

# A MEASURE OF TRADITIONALISM FOR AMERICAN INDIAN CHILDREN AND FAMILIES: PSYCHOMETRIC PROPERTIES AND FACTOR STRUCTURE

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*Abstract: Factor analytic findings from culturally specific instruments measuring traditionalism as one aspect of cultural identity are described, based on the self-reports of American Indian children and parents. Findings indicate that traditionalism is a multidimensional construct that can be measured reliably. Results are important because few psychometrically adequate instruments exist to assess either traditionalism or acculturation among American Indian families. Implications for refinements in measuring child and family acculturation and examining the relationship with the social/emotional development of American Indian children are discussed.*

The literature indicates that, in comparison to children of other ethnic minority groups, American Indian and Alaska Native children are at greater risk for emotional and behavioral disorders and negative psychosocial conditions such as poverty, family and community violence, substance abuse, and substandard living conditions (e.g., Beiser & Attneave, 1982; Berlin, 1987; Gotowiec & Beiser, 1993-94; Manson, Walker, & Kivlahan, 1987; U.S. Office of Technology Assessment, 1990). In addition, there is evidence that the stress of attempting to adapt to two disparate cultures has significant impact on overall mental health (Rogler, Cortes, & Malgady, 1991), drug abuse (Fuertes & Westbrook, 1996), suicide rates (Lester, 1999), and eating disorder symptoms (Perez, Voelz, Pettit, & Joiner, 2002). Conversely, strengthening cultural or ethnic identity may reduce problems such as substance abuse (Gilchrist, Schinke, Trimble, & Cvetkovich, 1987), suicide (Lester, 1999), loneliness, and depression (Roberts & Phinney,

1999); while enhancing emotional well-being (LaFromboise, Coleman, & Gerton, 1993) social adjustment (Coleman, Casali, & Wampold, 2001), self-esteem, coping ability, and optimism (Phinney, Cantu, & Kurtz, 1997; Roberts & Phinney, 1999). Understanding how American Indian and Alaska Native children and families adapt to living in a bicultural context is a critical aspect of promoting positive social and emotional development, preventing emotional and behavioral problems, and effectively treating problems when they arise.

Traditional indigenous cultures are an essential, but highly complex, resource for promoting positive mental health and addressing mental health problems among American Indian and Alaska Native children (Berlin, 1987; Tharp, 1991). Sociocultural level movements that "selectively return the life style of a group to a quasi-traditional form" (Berry, 1980, p. 270) involve changes at the individual level in identity, attitudes, beliefs, and stress reactions (Berry, 1980; Segall, Lonner, & Berry, 1998). Retraditionalization, the increasing reliance on "cultural beliefs, customs, and rituals as a means of overcoming problems and achieving Indian self determination" (LaFromboise, Trimble, & Mohatt, 1990, p. 637) has been called essential to the revitalization of American Indian and Alaska Native communities. In part due to the influence of retraditionalization, traditional cultures and the psychological constructs of biculturalism and cultural identity have come to be frequently emphasized in mental health and substance abuse programs for young people (e.g., Indian Health Service, 1994; Legah & Benally, 1990). Increased understanding of these constructs means increased understanding of the influences on mental health and well being for American Indian and Alaska Native children and families, and development of more appropriate prevention and intervention strategies.

The focus of the present research is on individual traditional orientation ("traditionalism") as one aspect of extant models of acculturation and cultural identity. Specifically, this report focuses on a sample of elementary-school students and their families from a southwestern American Indian tribe, utilizing a portion of an extant data set from the Flower of Two Soils project (Beiser, 1986; 1989; Sack, Beiser, Phillips, & Baker-Brown, 1993), a longitudinal study of mental health and academic performance across different tribal groups of American Indian children and families. Goals of the analyses reported here are to refine the scale structure and establish reliability of separate instruments for parents and children measuring culture-specific traditional behaviors, beliefs, and values.

## **Traditionalism and Models of Acculturation**

Persistent and pervasive social pressure to change and adapt in response to contact with multiple cultures is a fact of life for most American Indian and Alaska Native children and families (Berlin, 1987). In the context of a pluralistic society, the study of traditionalism and cultural identity requires

an understanding of these change processes, which are often collectively termed acculturation. Acculturation refers to the changes experienced by members of a distinct cultural group, as a result of continuous contact with members of different cultures (Birman, 1994; Redfield, Linton, & Herskovits, 1936). Changes encompass both cultural and psychological phenomena, including values, attitudes, beliefs, and behaviors (Berry, 1980), and vary across individual group members in accordance with individual and contextual differences (Berry, Trimble, & Olmedo, 1986).

In anthropology and psychology, the acculturation paradigm is commonly used to conceptualize social change through processes of mutual cultural exchange and influence. But historically, value-laden concepts of development and modernization have influenced the psychological study of sociocultural change (Berry, 1980). Under these outdated approaches, acculturation referred to the unidimensional movement of a minority culture along a continuum, away from reliance on aspects of traditional culture, and toward increasing internalization of the dominant culture. This linear conceptualization was used to imply the superiority of the majority culture, and promote the elimination of indigenous cultures in favor of adopting the ways of the dominant society (Oetting, Swaim, & Chiarella, 1998).

Modern theories provide a less value-laden, more empirically based, and multidimensional understanding of acculturation (Azar, 1999; Olmedo, 1979). Two widely accepted models are the two-dimensional model developed by Berry and colleagues (e.g., Berry & Annis, 1974; Berry, Wintrob, Sindell, & Mawhinney, 1982) and the orthogonal model developed by Oetting and colleagues (e.g., Oetting, E. R. & Beauvais, 1991; Oetting, Swaim, & Chiarella, 1998). In addition, Coleman and colleagues have recently developed a sequential model that provides a dynamic perspective on how individuals cope with cross-cultural contact (e.g., Coleman, Casali, & Wampold, 2001).

Berry's two-dimensional model was developed in part through research with indigenous communities in Canada and the U.S., and formed the basis for the measures of acculturation used in *Flower of Two Soils* (Beiser, 1989). The two-dimensional model describes attitudes to acculturation that allow for identification with both minority and majority cultures. The model is based on the idea that an individual faced with acculturation decides to what degree s/he will maintain connection with traditional culture and identity, *and* to what degree s/he will seek positive connections with the majority culture (Berry, Wintrob, Sindell, & Mawhinney, 1982). Based on the degree to which an individual identifies with the majority and traditional cultures, s/he falls into a category of either integration, assimilation, separation, or marginality (see Figure 1).

If the option of integration (more commonly called biculturalism) is chosen, connections with both cultures are sought and maintained. With assimilation, traditional culture is relinquished and the ways of the dominant

**Figure 1**  
**A Two-Dimensional Model of Acculturation**  
**(adapted from Berry et. al., 1986)**

		Traditional culture and identity are valued and retained	
		YES	NO
Positive connection with majority culture is sought	YES	integration	assimilation
	NO	separation	marginality

society are adopted. Separation, or traditionalism, involves adherence to traditional ways and avoidance of adopting the introduced culture. Marginality may include some mixture of elements from both cultures (Dana, 1993), but is not really an option in the true sense of the word, since it is not typically chosen by minority group members; rather, it is imposed on them through simultaneous loss of the original culture and exclusion from substantial participation in the new culture.

The orthogonal model (Oetting & Beauvais, 1991; Oetting, Swaim, & Chiarella, 1998), like the two-dimensional model, allows for independent identification with both cultures. Oetting’s contribution is the concept of continuous, independent measurement on each dimension. Thus a categorical model, which assigns the individual to a discrete group, is transformed into a model allowing for assessment of cultural identification on both dimensions, and placement of the individual anywhere within a two-dimensional space. The present report provides findings pertaining to assessment on one axis of this two-space, i.e., assessment of identification with traditional culture.

An alternate paradigm (Coleman, Wampold, & Casali, 2001) for understanding how individuals respond to cross-cultural contact is based on a sequential rather than a dimensional or orthogonal conceptualization. That is, an individual who is in contact with a second culture will have to make a series of choices, consciously or unconsciously, about how to associate with minority and majority cultures. These choices will be reflected in his or her behavior, and the individual will adopt specific strategies for coping with cross-cultural situations based on these choices. In support of this model, Coleman and colleagues found that adolescents’ goals and strategies in responding to cross-cultural situations do vary according to the social context, that is, they reflect a sequential process. One implication of this model is that young people with a strong bicultural identity may have a wider range of options, greater success, and experience

lower levels of stress, in coping with a wide variety of cross-cultural situations.

The goals of analyses reported here are consistent with the goals of acculturation research discussed in the literature (Berry et al., 1986; Olmedo, 1979), as follows: (a) development of a method to quantify cultural variables, in this case variables that describe traditionalism; (b) to systematically explore structural relationships among cultural variables, i.e., the interdependence structure of traditionalism variables; and (c) to improve precision in the definition and measurement of acculturation and cultural identity, by developing a reliable and valid measure of traditionalism for children and families.

## Methods

### Sample

Analyses reported in the present study were based on responses from 186 children or parents from a southwest Athabascan tribe, who participated in *Flower of Two Soils* (Beiser, 1989), and who completed an interview including the traditionalism protocol. In order to maximize sample size in the present analysis, data were retained for all subjects who completed the traditionalism interview. In many cases, data for both parent and child were not available. Thus, analyses are for samples of 91 children and 95 parents, with 35 parent/child dyads included in these samples. An additional 34 families (total  $N = 200$ ) participated in the project but neither parent nor child completed the traditionalism scale.

Traditionalism scales were included in the assessments conducted during the third and final year (1988) of data collection, and in consideration of the logistical difficulties of longitudinal research in a rural reservation setting, considerable attrition was expected across the 3-year data collection period (Beiser, 1989). However, data across all *Flower of Two Soils* sites show no systematic differences with respect to attrition for gender, academic achievement, IQ, depression, or instrumental competence (Sack, Beiser, Phillips, & Baker-Brown, 1993). However, among those children entering the study while in second grade, the children who dropped out had lower social and instrumental competency scores, and higher depression scores (Beiser, Lancee, Gotowiec, Sack, & Redshirt, 1993).

Children were in grades four and six during the final year of the study. All participants resided on the reservation at the time of the study, and came from several communities in different areas of the reservation. Selected demographic characteristics are presented in Table 1.

## Procedures

### Community Involvement

From its inception, the Flower of Two Soils project was designed and implemented as a community-based research project. Before becoming involved, community and school representatives met with the project principal investigator to discuss the project and its proposed procedures. Communities became involved only if they felt that they would be willing and able to actively participate in the research process, and if they were satisfied with the project's potential to provide returns to the community commensurate with the support provided by the community (Beiser, 1989).

When participation had been decided upon, community members appointed a community advisory board to work with project staff on every phase of the project. The board was composed of parents, school personnel, elders, and representatives of the tribal government. Duties of the board included reviewing proposed instruments, consulting on translation procedures, advising on personnel recruitment, preparing the community for the project, determining the appropriate applications of project findings in the community, and monitoring progress of the project. Community input played a critical role in development of traditionalism instruments.

### Instruments

The Flower of Two Soils project collected information from parents, children, and teachers using measures of mental health, cognitive ability, academic achievement, and a variety of family measures, including the traditionalism scales, which are the only measures utilized in this report (for a complete description of other instruments see, Beiser, 1986; Sack et al., 1993). All instruments were administered through interviews conducted with children and caregivers. All assessments and interviews were conducted or supervised by local, bilingual masters-level psychometricians. A lengthy structured interview was used to obtain family data from parents or a primary caretaker of the participating child. The instrument included a wide range of demographic items, but in the present study, only those family variables are reported that provided a basic demographic description of the sample (see Table 1).

The major cultural measure, initially termed the "Traditionalism Scale," was developed after beginning the longitudinal project, when members of the research team and community advisory boards became aware of the impact of acculturation on the measures being used in the project, and on the communities at large. Project staff and advisory boards

**Table 1**  
**Demographics of Child and Caregiver Participants**

Demographic Variable	%
Percent of respondents:	
parents	87%
grandparents	5%
other relative	8%
female (caregiver)	90%
median age of caregiver (SD)	35 (8.5)
average years education (SD)	11 (4.3)
Percent of households	
single parent	27%
receiving income support or unemployment	31%
without running water	11%
Percent of children: female	53%
Mean child age (SD)	11.5 (1.2)
Child average years living on reservation (SD)	11.0 (1.4)

worked together to develop instruments for parents and children to tap areas such as knowledge of language, traditional history, and tribal lore; as well as identification with traditional healing ceremonies and life transition rituals. While these instruments were tribally specific with respect to item content, they were designed to measure common cultural dimensions described in the literature (e.g., Berry et al., 1986; Olmedo, 1979), including: (a) food preferences, (b) preferences in dress and grooming, (c) knowledge of traditional beliefs, and (d) adherence to traditional practices.

Child and adult traditionalism scales each included 96 items, plus seven to nine items apiece specific to female caregiver, male caregiver, female child, or male child. Most items were either Likert-type or yes/no, both on a scale ranging from zero to two. Some items also allowed for descriptive answers or asked for the respondent to provide examples; these items were also scored yes/no according to whether or not the respondent had knowledge in the area assessed by the item. The instrument was administered in interview format, in conjunction with other measures used in *Flower of Two Soils*, and took approximately 45 minutes to complete. The item pools thus obtained from adult and child respondents provide the basis for the present analyses, and the derived instruments are referred to here as the Traditionalism Scale for Parents (TSP) and the Traditionalism Scale for Children (TSC).

The initial step in refining item pools was to identify items with high frequencies of missing responses. All items with greater than 10% missing responses were dropped from subsequent analyses, with 20 items dropped from the TSP in this manner, and 10 items dropped from the TSC. Upon examination, many of these items were apparently phrased in a manner that allowed participants to respond "I don't know." Items that were "branched," asking the respondent to provide further information about a previous item that was responded to affirmatively, presented a similar problem with high frequencies of missing values. Since responses to these items were only given by individuals who responded affirmatively to the previous "root" item, these items were also set aside. Because the relatively small sample size precluded separate analyses by gender, gender-specific items were also excluded.

Examination of all dropped items indicated that non-response was typically associated with problems in the structure or format of the items, rather than being associated with one particular content area or some other type of systematic bias. After this process of elimination, initial psychometric analyses proceeded with 44 items for the TSP and 53 items for the TSC, with all remaining missing values for each item replaced by the sample mean response (for adult and child samples, respectively) for that item. Although it would have been desirable, for purposes of comparison, to have identical scales for parents and children, even at this basic level of item analysis the items performed differently for parents and children, and this continued to be the case as analyses proceeded.

## Results

Initial analysis of scale internal consistency for the 44-item TSP yielded corrected item-total correlations ranging from -0.23 to 0.80, and inter-item correlations ranging from -0.47 to 0.83. Likewise, analysis of internal consistency for the 53-item TSC yielded corrected item-total correlations ranging from -0.16 to 0.55, and inter-item correlations ranging from -0.34 to 0.63. Items having negative coefficients were carefully examined as the process of item selection continued in conjunction with findings from principle components factor analysis and subsequent further analysis of internal consistency. Items that continued to perform poorly were dropped. This iterative process resulted in final retention of 32 items for the TSP and 41 items for the TSC on which the factor analysis was conducted.

In discussing the findings from the factor analysis, the term "structure coefficient" is used and refers to the correlation between variable and factor, which is also typically called "factor loading" in the literature. This choice of terminology reflects an attempt to establish consistent and accurately descriptive nomenclature in the factor analytic literature, as recommended by Thompson & Daniel (1996).



## Traditionalism Scale for Children (TSC)

### Factor Analysis

Based on simple structure and interpretability of content, a five-factor orthogonal solution was chosen for the TSC, accounting for 42.5% of overall variance, and converging in ten iterations. A structure coefficient cutoff at .40 was applied flexibly to determine which variables to retain within each factor for the purpose of constructing subscales. Items that doubly loaded on two factors were placed in both factors/subscales if they were logically and meaningfully related to the other items loading on the factors and if they contributed to the information provided by the subscale. Otherwise, an item with a double loading was retained only within the factor where it seemed to best fit. Items retained within each subscale are listed in Table 2, and are ranked within each factor by magnitude of structure coefficients. For each item, an abbreviated version of the item content is presented.

Twelve items were included in factor one, with structure coefficients ranging from .702 to .349. Factor one included items such as, "I pick plants and herbs to use such as wild onion and wild tea." Items loading on this factor involve reliance on animals, plants, and natural products derived from plants and animals. One item appeared to be an exception to this pattern ("Have you ever heard of Gobernador Knob?"), but this item actually refers to a place that figures prominently in traditional teachings about the natural world and the life forms found within it. Therefore, the subscale formed by factor one was labeled, "Plants and Animals."

Ten items were included in factor two, with structure coefficients ranging from .635 to .391. Factor two included items such as, "I feel sacred songs are important for the veterans of our tribe and for our people who performed honorable deeds and tasks." Another item was, "If someone died in a family, I would make it a point to visit the bereaved family in a separate house or at a special occasion to give them water and have someone speak encouraging words to them." Items loading on this factor involved a variety of culture-specific beliefs and behaviors. Therefore, the subscale formed by factor two was labeled, "Beliefs & Behaviors."

Nine items were included in factor three, with structure coefficients ranging from .642 to .408. Factor three included items such as, "Have you used sheepskin for beds at ceremonies?" Items loading on this factor appeared to represent a construct involving knowledge and participation in traditional ceremonies. Even those items that did not specifically refer to ceremonies involved geographical features that often figure in ceremonies. Therefore, the subscale formed by factor three was labeled, "Traditional Ceremonies."

**Table 2**  
**Traditionalism Scale for Children (TSC) - Structure**  
**Coefficients of 41 Retained Items**

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Item	Coefficient
 Factor 1 - Plants & Animals	
Ever heard of Gobernador Knob	.702
Use mountain herbs to give thanks	.623
Women prepare game which men hunted	.603
I use sage or cedar after long illness	.593
Give mountain herbs for spiritual strength	.545
Believe wild tea can prevent tooth decay	.477
Pick wild berries	.436
Use a hair tie with a natural yarn	.436
Pick plants & herbs such as wild onion	.434
Use sheepskins rather than blankets	.433
Have burned sage or cedar for ceremonies	.404
Use horses for transportation	.349
 Factor 2 - Beliefs & Behaviors	
Important that grandparents give [traditional] names	.635
Believe in the legends of the [traditional] way	.616
Sacred songs important for veterans	.566
If someone died - visit the family	.555
Prepare a meal for any visitor	.521
Sacred songs important for leaving reservation	.520
Look for signs when time for planting	.491
Use herbal plants after sweat bath	.485
Have you ever visited a medicine man	.460
Women have had a kinaalda ceremony	.391

Table 2 Continues on Next Page

**Table 2 (Continued)**  
**Traditionalism Scale for Children (TSC) - Structure**  
**Coefficients of 41 Retained Items**

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Item	Coefficient
<b>Factor 3 - Traditional Ceremonies</b>	
Ever heard of black mountain mesas	.642
Do you go to [traditional] ceremonies	.591
Ever heard of the four sacred mountains	.583
What is a shoe game	.583
Use sheepskin for beds at ceremonies	.509
Ever traveled to another type of ceremony	.480
Have you ever visited a medicine man	.436
Ever traveled to attend a shoe game	.427
Do you know what healing ceremonies are	.408
<b>Factor 4 - Language</b>	
Language your parents speak to you	.764
Language you speak at home	.740
Language you speak to your parents	.694
Language adults speak to each other	.654
Sing animal songs for your livestock	.464
Live in a Hogan most of the year	.407
<b>Factor 5 - Food Preference</b>	
Prefer dried foods to fried	.540
Like mutton meat more than beef steak	.536
I miss corn meal mush	.527
Prefer mutton stew to beef stew	.457
Pick plants & herbs such as wild onion	.400
Rather have blue cornmeal or kneel down bread	.313

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Six items were included in factor four, with structure coefficients ranging from .764 to .407. Four out of the six items on this subscale concerned the languages spoken by children, parents, and other family members. Another item was, “Do you sing animal songs for your livestock?” These songs would be sung in the Native language. Items loading on this factor clearly represented a construct involving the language or languages spoken within the family, and factor four was therefore labeled, “Language.”

Six items were included in factor five, with structure coefficients ranging from .540 to .313. Factor five included items such as, “When I haven’t had cornmeal mush for awhile, I miss it.” All items loading on this factor were concerned with food, and factor five was therefore labeled, “Food Preference.”

**Psychometric Properties**

Psychometric and descriptive data for the TSC and its subscales are presented in Table 3. The 41 scale items fell into the five subscales previously described ranging from six to twelve items apiece (a few items were included on more than one subscale). The full scale yielded an alpha coefficient of .86. All TSC subscales had alpha coefficients between .73 and .78, with the exception of Food Preferences, which had an alpha of .61.

**Table 3**  
**Traditionalism Scale for Children (TSC) Full Scale and**  
**Subscale Psychometric and Descriptive Findings (N=91)**

<b>Psychometric/ Descriptive Data</b>	<b>Full Scale</b>	<b>Plants &amp; Animals</b>	<b>Beliefs &amp; Behaviors</b>	<b>Traditional Ceremonies</b>	<b>Language</b>	<b>Food Preference</b>
N of Items	41	12	10	9	6	6
Scale Mean (SD)	33.2(12.9)	5.9 (4.2)	9.5 (4.5)	6.65 (4.5)	7.5 (4.1)	4.7 (2.5)
Mean Inter-Item Correlation	.13	.23	.26	.23	.33	.21
Range of Item- Total Correlation	.11 to .57	.27 to .50	.34 to .63	.35 to .54	.32 to .65	.31 to .39
Alpha Coefficient	.86	.75	.78	.73	.76	.61

The mean inter-item correlation for the full scale was .13. The low inter-item correlation was to be expected and reflects the multidimensional nature of the construct under study. All subscales had mean inter-item correlations between .21 and .33. Similarly, some item-total correlations for the full scale were rather low, ranging from .11 to .57, with fourteen out of forty-one items having item-total correlations less than .30. The large majority of item-total correlations among the subscales ranged between .35 and .55. Retention of all items was justified by the content of the items fitting well into the scale. Furthermore, internal consistency analyses (alpha coefficients) would not be appreciably improved by dropping items with relatively lower correlation coefficients.

## **Traditionalism Scale for Parents (TSP)**

### **Factor Analysis**

Factor analysis of the TSP was conducted using the same procedures as those employed with the TSC. Based on simple structure and interpretability of content, a three-factor solution using 32 items was selected, accounting for 46.9 percent of total variance, and converging in six iterations. A structure coefficient cutoff of .40 was consistently adhered to when determining which variables to retain from each factor for the purpose of constructing TSP subscales. Abbreviated wordings for the items and the structure coefficients are listed for each factor in Table 4.

Factor one contained thirteen items with loadings ranging from .822 to .444. The three highest loading items on factor one concerned the languages spoken by parents and children, such as, "Which language do you speak to your children?" Factor one also included items concerning food preferences, and items asking about traditional practices, such as, "Have you ever visited a medicine man?" All items in factor one, whether referring to language spoken, foods eaten, or specific traditional spiritual practices, involved specific culturally determined behaviors. Therefore, the subscale formed by factor one was labeled "Language & Behavior."

Ten items were included in factor two, with structure coefficients ranging from .679 to .465. Factor two included items such as, "Most of the women in my family have had a kinaalda [puberty] ceremony." Many items in factor two involved family practices. The highest loading item was, "I believe in the legends of the [traditional] Way." Two items dealt with food preference, but it is notable that both involved corn, which figures importantly in traditional spiritual beliefs. Factor two involved several behaviors, particularly those occurring in a family context, that stem from traditional beliefs, as well as some items directly pertaining to traditional beliefs. Therefore, the subscale formed by factor two was labeled "Family & Beliefs."

**Table 4**  
**Traditionalism Scale for Parents (TSP) - Structure Coefficients**  
**of 32 Retained Items**

Item	Coefficient
Factor 1 - Language & Behavior	
Language you speak to your children	.822
Language you speak at home	.791
Language your children speak to you	.714
Like mutton meat more than beef steak	.649
Use mountain herbs to give thanks	.603
I use sage or cedar after long illness	.512
Give mountain herbs for spiritual strength	.510
Prefer mutton stew to beef stew	.482
I miss fry bread	.465
Have you ever visited a medicine man	.463
Have burned sage or cedar for ceremonies	.454
Ever traveled to attend a shoe game	.447
Do you go to [traditional] ceremonies	.444
Factor 2 - Family & Beliefs	
Believe in the legends of the [traditional] way	.679
When young did you hear coyote stories & legends	.670
I miss cornmeal mush when I haven't had it for awhile	.664
I have a [traditional] name	.630
Family have a sheep corral	.591
Women have had a kinaalda ceremony	.586
Family have a horse corral	.564
Give mountain herbs for spiritual strength	.544
Rather have blue cornmeal or kneelown bread	.536
Do you go to [traditional] ceremonies	.465
Factor 3 - Plants & Animals	
Prefer dried foods to fried	.706
Use herbal plants after sweat bath	.588
Have burned sage or cedar for ceremonies	.583
Believe wild tea can prevent tooth decay	.582
I use sage or cedar after long illness	.535
Use a hair tie with a natural yarn	.520
Pick plants & herbs such as wild onion	.490
Sleep on a sheepskin rather than mattress	.490
Women prepare game which men hunted	.489
Pick wild berries	.465
Use sheepskins rather than blankets	.460
Look for signs when time for planting	.444
Ever heard of the four sacred mountains	.441

Thirteen items were included in factor three, with structure coefficients ranging from .706 to .441. Factor three included items such as, "I use a hair tie with a natural wool yarn as a sign of respect." Like the Plants & Animals subscale on the TSC, items in factor three involved reliance on plants, animals, and natural products derived from plants and animals. Therefore, the subscale formed by factor three was similarly labeled "Plants and Animals."

### Psychometric Properties

Psychometric and descriptive data for the TSP and its subscales are presented in Table 5. The 32 scale items fell into the three previously described subscales with ten to thirteen items apiece. Alpha coefficients for the full scale TSP and subscales ranged from .83 to .96, all well within the acceptable range. The mean inter-item correlation for both the full scale and the Plants & Animals subscale was .28. For the other two subscales, the mean inter-item correlation was slightly greater than .40. Item-total correlations ranged broadly from .18 to .81, but fell below .30 for only four out of thirty-two items, and a majority of item-total correlations exceeded .50 on the full scale TSP. All item-total correlations within subscales fell between .30 and .78, with most exceeding .50.

**Table 5**  
**Traditionalism Scale-Parents (TSP) Psychometric and**  
**Descriptive Findings (N=95)**

<b>Psychometric/ Descriptive Data</b>	<b>Full Scale</b>	<b>Language &amp; Behavior (LB)</b>	<b>Family &amp; Beliefs (FB)</b>	<b>Plants &amp; Animals (PA)</b>
N of Items	32	13	10	13
Scale Mean (SD)	32.0 (14.6)	15.2 (7.9)	12.2 (6.0)	8.6 (5.5)
Mean Inter-Item Correlation	.28	.41	.42	.28
Range of Item- Total Correlation	.18 to .81	.33 to .78	.47 to .73	.30 to .65
Alpha Coefficient	.96	.90	.87	.83

## Conclusion

### Dimensions of Traditionalism

Acculturation has been described in the literature as a multidimensional construct (Berry, 1980; Birman, 1994; Olmedo, 1979). This study assessed only one dimension of acculturation, specifically, traditionalism. Assessing this single dimension of acculturation describes only a part of the process of cultural adaptation in which minority persons are engaged (Dana, 1993; Mendoza, 1989; Rogler, Cortes, & Malgady, 1991; Sodowsky, Lai, & Plake, 1991). Factor analytic findings indicate that traditionalism itself is also a multidimensional construct that can be measured reliably among children and adults, both at the global level and at the level of individual constructs. These findings are consistent with those previously documented for adults (e.g., Olmedo, 1979; Pomales & Williams, 1989) indicating that traditionalism is measurable with a reasonable degree of reliability and validity. A cautionary note here is that the degree of measurement reliability among children was slightly lower, although this is a common finding across a variety of different measurement instruments (Anastasi, 1976).

Establishing a reliable measure of traditionalism is especially significant because few psychometrically adequate instruments exist to assess traditionalism or acculturation among American Indian and Alaska Native families (Dana, 1993). The measure studied here provides highly culture-specific information associated with one tribal group. This specificity can be both a strength and a limitation, depending on the desired application. In any case, a similar process of scale development could be employed with other tribal groups, to produce scales with similar psychometric properties. This line of research would also be useful for quantitatively identifying important differences across tribal groups, as indicated by any differences in factor structure that might emerge through replication.

The literature indicates that factor analysis is a useful tool for exploring the multiple dimensions of traditionalism (Dana, 1993; Olmedo, 1979). In addition to describing specific dimensions that may constitute traditionalism, factor analysis also identified similarities and differences in the manifestation of traditionalism between children and adults. For instance, each respondent group produced a subscale that was nearly identical, in terms of content, involving reliance upon plants and animals, and natural products derived from them. This consistency may indicate this dimension of traditionalism is particularly robust, at least among this particular American Indian tribe.



Children's responses produced separate dimensions for language and food preference. On the other hand, parent responses were such that language and food preference clustered together, along with other behavioral items such as engaging in traditional healing and spiritual practices. Previous factor analytic studies, primarily involving Hispanic or immigrant populations (e.g., Pomales & Williams, 1989) have consistently identified language as the strongest and first factor to emerge. Frequently, this factor is global in nature and includes a range of other culturally determined behaviors in addition to language (Olmedo, 1979). Similar findings emerged from the present analysis, particularly with respect to adult responses on the TSP. However, children's responses split this global factor into two, one of which was almost exclusively composed of items assessing language usage within the family. It may be that since increasing numbers of children from this tribe are primary English-speakers, other types of traditional behavior are emerging as distinct from speaking the language.

The language/behavior dimension of parent traditionalism shared some overlap with the family/beliefs factor of the TSP. Both these dimensions of parent traditionalism included some items dealing with spiritual practices, but family/beliefs was dominated by the heavily loading item, "I believe in the legends of the [traditional] way." Interestingly, the family/beliefs dimension included all TSP items that referred specifically to traditional characteristics of the respondent's family as a whole. These items may provide an especially far-reaching assessment of the cultural context of the respondents. Because the concept of "family" in American Indian cultures typically encompasses extended family, these items may assess behaviors and experiences within a rather large group of family members who influence the respondent.

For children, involvement in and knowledge of traditional ceremonies emerged as a distinct facet of traditionalism. In a post hoc comparison of subscale score means, the traditional ceremonies subscale was the only TSC scale to show differences in conjunction with the age of child respondents, with sixth grade children scoring approximately one-half standard deviation higher than fourth grade children (Morris, 1998). This difference may reflect that older children have had more opportunities to learn about and participate in ceremonies. The traditional ceremonies dimension of child traditionalism may be particularly important to mental health promotion and prevention efforts, as it has been positively associated with children's social competence (Morris, 1998).

The second factor commonly emerging in previous factor analytic studies of traditionalism concerns culture-specific attitudes and value orientations (Olmedo, 1979). Items specifically developed to assess acculturation attitudes were not available for this analysis. However, factors involving values, in the form of family practices, traditional spiritual beliefs, and ceremonial practices, did emerge as part of the TSP family/beliefs

subscale and the TSC beliefs/behaviors subscale. Further refining our ability to assess relative values and attitudes of parents and children in this area could be highly useful for communities seeking to develop prevention and intervention programs for families. There are some indications that parent acculturation attitudes are associated with parent perceptions of child competencies (Morris, 1998), and future research should include an expanded focus on attitudes and values in relation to traditionalism and other dimensions of acculturation.

Although not directly related to the present analysis, other findings suggested that the extent of traditionalism was associated with the age and identity of the respondent. This was particularly true if a grandparent was the informant, in which case TSP full-scale scores exceeded those of parents by nearly two standard deviations (Morris, 1998). These intergenerational differences provide some evidence for the construct validity of the instrument, since traditionalism would be expected to be greater in older generations (Olmedo & Padilla, 1978).

### **Limitations and Recommendations for Future Research**

Review of relevant literature indicates that quantitative data describing family and child traditionalism among American Indians and Alaska Natives are extremely rare. This study used existing data, from a project not specifically designed to study traditionalism or acculturation, to conduct an exploratory analysis of traditionalism. Although measures were based loosely on the two-dimensional model of acculturation, items were not devised with an a priori model of the traditionalism construct. Therefore, exploratory factor analysis, with its attendant limitations, was the appropriate technique for providing a springboard to further research, which may determine if the factor structure can be replicated using confirmatory (or additional exploratory) factor analytic techniques. Despite shortcomings in the design and data, findings do provide an addition to the slim body of research in this area, as well as some direction for future research.

The ratio of participants to items in these analyses, at around two to one, was lower than is typically desired; a ratio of at least five to one is more adequate. It is possible that spurious structure coefficients compromised the reliability of the factor structure. However, Stevens (1996) reported empirical data demonstrating that factors with four or more structure coefficients of .60 or greater will be reliable regardless of sample size, and most of the TSC and TSP factors meet or nearly meet this criterion. Replication could further establish reliability (or alternatives) for the factor structure reported here. Given the challenges of conducting research with American Indian and Alaska Native participants and obtaining adequate sample sizes, future research in this area might best focus on fewer carefully selected items, such as those that emerged with the highest loadings in the factor analyses reported here.

If reliability of the factor structure can be firmly established, future research should seek to determine the utility of specific items in the grouping of factors. Discriminant analysis can identify those items that are essential to the differentiation of subscales from one another, thus helping to establish the discriminant validity of subscales.

Although detailed data for variables that were dropped from the final versions of parent and child traditionalism scales were not reported here (for a full description see Morris, 1998), the excluded variables hold implications for further refinements in assessment of traditionalism. Some items were dropped for poor psychometrics, and these can be ruled out for future consideration in measurement of traditionalism. For example, many of the poorly performing items dealt with phenomena that are becoming very rare (such as regularly sleeping on sheepskins); nor did negatively worded items perform well.

On the other hand, future investigators may also wish to consider resurrecting certain types of items. For example, the gender-specific items were not analyzed simply due to insufficient sample size, but such items should still be considered for their utility to describe gender-related aspects of traditionalism. Some of the items in "branched" format, eliminated from the present analysis, were those providing numerical data (e.g., "How many times have you visited a medicine man?"). These items displayed relatively high variability in responses when examined at the item level, indicating that such items may do a good job of assessing a range of frequency for specific types of traditional behaviors. Furthermore, these items are also descriptive of what a family actually does, providing useful information for those attempting to provide services designed to meet the needs of specific families. Future research should consider including such items.

Since the typical response to items assessing rare and highly traditional practices is so close to zero (i.e., "never") and item variance is low, such items may not provide much information within a scale. However, such low frequency items should be carefully examined before being excluded from scale development, since some may be useful for their ability to discriminate the most traditional respondents. Whether as part of a scale, as separate "critical items" checked for an affirmative response, or included in an interview format, these items could help to identify those respondents with an unusually high degree of traditional knowledge or experiences. This information might be useful in certain applications, such as making decisions regarding how much of a mediating effect traditionalism may have, when assessment of acculturation is used as part of a larger psychological assessment (Dana, 1993).

It must be noted that the extant data set from Flower of Two Soils is now well over ten years old. This constitutes a significant limitation of current analyses, since during that time a variety of sociocultural, economic, political, and technological changes may have influenced traditionalism within the population studied. Assessing the breadth and impact of such

changes is beyond the scope of this paper, but it is possible there has been a differential effect across the dimensions of traditionalism identified here, potentially altering the construct itself. However, when studied as an aspect of acculturation, traditionalism is by its nature a dynamic construct, and the goal of research should be to understand traditionalism within the context of changing cultures. This report provides one set of data points toward that goal; additional research with contemporary data sets are now needed to further our understanding.

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#### Author's Note

The authors would like to thank Morton Beiser, M.D., Principal Investigator of the Flower of Two Soils project for his permission to use a portion of the extant data from the project. Without Flower of Two Soils and Dr. Beiser's dedication and support, this research would not have been possible.