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AUTHOR Bosher, Susan
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ABSTRACT

This paper describes the development and application of an instrument to measure the relationships between acculturation, ethnicity, second language learning, self-esteem, and academic success among the Hmong student population in United States postsecondary schools. The instrument assessed seven dimensions of acculturation (behavioral, social, linguistic, values, attitudes, and ethnic self-identification) in terms of both orientation toward Hmong culture and orientation toward mainstream American culture. Items were designed to be as culturally appropriate and explicit as possible. The questionnaire was written in English and piloted with high school students. Results of statistical analyses of the measure's reliability and validity are presented in some detail. It is noted that the instrument could be adapted for other immigrant populations. (Contains 73 references.) (MSE)

Author: Susan Bosher



# The Measurement of Acculturation

Acculturation is frequently cited as an important variable in the acquisition of a second language. Indeed, almost every textbook in second language acquisition includes a chapter or section on acculturation (Brown, 1994; Ellis, 1985, 1994; Gingras, 1978; Krashen, 1982; Krashen & Scarcella, 1980; Larsen-Freeman & Long, 1991; McLaughlin, 1987; Richards, 1978), yet with the exception of attitudes and motivation, most of the social and psychological variables that constitute Schumann's Acculturation Model, for example, have never been operationalized, without which there can be no large-scale investigation of its usefulness (Ellis, 1994; Gardner, 1985; Schumann, 1986). Furthermore, there has been almost no attempt to learn about the measurement of acculturation from other disciplines, most notably, anthropology, psychology, and sociology, which would greatly inform and enrich the discussion in second language acquisition.

Indeed, there have been only a handful of studies in second language acquisition which have operationalized acculturation as it is currently understood in the social sciences (Gardner et al., 1990; Hoffman, 1989; Lalleman, 1987; Young & Gardner, 1990), but each of these studies has operationalized acculturation in a different way, making comparisons across studies difficult. In addition, most attempts to measure acculturation and the related concept of ethnicity have fallen short of the current view of acculturation as both multidimensional and nonlinear.

The purpose of this paper is to present and discuss an instrument that I developed to investigate the relationships among acculturation, ethnicity, second language acquisition, self-esteem, and academic success in the Hmong student population at the post-secondary level. The study operationalized acculturation as

both multidimensional and nonlinear in the design of the instrument and maintained those characteristics during part of the data analysis. With some modifications, this instrument could be adapted for use in other studies investigating acculturation in other immigrant populations, and its relationship to second language acquisition.

## Review of the Literature

Acculturation is most often defined as the process of cultural adaptation or change. Berry (1980, 1986) identified four strategies of acculturation: (a) assimilation, (b) integration, (c) rejection, and (d) deculturation. Assimilation involves relinquishing one's native culture as one adapts to the majority culture; integration involves maintaining one's native culture at the same time there is movement towards the majority culture; rejection refers to separation from the majority culture, either self-imposed withdrawal or imposed by society through segregation; and deculturation to the loss of cultural affiliation with either group, resulting in alienation and complete loss of identity.

Traditionally, acculturation has been conceptualized as a linear, unidimensional process, by which the culture of the immigrant group is replaced by the culture of the host society. Most immigrants, in fact, choose some form of biculturalism, in which individuals adapt to the new culture without relinquishing their native culture. The ways in which and extent to which individuals become adept at both cultures, however, varies from group to group and from individual to individual, and can vary over time, as well. There is also variation regarding which aspects of the host culture are adopted, as well as which aspects of the native culture are maintained. In sum, acculturation is both multidimensional and nonlinear.

Multidimensionality of Acculturation

An instrument designed to measure acculturation, therefore, should assess cultural change along a variety of dimensions. Some scales have focused on just one aspect or dimension of acculturation, such as cultural awareness (Agurcia, 1984) or have attempted to assess acculturation indirectly through the use of semantic differentials, or the comparison of affective meanings assigned to culturally sensitive concepts such as "mother," "father," "male," and "female" (Martinez, Martinez, Olmedo, & Goldman, 1976; Osgood, Suci, & Tannenbaum, 1957). Such attempts are misleading as they imply acculturation is unidimensional or that it cannot be measured directly. The findings from such studies suggest that subjects are either acculturated or not, depending on that one dimension or measure, irrespective of other dimensions or measures.

Other scales have been presented as consisting of one dimension only, most typically behavioral, when, in fact, additional dimensions are present, such as linguistic, social, and ethnic identificational (Cuellar, Harris, & Jasso, 1980; Garcia & Lega, 1979; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987). These scales are misleading as they mask the complexity and multidimensionality of acculturation.

Of practical concern for the researcher in designing an instrument is determining how many dimensions of culture should be represented, as well as which ones from those dimensions that have been identified: cognitive, behavioral, social, linguistic, value, attitudinal, and ethnic self-identificational.

Cognitive dimension. A few studies have included a cognitive dimension in their assessment of acculturation. For example, in Clark, Kaufman, & Pierce's (1976, 1978)

study of the ethnic identity of first-, second-, and third-generation Mexican and Japanese immigrants, the cognitive dimension was assessed through a picture identification test which attempted to measure individuals' knowledge of popular culture in their native country compared with contemporary American culture. Pictures of American culture included, for example, a winter scene of the Grand Canyon, Billy Graham, and the Liberty Bell (Pierce, Clark, & Kiefer, 1972).

Fong (1963, 1965) used a Stick Figures Test to assess an individual's ability to recognize a wide range of expressive and attitudinal states in American culture. The test was constructed to measure the degree to which members of a particular social group share similar perceptions, cognitive organizations, and affective tendencies, assumed to develop out of shared experiences of group members (Sarbin & Hardyck, 1955). Fong (1963, 1965) hypothesized that accurate recognition of the expressions and attitudes would reflect the degree to which Chinese immigrants had internalized the traits and norms of American society.

Keefe and Padilla (1987) included a section on cultural heritage in their instrument designed to assess ethnic awareness and loyalty. Included in this section were questions about Mexican cultural symbols, historical events, and contemporary personalities.

For this study a cognitive dimension was not included in the instrument designed to measure acculturation because a relatively large number of items would have been needed to assess a broad range of cultural knowledge about the United States and the Hmong, not to mention the problematic nature inherent in any attempt to define what constitutes cultural knowledge. The questionnaire would have become too lengthy and

would have required too much time to fill out, perhaps discouraging some potential participants in the study.

Behavioral dimension. Many studies have limited their scales to two dimensions of acculturation, usually behavior and values (Szapocznik, Scopetta, & Kurtines, 1978; Celano, 1988), or to some conceptually similar distinction, such as intrinsic and extrinsic cultural traits (Yao, 1979). Other scales have been labeled behavioral when, in fact, additional dimensions were present, such as social, linguistic, and attitudinal. For example, Szapocznik et al.'s (1978) behavioral scale included items regarding language and social behavior, as well as items more typically associated with behavior, such as recreation, food, music, T.V. programs, books/magazines, dances, radio programs, and celebration of birthdays and weddings.

In Clark et al.'s (1976, 1978) study, the behavioral sphere was measured by social relationships, language proficiency, ethnic self-identification, and attitudes, as well as level of participation in ethnic group activities vs. the larger community, resulting in variables such as proportion of similar background friends, ethnic identification ratio, and attitude towards own group, as well as holiday ratio, percent Mexican or Japanese movies seen, and percent traditional Mexican or Japanese foods preferred.

The instrument designed to measure acculturation for this study assessed behavior separate from other dimensions, and included six items regarding food, music, T.V., social/recreational activities, cultural activities, and religious activities. Each item was assessed twice, once in terms of orientation towards Hmong culture and once in terms of orientation towards mainstream American culture.

Social dimension. Most studies have incorporated social contact with the majority culture as one aspect of the behavioral dimension of acculturation (Clark et al., 1976, 1978), or social contact with the ethnic culture as one aspect of ethnicity (Driedger, 1975, 1976; Rogler & Cooney, 1984), or have used it as a measure of structural assimilation (Hazuda, Stern, & Haffner, 1988).

Lalleman (1987), in her study of Turkish immigrant children in the Netherlands, defined acculturation in terms of social, cultural, and psychological positions. Social position was defined as frequency and nature of contact with Dutch peers, and exposure to Dutch.

The instrument designed for this study assessed the social dimension separate from the behavioral and linguistic dimensions, not only to preserve the multidimensionality of acculturation, but also to assess the importance of social contact, as it is one of two major variables in Schumann's Acculturation Model (1978a, 1978b, 1978c). The social dimension included items regarding friends, co-workers, supervisors, and families in the neighborhood, both Hmong and American.

Linguistic dimension. Most studies have included some aspect of language in their measurement of acculturation or ethnicity, sometimes proficiency (Suinn et al., 1987), preference (Padilla, 1980), use (Clark et al., 1976, 1978; Driedger, 1975; Olmedo & Padilla, 1978), or a combination of use and proficiency (Hazuda et al., 1988; Rogler & Cooney, 1984), use and preference (Szapocznik et al., 1978), or of all three (Cuellar et al., 1980). Most often the linguistic dimension is included as part of the behavioral dimension (Clark et al., 1976, 1978; Cuellar et al., 1980; Driedger, 1975; Hazuda et al., 1988; Rogler & Cooney, 1984; Suinn et al., 1987; Szapocznik et al.,

1978), but sometimes as part of the social dimension (Lalleman, 1987). Without exception, these studies used self-reporting or self-rating of language use, preference, and/or proficiency in English vs. the native language, implying a negative or subtractive relationship between the two languages, that is, as proficiency in the second language is acquired, proficiency in the native language is lost.

Another study, from the field of second language acquisition (Clement, 1986) determined level of acculturation as a function of proficiency in the second language, and assessed proficiency through an oral interview and a general English proficiency test, which consisted of a cloze test and tests of reading and listening comprehension.

As language is considered the most salient dimension of ethnic identity (Giles, Taylor, & Bourhis, 1974), it should be assessed separately, rather than subsumed under behavior or social contact. For this study, language use was included as a separate dimension of acculturation and included four items regarding language use at home, with friends, in the classroom, and at work, both Hmong and English. Language proficiency was assessed separately, as a dependent variable in this study, and will not be discussed in this paper (see Bosher, 1995).

Values dimension. Various means of assessing values have been attempted in studies of acculturation and ethnicity. Some studies (Clark et al., 1976, 1978; Szapocznik et al., 1978) have defined values in a more general sense, based on Kluckhohn and Strodtbeck's (1961) orientation categories: Activity (being, doing, being-in-becoming), Time (past, present, future), Man-Nature (with, over, subjugation), and Relational (individual, collateral, lineal), and the results of such studies have not been very successful.

Clark et al. (1976, 1978) found that while some ethnic group and generational differences were found in relation to certain value orientations, no patterns emerged when individual value orientations were examined. Almost as many patterns emerged as there were individuals in the study. Clark and her colleagues concluded that value orientation data is more complex and less accessible than behavioral data.

Szapocznik et al.'s (1978) developed problem situations using Kluckhohn and Strodtbeck's (1961) categories, but still no discernable patterns emerged from the data. Only the relational value of the value scale distinguished between subjects in their study who were considered to be low and high on acculturation. Overall, the value scale proved much less valid and reliable than the behavioral scale used in the same study.

Other studies (Domino & Acosta, 1987; Penner & Tran, 1977) have used Rokeach's (1973) Value Survey to assess values. These studies have been somewhat more successful than those using Kluckhohn and Strodtbeck's value orientations. Rokeach's Value Survey consists of a set of 18 goals in life (e.g., a comfortable life, freedom, happiness, social recognition) and 18 means to achieve those goals (e.g., cheerful, courageous, intellectual, obedient). Subjects rank-order both sets of goals. Subjects of different cultural backgrounds or at different levels of acculturation supposedly rank-order goals differently. This instrument is more specific than Kluckhohn and Strodtbeck's (1961) general value orientations, and has successfully discriminated between individuals of different cultural backgrounds or at different levels of acculturation (Domino & Acosta, 1987; Penner & Tran, 1977).

Other studies (Lalleman, 1987; Rogler & Cooney, 1984) have evaluated the

degree of importance individuals attach to values that are specific to their native culture; these studies have been the most successful . For example, in Lalleman's 1987) study of Turkish children in the Netherlands, cultural position was defined as the cultural norms and values specifically related to Islamic duties, and link to Turkey.

In Rogler and Cooney's (1984) study of Puerto Rican families in New York City, two values comprised one index used to assess ethnic identity: familism, or the importance of family in Puerto Rican society and the obligations and duties of family members; and fatalism, or the belief that events in life are preordained by a metaphysical process, and that humans can do little to change the future course of their lives. Familism was measured by the respondents' level of agreement or disagreement with statements regarding the hiring of relatives, seeking help from relatives, living near parents, and loyalty to parents. Fatalism was measured by the respondents' level of agreement or disagreement with statements regarding teaching fatalism to children, the importance of not planning life, and the nature of true happiness. In their study, children were found to be much less committed to the values of familism and fatalism than their parents.

Padilla, Wagatsuma, & Lindholm (1985) constructed a value scale based on Japanese values that were considered in possible conflict with generally accepted American or Western values, such as "Modesty is very admirable" and "Marriage involves not just two individuals but two families." Value scores differed between first, second, and third/later generations.

Scales based on values specific to a particular culture (Lallemann, 1987; Padilla et al., 1985; Rogler & Cooney, 1984) have proven to be far more useful than scales

based on general value orientations (Clark et al., 1976, 1978; Szapocznik et al., 1978), as they have successfully discriminated between individuals at different levels of acculturation.

For this study the value scale was comprised of ten values specific to Hmong culture, followed by ten contrasting mainstream American values. It included many of the values recommended by Sue (1973), who argued that a value scale for use with Asian immigrants should include certain traditional values, such as respect for the elderly, formality in interpersonal relations, restraint and inhibition of strong feelings, obedience to authority, obligations to the family, high academic and occupational achievement, and use of shame and guilt to control behavior. It also included values used in two other studies of Southeast Asian immigrants in the United States, one of Southeast Asian children (Caplan, Choy, & Whitmore, 1991), and the other of Hmong adolescents (Rick & Forward, 1992).

Attitudinal dimension. Attitudes are the least well-defined of the various dimensions of acculturation, perhaps because attitudes consist of various components (Harding, Kutner, Proshansky, & Chein, 1954). They reflect both an individual's belief system, as well as an individual's emotional reactions and behavioral tendencies towards the attitude object. Attitudes, therefore, must be assessed about or towards something, which has varied in different instruments designed to measure acculturation and ethnicity.

Fong (1963, 1965) assessed attitudes towards a wide variety of topics, including cultural interests, social interests, nationalistic sentiments, and social prejudice, which together comprised an Assimilation-Orientation Inventory. Although attitudes are

usually assessed along a continuum of agreement, Fong used a true/false format.

Rogler and Cooney (1984) used attitudes towards various components of individual modernity (Smith & Inkeles, 1966) as one index of ethnic identity. Individual modernity was measured by respondents' preference for schooling, attitude towards birth control, qualifications for a position of importance, frequency of participation in associations and clubs, and frequency of reading newspapers.

Hazuda et al. (1988) assessed attitudes towards traditional family structure and sex roles in their study of Mexican-Americans. Lalleman (1987) defined psychological position in her study of Turkish children in the Netherlands as attitudes towards Dutch peers, Dutch adults, and the Dutch language, and perceived discrimination.

Phinney (1991) has argued that instruments designed to measure ethnic identity should include specific statements regarding attitudes and evaluations about one's group, as well as attitudes about oneself as a group member. In the instrument designed for this study, the attitudinal dimension of acculturation assessed the following four specific attitudes towards both the American and Hmong cultures: pride in being American and Hmong, importance in speaking English and Hmong, importance in reading/writing English and Hmong, and importance in taking part in Hmong and American culture.

Ethnic self-identificational dimension. Lampe (1978) argued that a personally selected ethnic-identifying term is a valid indicator of degree of assimilation, as it reflects an individual's self-image, an important aspect of the assimilation process, which is influenced by an individual's reference group. Many instruments have included ethnic self-identification either as a dimension of acculturation or ethnicity

(Keefe & Padilla, 1987; Padilla et al., 1985; Rogler & Cooney, 1984), or as a socio-cultural index against which degree of acculturation is measured (Mercer, 1976; Olmedo, Martinez, & Martinez, 1978).

Padilla et al. (1985) assessed ethnic identity through identification labels, pride, and preference. Keefe and Padilla (1987) assessed ethnic identification and pride on the basis of respondents' self-identifying label, preferred first name for themselves, and for their children, and perception of native culture.

In Rogler and Cooney's (1984) study, ethnic self-identity was measured by the respondents' subjective affiliation with Puerto Rican or American culture, or both; feelings of closeness towards Puerto Ricans and Americans; and preferences for living in Puerto Rico or on the mainland, for the English or Spanish language, for their children retaining Puerto Rican culture, and for their children marrying Puerto Ricans.

Four items assessing ethnic self-identification, a direct question about ethnic self-identification, including identification of lifestyle and values, and importance of marrying a Hmong, were included in the instrument designed for this study, not as a dimension of acculturation per se, but as a means to assess the internal validity of the acculturation questionnaire by comparing scores on ethnic self-identification with overall acculturation.

Acculturation as Nonlinear/Bidirectional

With few exceptions (Szapocznik, Kurtinez, & Fernandez, 1981; Wong-Rieger & Quintana, 1987), most instruments have been set up in a linear fashion, with the two cultures at opposite ends of the continuum (Burnam, Hough, Telles, Karno, & Escobar, 1987; Celano & Tyler, 1990; Cuellar et al., 1980; Ghaffarian, 1987; Suinn et al., 1987;

Szapocznik et al., 1978) . The response set has usually consisted of a 5-point Likert scale with scores representing mutually exclusive categories, for example: very Hmong, somewhat Hmong, bicultural, somewhat American, and very American. Such scales are limited in their theoretical usefulness, since studies have clearly demonstrated that acculturation cannot be understood as a process by which the culture of the immigrant group is simply replaced by that of the dominant group. Furthermore, the construct of biculturalism is perceived in these scales as half-way between two cultures, rather than a state of proficiency in both cultures.

Only a handful of studies (Szapocznik et al., 1981; Wong-Rieger & Quintana, 1987) have designed their instruments to reflect a nonlinear or bidirectional model of acculturation with parallel statements for each item, one measuring movement towards the majority culture, the other measuring retention of native culture. However, in Szapocznik et al.'s (1981) study the instrument assessed the degree of comfort respondents felt in each culture, rather than their actual involvement in both cultures.

For this study the instrument assessed involvement in both American and Hmong cultures and included parallel statements for each item, one reflecting orientation towards Hmong culture, the other reflecting orientation towards American culture.

## Design of the Instrument

The Acculturation Scale developed for this study reflects the multidimensional, bidirectional nature of acculturation, as discussed in the literature on acculturation in anthropology, psychology, and sociology. It includes items assessing five dimensions of acculturation: language use, social contact, behavior, attitudes, and values, in terms

of both Hmong and American cultures.

Items in the questionnaire were designed to be as culturally appropriate and explicit as possible. Many items consisted of a universal concept, explained through culturally specific details, thus combining etic (universal) and emic (group-specific) perspectives (Brislin, 1990), the strategy thought best to ensure accurate representation of a given group in socio-psychological instruments (Marin & Marin, 1991). For example, items #33 and #34 both ask about participation in cultural activities (etic) in the two communities, American and Hmong; details or examples (emic) are provided to explain what is meant by cultural activities in each community:

> 33. How much do you take part in American cultural activities, such as local concerts, parades, museum shows, and art shows?
>
> 34. How much do you take part in Hmong cultural activities, such as New Year's celebrations, fashion shows, cultural shows, paj ndaub (needlework) and family and clan gatherings for special events, such as weddings, soul-calling ceremonies for new babies, funerals?

The value dimension of acculturation was constructed using culturally specific values for both American and Hmong cultures. For example, the following two items represent Hmong values:

> 51. Young adults should live with their parents or their elders, even after they get married.
>
> 58. It is important to work hard for the future.

The following two items represent comparable American values:

> 61. Young adults should live independently from their parents or elders, even before they get married.
>
> 68. It is important to have fun and enjoy life.

The questionnaire was written in English because research has indicated that less than 50% of Hmong adolescents are literate in their native language, and their level of literacy is at the intermediate level only (McGinn, 1989). Furthermore, translating the questionnaire into Hmong would not necessarily have ensured metaphorical equivalence between concepts in English and their Hmong translation (Dunnigan, McNall, & Mortimer, 1993; Marin & Marin, 1991; Mortimer, Dunnigan, Fish, & Martin, 1990), assuming there are even words or expressions in Hmong for concepts related to American culture.

It was assumed, therefore, for this study that Hmong students at the college level could read English at a sufficient level of proficiency, so that the questionnaire could be understood and appropriately responded to in English. The high alpha coefficients obtained for the various scales in the instrument (see Table 1) indicate that participants interpreted the items in each scale in the same way. In the administration of the questionnaire, students were encouraged to help each other with words or concepts they did not know, which they occasionally did.

The questionnaire was examined by two ESL instructors at a local high school with a large Hmong population. They made numerous suggestions for simplifying vocabulary and syntax and for making concepts more accessible by adding paraphrases in parentheses, suggestions that were incorporated into the final version of the questionnaire.

The questionnaire was then pilot-tested with a group of 17 Hmong students in Grade 11 at the same local high school. Pilot-testing an instrument is especially important when the participants in a study are non-native speakers of English, and are

from cultures that may not be familiar with survey instruments (Turner, 1993). Suggestions for clarification from the students, as well as insights gained from pilot-testing the questionnaire, were incorporated into the final version and procedure for administering it.

## Validity and Reliability of Scales

For overall content validity the Acculturation Scale was developed after a careful and thorough review of the literature and of existing instruments used to measure acculturation and ethnicity. To provide a comprehensive sample of dimensions of acculturation, five dimensions were included; to provide a representative sample of items, 4-10 items were included for each dimension. The instrument was also reviewed by two Hmong professionals working with Hmong students at the post-secondary level.

Items or sets of items were selected or modified as much as possible from existing instruments, based on how well they reflected current views of acculturation, as well as how well they predicted acculturation in previous studies (Caplan, Choy, & Whitmore, 1991; Rick, 1988; Rick & Forward, 1992; Wong-Rieger & Quintana, 1987). Although there are obvious advantages to using previously developed and standardized instruments without modification, it is preferable to develop a new instrument or modify one that already exists, so that it more accurately reflects the characteristics of the group being studied (Marin & Marin, 1991).

### Cronbach's Alpha

Cronbach's Alpha test of reliability (Cronbach & Meehl, 1967) was run on each of the five American and Hmong dimensions or scales of acculturation, to measure

their internal consistency, that is, how well all items in each scale measured the same underlying construct (see Table 1.)

**Table 1**

**Chronbach's Alpha Test of Reliability for American and Hmong Acculturation Scales**

| Acculturation Scale | Chronbach's Alpha | |
|---|---|---|
| | **American** | **Hmong** |
| Language Use (4 items) | .57 | .66 |
| Social Contact (4 items) | .51 | .56 |
| Behavior (6 items) | .64 | .74 |
| Attitudes (4 items) | .47 | .80 |
| Values (10 items) | .69 | .76 |

For short scales designed to detect group differences, a reliability of at least .50 is considered good enough. This criterion was met in all cases but one (American Attitudes), and in most cases, was far surpassed. In addition, all of the items in all of the scales correlated positively with their scale score.

In addition to determining the internal consistency of the various scales, it is also important to look at the relationships among the dimensions of acculturation within each cultural orientation. The results of factor analysis, to be discussed in the next section, demonstrate that each of the scales measures a single underlying construct and that those underlying constructs are related. To determine the extent of those relationships it is necessary to look at the correlations among those scales (see Tables 2 and 3).

**Table 2**

**Correlations among Dimensions of American Cultural Orientation**

| | Dimension of Acculturation | | | | |
|---|---|---|---|---|---|
| | **Lang.Am** | **Socl.Am** | **Behv.Am** | **Att.Am** | **Val.Am** |
| **Lang.Am** | 1.000 | | | | |
| **Socl.Am** | .38** | 1.000 | | | |
| **Behv.Am** | .51** | .36** | 1.000 | | |
| **Att.Am** | -.13 | .10 | -.04 | 1.000 | |
| **Val.Am** | -.09 | -.11 | -.02 | -.02 | 1.000 |

Note. Lang.Am=American (English) Language Use; Socl.Am=American Social Contact; Behv.Am=American Behavior; Att.Am=American Attitudes; Val.Am=American Values.

**p < or = .01.

**Table 3**

**Correlations among Dimensions of Hmong Cultural Orientation**

| | Dimension of Acculturation | | | | |
|---|---|---|---|---|---|
| | **Lang.Hm** | **Socl.Hm** | **Behv.Hm** | **Att.Hm** | **Val.Hm** |
| **Lang.Hm** | 1.000 | | | | |
| **Socl.Hm** | .41** | 1.000 | | | |
| **Behv.Hm** | .32** | .22* | 1.000 | | |
| **Att.Hm** | .27** | .01 | .32** | 1.000 | |
| **Val.Hm** | .23* | .13 | .14 | .28** | 1.000 |

Note. Lang.Hm=Hmong Language Use; Socl.Hm=Hmong Social Contact; Behv.Hm=Hmong Behavior; Att.Hm=Hmong Attitudes; Val.Hm=Hmong Values.

*p < or = .05. **p < or = .01.

The correlations among dimensions within both American and Hmong cultural orientation are generally moderate, rather than strong or non-existent, supporting both the distinct nature of each dimension of acculturation, as well as a moderate relationship among the dimensions.

Factor Analysis

Factor analysis was used to provide additional empirical justification for the individual acculturation scales by determining whether items loaded where they were supposed to on the relevant dimension of acculturation, and whether any items detracted from the specific scale or dimension to which they belonged. The five dimensions of acculturation: language use, social contact, behavior, attitudes, and values were hypothesized to be intercorrelated, or oblique, to each other.

In the following discussion, dimensions of acculturation have been capitalized and highlighted in bold-face type, and the factors which emerged from the rotation have been put into all upper-case letters, to help the reader distinguish between the dimensions of acculturation developed from theory, and the factors which emerged from the application of a statistical technique.

American Acculturation scales. The Acculturation Scale consisted of 28 items for both American and Hmong cultural orientations: four for **Language Use**, four for **Social Contact**, six for **Behavior**, four for **Attitudes**, and ten for **Values**. Table 4 provides descriptors for the American cultural items.

**Table 4**

**Descriptors of American Cultural Orientation**

| Dimension and Item Number | Descriptor |
|---|---|
| **Language Use** | |
| B.9 | Speak English in home |
| B.11 | Speak English with friends |
| B.13 | Speak English in classroom |
| B.15a | Speak English at work |
| **Social Contact** | |
| B.17 | American friends |
| B.19a | American co-workers |
| B.21a | American supervisors |
| B.23 | American families in neighborhood |
| **Behavior** | |
| B.25 | American food |
| B.27 | Social/recreational activities with Americans |
| B.29 | American music |
| B.31 | American T.V. |
| B.33 | American cultural activities |
| B.35 | American religious activities |
| **Attitudes** | |
| B.41 | Pride in being American |
| B.45 | Importance of speaking English well |
| B.47 | Importance of reading/writing English well |
| B.49 | Importance of taking part in American culture |
| **Values** | |
| C.61 | Young adults live independently from parents/elderly |
| C.62 | Young adults make decisions alone |
| C.63 | Young adults don't take care of parents/elderly |
| C.64 | Respect elderly not just because of age |
| C.65 | Personal needs before family |
| C.66 | Close relations with friends |
| C.67 | Importance of money/material possessions |
| C.68 | Importance of having fun/enjoying life |

| | |
|---|---|
| C.69 | Importance of expressing feelings |
| C.70 | Be aggressive to get what you want |

[a] Items that were dropped from the factor analysis because of a skip-pattern in the data.

At the time the Acculturation Scale was developed, it seemed appropriate to measure students' current level of acculturation only. Thus, three items in both the American and Hmong portions of the questionnaire were to be answered only if respondents were currently employed. In the American portion of the questionnaire, these items were: B.15 from the **Language Use** dimension, and B.19 and B.21 from the **Social Contact** dimension, and in the Hmong portion, B.16 from the **Language Use** dimension, and B.20 and B.21 from the **Social Contact** dimension. In retrospect, however, these items should have allowed for participants not currently employed to have responded based on their most recent employment.

The unequal number of cases for these items, due to many respondents not being currently employed, resulted in a skip-pattern in the data. To avoid this problem, these three items had to be eliminated from the factor analysis. Thus, for the factor analysis, three items remained in the **Language Use** dimension, and two in the **Social Contact** dimension.

Results of factor analysis of the American items in the Acculturation Scale are illustrated in Table 5.

**Table 5**

**Pattern Matrix for Factor Analysis of American Acculturation Scales**

| | Factor 1 (LANGUAGE) | Factor 2 (BEHAVIOR) | Factor 3 (FAMILY VALUES) | Factor 4 (VALUES OF INDIVIDUALISM) | Factor 5 (ATTITUDES) |
|---|---|---|---|---|---|
| B.29a | .65 | | | | |
| B.9 | .64 | | | | |
| B.11 | .64 | | | | |
| B.31a | .58 | | | | |
| (C.67) | (-.49) | | | | |
| (B.49) | (-.45) | | | | |
| B.13 | .44 | | | | |
| B.27 | | .75 | | | |
| B.17a | | .68 | | | |
| B.25 | | .54 | | | |
| B.35 | | .51 | | | |
| (B.49) | | (.43) | | | |
| B.33 | | .37 | | | |
| C.63 | | | .76 | | |
| C.64 | | | .71 | | |
| C.62 | | | .70 | | |
| C.61 | | | .67 | | |
| C.65 | | | .61 | | |
| C.66 | | | .50 | | |
| C.68 | | | | .68 | |
| C.69 | | | | .66 | |
| C.70 | | | | .33 | |
| C.67 | | | | .28 | |
| B.45 | | | | | .80 |
| B.47 | | | | | .54 |
| B.23a | | | | | .47 |
| B.49 | | | | | .41 |
| B.41 | | | | | .32 |

[a] Indicates items that did not load on their own dimension. Second loadings >.40 are indicated in parentheses.

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The factor loading cut-off score was .40, because it provided at least a moderate loading that included the major loadings, while largely excluding the second and third loadings on a factor. Several items loaded at < .40 on their own dimension for the American acculturation scales (B.33, C.70, C.67, and B.41), and one item for the Hmong acculturation scales (B.24).

Five factors were specified in the factor analysis. Four dimensions of acculturation emerged as factors: LANGUAGE USE, BEHAVIOR, VALUES, and ATTITUDES. The two remaining items from the **Social Contact** dimension (B.17 and B.23) did not emerge as a separate factor, but rather loaded with closely related items. They were weakly correlated ($r$ = .13), and easily split across the other factors. (B.17, American friends, loaded with BEHAVIOR, and B.23, American families in neighborhood, with ATTITUDES.)

In sum, the essence of the American portion of the Acculturation Scale was supported by the results. VALUES clearly hung together as a dimension, with six of the **Value** items loading together on one factor, and four on another. LANGUAGE USE, BEHAVIOR, and ATTITUDES formed their own dimensions, as well, joined by a few closely related items from other dimensions. Items which loaded at > .40 on dimensions other than their own are included in the pattern matrix (see Table 11).

The first factor, LANGUAGE, consisted of the three remaining **Language Use** items on the Acculturation Questionnaire (B.9, B.11, and B.13), joined by two

**Behavior** items (B.29 and B.31), suggesting a strong relationship between certain kinds of behavior and language use. B.29, Listening to American music, and B.31, Watching American T.V., both contain a strong language component.

The second factor, BEHAVIOR, consisted of four of the **Behavior** items (B.25, B.27, B.33, and B.35) and one item from **Social Contact** (B.17). The loading of B.17, American friends on BEHAVIOR, suggests the importance of having American friends in order to learn about and adopt certain American behavior patterns. One factor, B.33, American cultural activities, had a factor loading score < .40, suggesting the least amount of involvement in this aspect of American Behavior.

The third factor, FAMILY VALUES, consisted of six of the **Value** items from the Acculturation questionnaire (C.61, C.62, C.63, C.64, C.65, and C.66). These items all refer to family values, or in the case of American cultural orientation, independence from family. The other four **Value** items which did not represent specifically family values (C.67, C.68, C.69, and C.70) loaded together on Factor 4, labeled VALUES OF INDIVIDUALISM.

The fourth factor, VALUES OF INDIVIDUALISM, consisted of four items from the **Value** dimension (C.67, C.68, C.69, C.70). C.68, Importance of having fun, and C.69, Importance of expressing yourself, are values that seem especially typical of American adolescents and young adults, which reflect the preoccupation at this time in life with developing an individual identity, or self. C.70, Be aggressive to get what you want, and C.67, Importance of money and material possessions reflect values of individualism, as well. Both of these items had factor loadings < .40, suggesting less

commitment to these American values.

The fifth factor, ATTITUDES, consisted of the four items from the **Attitudes** dimension (B.41, B.45, B.47, and B.49) and one **Social Contact** item (B.23). The loading of B.23, American families in the neighborhood, on ATTITUDES suggests that living in neighborhoods with American families is associated with positive attitudes towards American culture and learning English. Either families who felt it was important to take part in American culture and learn English chose to live in neighborhoods with American families, or they developed positive attitudes towards American culture as a result of living in neighborhoods with American families. One item, B.41, Pride in being American, had a factor loading score < .40, suggesting less commitment to this attitude towards American culture.

Hmong Acculturation scales. The Acculturation Scale consisted of parallel items for both American and Hmong cultures: four for **Language Use**, four for **Social Contact**, six for **Behavior**, four for **Attitudes**, and ten for **Values**. Table 6 provides descriptors for the Hmong cultural items.

**Table 6**

**Descriptors of Hmong Cultural Orientation**

| **Dimension and Item Number** | **Descriptor** |
|---|---|
| **Language Use** | |
| B.10 | Speak Hmong in home |
| B.12 | Speak Hmong with friends |
| B.14 | Speak Hmong in classroom |
| B.16a | Speak Hmong at work |

| | |
|---|---|
| **Social Contact** | |
| B.18 | Hmong friends |
| B.20a | Hmong co-workers |
| B.22a | Hmong supervisors |
| B.24 | Hmong families in neighborhood |
| **Behavior** | |
| B.26 | Hmong food |
| B.28 | Hmong social/recreational activities |
| B.30 | Hmong music |
| B.32 | Hmong T.V. |
| B.34 | Hmong cultural activities |
| B.36 | Hmong religious activities |
| **Attitudes** | |
| B.40 | Pride in being Hmong |
| B.46 | Importance of speaking Hmong well |
| B.48 | Importance of reading/writing Hmong well |
| B.50 | Importance of taking part in Hmong culture |
| **Values** | |
| C.51 | Live with parents/elders |
| C.52 | Ask parents/elders for help |
| C.53 | Young take care of parents/elderly |
| C.54 | Respect elderly |
| C.55 | Family needs before personal needs |
| C.56 | Close relations with many relatives |
| C.57 | Importance of good education |
| C.58 | Work hard for future |
| C.59 | Be patient to get what you want |
| C.60 | Don't show emotions |

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[a] Items that were dropped from the factor analysis because of a skip-pattern in the data.

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Because of the skip-pattern in the data, three items in the Hmong portion of the questionnaire were also eliminated from the factor analysis: B.16 from the **Language Use** dimension, and B.20 and B.22 from the **Social Contact** dimension.

Results of factor analysis of the Hmong items in the Acculturation

Questionnaire are illustrated in Table 7.

**Table 7**

**Pattern Matrix for Factor Analysis of Hmong Acculturation Scales**

| | Factor 1 (LANGUAGE) | Factor 2 (BEHAVIOR) | Factor 3 (VALUES I-RESPONSIBILITY) | Factor 4 (VALUES II-RESPECT) | Factor 5 (ATTITUDES) |
|---|---|---|---|---|---|
| B.30a | .66 | | | | |
| B.10 | .65 | | | | |
| B.14 | .63 | | | | |
| C.60a | .58 | | | | |
| B.32a | .55 | | | | |
| B.12 | .53 | | | | |
| B.18a | | .76 | | | |
| B.28 | | .75 | | | |
| B.34 | | .74 | | | |
| B.26 | | .54 | | | |
| B.36a | | .44 | | | |
| B.24a | | .33 | | | |
| C.58 | | | .84 | | |
| C.57 | | | .84 | | |
| C.59 | | | .57 | | |
| C.53 | | | .45 | | |
| (B.36) | | | (-.41) | | |
| C.52 | | | | .77 | |
| C.55 | | | | .76 | |
| C.56 | | | | .67 | |
| C.54 | | | | .55 | |
| C.51 | | | | .53 | |
| B.46 | | | | | .87 |
| B.48 | | | | | .80 |
| B.50 | | | | | .77 |
| B.40 | | | | | .65 |

[a] Indicates items that did not load on their own dimension. Second loadings >.40 are indicated in parentheses.

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The factor analysis was run specifying five factors. Four dimensions of acculturation emerged as factors: LANGUAGE USE, VALUES, BEHAVIOR, and ATTITUDES. The two remaining items for **Social Contact** did not emerge as a separate factor for the Hmong construct either, but rather loaded with closely related items, as well. (B.18, Hmong friends, and B.24, Hmong families in neighborhood, both loaded with BEHAVIOR.)

The essence of the Hmong portion of the Acculturation Scale was also supported by the results of factor analysis, as well. ATTITUDES clearly hung together as a dimension, with the four **Attitude** items loading together. LANGUAGE USE and BEHAVIOR formed their own dimensions, joined by a few closely related items from other dimensions. VALUES split into two dimensions, one labeled RESPONSIBILITY, the other RESPECT. Items which loaded at > than .40 on dimensions other than their own are included in the pattern matrix (see Table 13).

The first factor, LANGUAGE, consisted of the three remaining **Language Use** items (B.10, B.12, and B.14), joined by two **Behavior** items (B.30 and B.32) and one **Value** item (C.60). The loading of B.30, Listening to Hmong music, and B.32, Watching Hmong programs on T.V., suggests a strong relationship between language use and certain kinds of behavior. (The same two behavior items in American cultural orientation also loaded on LANGUAGE.) The loading of C.60, Don't show emotions, suggests that it is not strictly a value, but rather an aspect of communicating in Hmong.

The second factor, BEHAVIOR, consisted of four of the **Behavior** items (B.26, B.28, B.34, and B.36), joined by the two remaining **Social Contact** items (B.18, Hmong friends, and B.24, Hmong families in the neighborhood), the latter of which loaded at < .40. The loading of B.18 and B.24 on BEHAVIOR suggests the importance of social contact with both Hmong friends and to a lesser extent, with Hmong families in the neighborhood, for participation in Hmong culture and behavior patterns. (The social contact item American friends also loaded on American BEHAVIOR.)

VALUES split into two factors: RESPONSIBILITY and RESPECT. RESPONSIBILITY, the third factor, consisted of the following items from the **Value** dimension: C.53, Young adults taking care of parents/elderly, C.57, Importance of good education, C.58, Working hard for the future, and C.59, Being patient. These values reflect the responsibilities Hmong youth have in building a future for themselves and their families in a new country.

RESPECT, the fourth factor, consisted of the following **Value** items: C.51, Living with parents/elders, C.52, Asking parents/elders for help, C.54, Respecting the elderly, C.55, Putting family needs before personal needs, and C.56, Having close relations with many relatives. These values reflect the relationship of respect and commitment Hmong youth have towards their families.

The fifth factor, ATTITUDES, consisted of the four **Attitude** items from the Hmong portion of the Acculturation Questionnaire (B.40, B.46, B.48, and B.50). These items clearly hung together as a dimension.

Overall, the results of the factor analysis provide empirical support for the

Acculturation Scale. Indeed, it would be quite unusual in exploratory factor analysis if all the variables loaded exactly as desired, in this case, as per the conceptually created dimensions or scales of acculturation, especially since both theory and this study suggest that such scales are moderately intercorrelated.

Relationship between Acculturation and Ethnic Self-Identification

Concurrent validity of the Acculturation Scale was determined by the degree to which students' overall acculturation was consistent with their ethnic self-identification. Overall acculturation was determined by calculating the difference between **Overall Majority Culture Identification (OMCIS)**, the mean of the five dimensions of American culture and **Overall Ethnic Identification (OEIS)**, the mean of the five dimensions of Hmong culture. Ethnic self-identification was determined by an individual's responses to items regarding ethnic self-identification.

Overall Acculturation Index (OAI) scores. According to Wong-Rieger (1987), a positive difference between an individual's overall cultural identification scores (**OMCIS** and **OEIS**), when **OEIS** is subtracted from **OMCIS**, indicates a tendency towards assimilation, a negative score a tendency towards separation or ethnic culture maintenance. A score close to zero indicates a bicultural orientation or integration if the scores for both **OMCIS** and **OEIS** are high, or marginalization (deculturation) if they are both low.

In this study, participants scored relatively high on measures of overall American and Hmong cultural identification (see Table 8).

**Table 8**

**Summary Constructs of Acculturation and Overall Acculturation Index**

| American Cultural Identification | | Hmong Cultural Identification | |
|---|---|---|---|
| | **OMCIS** | | **OEIS** |
| **Mean** | 3.59<br>N=97 | **Mean** | 3.72<br>N=100 |

| Overall Acculturation | |
|---|---|
| | **OAI** |
| **Mean** | -.13<br>N=97 |

Note. MCIS=Majority Culture Identification Score; OMCIS=Overall Majority Culture Identification Score; EIS=Ethnic Identification Score; OEIS=Overall Ethnic Identification Score; OAI=Overall Acculturation Index.

Note. Highest Possible Score: 5.20. Lowest Possible Score: 1.00.

a For four dimensions the highest possible score was 5.00; for the fifth dimension, the highest possible score was 6.00.

Participants scored slightly higher on Hmong cultural orientation (**OEIS**=3.72) than American cultural orientation (**OMCIS**=3.59), which is reflected in the slightly negative **Overall Acculturation Index (OAI** = -.13). However, because the scores for both majority culture **(OMCIS)** and ethnic culture **(OEIS)** identification were more than half-way between the lowest and highest possible scores (> 3.10), their **Overall**

**Acculturation Index** reflects a bicultural orientation, rather than separation (Wong-Rieger, 1987).

Using Berry's (1980, 1986) matrix of possible strategies for adapting to a new culture (assimilation, integration, rejection, and deculturation), participants in this study were found to be overwhelmingly bicultural (see Table 9).

**Table 9**

**Adaptation Strategies to American Culture: Assimilation, Integration, Rejection, and Deculturation (Berry, 1986)**

| | OEIS | |
|---|---|---|
| | **Low** 1-3 | **High** 3.01-5.2 |
| **OMCIS** | | |
| **Low** 1-3 | 0 | 5 |
| **High** 3.01-5.02 | 7 | 85 |

Note: OMCIS=Overall Majority Culture Identification Score; OEIS=Overall Ethnic Identification Score.

To calculate this table, **OMCIS** and **OEIS** were split evenly into low and high groups. A low score was defined as 1-3, and a high score as 3.1-5.2. Based on this calculation, the vast majority of subjects (88%) scored high on identification with both the majority culture **(OMCIS)** and native culture **(OEIS)**, and thus reflect bicultural integration. A few subjects (5%) scored high on identification with Hmong culture **(OEIS)**, and low on identification with American culture **(OMCIS)**, and thus reflect rejection or separation.

Likewise, a few individuals (7%) scored low on identification with Hmong culture **(OEIS)**, and high on American culture **(OMCIS)**, and thus reflect assimilation. No students scored low on both identification with Hmong and American cultures, or deculturation.

Ethnic Self-Identification scores. Six items on the Acculturation questionnaire assessed various aspects of ethnic self-identification, four of which are discussed below.

**Table 10**

**Tabulation of Items Assessing Ethnic Self-Identification**

| Question | Responses | % |
|---|---|---|
| **B.37 How would you identify yourself ethnically?** | | |
| | 1. Hmong | 40.6% |
| | 2. Hmong-American | 49.5% |
| | 3. Asian | 5.0% |
| | 4. Asian-American | 4.0% |
| | 5. American | 1.0% |
| **B.42 How would you describe yourself in terms of your lifestyle?** | | |
| | 1. Very Hmong | 7.9% |
| | 2. Mostly Hmong | 15.8% |
| | 3. Bicultural | 61.4% |
| | 4. Mostly American | 14.9% |
| | 5. Very American | 0.0% |
| **B.43 How would you describe yourself in terms of your values?** | | |
| | 1. Very Hmong | 10.9% |
| | 2. Mostly Hmong | 26.7% |
| | 3. Bicultural | 54.5% |
| | 4. Mostly American | 7.9% |
| | 5. Very American | 0.9% |

**B.44 How important is it to you that you marry a Hmong?**

| | |
|---|---|
| 1. Not at all important | 8.9% |
| 2. A little important | 8.9% |
| 3. Somewhat important | 13.9% |
| 4. Very important | 22.8% |
| 5. Extremely important | 45.5% |

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Regarding ethnic identification, in response to the first question 50% of the participants identified themselves as Hmong-American, 41% as Hmong. In terms of their lifestyle, 61% described themselves as bicultural, and in terms of their values 55% described themselves as bicultural. It is interesting to note that subjects who did not rate their lifestyle as bicultural or very Hmong (7.9%), were split evenly between those who rated their lifestyle as either mostly American (14.9%) or mostly Hmong (15.8%). For values, of the subjects who did not rate their values as bicultural or very Hmong (10.9%), many more rated their values as mostly Hmong (26.7%) than mostly American (7.9%). In other words, adaptation of American behavioral patterns occurs with greater frequency than adaptation of American values. With regards to marriage, 69% said it was very to extremely important they marry a Hmong. In sum, scores on ethnic identification items reflect a bicultural orientation of participants, which is consistent with their overall acculturation score, which also indicated a bicultural orientation, providing evidence for the concurrent validity of the questionnaire.

Prediction of Dependent Variables

The predictive validity of the acculturation scales was demonstrated by their ability to predict statistically significant proportions of variance in the dependent variables in this study, English and Hmong language proficiencies, and Self-Esteem. In addition, the amount of variance that individual dimensions of acculturation were

able to predict was considerably more than the summary constructs of acculturation or overall acculturation (see Table 11).

**Table 11**

**Amount of Variance Explained by Dimensions of Acculturation, Summary Constructs of Acculturation (OMCIS/OEIS), and Overall Acculturation (OAI)**

| | Amount of Variance Explained by Independent Variable | | |
|---|---|---|---|
| **Dependent Variable** | **Dimensions of Acculturation** | **OMCIS/OEIS** | **OAI** |
| **English Lang. Prof.** | | | |
| **Speaking/Listening** | .43 | .32 | .32 |
| **Reading/Writing** | .41 | .30 | .30 |
| **Hmong Lang. Prof.** | .31 | .20 | .17 |
| **Speaking/Listening** | | | |
| **Reading/Writing** | .32 | .12 | .10 |
| **Self-Esteem** | .36 | .11 | .07 |
| | **mean:** 37% | 21% | 19% |
| | **range:** 31-43% | 11-32% | 7-32% |

The dimensions of acculturation, which retain the multidimensional and bicultural characteristics of acculturation, accounted for considerably more variance in the multiple regressions on the dependent variables than the summary constructs of acculturation, **Overall Majority Culture Identification Score** and **Overall Ethnic**

**Identification Score (OMCIS/OEIS)**, which have lost the multidimensionality of acculturation, or **Overall Acculturation (OAI)**, which has lost both its multidimensionality and bidirectionality. The average amount of variance explained by the dimensions of acculturation (37%) was more than twice as much variance explained by the summary constructs **OMCIS/OEIS** (21%) and overall acculturation **OAI** (19%). These findings are consistent with the multidimensional and bidirectional model of acculturation proposed in this study, and clearly demonstrate the predictive validity of the instrument used in this study.

## Discussion of the Results and Conclusion

The instrument discussed in this paper was designed for a study measuring the relationships among acculturation, ethnicity, second language acquisition, self-esteem, and academic success in the Hmong student population at the post-secondary level. Acculturation was operationalized as both multidimensional and nonlinear or bidirectional, assessing acculturation along five dimensions: language use, social contact, behavior, attitudes, and values, both in terms of American and Hmong cultural orientation. Various procedures were followed during the design of the instrument which helped to ensure its overall content validity and reliability (e.g., thorough review of the literature and pilot-testing). Various tests and statistical procedures were run on the data collected using the instrument, the results of which demonstrate further its validity and reliability: Chronbach's Alpha Test demonstrated its internal consistency; factor analysis provided additional empirical justification for the dimensions of acculturation; consistency between participants' scores on overall acculturation and

ethnic self-identification support the concurrent validity of the instrument; and the results of multiple regressions run on the dependent variables of English and Hmong language proficiencies and self-esteem clearly demonstrate its predictive validity. With regards to the latter, the characteristics of multidimensionality and bidirectionality added considerably to the ability of acculturation to predict the dependent variables, as demonstrated by a comparison of the amount of variance explained by individual dimensions of acculturation and by summary constructs.

This instrument could be adapted for use in studies of other immigrant populations. The overall design and the universal concepts or dimensions of acculturation (the etic) could remain the same, while the group-specific perspective or the details used to make each item culturally explicit and relevant to Hmong college students in the U.S. (the emic) would need to be changed to reflect the cultural characteristics and experiences of the relevant immigrant population.

It is hoped that the development of this instrument of acculturation will contribute to a renewed effort in the field of second language acquisition to investigate the role of acculturation as a variable in SLA. Indeed, the operationalization of acculturation is a necessary first step in any large-scale investigation of its usefulness. Follow-up studies would need to operationalize acculturation in a similar manner, modifying the emic for different immigrant populations while maintaining the etic, in order to compare results across studies. Only with multiple large-scale studies with different immigrant populations, complemented by qualitative in-depth case studies, could we begin to clarify our understanding of the role of acculturation in second-language acquisition.

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