authoritativeness in general was related to almost all of the predictor variables in this study. In each case, either maternal authoritativeness, paternal authoritativeness, or both contributed to the explained variance of these measures. In addition, the direction of each of the relationships was as hypothesized. Authoritativeness was positively related to all of the relationship with parents variables, negatively related to the psychological well-being variables of depressive symptomatology and perceived stress, and positively related to self-esteem. This is congruent with previous findings with younger students in which authoritative parenting has been associated with better academic performance (Dornbusch et al., 1987; Steinberg et al., 1992), increased competence, autonomy, and self-esteem (Baumrind, 1989, 1991; Buri, 1989; Steinberg et al., 1989), and less deviance (Baumrind, 1991).

Perhaps the most important finding of this set of analyses was that the combination of maternal and paternal authoritativeness was able to explain almost 60% of the variance of mutual reciprocity. As mentioned previously, the link between the two has been clearly established (Yaffe & Wintre, 1996), and provides strong support for Lewis's (1981) reinterpretation of Baumrind's theory, which emphasizes the role of reciprocal communication in authoritative families. Furthermore, the main benefit of mutual reciprocity was derived by the male participants. In fact, Baumrind (1989) demonstrated that authoritative parenting was especially important in the development of competence in sons. It would appear, therefore, that a potential mediating role of mutuality has been identified in conveying the effects of parenting style. Discussion with parents, the salient predictor for female adaptation, was also predicted positively by both maternal and paternal authoritativeness. That measures of current relationships with parents were more salient than retrospectively recalled parenting style in the prediction of adaptation is an important point that emphasizes the need for researchers to choose parent-

ing measures appropriate to their participants' ages, especially when dealing with late adolescents/young adults. Finally, the relationship between parenting style and perceived parental support mirrors the relationship between parenting style and mutual reciprocity, with the exception of the significance of a lack of paternal authoritarianism as an additional predictor of parental support. Overall, however, it appeared that mutual reciprocity and discussion with parents were the two central predictive measures of relationships with parents in this study. Taken altogether, this group of findings can be interpreted as generally supportive of the concept that mutual reciprocity and discussion with parents are mediators of the relationship between parenting style measures and adaptation (Darling & Steinberg, 1993).

In terms of psychological well-being variables, both depressive symptomatology and perceived stress were found to be related to the presence of maternal authoritarianism and to a lack of paternal authoritativeness. This is consistent with the finding that authoritarian parenting was associated with unhappiness, apprehensiveness, and a vulnerability to stress (Baumrind, 1967). It is interesting that only paternal authoritativeness was found to be related to a diminished degree of depressive symptomatology and perceived stress, and not maternal authoritativeness. It appears that the authoritative-ness provided by the more familiar mother may not sufficiently shield children from depression and stress at university. Finally, the link between authoritativeness and self-esteem has already been established (Baumrind, 1989, 1991; Buri, 1989; Steinberg et al., 1989).

Parenting style was thus clearly a demonstrated antecedent to the other variables in this study. In addition to clarifying the relationship between parenting style and the other variables, these findings have confirmed that authoritative parenting style is related to other, more age appropriate and current measures of parent-child relationships, notably mutual reciprocity and discussion with parents, which may partly mediate the effects of this parenting style. These findings have identified important factors in the consideration of family background characteristics, as theorized by Tinto (1975, 1993) and Weidman (1989).

Academic Achievement Based on GPA

Although the SACQ adaptation measures were based on subjective personal assessments, actual academic achievement is an objective measure. Furthermore, Pascarella and Terenzini (1991) point out that a student's grades are the best predictor of obtaining a degree in university.

As stated previously, because there was a time gap in our data collection, it was feasible to use the university adaptation measures as predictors for GPA. The model for males, which identified perceived academic adaptation, graduating OAC average, and paternal level of education as predictors, was parsimonious and explained approximately 48% of the variance in GPA. In contrast, for females, six variables provided approximately 38% of the explained variance in GPA. The significant predictors were graduating OAC average, perceived academic adaptation, initial stress, maternal level of education, a lack of discussion with parents about university issues, and a lack of maternal authoritarianism.

As anticipated, perceived academic adaptation was demonstrated to be an appropriate predictor. Given that no parental variables directly predicted the academic adaptation subscale for either males or females, it appeared that parental variables do not play a role in academic achievement via academic adaptation. Furthermore, there was no direct link between parenting variables and academic achievement for males. Perhaps this explains why models of the transition to university, which primarily focused on academic achievement, have generally ignored the potential role of parents. A model that differentiates social adaptation from academic achievement would seem inadequate if it overlooks the role of parents. For females, however, there are two direct links between grades and parent variables. Maternal authoritarianism was negatively related to academic achievement. This was the only direct effect of parenting style on outcome variables in the entire study. It seems to reflect the detrimental role of an authoritarian mother-daughter relationship to achievement in an authoritative environment, perhaps due to a lack of fit between the authoritarian home and the authoritative school (e.g., Eccles, Lord, & Roeser, 1996; Wintre & Ben-Knaz, 2000 [this issue]). Somewhat curiously, discussion concerning university issues with parents was negatively related to achievement. One possible explanation is that parents' actual experience with university in this population, with a large immigrant component, is either nonexistent or considered foreign to their current culture so that parental advice is actually counterproductive to achievement in this context. An alternative explanation might be that students who are doing poorly in school simply provoke more parental anxiety and discussion specifically around issues such as grades.

The expected finding that high school graduating OAC averages were an important predictor of university grades for both genders has been consistently present in the literature (cf. Cutrona et al., 1994; Dispenzier, 1971; Hooper, 1968; McCausland & Stewart, 1974; McDonald & Gawkoski, 1979; Neely, 1977; Steinberg et al., 1989, 1992). It is assumed that the same skills

and traits that enabled high academic achievement previously continue to do so in university.

Paternal level of education was demonstrated to be related to achievement of sons, as was maternal level of education related to achievement of daughters. These results support Tinto's and Weidman's conception of background variables. They are also consistent with theoretical models and findings referencing identification, modeling, and imitation as particularly focused on the same-sex parent (e.g., Bandura, 1989).

An interesting finding was that initial stress when beginning university was positively associated with academic achievement for females. It is possible that an initial perception of stress in university acknowledges a student's recognition of the task before them, and thus facilitates eventual academic success. Early writers on the transition to university stressed the dangers of a too glibly optimistic freshman myth for success and adjustment (for a review see Pancer, Hunsberger, Pratt, & Alisat, 2000 [this issue]). Persisting stress, however, may be more likely to be deleterious in nature.

To summarize, although psychological well-being variables were robust predictors of adjustment to university, parent-child relationships also contributed as significant predictors, therefore suggesting that relationships with parents may facilitate perceived adaptation to university. However, with regard to actual academic achievement, no parental relationship variable was established as a positive contributor, although maternal authoritarianism and discussion with parents were negatively linked to GPA for females.

Parenting style, and specifically parental authoritativeness, has been identified in this study as having an indirect effect on university adjustment, thereby extending the model of Steinberg et al. (1992) to the transition to university. Current relationships with parents, in particular the perception of reciprocity with parents and discussion with parents about university-related issues, have direct effects on university adjustment. Overall, however, psychological well-being variables provided key predictors within each model (see Table 2). In particular, the variables of change in reported depressive symptomatology and change in reported stress over the course of the year as well as initial stress, were present and direct in both male and female adaptation models. The first two variables were also implicated by academic adaptation in regard to actual academic achievement. These findings confirm the primary role that psychological well-being plays in social/emotional adaptation and academic achievement in university.

Among the practical implications of this study, then, is the importance of maintaining the psychological well-being of students. Incoming undergraduates appear to be at risk for depressive symptomatology and negative reac-

tions to stress, often heightened during the university experience. Therefore, it would appear to be crucial for the university to make students aware of the options in accessing mental health support facilities. Another implication is that parents, particularly in terms of their current relationships, continue to play an important role in the lives of their children. It is, therefore, important to involve parents and to educate them about topics concerning university life and values that may present challenges to their adolescents. The saliency of this recommendation may be potentiated in a primarily commuter university, such as the present one, where parents' roles may tend to be stronger. Certainly a potential criticism of this study, in considering practical implications, is the fact that 76% of the students were commuters still living at home while attending university, which does limit the generalizability of the findings. However, it should be noted that there is a growing trend in North America for post-secondary students to commute to university. In fact, commuting has become the statistical norm, representing an estimated 60% of students (Slade & Jarmul, 1975; Stewart et al., 1985). Thus, this practical implication may be quite widely applicable.

This study is not without its limitations. To begin, the design of the study is essentially correlational and therefore cannot establish causality. Other limitations include the fact that the model is nonexhaustive (e.g., it excludes potentially important predictors such as peer support, personality traits, intelligence quotient), the data consist primarily of self-reports, and there is some overlap between the psychological well-being variables assessed at Time 2 and the SACQ. Moreover, the study spans a longitudinal period limited to the first year of university, and effectively only has a sample size (n) of one, insofar as the study was conducted at one large, ethnically diverse and primarily commuter university.

The main conclusions from this study are that (a) authoritative parenting appeared to have an indirect positive effect on student adjustment to university, extending the findings of Baumrind (1991), Dornbusch et al. (1987), and Steinberg et al. (1989, 1992) with younger populations to a university sample; (b) current relationships with parents, particularly mutual reciprocity and discussion with parents, were more directly related to university adjustment than parenting style and appeared to mediate the effects of parenting style on university adjustment; (c) distinct predictor variables were involved for adaptation and academic achievement, supporting the need to recognize them as separate domains; (d) different variables were of consequence to the sexes, recommending the need to analyze the data from the sexes separately; (e) the models of Chickering (1969), Tinto, and Weidman (1989) were empirically supported in part, and extended to include parent-child variables;

and (f) the predictor variables seemed to be related to the outcome variables in these analyses across a broad range of cultures, socioeconomic status, and living circumstances represented in this sample of undergraduates.

NOTES

1. Initially, there were no significant differences on any of the measures of relationships with parents or psychological well-being between students living at home and those living in residence. However, by winter, students in residence scored higher than commuters on two SACQ subscales: social adjustment, $t(370) = -3.94, p < .05$, and institutional attachment, $t(370) = -2.28, p < .05$.

2. Although only the variables that contribute to overall adjustment are reported in this article, analyses were conducted on the SACQ subscales as well. The models that were developed consisted of between three and eight variables, with explained variance ranging between 31% and 67%.

3. Note that when predictor variables are correlated, the sum of the squared semipartial correlations of the set of predictor variables is usually smaller than the overall explained variance; the difference stems from the fact that the overall explained variance also includes the shared variance contributed by two or more predictor variables (Tabachnick & Fidell, 1996).

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