

FEATURE

Testing Berry's Model of Acculturation: A Confirmatory Latent Class Approach

Seth J. Schwartz
University of Miami

Byron L. Zamboanga
Smith College

The authors examined the extent to which Berry's (1997) acculturation orientation categories—assimilation, integration, separation, and marginalization—would emerge from a latent class analysis of continuous acculturation indices. Hispanic college students ($N = 436$) from Miami participated in the study. The authors used measures of heritage and American cultural orientations to create the latent classes. The authors utilized a number of external variables, including ethnic identity, value-based indices of cultural identity, familial ethnic socialization, acculturative stress, and perceived ethnic discrimination to validate the cluster solution. Overall, our findings provided mixed support for Berry's model. Six latent classes emerged from analysis. Two of these appeared to represent variants of biculturalism, two resembled a combination of assimilation and biculturalism, one resembled a combination of separation and biculturalism, and one was not clearly associated with any of Berry's categories. The two bicultural classes differed markedly in American and heritage cultural orientations, ethnic identity, and nearly all of the value-based indices of cultural identity. Some of the differences among the six classes supported Berry's model, and others did not. The authors discuss the implications of these results for acculturation theory and research.

Keywords: acculturation, biculturalism, latent class analysis, Hispanic

Acculturation refers to contact between individuals or groups from dissimilar cultural backgrounds, as well as the adaptation (or lack thereof) that takes place as a result of such contact (Berry, 1980, 1997). Although acculturation also refers to changes in the receiving society as a result of contact with immigrant groups, acculturation is most often studied as a process of adaptation in immigrants. Much of the increased attention to acculturation can be attributed to the post-1965 mass migration of collectivist-oriented immigrants to largely individualist societies (e.g., Schwartz, Montgomery, & Briones, 2006). The United States, for example, has received millions of immigrants, mostly from ethnic minority groups, during the current wave of mass immigration (Bernstein, 2007). These immigrants have been instrumental in transforming many American urban areas into ethnic enclaves (e.g., Chinatown, Spanish Harlem, Little Saigon). Indeed, the

cultural context of many of these ethnic enclaves has become a unique blend of the heritage and American cultural streams (Flanery, Reise, & Yu, 2001).

The largest group of immigrants to the United States has been Hispanics, who have arrived in the United States from as many as 20 different countries of origin. Mexican Americans, Puerto Ricans, and Cuban Americans have the longest histories in the United States. However, Hispanics from other national origins (e.g., Colombians, Dominicans) have also become quite prominent (Chun, 2007). The Hispanic population in the United States has increased rapidly in the past 15 to 20 years, including a 58% increase during the 1990s (Marotta & Garcia, 2003) and representing 50% of all population growth between 2000 and 2006 (Bernstein, 2007). Accordingly, much of the research on acculturation has been conducted with Hispanic populations (e.g., Coatsworth, Maldonado-Molina, Pantin, & Szapocznik, 2005). Acculturation in Hispanics has been examined with regard to a number of different outcomes, including substance use (Zamboanga, Raffaelli, & Horton, 2006), self-esteem (Moradi & Risco, 2006), depression (Torres & Rollock, 2007), and sexual risk taking (Raffaelli, Zamboanga, & Carlo, 2005).

Scholars in cultural psychology have found that acculturation is best represented as a bidimensional model, with receiving-culture acquisition and heritage-culture retention representing independent dimensions (e.g., Ryder, Alden, & Paulhus, 2000). Bidimensional approaches to acculturation allow for the possibility of biculturalism, where the individual strongly endorses values and practices from both the receiving and heritage cultural contexts (Benet-Martínez & Haritatos, 2005; Schwartz, Zamboanga, Rodriguez, &

Seth J. Schwartz, Center for Family Studies, Department of Epidemiology and Public Health, Leonard M. Miller School of Medicine, University of Miami, Florida; Byron L. Zamboanga, Department of Psychology, Smith College, Northampton, Massachusetts.

We thank Nadja Schreiber and Michael Vernon for their help with data collection and management, and Ervin Briones, Janine V. Olthuis, and Lourdes Suarez-Morales for their helpful comments on earlier drafts of this article. We also thank Anthony D. Greene for his clerical assistance.

Correspondence concerning this article should be addressed to Seth J. Schwartz, Center for Family Studies, Department of Epidemiology and Public Health, Leonard M. Miller School of Medicine, University of Miami, 1425 N.W. 10th Avenue, Miami, FL 33136. E-mail: sschwartz@med.miami.edu

Wang, 2007; Tadmor & Tetlock, 2006). It is possible for Hispanic immigrants, for example, to function well in American society while retaining their cultural roots and their ethnic language (e.g., Lopez & Contreras, 2005). In fact, studies have found that biculturalism is often, but not always, the most favorable acculturation orientation for young Hispanics (Coatsworth et al., 2005; Sullivan et al., 2007). Biculturalism may allow one to relate to people from both cultural contexts, but it may also create pressures (perceived or real) to meet the expectations of the receiving cultural context, the heritage cultural community, or both (Schwartz, Montgomery, & Briones, 2006). For example, the heritage cultural context may dictate that young people should live according to their parents' wishes, whereas an individualist-oriented receiving society may be organized around individual choice and self-direction (cf., Rudmin, 2003, 2006).

Berry's Model of Acculturation

A number of researchers have theorized about the dimensions of acculturation (see Berry, 2003, for a review). Working within the bidimensional model of acculturation, Berry (1997; Berry, Trimble, & Olmedo, 1986) crossed the independent dimensions of receiving-culture acquisition and heritage-culture retention to create four categories. These categories are assimilation (acquires the receiving culture and discards the heritage culture), separation (rejects the receiving culture and retains the heritage culture), integration (acquires the receiving culture and retains the heritage culture), and marginalization (rejects the receiving culture and discards the heritage culture). Within Berry's model, integration represents biculturalism, and these terms are used interchangeably here.

Berry's model has inspired a large body of literature on acculturation in various ethnic groups (Berry, 2003). Some of this research has examined correlates of, and differences between, the four acculturation orientations (e.g., Giang & Wittig, 2006). At the same time, the validity of Berry's model has also been questioned on several fronts. First, the validity of marginalization as an approach to acculturation has been called into question, because it is unclear how immigrants can develop a cultural identity without drawing on either the heritage or receiving cultures (e.g., del Pilar & Udasco, 2004; Rudmin, 2003). Second, researchers (e.g., Benet-Martínez & Haritatos, 2005; LaFromboise, Coleman, & Gerton, 1993) have identified *multiple* types of biculturalism, which suggests that Berry's conception of "integration" may encompass multiple subcategories. Finally, Rudmin (2003) has reviewed research suggesting that Berry's four orientations actually cluster onto a single factor, and there is only one "type" of acculturation within Berry's model. Rudmin (2006) has also pointed to serious construct validity problems in Berry's model. Taken together, these points suggest a need for additional validation evidence for the model.

The majority of studies using Berry's model have either (a) derived acculturation categories from continuous measures of the four acculturation orientations (e.g., Pham & Harris, 2001) or (b) conducted median splits on receiving-culture acquisition and heritage-culture retention scores (e.g., Giang & Wittig, 2006). Both of these strategies, however, assume that all four categories exist and are equally valid. In other words, the categories are assumed prior to analysis, and the extent to which they can be

empirically derived has only begun to be tested. Empirical research illustrating that these dimensions can be empirically derived from the continuous scales may help to bolster the internal construct validity of Berry's model. Indeed, some studies (e.g., Berry, Phinney, Sam, & Vedder, 2006; Chia & Costigan, 2006) have begun to use cluster-analytic methods that empirically extract acculturation groupings from the sample or population. The purpose of the present study was to use one such clustering method—latent class analysis—to empirically evaluate Berry's model of acculturation.

One way to test whether acculturation orientations demonstrate external construct validity is to show that they relate differentially both to value-based indices of cultural identity and to established correlates of acculturation. Although the majority of acculturation measures assess behavioral aspects of acculturation such as linguistic, food, and social preferences (Zane & Mak, 2003), acculturation refers to changes in both values and behaviors (Cabassa, 2003). As a result, the validity of Berry's categories as indices of acculturation is partially dependent on their ability to relate to value-based indices of cultural identity. Ethnic identity exploration and affirmation represent a subjective dimension of acculturation (Phinney, 2003); and collectivism, interdependence, and familism represent indices of heritage-culture retention (Schwartz et al., 2007). Accordingly, participants classified as retaining heritage-culture practices (those classified as separated or bicultural) would be expected to score higher on these indices than participants classified as rejecting heritage-culture practices (assimilation and marginalization).

In addition, the categories should relate differentially to theoretically based correlates of cultural identity, such as familial ethnic socialization (Umaña-Taylor, Bhanot, & Shin, 2006), acculturative stress (Sonderegger & Barrett, 2004), and perceived ethnic discrimination (Phinney, Madden, & Santos, 1998). Familial ethnic socialization, whereby parents teach their children about the language, customs, and historical figures from the family's culture of origin, may serve as a "transmitter" of heritage-culture values and practices (Hughes, 2003). Indeed, familial ethnic socialization is closely related to ethnic (Umaña-Taylor & Fine, 2001) and cultural (Schwartz et al., 2007) identity. Accordingly, participants characterized as separated or bicultural, both of whom retain aspects of the heritage culture, should report higher levels of familial ethnic socialization than those classified as assimilated or marginalized.

Another important correlate of acculturation is acculturative stress. Acculturative stress represents negative "side effects" of acculturation, including pressures to retain aspects of the heritage culture as well as pressures to acquire aspects of the receiving culture (Rodriguez, Myers, Mira, Flores, & Garcia-Hernandez, 2002). Accordingly, components of acculturative stress may map differently onto the acculturation categories. Bicultural individuals, who retain aspects of their heritage cultures as well as acquire aspects of the receiving culture, should be most vulnerable to pressures from both the heritage and receiving culture communities (Rudmin, 2003, 2006). Assimilated individuals would be expected to report pressure to reorient themselves toward the heritage culture, and separated individuals should report pressure to adopt aspects of the receiving culture. Given that marginalization may represent "cultural identity confusion" (Berry & Kim, 1988), it is unclear how marginalized individuals would score in terms of

perceived pressures to adopt aspects of the heritage and receiving cultures.

Finally, perceived discrimination is among the most debilitating stressors that immigrant and minority individuals face (Berry et al., 2006). In prior research, individuals adopting a separated approach to acculturation may be most likely to encounter discrimination from members of the receiving society (Piontkowski, Florack, Hoelker, & Obdrzálek, 2000). Assimilated individuals, who see themselves largely as members of the receiving society, would be expected to perceive the least amount of discrimination.

Present Study

We conducted the present study in Miami, which has been a Hispanic enclave for two generations (Stepick & Stepick, 2002). Miami was developed largely by Cuban immigrants arriving in the 1950s and 1960s, and it is now home to Hispanics from many different national origins, including Cubans, Colombians, Nicaraguans, Peruvians, and Puerto Ricans (Huntington, 2004). This diversity, along with the heavily bicultural context of the South Florida area, makes Miami a fertile background in which to conduct research on acculturation (cf. Coatsworth et al., 2005; Schwartz, Pantin, Sullivan, Prado, & Szapocznik, 2006; Sullivan et al., 2007).

Given the limitations of many prior studies examining Berry's acculturation typology, it is important to test the model in innovative and methodologically appropriate ways. Berry (2006); Rudmin (2003, 2006), and others have recommended analyzing acculturation data using empirical clustering methods that do not assume any particular theoretical model. Latent class analysis (DiStefano & Kamphaus, 2006) is an empirical clustering technique that creates categories based on patterns observed in the data. Latent class analysis controls for measurement error and uses fit criteria and statistical tests to select the optimal number of classes (Nylund, Asparouhov, & Muthén, 2007). This approach makes no assumptions regarding the categories derived. As such, it stands in contrast to median split techniques and "highest score" category assignment methods. Median-split techniques conducted on the component dimensions create artificial dichotomization that may deviate from the data (MacCallum, Zhang, Preacher, & Rucker, 2002). Similarly, assignment methods where the acculturation orientation with the highest raw or standard score is assigned as the participant's categorization carry the assumption that all four categories are equally valid. Because latent class analysis does not make assumptions regarding the categories created, a finding where Berry's categories emerge from analysis would provide additional empirical support for the model.

We designed the current study to empirically evaluate Berry's model of acculturation in three steps. First, we used latent class analysis to evaluate the extent to which Berry's acculturation categories would emerge from continuous measures of heritage-culture retention and receiving-culture acquisition. Second, the categories emerging from analysis were appraised in terms of their relationship to ethnic identity and to value-based indices of cultural identity—such as individualism-collectivism, independence-interdependence, and familism. Ethnic identity and acculturation (especially heritage-culture orientation) are somewhat conceptually similar, such that acculturation classifications would be expected to differ considerably on ethnic identity exploration and

affirmation (e.g., Berry et al., 2006; Phinney, 2003). As a result, we hypothesized that individuals scoring high on ethnic identity would be classified as either bicultural or separated. Third, we evaluated the classes regarding the extent to which they can be differentiated in terms of three important correlates of cultural identity—familial ethnic socialization, acculturative stress, and perceived ethnic discrimination (cf. Schwartz et al., 2007).

Method

Participants and Procedures

The sample for the present analyses consisted of 436 Hispanic students (100 men, 336 women; mean age = 20.4 years, $SD = 4.23$) enrolled in introductory psychology courses at a large, urban, multicultural university in Miami. We recruited 45% ($n = 193$) of the participants in fall 2004. These respondents completed paper-pencil surveys at home and returned them to their instructor. We recruited the remaining 55% of the sample during the fall of 2006. These respondents completed an online survey. All participants received course credit for their participation. This investigation was approved by the institutional review boards at the university where the study was conducted and at the university with which the senior author is affiliated.

Thirty-four percent of participants were first-generation immigrants, and 64% were second-generation immigrants. Immigrant participants and parents were primarily from Cuba (26%), Colombia (13%), Peru (11%), Puerto Rico (6%), and Nicaragua (5%). Of participants reporting annual family income (86% of the sample), 21% reported less than \$30,000, 34% between \$30,000 and \$50,000, 29% between \$50,000 and \$100,000, and 16% above \$100,000.

Measures

Except where noted otherwise, for all of the measures listed below, participants provided their responses using a five-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Cronbach's alpha coefficients reported here were calculated using the present dataset. All measures were completed in English.

Clustering variables. To measure our primary clustering variables, we used the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000). This instrument assesses orientation toward heritage (17 items, $\alpha = .89$) and American (15 items, $\alpha = .84$) cultural practices in areas such as language use, food, and entertainment.

External ethnic and cultural identity indices. To validate the cluster solution, we used a second measure of acculturation, the Acculturation, Habits, and Interests Multicultural Scale for Adolescents (Unger et al., 2002). In this measure, each item refers to a specific acculturation domain (e.g., food, language, and media). For each item, participants indicated whether their preferred way of performing the cultural practice in question is most in line with the U.S., their country of familial origin, both, or neither. The *assimilation score* is the sum of "United States" responses; the *integration score* is the sum of "both" responses; the *separation score* is the sum of "the country my family is from" responses, and the *marginalization score* is the sum of "neither" responses. In the

present study, internal consistency reliability estimates for scores on these subscales were: assimilation, $\alpha = .77$; separation, $\alpha = .66$; integration, $\alpha = .69$; and marginalization, $\alpha = .75$. Validity evidence for the Berry model would be strongest if each class were characterized by high scores on one of the acculturation category subscales. A finding that some classes are characterized by high scores on more than one subscale would provide somewhat more modest support for Berry's model, and would be consistent with Rudmin's (2003, 2006) criticism that the acculturation categories are not independent of one another.

To provide further validation evidence for the clusters, we used ethnic identity as well as a number of value-based indices of cultural identity. These variables included horizontal and vertical individualism and collectivism, independence and interdependence, and familism. We assessed horizontal (e.g., "I'd rather depend on myself than on others") and vertical individualism (e.g., "It is important that I do my job better than others"), as well as horizontal (e.g., "The well-being of my coworkers is important to me") and vertical (e.g., "It is my duty to take care of my family, even when I have to sacrifice what I want") collectivism using corresponding 4-item subscales developed by Triandis and Gelfand (1998). In the present study, internal consistency reliability coefficients for scores on these subscales were: horizontal individualism, $\alpha = .78$; vertical individualism, $\alpha = .72$; horizontal collectivism, $\alpha = .73$; and vertical collectivism, $\alpha = .70$.

We measured independence (12 items, $\alpha = .69$; e.g., "Being able to take care of myself is a primary concern for me") and interdependence (12 items, $\alpha = .70$; e.g., "I will sacrifice my self-interest for the benefit of the Group I am in") using the Self-Constraint Scale (Singelis, 1994). We used the 18-item Attitudinal Familism Scale (Lugo Steidel & Contreras, 2003) to assess familism. We summed the items to create a total familism score ($\alpha = .81$). Sample items include "A person should be a good person for the sake of his or her family."

We used the Multi-Group Ethnic Identity Measure (Roberts et al., 1999) to measure ethnic identity. This instrument assesses two aspects of ethnic identity: exploration (5 items, $\alpha = .74$; e.g., "I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs"), representing having considered the subjective meaning of one's ethnicity; and affirmation (7 items, $\alpha = .90$; e.g., "I have a lot of pride in my ethnic group"), representing identifying with and valuing one's ethnic group.

Correlates of cultural identity. We also assessed familial ethnic socialization, acculturative stress, and perceived ethnic discrimination as correlates of cultural identity. The Familial Ethnic Socialization Measure (Umaña-Taylor & Fine, 2001) consists of 12 items ($\alpha = .89$) assessing the extent to which the participant's family (a) taught her/him about their ethnic group and its values and practices and (b) exposed her/him to other people from their ethnic group. A sample item from this measure is "My family encourages me to respect the cultural values and beliefs of our ethnic/cultural background."

We measured acculturative stress using the Multidimensional Acculturative Stress Inventory (Rodriguez et al., 2002). We used all four subscales for the present study, including: perceived Spanish-language competency pressures (7 items, $\alpha = .85$; e.g., "It bothers me when people assume I speak Spanish"); perceived

English-language competency pressures (7 items, $\alpha = .85$; e.g., "It bothers me that I speak English with an accent"); perceived pressure to acculturate (7 items, $\alpha = .80$; e.g., "It bothers me when people don't respect my family's cultural values"); and perceived pressure against acculturation (4 items, $\alpha = .79$; e.g., "People look down upon me if I practice American customs").

We assessed perceived ethnic discrimination using a 7-item measure ($\alpha = .84$) developed by Phinney et al. (1998). The items ask about the extent to which participants have been treated unfairly (e.g., by police officers and teachers) and the extent to which participants believe that they are unwanted in American society (e.g., "How often do teachers or employers treat you unfairly or negatively because of your ethnic background?").

Results

Latent Class Analysis

We conducted latent class analysis to empirically evaluate Berry's model of acculturation by identifying groups of participants with similar patterns of scores on the acculturation dimensions. Latent class analysis is less subjective than cluster analysis, in part because it allows for comparison of solutions with different numbers of classes (DiStefano & Kamphaus, 2006). A maximum likelihood algorithm is used to create the classes (see Loken, 2004, for a more extensive description). These groupings are assumed to represent heterogeneous subpopulations within the study sample or population. A combination of fit statistics and substantive interpretability is used to decide on the number of classes (Nylund et al., 2007). The entropy value (E) for the class solution, and the posterior probability (likelihood of correct classification) of membership in each of the classes, is used to determine the overall reliability and stability of the solution as a whole, where values of .70 can be considered adequate (Murphy, Shevlin, & Adamson, 2007). Provided that these reliability estimates are adequate, participants can be grouped into their most likely classes for further analysis. If reliability is not adequate, more advanced statistical procedures may be required (Loken, 2004).

Only the American and heritage cultural orientation subscales were used to create the classes. The appropriate number of classes was selected using a multistage decision process (Nylund et al., 2007). First, a solution with k classes would be selected only if it provided a significantly better fit than a solution with $k-1$ classes. This was determined by using the Bootstrap Lo-Mendell-Rubin test (BLRT; Nylund et al., 2007). The BLRT provides a p value for the degree of improvement in fit achieved by adding an additional class. Second, each class had to represent at least 1% of the sample. Third, the classes had to be conceptually distinct. Solutions meeting all of these criteria are likely to be parsimonious and maximally efficient.

Although data were collected at different times using different assessment methods, extant literature suggests that the interrelationships among variables—which are most critical in clustering methods (DiStefano & Kamphaus, 2006)—are consistent across methods of administration (Chuah, Drasgow, & Roberts, 2006). Supplemental analyses, not presented here, indicated that the same set of clusters emerged from analysis of the two subsamples separately.

Table 1
Acculturation Variables by Latent Class

Variable	<i>M (SD), % range</i>							<i>F ratio (η²)</i>
	Undifferentiated (<i>n</i> = 10)	Assimilated (<i>n</i> = 97)	Partial bicultural (<i>n</i> = 74)	American- oriented bicultural (<i>n</i> = 101)	Separated (<i>n</i> = 64)	Full bicultural (<i>n</i> = 78)		
Cultural orientations								
Heritage cultural orientation	2.84 _a (0.90), .46	2.73 _a (0.48), .43	3.57 _b (0.23), .64	3.20 _c (0.21), .55	3.86 _d (0.35), .72	4.03 _e (0.48), .76		121.88*** (.59)
American cultural orientation	2.45 _a (0.76), .36	3.94 _b (0.38), .73	3.66 _c (0.13), .67	3.72 _c (0.21), .68	3.22 _d (0.35), .55	4.24 _e (0.29), .81		124.95*** (.60)
Acculturation categories								
Assimilation	3.10 _a (2.23), .39	4.66 _b (1.72), .58	1.26 _c (0.97), .16	2.04 _d (1.10), .26	0.63 _e (0.65), .08	1.44 _e (1.11), .18		112.61*** (.58)
Separation	1.90 _a (1.79), .24	0.33 _b (0.54), .04	0.69 _c (0.91), .09	0.75 _c (1.05), .09	3.09 _d (1.79), .39	0.71 _e (0.98), .09		58.13*** (.41)
Integration	1.50 _a (1.35), .19	2.82 _b (1.60), .35	5.05 _c (1.95), .56	5.14 _c (1.45), .64	3.55 _d (1.98), .44	5.79 _e (1.58), .72		42.58*** (.34)
Marginalization	1.50 _a (1.35), .19	0.19 _b (0.49), .02	0.97 _{ac} (1.74), .12	0.07 _b (0.26), .01	0.73 _{ac} (1.38), .09	0.05 _b (0.22), .01		14.58*** (.15)

Note. Within each row, means with the same subscript are not significantly different from one another. Post-hoc comparisons conducted using Tukey's Least Significant Difference test. Cultural orientation scores are on a 1–5 scale. The four acculturation category scores must sum to 8 for any given participant.

^a Indicates the percentage ranking of the observed cluster mean on the range of possible scores; for example, the scale midpoint would have a percentage ranking of .50.

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

The six-class solution provided a better fit to the data than the five-class solution, $\chi^2(9) = 37.11$, $p < .001$. Sample sizes for the classes were: Class 1, $n = 10$; Class 2, $n = 97$; Class 3, $n = 74$; Class 4, $n = 101$; Class 5, $n = 64$; and Class 6, $n = 78$. Twelve participants were not placed into a class because they were missing data on both of the clustering variables. The solution was fairly reliable, $E = .75$, and the classification accuracy rates for all six classes were above .76.

Internal Validation of the Latent Class Solution

We took two steps to initially validate the six-class solution. First, we conducted a multivariate analysis of variance (MANOVA) on the clustering variables (heritage and American cultural orientations), and on the acculturation category variables, by cluster. This allowed us both to ensure that the clustering variables sufficiently discriminated between and among clusters; and to identify which acculturation categories are best represented by each latent class.

The MANOVA conducted on the clustering and acculturation category variables yielded a significant multivariate effect, Wilks' $\lambda = .23$, $F(20, 1371) = 38.97$, $p < .001$, $\eta^2 = .31$. Univariate results are displayed in Table 1. For the clustering and acculturation category variables, we calculated not only the mean and standard deviation for each latent class, but also a "percentage of the possible range." For each latent class, this percentage represents the proportion of the range of possible scores captured by the mean. For example, the percentage would be .00 for someone scoring at the bottom of the possible range, 1.00 for someone scoring at the top of the possible range, and .50 for someone scoring at the scale midpoint.

Based on the patterns and percentages appearing in Table 1, we labeled Cluster 1 as Undifferentiated, Cluster 2 as Assimilation, Cluster 3 as Partial Biculturalism, Cluster 4 as

American-Oriented Biculturalism, Cluster 5 as Separation, and Cluster 6 as Full Biculturalism. These latent class names were derived from the range percentages for the heritage and American cultural orientations, as well as from the patterns of means on the acculturation category subscales.¹ The small Undifferentiated class is consistent with marginalization in terms of scores on the heritage and American cultural orientation scales, but all four acculturation categories were endorsed—suggesting that these individuals were somewhat confused about their cultural identities. Indeed, as evidenced in Table 2 and discussed in the next section, the Undifferentiated class scored lowest on nearly all of the indices of cultural identity.

We then cross-tabulated the clusters against gender and immigrant generation. There was no significant relationship between gender and cluster membership, $\chi^2(5, N = 424) = 7.41$, $p = .19$, $\phi = .13$. A significant relationship emerged between class membership and immigrant generation, $\chi^2(5, N = 424) = 111.00$, $p < .001$, $\phi = .51$. Second-generation immigrants comprised 70% of the Undifferentiated class, 76% of the Assimilated class, 32% of the Partial Bicultural class, 100% of the American-Oriented Biculturalism class, 42% of the Separated class, and 65% of the High-Bicultural class.

As a follow-up to the Cluster \times Immigrant Generation analysis, we examined whether, among first-generation immigrants, age at immigration was related to acculturation class. Among first-generation immigrants, age at immigration differed significantly by class, $F(4, 133) = 6.74$, $p < .001$, $\eta^2 = .17$. Assimilated participants immigrated at 5.3 years of age, on average; Partial and Full Bicultural participants immigrated at

¹ We also conducted a MANOVA on the individual SMAS items to verify that the class labels were accurate. Results are available from the first author on request.

Table 2
Cultural Identity Indices and Hypothesized Correlates by Cluster

Variable	<i>M (SD)</i>						<i>F</i> ratio (η^2)
	Undifferentiated (<i>n</i> = 10)	Assimilated (<i>n</i> = 97)	Partial bicultural (<i>n</i> = 74)	American- oriented bicultural (<i>n</i> = 101)	Separated (<i>n</i> = 64)	Full bicultural (<i>n</i> = 78)	
Familial ethnic socialization	2.79 _a (0.59)	3.15 _a (0.68)	3.46 _b (0.46)	3.35 _b (0.51)	3.68 _c (0.54)	4.00 _d (0.77)	24.52 ^{***} (.23)
Ethnic identity affirmation	3.30 _a (0.83)	3.46 _a (0.69)	3.77 _b (0.45)	3.81 _{bc} (0.44)	3.98 _{cd} (0.59)	4.31 _e (0.57)	22.30 ^{***} (.21)
Spanish language pressures	2.07 _{ac} (0.99)	2.13 _a (0.72)	1.52 _b (0.57)	1.81 _c (0.62)	1.44 _b (0.61)	1.39 _b (0.52)	16.76 ^{***} (.17)
Independence	2.68 _a (1.14)	3.49 _b (0.68)	3.50 _b (0.55)	3.46 _b (0.50)	3.48 _b (0.50)	3.77 _c (0.55)	16.34 ^{***} (.17)
Ethnic identity exploration	2.86 _{ab} (0.74)	2.65 _{ac} (0.80)	3.03 _b (0.52)	3.08 _b (0.58)	3.13 _b (0.66)	3.53 _d (0.64)	15.62 ^{***} (.16)
English language pressures	2.19 _a (1.02)	1.20 _b (0.40)	1.50 _c (0.66)	1.22 _b (0.41)	1.74 _d (0.79)	1.33 _{bc} (0.53)	13.16 ^{***} (.14)
Familism	3.23 _a (0.52)	3.35 _a (0.46)	3.47 _{ab} (0.29)	3.44 _{ab} (0.33)	3.54 _b (0.44)	3.78 _c (0.39)	12.21 ^{***} (.13)
Horizontal individualism	3.23 _a (1.02)	4.03 _b (0.56)	3.84 _c (0.44)	3.79 _c (0.50)	3.85 _c (0.67)	4.28 _d (0.59)	11.49 ^{***} (.12)
Perceived discrimination	2.73 _a (0.73)	1.63 _b (0.54)	1.83 _c (0.59)	1.64 _b (0.43)	2.03 _d (0.65)	1.72 _{bc} (0.56)	11.47 ^{***} (.12)
Horizontal collectivism	3.20 _a (1.06)	3.68 _b (0.51)	3.69 _b (0.54)	3.71 _b (0.35)	3.70 _b (0.63)	4.10 _c (0.52)	9.82 ^{***} (.11)
Vertical collectivism	3.13 _a (0.94)	3.49 _{ab} (0.72)	3.63 _b (0.43)	3.57 _b (0.53)	3.63 _b (0.52)	4.00 _c (0.62)	9.00 ^{***} (.10)
Pressure to acculturate	2.71 _a (0.73)	2.06 _b (0.66)	2.18 _b (0.60)	2.16 _b (0.62)	2.63 _a (0.73)	2.10 _b (0.74)	7.56 ^{***} (.09)
Interdependence	2.70 _a (0.78)	3.15 _b (0.43)	3.19 _b (0.33)	3.18 _b (0.36)	3.23 _b (0.45)	3.40 _c (0.50)	6.46 ^{***} (.07)
Pressure against acculturation	2.40 _a (0.68)	1.99 _{ab} (0.79)	1.87 _{bd} (0.68)	1.78 _d (0.69)	1.80 _{bd} (0.77)	1.54 _e (0.63)	4.98 ^{***} (.06)
Vertical individualism	3.40 _a (1.03)	3.10 _{ac} (0.72)	2.89 _{bcd} (0.66)	2.88 _{bd} (0.75)	2.84 _b (0.57)	3.09 _{acd} (0.82)	2.66 [*] (.03)

Note. Within each row, means with the same subscript are not significantly different from one another. Post-hoc comparisons conducted using Tukey's Least Significant Difference test.

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

8.5 years of age, on average; Separated participants immigrated at 13.9 years of age, on average; and Undifferentiated participants immigrated, on average, at 14.3 years of age. It should be noted that there were no foreign-born participants in the American-Oriented Biculturalism class, and only in three in the Undifferentiated class.

Cultural Identity Variables and Correlates by Latent Acculturation Class

Given that cultural identity represents cultural *values* and *identifications* as well as cultural *practices*, we next sought to externally validate the acculturation class solution by comparing the classes in terms of indicators of cultural values and identifications that would be expected to be related to acculturation (cf. Schwartz, Montgomery, & Briones, 2006; Schwartz et al., 2007). These cultural identity indices may also help to further differentiate among the latent acculturation classes. For example, two biculturalism classes may differ markedly in terms of ethnic identity and familism—suggesting that these two forms of biculturalism may diverge in terms of the extent to which endorsement of *practices* from the heritage and American cultural contexts may also be associated with endorsement of cultural *values* and *identifications*.

Because MANOVA requires the dependent variables to be theoretically correlated (Weinfurt, 1995), we conducted two separate MANOVAs—one for the “American culture identity” variables (individualism and independence) and another for the “heritage culture identity” variables (collectivism, interdependence, familism, and ethnic identity). To control for Type I error, we set the alpha level for each MANOVA to .025 (.05/2).

Both the “American cultural identity” and “heritage culture identity” MANOVAs produced significant multivariate effects,

Wilks' $\lambda = .76$, $F(15, 1143) = 7.99$, $p < .001$, $\eta^2 = .09$; and Wilks' $\lambda = .62$, $F(30, 1642) = 6.88$, $p < .001$, $\eta^2 = .09$, respectively. Exploring univariate results (see Table 2) indicated cluster differences in all of the indices of cultural values and identifications. The Full Biculturalism cluster was highest on all of these indices except for vertical individualism, for which only minimal differences emerged across clusters. The Undifferentiated class was lowest on many of the cultural value and identification indices, although in several cases it was not significantly different from the American-Oriented Biculturalism class. Among the two classes characterized by elevated scores on both assimilation and integration, the American-Oriented Bicultural class was characterized by higher scores on horizontal and vertical individualism, and lower scores on ethnic identity exploration and affirmation, compared to the American-Oriented Biculturalism class. Among the two “pure” biculturalism classes, the Full Biculturalism class was characterized by higher scores on *all* of the indicators of cultural values and identifications than the Partial Biculturalism class.

Finally, we entered the cultural identity correlates (familial ethnic socialization, acculturative stress, and perceived ethnic discrimination) into a MANOVA by latent class. This analysis produced a significant multivariate effect, Wilks' $\lambda = .47$, $F(30, 1602) = 11.21$, $p < .001$, $\eta^2 = .14$. Exploring univariate results (see Table 2) indicated class differences in all of the cultural identity correlates. Familial ethnic socialization was lowest in the Undifferentiated and American-Oriented Bicultural classes and highest in the Separated and Full Bicultural classes. Perceived pressure to speak Spanish evidenced an opposing pattern—lowest in the Full Bicultural and Separated classes and highest in the Undifferentiated and Assimilated classes. Perceived pressure to speak English was highest in the

Undifferentiated and Separated classes and lowest in the Assimilated and American-Oriented Bicultural classes. Perceived pressure to acculturate was significantly higher in the Undifferentiated and Separated classes than in the other four classes, none of which were significantly different from one another. Perceived pressure against acculturation was lowest in the Full Biculturalism class and highest in the Undifferentiated class. Perceived ethnic discrimination was highest in the Undifferentiated class and lowest in the Assimilated Bicultural and American-Oriented Bicultural classes.

Discussion

In the present study, we evaluated Berry's (Berry et al., 1986; Berry, 1980, 1997) model of acculturation by ascertaining the extent to which the acculturation orientation categories could be extracted from continuous measures of heritage and receiving cultural practices. We also examined whether value-based indices of cultural identity, as well as cultural identity correlates, would differentiate between and among the clusters. We used latent class analysis, a clustering technique that makes no a priori assumptions about the categories that emerge. Furthermore, in contrast to Berry et al. (2006), who specified the number of classes in advance in their k-means cluster analysis, in the present study, empirical methods were used to determine the number of classes to retain.

In addition, whereas Berry et al. (2006) used continuous measures of the acculturation categories (as well as heritage and receiving cultural identifications and practices) to create clusters, we used only measures of cultural practices to create the latent classes. We did this for two primary reasons. First, we wanted to utilize a theoretically neutral clustering method, and to use clustering variables that would not weight the results toward theoretical expectations. Including measures of the four acculturation categories as part of the clustering procedure, inasmuch as these acculturation category measures are statistically independent from one another, may predispose the analysis to produce clusters reflecting these categories. Second, given that, within Berry's (1980, 1997) theoretical framework, the acculturation categories are derived from orientations toward the heritage and receiving cultural contexts, we wanted to directly test this assumption in an empirical way.

Berry's Model of Acculturation: Extent of Empirical Support in the Present Results

The present results provided partial support for Berry's model. A total of six, rather than four, classes emerged from analysis. This suggests that some of Berry's categories, at least in the present sample, may have multiple variants. Additionally, one of the classes extracted appeared to represent a combination of the assimilated and integrated categories.

Three of Berry's acculturation orientation categories emerged from the latent class analysis—separation, assimilation, and biculturalism (integration)—although the separation class was also characterized by some degree of biculturalism. The mixing of biculturalism with separation and with assimilation is consistent with prior evidence (Berry, Kim, Minde, & Mok, 1987) that the acculturation categories may not be as independent as once

thought. However, the acculturation category variables, which were not used to create the latent classes, differed considerably by class, suggesting that the classes could be differentiated in terms of Berry's categories.

Marginalization did not emerge as a cluster, although the very small "undifferentiated" class was characterized by the highest marginalization scores. The absence of marginalization as an appreciably sized cluster is consistent with del Pilar and Udasco (2004) and Rudmin (2003), who have argued that it is implausible for someone to develop a cultural identity that does not incorporate either the heritage or receiving cultural contexts. The casting of the undifferentiated cluster in terms of "cultural identity confusion" is consistent with prior work (e.g., Berry & Kim, 1988; Berry et al., 2006) suggesting that what appears to be marginalization may actually represent a sense of discomfort or lack of clarity in terms of who one is as a cultural being.

As would be expected given Berry's model, second-generation immigrants were more likely to evidence a combination of assimilation and integration (either Assimilated or American-Oriented Biculturalism), and first-generation immigrants—especially those who had arrived in the United States as older children or adolescents—were more likely to be classified as Partial Bicultural or Separated. The distribution of immigrant generations for the Full Bicultural class was almost identical to that of the sample as a whole.

Prominence of Biculturalism in the Present Results

Although somewhat consistent with Berry's work, our results also parallel findings from other studies (e.g., Chia & Costigan, 2006; Coatsworth et al., 2005; Pierce, Clark, & Kaufman, 1978) that have used only indices of heritage and receiving culture orientations to create acculturation clusters. Three of the five clusters extracted by Chia and Costigan (2006) could be considered as representing some form of biculturalism (i.e., both the Chinese and Canadian cultural orientation scores were near or above their respective scale midpoints). Coatsworth et al. (2005) used scale midpoints, rather than cluster analyses, to create four acculturation groups—two of which represented forms of biculturalism. Pierce et al. (1978) used cluster analysis and extracted six acculturation clusters, four of which could be considered as representing some form of biculturalism. Even studies that have used continuous measures of Berry's acculturation categories (e.g., Berry et al., 2006) have found biculturalism to be the most commonly endorsed mode of acculturation among individuals from immigrant families.

In contexts such as Miami, where both heritage and American cultural influences are strong, and where biculturalism is strongly encouraged among young people (e.g., Schwartz, Pantin, et al., 2006; Stepick & Stepick, 2002), biculturalism may appear even more strongly across empirically extracted acculturation categories. The prominence of biculturalism may reflect what Flannery, Reise, and Yu (2001) have termed *ethnogenesis*—the emergence of a "hybrid" culture that mixes heritage and receiving cultural streams. Indeed, a number of authors (e.g., Benet-Martínez & Haritatos, 2005; Schwartz et al., 2007; Tadmor & Tetlock, 2006) have found that biculturalism represents a synthesis of the two component cultures in a way that is different from either of these cultures—an

individual-level conceptualization that is parallel to the social-structural concept of ethnogenesis.

With that said, however, there appear to be considerable individual differences among young-adult Miami Hispanics with respect to retention of Hispanic cultural values and practices and in terms of acquisition of American cultural values and practices. Individuals who were fully bicultural—that is, those who scored above 75% on the range of possible scores on both heritage and American cultural practices—were most likely to identify with cultural values associated with the United States (individualism and independence) *and* with cultural values associated with many Hispanic cultures (collectivism, interdependence, and familism). These individuals were also the most ethnically identified of all the clusters extracted from the present dataset. These results support the contention (e.g., Benet-Martínez & Haritatos, 2005; LaFromboise et al., 1993; Rudmin, 2006) that multiple variants of biculturalism exist, and that these variants differ in terms of comfort with the heritage and receiving cultural contexts.

Indeed, the Full Biculturalism cluster scored significantly higher than the Partial Biculturalism cluster on orientation toward *both* Hispanic and American cultures. As a result, the Full Biculturalism class may be equated with a more blended form of biculturalism. This conclusion is bolstered by the finding that, although Full Bicultural participants reported greater degrees of familial ethnic socialization (suggesting more perceived familial guidance toward the heritage culture), they also reported less pressure against acculturation (suggesting more perceived contextual support for engaging in American cultural practices). Moreover, the Full Biculturalism class was characterized by significantly higher integration scores, and significantly lower marginalization scores, than the Partial Biculturalism class. This suggests that these individuals may have developed a truly bicultural identity—one that synthesizes elements of Hispanic and American culture into a unique blend that is “greater than the sum of its parts” (cf. Tadmor & Tetlock, 2006). These people’s cultural identities may be well matched to the “ethnogenesis” that characterizes the Hispanic American community in South Florida (cf. Stepick & Stepick, 2002).

The present results do not, however, provide information as to whether these two variants of biculturalism differed in terms of adjustment. Measures of self-esteem, depression, and other dimensions of psychosocial adjustment, which were not included in the present study, would be required to examine this. Accordingly, it is important for future research to examine psychosocial correlates of the acculturation categories, including differences between types of biculturalism (e.g., Benet-Martínez & Haritatos, 2005). A bicultural approach where the two component cultures are smoothly integrated would be expected to be associated with more adaptive functioning (e.g., higher self-esteem, lower anxiety and depression) than a bicultural approach where the person favors one orientation over the other or must “choose” between competing cultural expectations (Tadmor & Tetlock, 2006).

Cultural identity indices and correlates by latent acculturation class. Contrary to expectations, most of the attitudinal indices of cultural identity (individualism-collectivism, independence-interdependence, and familism) were able only to differentiate the Undifferentiated and Full Biculturalism classes from the

other classes. The Partial Biculturalism class, and the classes in which integration was mixed with either assimilation or separation, did not differ significantly from one another in terms of attitudinal indices of cultural identity. Patterns of differences for ethnic identity exploration and affirmation were somewhat stronger; as would be hypothesized, the Assimilated class, which was associated with the highest assimilation scores, was characterized by the lowest levels of ethnic identity exploration and affirmation. The Full Bicultural class was characterized by the highest scores on ethnic identity exploration and affirmation. This finding supports the conceptualization of ethnic identity as a subjective dimension of acculturation (Phinney, 2003). As a result, although ethnic identity and behavioral acculturation are somewhat distinct (Raffaelli et al., 2005), the patterns of differences in ethnic identity by latent acculturation class were somewhat consistent with Berry’s model—specifically, assimilation implies low levels of ethnic identity, and high (blended) biculturalism implies the greatest level of comfort with one’s ethnicity. Interestingly, and contrary to what would be expected given Berry’s model, the Separated class was *not* characterized by comparatively high scores on ethnic identity exploration and affirmation. However, among the cultural identity variables, differences among classes were strongest for familial ethnic socialization and for ethnic identity affirmation. This suggests that the classes are most different in terms of retention of the heritage (in the case Hispanic) culture.

In terms of correlates of cultural identity, familial ethnic socialization, as a “transmitter” of cultural identity, was highest in those clusters (Separation and Full Biculturalism) that represent retention of heritage-culture practices, and was lowest in Undifferentiated and Assimilated participants, who are more likely to reject their heritage culture. Partial Bicultural and American-Oriented Bicultural participants scored slightly higher on familial ethnic socialization, but still lower than Separated or Full Bicultural participants. This pattern suggests that Hispanic immigrant parents who do not emphasize the importance of retaining heritage values and practices are likely to have children who are more Americanized and who may discard their culture of origin. This appears to be the case even in Miami, where Hispanic culture predominates (Stepick & Stepick, 2002). These results suggest that American cultural influences are quite pervasive, even in ethnic enclaves, and that parents must take care to preserve their ethnic culture in the home and in their dealings with the outside world—or else it is at risk for being lost. When Hispanic parents promote retention of the heritage culture in their children, the result may be “blended” biculturalism for children who immigrate at younger ages; or separation (somewhat mixed with biculturalism) for those who arrive as older children or adolescents.

The results for acculturative stress are also consistent with our expectations. Participants in classes characterized by elevated (i.e., 2.0 or greater) scores on assimilation were likely to report pressures to speak and improve their Spanish. The Separated and Partial Bicultural classes were associated with the greatest perceived pressures to speak and improve their English, whereas the classes characterized by assimilation were associated with the lowest such pressures. Also consistent with theory, individuals in the Assimilated class reported elevated pressures against acculturation, whereas individuals in the

Separated class reported elevated pressures to acculturate. Individuals in the Full Bicultural class reported among the lowest levels of all of these stressors. These findings may help to further clarify Rudmin's (2003) statement that biculturalism is not necessarily the most advantageous of the acculturation categories—it depends on *which kind* of biculturalism is being considered. It is also possible that being bicultural is particularly advantageous in a bicultural environment such as Miami (cf. Bourhis, Moïse, Perrault, & Senécal, 1997) – and especially in a context characterized by “ethnogenesis” (cf. Flannery et al., 2001). Being bicultural may be more difficult and stressful in monocultural environments where assimilation is most desirable and where heritage-culture retention is frowned upon (Sam, 2000; van Oudenhoven & Eisses, 1998). More research is necessary to investigate the extent to which the present results are specific to bicultural urban environments versus generalizable to other types of receiving contexts.

The results for perceived discrimination suggest that individuals adopting a more separated approach to acculturation may report the most discrimination. In more monocultural American contexts, displays of ethnic pride and unwillingness to assimilate may be associated with discrimination (e.g., Sellers & Shelton, 2003). However, it is somewhat surprising to find this pattern in a sample of Hispanics from Miami. It is possible that, although adults immigrating to ethnic enclaves may be able to function well without interacting with American culture (Schwartz, Pantin, et al., 2006), young people—who attend schools and colleges based in American cultural expectations—may not always have this option. Among those who choose not to acculturate, or to do so to a lesser extent than others, there may be a perception that others, including other Hispanics, are not supportive of their cultural orientation. Although Miami is heavily oriented toward Hispanic cultural values and practices, acquiring American cultural practices—and therefore becoming bicultural—may also be important.

Limitations and Conclusions

The present results should be interpreted in light of several important limitations. First, the use of a university student sample likely resulted in exclusion of individuals with limited English proficiency, individuals from more diverse socioeconomic backgrounds, and migrant and seasonal workers. Because all three of these categories are prominent in Miami and other urban settings, it is important to replicate the present analyses—and to evaluate Berry's model of acculturation—on community samples. Second, a fuller evaluation of the four acculturation orientations might include aspects of psychosocial functioning such as self-esteem and depression. A finding that high/blended biculturalism is associated with the most favorable psychosocial functioning, for example, would provide support for prior literature (e.g., Lopez & Contreras, 2005) and would provide further support for Berry's model of acculturation.

Despite these limitations, the present study provides some empirical support for Berry's (Berry et al., 1986; Berry, 1997; Berry & Kim, 1988;) model of acculturation, using a theoretically neutral analytic approach and set of clustering variables. External variables, including demographic variables, cultural identity indices, and hypothesized correlates of cultural identity, tended to relate to

the latent acculturation classes in theoretically consistent ways. These empirical findings advocate for a position midway between Berry's model and some of the criticisms (e.g., Rudmin, 2003, 2006) that the acculturation orientations are invalid or artifactual. Acculturation classes similar to those proposed by Berry clearly do exist, but they appear to be less well differentiated than suggested by the theory.

It is hoped that the present study will open a line of research examining the viability of the acculturation orientations in other cultural settings and with regard to a more diverse set of comparison measures. It is through such research efforts that the acculturation literature may make a maximal contribution both to cultural psychology and to the study of predictors of psychosocial and health outcomes among immigrants and their descendants.

References

- Benet-Martínez, V., & Haritatos, J. (2005). Bicultural identity integration (BII): Components and psychosocial antecedents. *Journal of Personality*, 73, 1015–1050.
- Bernstein, R. (2007). *Minority population tops 100 million*. Retrieved May 17, 2007, from http://www.census.gov/dcmd/www/embargo/popest/national/pio-nat_stat.html
- Berry, J., Trimble, J., & Olmedo, E. (1986). Assessment of acculturation. In W. Lonner & J. W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 291–324). Newbury Park, CA: Sage.
- Berry, J. W. (1980). Acculturation as varieties of adaptation. In A. M. Padilla (Ed.), *Acculturation: Theory, models, and some new findings* (pp. 9–25). Boulder, CO: Westview.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review*, 46, 5–34.
- Berry, J. W. (2003). Conceptual approaches to understanding acculturation. In K. M. Chun, P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement, and applied research* (pp. 17–38). Washington, DC: American Psychological Association.
- Berry, J. W. (2006). Design of acculturation studies. In D. L. Sam & J. W. Berry (Eds.), *Cambridge handbook of acculturation psychology* (pp. 129–141). Cambridge, United Kingdom: Cambridge University Press.
- Berry, J. W., & Kim, U. (1988). Acculturation and mental health. In P. Dasen, J. W. Berry, & N. Sartorius (Eds.), *Health and cross-cultural psychology* (pp. 207–236). London: Sage.
- Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, 21, 491–511.
- Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006). *Immigrant youth in cultural transition*. Mahwah, NJ: Erlbaum.
- Bourhis, R. Y., Moïse, L. C., Perrault, S., & Senécal, S. (1997). Toward an interactive acculturation model: A social psychological approach. *International Journal of Psychology*, 32, 369–386.
- Cabassa, L. J. (2003). Measuring acculturation: Where we are and where we need to go. *Hispanic Journal of Behavioral Sciences*, 25, 127–146.
- Chia, A-L., & Costigan, C. L. (2006). A person-centred approach to identifying acculturation groups among Chinese Canadians. *International Journal of Psychology*, 41, 397–412.
- Chuah, S. C., Drasgow, F., & Roberts, B. W. (2006). Personality assessment: Does the medium matter? No. *Journal of Research in Personality*, 40, 359–376.
- Chun, S.-C. (2007). The “Other Hispanics”: What are their national origins? Estimating the Latino-origin populations in the United States. *Hispanic Journal of Behavioral Sciences*, 29, 133–155.
- Coatsworth, J. D., Maldonado-Molina, M., Pantin, H., & Szapocznik, J. (2005). A person-centered and ecological investigation of acculturation

- strategies in Hispanic immigrant youth. *Journal of Community Psychology*, 33, 157–174.
- del Pilar, J. A., & Udasco, J. O. (2004). Deculturation: Its lack of validity. *Cultural Diversity & Ethnic Minority Psychology*, 10, 169–176.
- DiStefano, C., & Kamphaus, R. W. (2006). Investing subtypes of child development: A comparison of cluster analysis and latent class cluster analysis in typology creation. *Educational and Psychological Measurement*, 66, 778–794.
- Flannery, W. P., Reise, S. P., & Yu, J. (2001). A comparison of acculturation models. *Personality and Social Psychology Bulletin*, 27, 1035–1045.
- Giang, M. T., & Wittig, M. A. (2006). Implications of adolescents' acculturation strategies for personal and collective self-esteem. *Cultural Diversity & Ethnic Minority Psychology*, 12, 725–739.
- Hughes, D. (2003). Correlates of African American and Latino parents' messages to children about ethnicity and race: A comparative study of racial socialization. *American Journal of Community Psychology*, 31, 15–33.
- Huntington, S. P. (2004). The Hispanic challenge. *Foreign Policy*, 141, 30–45.
- LaFromboise, T., Coleman, H. L. K., & Gerton, J. (1993). Psychological impact of biculturalism: Evidence and theory. *Psychological Bulletin*, 114, 395–412.
- Loken, E. (2004). Using latent class analysis to model temperament types. *Multivariate Behavioral Research*, 39, 625–652.
- Lopez, I. R., & Contreras, J. M. (2005). The best of both worlds: Biculturality, acculturation, and adjustment among young mainland Puerto Rican mothers. *Journal of Cross-Cultural Psychology*, 36, 192–208.
- Lugo Steidel, A. G., & Contreras, J. M. (2003). A new familism scale for use with Latino populations. *Hispanic Journal of Behavioral Sciences*, 25, 312–330.
- MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, 7, 19–40.
- Marotta, S. A., & Garcia, J. G. (2003). Latinos in the United States in 2000. *Hispanic Journal of Behavioral Sciences*, 25, 13–34.
- Moradi, B., & Risco, C. (2006). Perceived discrimination experiences and mental health of Latina/o American persons. *Journal of Counseling Psychology*, 53, 411–421.
- Murphy, J., Shevlin, M., & Adamson, G. (2007). A latent class analysis of positive psychosis symptoms based on the British Psychiatric Morbidity Survey. *Personality and Individual Differences*, 42, 1491–1502.
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation. *Structural Equation Modeling*, 14, 535–569.
- Pham, T. B., & Harris, R. J. (2001). Acculturation strategies among Vietnamese Americans. *International Journal of Intercultural Relations*, 25, 279–300.
- Phinney, J. S. (2003). Ethnic identity and acculturation. In K. M. Chun, P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement, and applied research* (pp. 63–82). Washington, DC: American Psychological Association.
- Phinney, J. S., Madden, T. J., & Santos, L. J. (1998). Psychological variables as predictors of perceived ethnic discrimination among minority and immigrant adolescents. *Journal of Applied Social Psychology*, 28, 937–953.
- Pierce, R. C., Clark, M., & Kaufman, S. (1978). Generation and ethnic identity: A typological analysis. *International Journal of Aging and Human Development*, 9, 19–29.
- Piontkowski, U., Florack, A., Hoelker, P., & Obdržálek, P. (2000). Predicting acculturation attitudes of dominant and nondominant groups. *International Journal of Intercultural Relations*, 24, 1–26.
- Raffaelli, M., Zamboanga, B. L., & Carlo, G. (2005). Acculturation status and sexuality among female Cuban American college students. *Journal of American College Health*, 54, 7–13.
- Roberts, R. E., Phinney, J. S., Mase, L. C., Chen, Y. R., Roberts, C. R., & Romero, A. (1999). The structure of ethnic identity in young adolescents from diverse ethnocultural groups. *Journal of Early Adolescence*, 19, 301–322.
- Rodriguez, N., Myers, H. F., Mira, C. B., Flores, T., & Garcia-Hernandez, L. (2002). Development of the Multidimensional Acculturative Stress Inventory for adults of Mexican origin. *Psychological Assessment*, 14, 451–461.
- Rudmin, F. W. (2003). Critical history of the acculturation psychology of assimilation, separation, integration, and marginalization. *Review of General Psychology*, 7, 3–37.
- Rudmin, F. W. (2006). Debate in science: The case of acculturation. Retrieved February 12, 2008, from www.anthrolobe.ca/docs/rudminf_acculturation_061204.pdf
- Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology*, 79, 49–65.
- Sam, D. L. (2000). Psychological adaptation of adolescents with immigrant backgrounds. *Journal of Social Psychology*, 140, 5–25.
- Schwartz, S. J., Montgomery, M. J., & Briones, E. (2006). The role of identity in acculturation among immigrant people: Theoretical propositions, empirical questions, and applied recommendations. *Human Development*, 49, 1–30.
- Schwartz, S. J., Pantin, H., Sullivan, S., Prado, G., & Szapocznik, J. (2006). Nativity and years in the receiving culture as markers of acculturation in ethnic enclaves. *Journal of Cross-Cultural Psychology*, 37, 345–353.
- Schwartz, S. J., Zamboanga, B. L., Rodriguez, L., & Wang, S. C. (2007). The structure of cultural identity in an ethnically diverse sample of emerging adults. *Basic and Applied Social Psychology*, 29, 159–173.
- Sellers, R. M., & Shelton, J. N. (2003). The role of racial identity in perceived racial discrimination. *Journal of Personality and Social Psychology*, 84, 1079–1092.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, 20, 580–591.
- Sonderegger, R., & Barrett, P. M. (2004). Patterns of cultural adjustment among migrants to Australia. *Journal of Child and Family Studies*, 13, 341–356.
- Stephenson, M. (2000). Development and validation of the Stephenson Multigroup Acculturation Scale (SMAS). *Psychological Assessment*, 12, 77–88.
- Stepick, A., & Stepick, C. D. (2002). Power and identity: Miami Cubans. In M. M. Suárez Orozco & M. Páez (Eds.), *Latinos: Remaking America* (pp. 75–92). Cambridge, MA: Harvard University Press.
- Sullivan, S., Schwartz, S. J., Prado, G., Pantin, H., Huang, S., & Szapocznik, J. (2007). A bidimensional model of acculturation for examining differences in family functioning and behavior problems in Hispanic immigrant adolescents. *Journal of Early Adolescence*, 27, 405–430.
- Tadmor, C. T., & Tetlock, P. E. (2006). Biculturalism: A model of second-culture exposure on acculturation and integrative complexity. *Journal of Cross-Cultural Psychology*, 37, 173–190.
- Torres, L., & Rollock, D. (2007). Acculturation and depression among Hispanics: The moderating effect of intercultural competence. *Cultural Diversity & Ethnic Minority Psychology*, 13, 10–17.
- Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, 74, 118–128.

- Umaña-Taylor, A. J., Bhanot, R., & Shin, N. (2006). Ethnic identity formation during adolescence: The critical role of families. *Journal of Family Issues, 27*, 390–414.
- Umaña-Taylor, A. J., & Fine, M. A. (2001). Methodological implications of grouping Latino adolescents into one collective ethnic group. *Hispanic Journal of Behavioral Sciences, 23*, 347–362.
- Unger, J. B., Gallagher, P., Shakib, S., Ritt-Olson, A., Palmer, P. H., & Johnson, C. A. (2002). The AHIMSA acculturation scale: A new measure of acculturation for adolescents in a multicultural society. *Journal of Early Adolescence, 22*, 225–251.
- van Oudenhoven, J., & Eisses, A.-M. (1998). Integration and assimilation of Moroccan immigrants in the Netherlands and Israel. *International Journal of Intercultural Relations, 22*, 293–307.
- Weinfurt, K. P. (1995). Multivariate analysis of variance. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 245–276). Washington, DC: American Psychological Association.
- Zamboanga, B. L., Raffaelli, M., & Horton, N. J. (2006). Acculturation status and heavy alcohol use among Mexican American college students: Investigating the moderating role of gender. *Addictive Behaviors, 31*, 2188–2198.
- Zane, N., & Mak, W. (2003). Major approaches to the measurement of acculturation among ethnic minority populations: A content analysis and an alternate empirical strategy. In K. M. Chun, P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement and applied research* (pp. 39–60). Washington, DC: American Psychological Association.

Announcing Establishment of Division 45 Book Series on Cultural, Racial, and Ethnic Psychology.

This is the official book series of the Society for the Psychological Study of Ethnic Minority Issues (Division 45) of the APA. The series is designed to advance our theories, research and practice related to cultural, racial and ethnic psychology. It will focus on, but not be limited to, the major racial and ethnic groups in the United States. The books in the series will contain original materials that address the full spectrum of methodological, substantive, and theoretical areas related to cultural, racial and ethnic psychology in the United States. This would include topics in Behavioral Neuroscience, Cognitive, Developmental, Personality, and Social psychology. Also of interest would be volumes in the applied areas of psychology such as Clinical, Counseling, School, Community and Industrial-Organizational Psychology. In covering psychology related racial and ethnic groups, the series will include both books that examine a single racial or ethnic group as well as books that undertake a comparative approach (e.g., Racial and Ethnic Variations in Depression). Please direct inquiries to the Series Editor, Professor Frederick Leong at the Center for Multicultural Psychology Research at Michigan State University (Tel: 517-353-9925; Email: fleong@msu.edu).