



Published in final edited form as:

J Cross Cult Psychol. 2011 October 1; 42(7): 1219–1236. doi:10.1177/0022022110383317.

Survey Response Styles, Acculturation, and Culture Among a Sample of Mexican American Adults

Rachel E. Davis, Ph.D.,

University of Michigan, School of Public Health, Department of Environmental Health Sciences, 6610B SPH Tower, Ann Arbor, MI 48109-2029, Telephone: (734) 615-9672, Fax: (734) 936-7283

Ken Resnicow, Ph.D., and

University of Michigan, School of Public Health, Department of Health Behavior & Health Education, 109 Observatory Street, Room 3867 SPH I, Ann Arbor, MI 48109-2029, Telephone: (734) 647-0212, Fax: (734) 763-7379

Mick P. Couper, Ph.D.

University of Michigan, Institute for Social Research, Survey Research Center, 4030 ISR Building, 426 Thompson Street, Ann Arbor, MI 48104-1248, Telephone: (734) 647-3577, Fax: (734) 764-8263

Rachel E. Davis: reda@umich.edu; Ken Resnicow: kresnic@umich.edu; Mick P. Couper: MCooper@umich.edu

Abstract

A number of studies have investigated use of extreme (ERS) and acquiescent (ARS) response styles across cultural groups. However, due to within-group heterogeneity, it is important to also examine use of response styles, acculturation, and endorsement of cultural variables at the individual level. This study explores relationships between acculturation, six Mexican cultural factors, ERS, and ARS among a sample of 288 Mexican American telephone survey respondents. Three aspects of acculturation were assessed: Spanish use, the importance of preserving Mexican culture, and interaction with Mexican Americans versus Anglos. These variables were hypothesized to positively associate with ERS and ARS. Participants with higher Spanish use did utilize more ERS and ARS; however, value for preserving Mexican culture and interaction with Mexican Americans were not associated with response style use. In analyses of cultural factors, endorsement of *familismo* and *simpatia* were related to more frequent ERS and ARS, *machismo* was associated with lower ERS among men, and *la mujer* was related to higher ERS among women. *Caballerismo* was marginally associated with utilization of ERS among men. No association was found between *la mujer abnegada* and ERS among women. Relationships between male gender roles and ARS were nonsignificant. Relationships between female gender roles and ARS were mixed but trended in the positive direction. Overall, these findings suggest that Mexican American respondents vary in their use of response styles by acculturation and cultural factors. This usage may be specifically influenced by participants' valuing of and engagement with constructs directly associated with social behavior.

Corresponding Author: Rachel E. Davis, PhD, Department of Environmental Health Sciences University of Michigan School of Public Health, 109 S. Observatory, #6610 Tower, Ann Arbor, MI 48109-2029 USA.

Co-Authors: Ken Resnicow, PhD, Department of Health Behavior and Health Education, University of Michigan School of Public Health, 109 S. Observatory, Ann Arbor, MI 48109-2029 USA

Mick P. Couper, PhD, Program in Survey Methodology, University of Michigan, 4040 ISR, Ann Arbor, MI 48104 USA

Introduction

The development of reliable methods for obtaining valid survey data for Mexican Americans is a particular priority. Latinos comprise the largest and fastest growing minority group in the U.S. (Bureau, 2005), and Mexican Americans are the largest and fastest growing Hispanic subgroup (Guzman, 2001). As the population of Mexican Americans continues to rise, the need to understand whether and how cultural differences influence the survey response process for this group will concurrently increase.

The examination of culturally associated differences in survey response styles has received increased attention in cross-cultural assessment research. A response style is defined as an observed pattern of responding to survey items that is independent of item content. Prior studies have focused on the influence of personality, sociodemographic, and cultural variables on response styles. Although many types of response styles have been identified (e.g., Baumgartner & Steenkamp, 2001), two types have received primary attention in the literature on cross-cultural research: extreme response style (ERS) and acquiescent response style (ARS). ERS was first identified by Cronbach (1946) and refers to a pattern of selecting only the endpoints of a response scale. ARS, which was documented by Couch and Keniston (1960), is defined as a pattern of reflexively agreeing with survey items.

Studies indicate that both ERS and ARS may be more frequent among Latinos as a group than Anglos (Aday, Chiu, & Andersen, 1980; Hui & Triandis, 1989; Marin, Gamba, & Marin, 1992; Weech-Maldonado, Elliott, Oluwole, Schiller, & Hays, 2008). Studies assessing response styles among Anglo Americans and Mexicans and/or Mexican Americans suggest that ERS and ARS may increase with Mexican ethnicity. ERS may be more common among Mexicans than Americans (Clarke, 2001), ARS may be more prevalent among Mexicans than Mexican Americans (Ross & Mirowsky, 1984), and both ERS and ARS may be used more by Mexican Americans than Anglo Americans (Johnson et al., 1997; Ross & Mirowsky, 1984). Response styles have also been associated with other sociodemographic characteristics across a range of national, racial, and ethnic groups. ERS and ARS both appear to be more prevalent among older (Gove & Geerken, 1977; Greenleaf, 1992a, 1992b; Ross & Mirowsky, 1984; Winkler, Kanouse, & Ware, 1982) and less educated respondents (Bachman & O'Malley, 1984; Couch & Keniston, 1960; de Jong, Steenkamp, Fox, & Baumgartner, 2008; Gove & Geerken, 1977; Greenleaf, 1992b; Hui & Triandis, 1989; Johnson et al., 1997; Marin et al., 1992). ARS appears to be related to lower socioeconomic status (Ross & Mirowsky, 1984), with lower income respondents demonstrating ERS and ARS more frequently (Greenleaf, 1992b; Ware, 1978). Higher ERS has been observed among women in at least one study (de Jong et al., 2008), but other studies indicate that ERS does not covary with gender (Bachman & O'Malley, 1984; Greenleaf, 1992b; Marin et al., 1992). Associations between ARS and gender have been mixed (Johnson et al., 1997; Marin et al., 1992; Ross & Mirowsky, 1984; Ware, 1978; Winkler et al., 1982).

Limited research has explored whether cultural differences, as opposed to racial or ethnic differences, are associated with survey response styles among Latinos. Marín, Gamba, and Marín (1992) investigated the relationship between acculturation and response styles in three surveys of Latino respondents. Acculturation has been conceptualized as: "... a multidimensional process, resulting from intergroup contact, in which individuals whose primary learning has been in one culture ... take over characteristic ways of living (attitudes, values, and behavior) from another culture" (Hazuda, Stern, & Haffner, 1988). Marín et al. (1992) found that Latino respondents with lower levels of acculturation demonstrated both higher ERS and ARS than Latinos of higher acculturation in two of the three surveys administered. These findings indicate that some aspects of Latino culture may be associated

with survey response styles. However, which specific cultural factors are related to ERS and ARS among Mexican Americans remains unknown.

Several cross-national, population level studies have been conducted to explore associations between specific cultural factors and survey response styles. Three studies have assessed associations between individual-level response styles and country-level measures of collectivism (Hofstede, 2001). These studies indicate that collectivism is positively related to ARS (Harzing, 2006; Johnson, Kulesa, Cho, & Shavitt, 2005) and that associations between collectivism and ERS are either negative (de Jong et al., 2008) or nonsignificant (Johnson et al., 2005). Multinational comparisons have also observed a positive association between country-level masculinity, which is characterized as a national value for assertiveness and achievement, and individual-level ERS (de Jong et al., 2008; Johnson et al., 2005). In contrast, a negative relationship appears to exist between masculinity and ARS (Johnson et al., 2005). Findings also indicate that country-level norms for greater power distance are positively related to ERS and negatively related to ARS (Johnson et al., 2005). However, further research is needed to explore associations between response styles and specific, additional cultural variables. As Johnson et al. (2005) note, "(T)he dimensions of respondent culture that drive (response styles) ... remain largely unexplored and unknown" (p. 265).

Although the present study was not designed to explore response styles and, thereby, has some known limitations, this paper seeks to contribute to the literature in three primary ways. First, it adds to the work of Marín and colleagues (1992) by presenting within-group analyses of ERS, ARS, and acculturation in a sample of Mexican American adults. Research on response styles to date has focused on comparisons across racial/ethnic or national groups, and, as a consequence, very little information exists about variability of response styles within particular racial or ethnic groups. Although they may represent a singular ethnic group, Mexican Americans, by definition, vary in their individual affiliations with at least two primary cultures, Mexican and Anglo American, and they should not be viewed as forming a homogenous cultural entity. If culture and response styles are related, Mexican Americans are thus likely to vary in their use of response styles. Second, this paper assesses relationships between cultural components and response styles at the individual level. Studies of specific cultural variables (e.g., de Jong et al., 2008; Harzing, 2006; Johnson et al., 2005) have analyzed response-style variables measured at the individual level with cultural variables measured at the national or group level. This paper acknowledges that culture is a group-level construct. But, the members of any cultural group are likely to vary in their personal endorsement of the specific values, attitudes, beliefs and behaviors that comprise the cultures with which they identify. If culture influences individual-level use of response styles, then the degree to which survey respondents adhere to cultural influences must also be individually assessed. Third, this paper seeks to disassemble relationships between culture and response styles. In this vein, associations between response styles and three domains of acculturation will be explored: Spanish use, the importance of preserving Mexican culture, and interaction with Mexican American versus Anglo Americans. However, this paper envisions acculturation as an indicator of latent cultural variables representing a composite of specific cultural factors. Associations between acculturation and response styles may, therefore, be driven by specific cultural factors. In order to explore this premise, this paper examines relationships between ERS, ARS, and six cultural factors that have been associated with traditional Mexican culture: *familismo*, *simpatía*, two gender concepts for men (*machismo* and *caballerismo*), and two gender concepts for women (*la mujer* and *la mujer abnegada*).

Disassembling Mexican American Culture and Response Styles

There are many definitions of acculturation (Trimble, 2003). This study conceptualizes acculturation as the degree to which Mexican Americans adopt the cultural patterns of Anglo American society (Gordon, 1964) by measuring three aspects of acculturation put forth by Hazuda et al. (1988): Spanish use, the importance of preserving Mexican culture, and adult structural assimilation. Structural assimilation (Gordon, 1964) refers to the degree to which individuals interact with Mexican Americans versus Anglos. For greater ease in interpreting the directions of findings presented in this paper, structural assimilation will be referred to as interaction with Mexican Americans. Since Latinos have been associated with higher use of ERS and ARS, it was hypothesized that higher Spanish use, higher value for preserving Mexican culture, and more interaction with Mexican Americans than Anglo Americans would all be positively associated with higher ERS and ARS.

Familismo is a Latino cultural value characterized by a high degree of social interaction, loyalty, obligation, reciprocity, and social support among nuclear and extended family members, as well as fictive kin (Keefe, 1984; Lugo Steidel & Contreras, 2003; Marin & Marin, 1991; Rothman, Gant, & Hnat, 1985; Warda, 2000). *Familismo* is related to allocentrism and collectivism (Lugo Steidel & Contreras, 2003), which value social harmony. Prior multi-national research on 26 countries, excluding Mexico, indicates that ERS may be inversely related to collectivism (de Jong et al., 2008). However, other researchers have argued that collectivism would be more likely to promote ERS among Hispanics, as extreme responses may be viewed as more sincere (Hui & Triandis, 1989; Marín, Gamba, & Marín, 1992). Thus, it was predicted in this study that *familismo* would be positively associated with ERS. An association between collectivism and ARS has been previously hypothesized (Arce-Ferrer, 2006; Marin et al., 1992; Ross & Mirowsky, 1984). Ross and Mirowsky (1984) reasoned that Mexican Americans may be more likely to acquiesce because “(t)he strong extended-family and psuedokinship ties of Mexicans may create pressure to conform and to present a good face to the outside world, since ‘every individual is regarded as a walking symbol of his family’” (p. 190). Respondents who endorse *familismo* may therefore be more likely to utilize response styles supporting social harmony, cohesiveness, and similarity. In the present analysis, it was hypothesized that *familismo* would be positively associated with ARS.

Simpatía is a Latino cultural ethos that guides individuals to be polite, agreeable, likeable, and respectful in interpersonal interactions (Triandis, Marin, Lisansky, & Betancourt, 1984). Marín, Gamba, and Marín (1992) proposed that *simpatía*, like *familismo*, may be associated with higher ERS, as more extreme responses may be more easily interpreted by others, and therefore, be more promotive of social harmony. This study therefore predicted that stronger endorsement of *simpatía* would be associated with higher ERS. Although not empirically tested, previous authors have hypothesized that *simpatía* covaries with acquiescence (Johnson et al., 2005; Marin et al., 1992). Johnson and colleagues (2005) proposed that a person who values *simpatía* may be more likely to acquiesce because acquiescence may be “a submissive response style that conveys agreeableness and deference to hierarchy” (p. 266). Ross and Mirowsky (1984) surmised that Mexican Americans would be more likely to acquiesce because “persons of Mexican heritage living in the U.S. may, like other minority-group members, find that deference, conformity, and correct behavior are adaptive strategies” (p. 190). Thus, a positive association was hypothesized between *simpatía* and ARS among Mexican American respondents.

The concept of *machismo*, or manliness, is often negatively characterized in popular culture as a combination of chauvinism, aggression, and hypermasculinity (Arciniega, Anderson, Tovar-Blank, & Tracey, 2008). Just as countries with more masculine orientations have been found to have higher ERS and lower ARS (de Jong et al., 2008; Johnson et al., 2005), it was

predicted that male respondents in this study who endorsed *machismo* would be more likely to utilize ERS as a means of expressing decisiveness (Johnson et al., 2005). In contrast, it was hypothesized that more *macho* male respondents would be less likely to demonstrate ARS, which may be perceived as too submissive for a male gender role characterized by strength, independence, and dominance. However, *machismo* can also represent positive masculine qualities such as dignity, honor, responsibility, and treating others with respect (Arciniega et al., 2008; Cuellar, Arnold, & Gonzalez, 1995; Delgado, 2007; Kulis, Marsiglia, & Hurdle, 2003; Neff, Prihoda, & Hoppe, 1991). Arciniega and colleagues (2008) refer to these more positively oriented dimensions as *caballerismo*. Because *caballerismo* encourages the display of a gentlemanly, well-mannered, and outwardly respectful social presence, it was hypothesized that *caballerismo* would be negatively associated with ERS. However, the opposite relationship was anticipated between *caballerismo* and acquiescence, as men who prize *caballerismo* were thought to be more likely to display agreeableness and conflict avoidance by utilizing ARS.

The female concept of *marianismo* has been characterized by a sense of moral and spiritual superiority, humility, self-sacrifice, nurturance, and submissiveness (Kulis et al., 2003; Stevens, 1973). *Marianismo* has been described as having two components: *la mujer* and *la mujer abnegada* (Kulis, Marsiglia, Lingard, Nieri, & Nagoshi, 2008). While both social roles prioritize caring for women's households and families, *la mujer* is viewed as capable and proactive, while *la mujer abnegada* is subservient, submissive, dutiful, and accrues honor in caring for others at the expense of herself (Kulis et al., 2008). Women endorsing *la mujer* were expected to evince higher ERS, since *la mujer* values strength. In contrast, *la mujer abnegada* is primarily defined by her submissiveness, which led to expectations that endorsement of this gender role would be negatively associated with ERS. However, since both aspects of *marianismo* are oriented toward the needs of others, positive relationships were hypothesized between both *la mujer* and *la mujer abnegada* and ARS.

Methods

Study Sample and Procedures

The data for this study were obtained from a telephone survey that explored various aspects of acculturation and attitudes about type 2 diabetes among Mexican American adults. Participants were residents of Texas and California. The interviewers were all Latino, and approximately half of the interviewers were of Mexican ethnicity. All of the interviewers were bilingual in Spanish and English. The interviewer initiated the script using the language in which the respondent answered the phone. The language used during the interview was driven by the language used by the respondent. Respondents were eligible to participate in the survey if they reported being diagnosed by a doctor with type 2 diabetes, were between 18 and 75 years of age, were not pregnant, lived in Texas or California, and were of Mexican descent. To qualify as being of Mexican descent, respondents must have had either: (1) two sets of parents who had been born in Mexico; (2) two sets of grandparents who had been born in Mexico; or (3) one parent and an opposing set of grandparents who had been born in Mexico.

Both the telephone script and the survey were initially drafted in English and sent to a professional translation company for translation. The company specializes in localized language translations, and the script and survey were translated to the Spanish deemed most appropriate for use with Mexican Americans living in Texas and California. The translation involved three steps: (1) initial translation of the script and survey by a professional translator; (2) editing of the documents by a second professional translator; and (3) proofreading and review for quality, consistency, and relevance to Mexican Americans in

Texas and California. All translation, editing, and proofreading work was conducted by native Spanish speakers from Mexico with experience in market research.

The analytical dataset contained 288 participants. The sample averaged 55.1 years old and was 58.0% female. The majority (68.8%) of participants reported being married or living with a partner. A quarter (26.0%) of the sample had an 11th grade education or less, while 30.4% had completed high school or obtained a GED. Another quarter of participants had completed post high school training or some college (26.1%), while another 17.5% had obtained a four-year bachelor's or graduate degree. Twenty-nine percent of participants lived in households earning \$20,000 or less per year, and 27.9% of participants resided in households with an annual income of \$60,000 or above. More of the sample lived in Texas (53.8%) than California (46.2%); however, no statistically significant differences in sociodemographics were observed between participants from the two states. Most (65.3%) of the interviews were wholly or mostly completed in English, while the remaining 34.7% were wholly or mostly completed in Spanish. When participants were given a few examples and asked to describe their ethnicity, the following distribution was obtained: Mexican (30%), Mexican American (49%), Latino (6%), Chicano (1%), American (9%), and other (5%). Participants were also asked "What race do you consider yourself?" No response categories were provided, and participants could supply up to two responses. Ninety percent of participants reported a first race that was coded as Hispanic, and 8% of participants reported their first race as White. Only three participants reported a second race; of these, only one reported his or her second racial identification as Hispanic.

This study was approved by a human subjects review committee at the University of Michigan.

Measures

Acculturation—Spanish use, value for preserving Mexican culture, and interaction with Mexican Americans were measured using a subset of items from the 31-item Hazuda acculturation and structural assimilation scales (Hazuda, 1994; Hazuda et al., 1988). Specific items used and reliability statistics for this study are as follows:

Spanish Use: Spanish use was assessed using nine items drawn from two subscales. The first subscale measured English comprehension utilizing the three items comprising Scale A2 (Hazuda, 1994). These items asked how well participants understood English, spoke English, and read English ($\alpha = 0.97$). Proffered response options included "very well", "pretty well", "not too well", and "not at all". The second subscale measured Spanish use using six of the ten items comprising Scale A3 (Hazuda, 1994). Four items queried what language the participant used with their spouse or partner, their children, most of their friends, and most people at work. The remaining two items asked what language the television programs were in that the participant watched and what languages the radio stations were in that the participant listened to. The six items from this subscale were accompanied by the following response options: "only English", "mostly English", "Spanish and English equally", "mostly Spanish", and "only Spanish". This second subscale had a high alpha of 0.93. Since mean responses on the two subscales were strongly correlated ($\rho = 0.79$), the subscale means were standardized and averaged to form a single, Spanish use scale ($\alpha = 0.95$). Higher scores on the Spanish use scale indicated higher use of Spanish and lower comprehension of English; thus, higher scores represented lower acculturation.

Importance of Preserving Mexican Culture: The value that participants had for preserving Mexican culture was measured using Scale A4 (Hazuda, 1994). This scale consisted of three items querying how important the respondent felt it was for their children

to: (a) “know something about the history of Mexico”; (b) “follow Mexican customs and way of life”; and (c) “celebrate Mexican holidays such as *Cinco de Mayo* or *El Deisyseis de Septiembre*”. Response options ranged from “very important”, “somewhat important”, “not very important”, to “not important at all”. The items were recoded such that higher scores on the scale indicated higher importance placed on preserving Mexican culture ($\alpha = 0.82$) and lower acculturation.

Interaction with Mexican Americans: The interaction that a participant had with Anglo versus Mexican Americans was measured using Scale S2 (Hazuda, 1994). This scale consisted of three items, the first of which queried interaction with Anglo versus Mexican Americans in one's current or last job. However, over half of the responses to this item were missing, as this question was not asked of those participants who had reported that they were homemakers, students, or unable to work in response to an earlier question. This item was therefore dropped from the scale, and the remaining two items were used to form the interaction with Mexican Americans variable. These items assessed whether the participant's close personal friends and neighbors, respectively, had been “mostly Mexican American, mostly Anglo, or about equal numbers of each”. Responses for the items were recoded so that lower scores indicated more interaction with Anglo Americans, middle scores indicated equal interaction with Anglo and Mexican Americans, and higher scores indicated more interaction with Mexican Americans ($\alpha = 0.82$). Thus, higher scores on this variable represented lower structural assimilation.

Cultural Factors

Familismo: *Familismo* was assessed using four items exploring family honor and interconnectedness. Three items were drawn from a scale developed for Latinos by Lugo Steidel and Contreras (2003). The honor question asked participants to rate the statement “A person should feel ashamed if something he or she does dishonors the family name”. The interconnectedness items assessed whether participants agreed with statements about treating elder family members with respect and engaging in frequent activities with family members. A fourth family interconnectedness item was selected from a scale measuring *caballerismo* (Arciniega et al., 2008): “The family is more important than the individual.” Response options for all items ranged from one (“strongly disagree”) to ten (“strongly agree”); thus, higher scale scores denoted stronger endorsement of *familismo* ($\alpha = 0.73$).

Simpatía: Two items measured *simpatía*. The first item was drawn from a measure of interdependent self-construals but appeared to tap into the communication aspect of allocentrism: “Even when I strongly disagree with someone, I avoid an argument” (Singelis, 1994). The second item was created by the study team and read: “I avoid conflict, even if it means that I have to sacrifice something.” Both items utilized a response scale ranging from one (“strongly disagree”) to ten (“strongly agree”), with higher scores signifying higher *simpatía* ($\alpha = 0.65$).

Machismo: *Machismo* was measured using four items from a *machismo* scale developed for Mexican American men (Arciniega et al., 2008). Only male study participants completed these items. Examples of the *machismo* items include “In a family, a father's wish is law” and “Real men never let down their guard”. The response options varied from one (“strongly disagree”) to five (“strongly agree”), with higher scores indicating higher *machismo* ($\alpha = 0.79$).

Caballerismo: Four items comprised the *caballerismo* scale, which was only administered to male respondents. Three items were drawn from a published *caballerismo* scale (Arciniega et al., 2008) and included “Men should always display good manners in public”

and “Men should respect their elders”. A fourth item was developed by the study team: “A man is responsible for providing the things that his family needs such as food, clothing, and shelter.” These items used the same response options as the *machismo* scale, and higher scores denoted higher *caballerismo* ($\alpha = 0.73$).

La Mujer: The *la mujer* scale consisted of two items developed by the study team: “Women should be capable and strong” and “Behind every strong man is an even stronger woman”. These items were only administered to female participants. Response options ranged from one (“strongly disagree”) to five (“strongly agree”), with higher scores indicating higher endorsement of *la mujer* ($\alpha = 0.64$).

La Mujer Abnegada: Seven items were created by the study team to assess *la mujer abnegada*. These items included such statements as “It is honorable for a woman to sacrifice her own needs for the good of her family” and “A woman's success is judged by the health and happiness of her family”. This scale was only administered to female respondents. The response options ranged from one (“strongly disagree”) to five (“strongly agree”), with higher scores suggesting stronger endorsement of *la mujer abnegada* ($\alpha = 0.76$).

Extreme and Acquiescent Response Styles—Three of Bachman and O'Malley's (1984) criteria were used to select items to assess participants' response style tendencies: (1) the items were all ordinal and had four or more response options; (2) demographic items were excluded; and (3) factual items were excluded. These criteria were utilized in similar analyses by Marín and colleagues (1992).

Extreme Response Style: Two variables were constructed to assess ERS. The first ERS variable was created using the 29 survey items with response options ranging from one to five and 42 items with response options ranging from one to ten that were identified as meeting the three selection criteria outlined above. However, since the 29 one-to-five items included the *machismo* and *caballerismo* scales, which consisted of nine items that were only administered to men, as well as the *la mujer* and *la mujer abnegada* scales, which consisted of nine items that were only administered to women, there was a possible maximum of only 20 items per participant for the one-to-five items instead of 29. Thus, up to 62 items were used to calculate each individual participant's ERS score. The ERS variable was computed as the proportion of either “1”s and “5”s on the one-to-five items and “1”s and “10”s on the one-to-ten items. If an item response was missing, the denominator was adjusted accordingly. The second ERS variable was constructed in the same manner as the first, with the exception that survey items used to measure cultural factors were excluded. The second ERS variable was created using responses from 47 items, which were composed of 11 one-to-five items and 36 one-to-ten items. Further analyses were conducted using two additional ERS variables: (1) the proportion of ERS on items with one-to-five response scales only; and (2) the proportion of ERS on items with one-to-ten response scales only. However, since the results of these models were almost identical to those obtained from the model using the ERS variables that combined items with one-to-five and one-to-ten response scales, results from these analyses are not reported.

Acquiescent Response Style: Acquiescence was conceptualized as agreeing with items that were cognitively dissonant. Four items were selected to assess ARS because they represented contrasting views and met the three response style criteria outlined above. Although arguable, agreement with all four items was considered to be counter-intuitive. Two items were drawn from a measure of fatalism that had been previously used with Latina women (Evenson, Sarmiento, & Ayala, 2004): “Whatever is supposed to happen to me will, regardless of my efforts” and “Whether a person is healthy or not depends mostly on God's

will". The other two items were developed by the study team to assess whether one's own behaviors were the main determinants of health: "I alone am responsible for my behavior" and "My behavior determines whether I will be healthy". All four items used a response scale ranging from one ("strongly disagree") to ten ("strongly agree"). It was expected that participants who agreed with the two fatalism items would disagree with the two behavioral determinant items and that participants who disagreed with the two fatalism items would agree with the behavioral determinant items. Agreement with all four items was assumed to be logically inconsistent. Only participants with complete data for the four items were included in the acquiescence analyses. Two binary variables were created to assess ARS. One variable ("answered 10") measured whether participants answered a "10" to all four items, while the other variable ("answered 8-10") measured whether participants answered an "8" or "9" or "10" to all four items.

Other Variables—The language in which each interview was conducted, age, educational attainment, and gender were also assessed and utilized as control variables.

Analyses

The ERS acculturation analysis was modeled using linear regression, as the ERS variable was sufficiently normally distributed. The model included Spanish use, importance of preserving Mexican culture, and interaction with Mexican Americans as independent variables. Interview language, age, educational attainment, and gender were included as controls. Whether the interview was conducted in Spanish had a correlation of 0.71 with Spanish use; however, no excessive multicollinearity was detected in the models.

Since the ARS variables were both binary, the two ARS acculturation models utilized logistic regression. Separate models were run for each of the two acquiescence dependent variables: (1) answered 10; and (2) answered 8-10. Each model included Spanish use, importance of preserving Mexican culture, and interaction with Mexican Americans as independent variables and interview language, age, educational attainment, and gender as controls.

Linear regression models were used to explore associations between the ERS variable that excluded responses from the cultural factor items and each of the six cultural factors (*familismo*, *simpatía*, *machismo*, *caballerismo*, *la mujer*, and *la mujer abnegada*). Due to the limited sample size and subsequent underpowered analyses for the gender-specific variables, separate models were run to test associations between the ERS variable and each of the cultural factors. The *familismo* and *simpatía* models included age, education, and gender as control variables. However, since the remaining cultural variables were only assessed within a single gender, only age and education were included as controls in the *machismo*, *caballerismo*, *la mujer*, and *la mujer abnegada* models.

Associations between acquiescence and the six cultural factors were tested using logistic regression. As with the ERS and cultural factor models, simple models were run to test associations between the two ARS variables and each of the cultural factors. The two ARS variables served as dependent variables, while the six cultural factors functioned as independent variables. The *familismo* and *simpatía* models controlled for age, education, and gender. The *machismo*, *caballerismo*, *la mujer*, and *la mujer abnegada* models controlled for age and education.

Results

Acculturation and Extreme Response Style (ERS)

Among all of those responses evaluated for ERS, the mean proportion of extreme responses to all responses was 0.71, indicating a high prevalence of ERS. Among those responses classified as extreme, the mean proportion of “1” responses on the one-to-five and one-to-ten response scales was 0.30. Thus, approximately 70% of the extreme responses obtained were at the upper ends of the response scales (“5”s and “10”s).

As predicted, higher Spanish use was significantly associated with an increase in ERS ($p < .0001$) (Table 1). No significant associations were found between the importance of preserving Mexican culture and ERS, and only a marginally significant relationship was observed between interaction with Mexican Americans and ERS ($p = .08$). No significant effects were observed for interview language, gender, age, or education.

Acculturation and Acquiescent Response Style (ARS)

Overall, 22.2% of study participants answered 10 to all four fatalism/behavioral determination items, indicating a substantial amount of acquiescence.

As hypothesized, Spanish language use and ARS were positively associated (Table 2). Adult use of Spanish was marginally associated with increased odds of answering “10” ($p = .07$) and significantly associated with answering 8-10 ($p = .01$) to all four acquiescence items. No significant relationships were found between the importance of preserving Mexican culture or interaction with Mexican Americans and ARS.

The language in which the interview was conducted was not associated with ARS. Males were more likely to answer 10 to all four acquiescence items ($p = .02$); however, no gender effects were found for answering 8-10 to the acquiescence items. No significant associations were observed between age and ARS. Education had a consistent and negative association with ARS. As education increased, the odds of answering 10 ($p = .03$) or 8-10 ($p = .01$) to all four acquiescence items significantly decreased.

Cultural Factors and ERS

Consistent with expectations, participants with higher *familismo* ($p < .001$) and *simpatía* ($p = .02$) scores were both significantly more likely to demonstrate ERS (Table 3). Among male respondents, men who more strongly endorsed *machismo* were significantly less likely to utilize ERS ($p = .05$). Men who endorsed *caballerismo* were marginally more likely to use ERS ($p = .06$). These findings for men were opposed to the hypothesized directions. The hypothesis that women with higher *la mujer* scores would be more likely to evince extreme responding was supported ($p = .0002$). No significant relationships were observed between ERS and *la mujer abnegada*.

Cultural Factors and ARS

The odds of answering 10 ($p = .003$) or 8-10 ($p = .0003$) to all four acquiescence items were higher for those with higher *familismo* scores (Table 4). These relationships were in the hypothesized directions. The prediction that higher *simpatía* would be associated with ARS was also supported by the data. Participants with higher *simpatía* scores were more likely to report a 10 ($p = .0001$) or 8-10 ($p < .0001$) to the four acquiescence items. No significant relationships were found between male respondents' *machismo* or *caballerismo* scores and ARS.

Hypotheses for the female gender roles and acquiescence were partially supported. As scores on the *la mujer* scale increased, female participants were borderline more likely to report a 10 to all four acquiescence items ($p = .10$). No significant relationship was observed between the *la mujer* scale and the 8-10 ARS variable, but the pattern of effects was in the hypothesized direction. A significant and positive association was observed between scores on the *la mujer abnegada* scale and the odds of answering a 10 on the acquiescence items ($p = .05$). A marginally significant association was found for the *la mujer abnegada* scale and the odds of answering 8-10 to the acquiescence items ($p = .08$). These findings were in the predicted directions.

Discussion

The finding that approximately 70% of responses evaluated for extreme response style were extreme responses suggests a strong affinity for selecting response scale endpoints among this population. The finding that over one-fifth of study participants reported a “10” to the four illogically paired, fatalism/behavioral determination items also indicates a substantial level of reflexive agreement.

It was hypothesized that both extreme and acquiescent response styles would be positively associated with three domains of acculturation: use of Spanish in adulthood, value for preserving Mexican culture, and interaction with Mexican Americans (Table 5). Findings from this study indicate that the use of extreme responding by Mexican American respondents may, indeed, be associated with acculturation, as participants in this study with higher Spanish use were significantly more likely to provide extreme responses. This finding supports earlier research on acculturation and response styles by Marín and colleagues (1987). Similarly, participants in this study who reported higher Spanish use were significantly more likely to evince acquiescent response styles. However, the importance that participants placed on preserving Mexican culture and their interaction with Mexican Americans had no significant effects in this study on extreme or acquiescent responding. Thus, survey response styles may be influenced only by language-related aspects of the acculturative process.

Associations between Spanish use and survey response styles support a more generalizable theory that language use determines use of culturally associated communication norms. These norms may include customs that influence the survey response process, such as more fervent opinion-sharing or a norm for appearing agreeable. These norms may also be supported by structural aspects of languages themselves. For instance, Mexican Spanish utilizes two forms of the singular English word for “you”: “*tu*” and “*usted*”. *Tu* is traditionally used with children and in informal settings, whereas *usted* is used to convey respect to elders, strangers, and persons considered higher in the speaker's social hierarchy. A survey respondent speaking in Mexican Spanish has to make a choice: Will they use the more informal or formal word and verb forms for “you” during their interview? In most cases, the respondent will probably select *usted*, as it would be more normative in a conversation with a stranger. This usage, of and in itself, may predispose a respondent who is knowledgeable about Spanish language use and customs to draw upon other Mexican communication norms, such as the expression of respect, sincerity, and personalism. The finding that interview language was not associated with self-reported use of Spanish in this study further suggests that usual language use and language comfort are stronger predictors of communication norms than the language in which an interview is conducted. This result provides support for findings from previous research, in which more extreme responding has been observed when respondents complete surveys in their native languages (Gibbons, Zellner, & Rudek, 1999; Harzing, 2006). The importance of assessing language use also

underscores the precariousness of using interview language as a proxy for language proficiency, language preferences, typical language use, or acculturation.

Several significant findings emerged in analyses of relationships between extreme response style and six specific cultural factors. Consistent with expectations, both *familismo* and *simpatía* were associated with more extreme responding. These findings lend credibility to earlier predictions that the desire for social harmony and agreeableness that characterizes both *familismo* and *simpatía* does not drive a tendency to choose middle-range response options among Latinos, as had been predicted in Asian populations, but instead promotes the voicing of strong agreement as a show of sincerity to further social cohesion (Hui & Triandis, 1989; Marín, Gamba, & Marín, 1992). The fact that approximately one-third of the extreme responses obtained were at the lowest, negative ends of the response scales extends further support to the sincerity hypothesis.

Results from prior multi-national research led to expectations that Mexican American men with higher *machismo* scores would utilize more extreme responding (de Jong et al., 2008; Johnson et al., 2005); however, the opposite association was found. Higher *machismo* was associated with significantly less extreme responding. One explanation for this finding may lie in closer examination of the *machismo* scale items. Two of the items assess dominance, while two of the items assess emotional restraint. More *macho* men may have selected middle-range response options as a means of conveying emotional restraint. Although marginally significant, the opposite association was found for men endorsing *caballerismo*. Men with higher *caballerismo* were predicted to utilize less extreme responding, as it was assumed that middle-response options would convey greater social harmony and respectfulness toward others. However, men with higher *caballerismo* scores were more likely to demonstrate extreme response styles. Although opposite from the predicted direction, this finding is consistent with results from this study for *familismo* and *simpatía*, thus lending further support to an association between strong agreement with survey items and smooth interpersonal interactions among Mexican Americans who endorse more traditionally Mexican cultural factors.

As predicted, Mexican American women in this study with stronger endorsement of *la mujer* were significantly more likely to utilize an extreme response style. This finding provides some evidence for the hypothesis that Mexican American women who value a strong female social identity may enact this identity in the survey interaction through the selection of extreme response choices. The opposite relationship was proposed for *la mujer abnegada*; however, no significant results were found between *la mujer abnegada* and extreme response style.

This study also explored associations between acquiescence and cultural factors, revealing several additional intriguing patterns. For one, participants in this research with a stronger sense of *familismo* exhibited stronger acquiescence. This finding lends support to the hypothesis that Mexican Americans who value interpersonal harmony and social cohesiveness exercise these values not only with family and fictive kin, but also through expressions of acquiescence in interactions with family outsiders such as survey interviewers. As such, both *familismo* and acquiescence may be related to latent allocentrism. Allocentrism may also drive Mexican Americans' utilization of *simpatía*. Findings from this study indicate that Mexican American survey respondents who endorse *simpatía* are more likely to acquiesce to survey questions. This relationship was in the expected direction. Since *simpatía* is an oral communication norm, this finding prompts the question of how survey mode influences communication patterns. Would Mexican American survey respondents with higher *simpatía* be less likely to acquiesce in a self-administered survey, in which the social dynamics incurred by the presence of an

interviewer were removed from the survey interaction? This question merits further research.

No significant findings emerged in analyses of acquiescent response style and *machismo* or *caballerismo*. These analyses were limited in statistical power, but the directions of findings indicate that Mexican American men who endorse *machismo* or *caballerismo* may be more likely to acquiesce. In the case of *machismo*, this was contrary to the hypothesized direction. Data from this study indicate greater acquiescence among men with higher *caballerismo* than *machismo* scores, which fits with the expectation that *caballerismo* would be more positively associated with acquiescence than *machismo*. However, further research is needed to explore these results.

Results from this study suggest that female gender roles may also have implications for survey interactions. Mexican American women with higher *la mujer* scores were borderline more likely to report the highest level of agreement with the acquiescence items, and all estimates were in the direction of supporting a positive relationship between *la mujer* and acquiescence. Both significant and marginally significant relationships were found between women's *la mujer abnegada* scores and acquiescence, suggesting that *la mujer abnegada* may have a stronger association with acquiescence than *la mujer*. Such relationships would make sense, as *la mujer* is likely to avoid social reactions which may cause her to be perceived as weak, while *la mujer abnegada* derives public honor and personal fulfillment through femininity, self-sacrifice and submissiveness.

This study was not designed to assess response styles and, as a consequence, has several limitations. Most notably, the survey items were limited in their provision of adequate measures of acquiescence. A more ideal set of items for measuring acquiescence would have included longer scales with balanced, positively worded items (Baumgartner & Steenkamp, 2001; Ware, 1978; Winkler et al., 1982) known to measure a single construct. The acquiescence items were intended to explore the two extremes of fatalism, with self-determination at one end of the continuum and a belief that God and/or fate will determine what happens to someone, regardless of their own behaviors, at the other end of the continuum. However, it is arguable whether the four items used to assess acquiescence in this study actually measure a single latent construct. It is possible that some participants alternatively saw these two endpoints as different concepts and considered a person as being both responsible for her or her own behavior while at the same time affected by God and fate. Thus, agreement with all four items may not have been illogical, and, therefore, not an indication of acquiescence but a legitimate response pattern. Exploring these conceptualizations with Mexican American survey respondents is a goal of ongoing research. Additional research is needed to explore whether the findings presented here are indicative of true relationships with acquiescence. Although other researchers have concluded that extreme and acquiescent responding are distinct response styles (Bachman & O'Malley, 1984; Johnson et al., 2005), it was impossible to discern whether acquiescence drove extreme responding in the present study, since the overall direction of the survey associated stronger agreement with stronger endorsement of traditionally Mexican beliefs and attitudes. This directionality was the result of prior observations that Mexican Americans may have difficulty with reverse-worded items (Brown, Becker, Garcia, Barton, & Hanis, 2002). The implied utilization of response styles in these data underscore the importance of addressing this challenge by incorporating balanced, but positively worded, scales. The mixture of one-to-five and one-to-ten response scales for the six cultural constructs may have confounded explorations of extreme and acquiescent responding. However, Hui and Triandis (1989) found fewer differences in the degree of extreme responding used by Hispanics and non-Hispanics when using 5-point versus 10-point scales. Thus, the fact that we observed significant cultural effects even for the one-to-ten items may

provide even stronger evidence of the presence of response styles. Many of the scales used in this study contained new or understudied items. Further conceptual and psychometric scale development is being pursued in ongoing research. The acculturation variables themselves may have been affected by extreme or acquiescent responding. However, the distributions of responses on these variables suggest that the effects of response styles on these variables, if any, were very minimal. This lack of evident measurement error is likely due to the fact that the response options for the acculturation items were not always arranged in order of magnitude (e.g., the interaction with Mexican Americans item responses were ordered “mostly Mexican American”, “mostly Anglo”, or “about equal numbers of each”) and that the response options were fully labeled. Whether fully labeling response scales and avoiding an ordered response magnitude should be examined as mitigating influences on response styles in future research. This study also had a limited sample size. This limitation resulted in even smaller samples for analyses utilizing the *machismo*, *caballerismo*, *la mujer*, and *la mujer abnegada* scales, which were administered to only male or female participants. Use of response styles and gender roles should be explored in future research with larger sample sizes. Findings from this study may not be generalizable to other Mexican American survey respondents. Participants in this study lived in specific geographies, were within two generations of Mexican descent, and were generally older, due to having been diagnosed with type 2 diabetes. Other populations of Mexican Americans may vary in these and other characteristics, which may have an influence on their cultural affiliations and response styles.

Despite these limitations, the present research adds to the literature by suggesting several directions for future research. For one, findings from this study indicate that survey response styles may vary according to the degree to which members of a cross-cultural ethnic group endorse the varied values, attitudes, and beliefs associated with the cultures informing that group. Because ethnic groups do not inherently comprise homogenous cultural groups, additional research is warranted among Mexican Americans and other socially defined groups to explore not only how culture influences survey response styles across ethnic group boundaries, but also within. Failing to do so may result in what Trimble (1990) refers to as “ethnic glossing”, or the construction of a social group based on superficial ethnic or cultural attributes without acknowledging the potentially significant heterogeneity within such groups. Further research is also needed to identify how specific cultural factors associated with different groups but measured at the individual level influence survey response styles, and, thereby, the interpretation of survey data obtained from such groups. The present findings suggest that survey respondents who endorse allocentrist values such as *familismo* and harmonizing social communication practices such as *simpatía* may be more likely to utilize extreme and acquiescent response styles. However, these findings warrant further investigation. This study also indicates that it is important to consider how gender roles and communication patterns interact in future research. For example, if men with higher *machismo* or *caballerismo* tend to mildly but not strongly acquiesce in interviewer-administered surveys, survey researchers may erroneously conclude that such men have lower scores on survey measures, resulting in the over-interpretation of differences between not only different types of men but, if women acquiesce more strongly, between men and women. Additional research on these and other gender roles is needed. Future research should also consider a broader range of cultural factors than those presented in this study, including assessment of allocentrism.

Considerable research is needed to better understand, predict, and control for measurement error in cross-cultural survey research. The motivation to pursue this line of inquiry is not only academic. If response styles are associated with particular racial and ethnic or cultural groups, then the failure to measure and control for such response styles may bias survey findings in ways that confound substantive knowledge about those groups (Chun, Campbell,

& Yoo, 1974; Weech-Maldonado et al., 2008). For example, Bachman and O'Malley (1984) note that differences in how researchers collapse response scales when analyzing survey data have the potential to suggest stronger substantive differences between groups than truly exist. Such approaches may be particularly tempting in cross-cultural research, as investigators may be inherently more attentive to seeking differences between groups. However, it is through these means that undetected measurement error can have real implications for the populations being studied. On the other hand, findings from this study indicate that response style usage may be indicative of cultural values and communication norms, which may have significant implications for how health professionals should interact with individuals from different cultural groups. Findings from this research suggest that the use of response styles may be a stronger indication of how an individual chooses how to present himself in the social world than language choices, which may be driven by other, contextual factors. Response styles should therefore not only be examined in relation to measurement error, but also as expressions of the cultural values and practices of individuals navigating through an increasingly multicultural world.

References

- Aday LA, Chiu GY, Andersen R. Methodological issues in health care surveys of the Spanish heritage population. *American Journal of Public Health*. 1980; 70(4):367–374. [PubMed: 7361954]
- Arce-Ferrer AJ. An investigation into the factors influencing extreme-response style: Improving meaning of translated and culturally adapted rating scales. *Educational and Psychological Measurement*. 2006; 66(3):374–392.
- Arciniega GM, Anderson TC, Tovar-Blank ZG, Tracey TJG. Toward a fuller conception of machismo: Development of a traditional machismo and caballerismo scale. *Journal of Counseling Psychology*. 2008; 55(1):19–33.
- Bachman JG, O'Malley PM. Yea-saying, nay-saying, and going to extremes: Black-White differences in response styles. *Public Opinion Quarterly*. 1984; 48:491–509.
- Baumgartner H, Steenkamp JBEM. Response styles in marketing research: A cross-national investigation. *Journal of Marketing Research*. 2001; 38(2):143–156.
- Brown SA, Becker HA, Garcia AA, Barton SA, Hanis CL. Measuring health beliefs in Spanish-speaking Mexican Americans with type 2 diabetes: Adapting an existing instrument. *Research in Nursing & Health*. 2002; 25(2):145–158. [PubMed: 11933008]
- Bureau, USC. Hispanic population passes 40 million. 2005. Retrieved April 14, 2006, from <http://www.census.gov/PressRelease/www/releases/archives/population/005164.html>
- Chun KT, Campbell JB, Yoo JH. Extreme response style in cross-cultural research: A reminder. *Journal of Cross-Cultural Psychology*. 1974; 5(4):465–480.
- Clarke I III. Extreme response style in cross-cultural research. *International Marketing Review*. 2001; 18(3):301–324.
- Couch A, Keniston K. Yeasayers and naysayers: Agreeing response set as a personality variable. *Journal of Abnormal and Social Psychology*. 1960; 60(2):151–174. [PubMed: 13812335]
- Cronbach LJ. Response set and test validity. *Educational and Psychological Measurement*. 1946; 6(4):475–494.
- Cuellar I, Arnold B, Gonzalez G. Cognitive referents of acculturation: Assessment of cultural constructs in Mexican Americans. *Journal of Community Psychology*. 1995; 23(4):339–355.
- de Jong MG, Steenkamp JBEM, Fox JP, Baumgartner H. Using item response theory to measure extreme response style in marketing research: A global investigation. *Journal of Marketing Research*. 2008; 45:104–115.
- Delgado, M. *Social work with Latinos: A cultural assets paradigm*. New York: Oxford University Press; 2007.
- Evenson KR, Sarmiento OL, Ayala GX. Acculturation and physical activity among North Carolina Latina immigrants. *Social Science & Medicine*. 2004; 59(12):2509–2522. [PubMed: 15474205]

- Gibbons JL, Zellner JA, Rudek DJ. Effects of language and meaningfulness on the use of extreme response style by Spanish-English bilinguals. *Cross-Cultural Research*. 1999; 33(4):369–381.
- Gordon, MM. *Assimilation in American life: The role of race, religion, and national origins*. New York: Oxford University Press; 1964.
- Gove WR, Geerken MR. Response bias in surveys of mental health: An empirical investigation. *The American Journal of Sociology*. 1977; 82(6):1289–1317.
- Greenleaf EA. Improving rating scale measures by detecting and correcting bias components in some response styles. *Journal of Marketing Research*. 1992a; 29(2):176–188.
- Greenleaf EA. Measuring extreme response style. *Public Opinion Quarterly*. 1992b; 56:328–351.
- Guzman, B. *The Hispanic population*. Washington, DC: U.S Census Bureau; 2001.
- Harzing AW. Response styles in cross-national survey research: A 26-country study. *International Journal of Cross Cultural Management*. 2006; 6(2):243–265.
- Hazuda HP. *Items and scoring procedures for the Hazuda acculturation and assimilation measures*. 1994
- Hazuda HP, Stern MP, Haffner SM. Acculturation and assimilation among Mexican Americans: Scales and population-based data. *Social Science Quarterly*. 1988; 69(3):687–706.
- Hofstede, G. *Culture's consequences*. 2nd. Thousand Oaks, CA: Sage Publications; 2001.
- Hui CH, Triandis HC. Effects of culture and response format on extreme response style. *Journal of Cross-Cultural Psychology*. 1989; 20(3):296–309.
- Johnson T, Kulesa P, Cho YI, Shavitt S. The relation between culture and response styles: Evidence from 19 countries. *Journal of Cross-Cultural Psychology*. 2005; 36(2):264–277.
- Johnson, T.; O'Rourke, D.; Chavez, N.; Sudman, S.; Warnecke, R.; Lacey, L., et al. Social cognition and responses to survey questions among culturally diverse populations. In: Lyberg, L.; Biemer, P.; Collins, M.; De Leeuw, E.; Dippo, C.; Schwarz, N.; Trewin, D., editors. *Survey measurement and process quality*. New York: John Wiley & Sons, Inc; 1997. p. 87-113.
- Keefe SE. Real and ideal extended familism among Mexican Americans and Anglo Americans: On the meaning of “close” family ties. *Human Organization*. 1984; 43(1):65–70.
- Kulis S, Marsiglia FF, Hurdle D. Gender identity, ethnicity, acculturation, and drug use: Exploring differences among adolescents in the Southwest. *Journal of Community Psychology*. 2003; 31(2): 167–188. [PubMed: 21359134]
- Kulis S, Marsiglia FF, Lingard EC, Nieri T, Nagoshi J. Gender identity and substance use among students in two high schools in Monterrey, Mexico. *Drug and Alcohol Dependence*. 2008; 95(3): 258–268. [PubMed: 18329826]
- Lugo Steidel AG, Contreras JM. A new familism scale for use with Latino populations. *Hispanic Journal of Behavioral Sciences*. 2003; 25(3):312–330.
- Marín G, Gamba RJ, Marín BV. Extreme response style and acquiescence among Hispanics: The role of acculturation and education. *Journal of Cross-Cultural Psychology*. 1992; 23(4):498–509.
- Marín, G.; Marín, BV. *Research with Hispanic populations*. Vol. 23. Newbury Park: Sage Publications; 1991.
- Marín G, Sabogal F, Marín BV, Otero-Sabogal R, Perez-Stable EJ. Development of a short acculturation scale for Hispanics. *Hispanic Journal of Behavioral Sciences*. 1987; 9(2):183–205.
- Neff JA, Prihoda TJ, Hoppe SK. “Machismo,” self-esteem, education and high maximum drinking among Anglo, Black and Mexican-American male drinkers. *Journal of Studies on Alcohol*. 1991; 52(5):458–463. [PubMed: 1943101]
- Ross CE, Mirowsky J. Socially-desirable response and acquiescence in a cross-cultural survey of mental health. *Journal of Health and Social Behavior*. 1984; 25:189–197. [PubMed: 6470459]
- Rothman J, Gant LM, Hnat SA. Mexican-American family culture. *Social Service Review*. 1985; 59(2):197–215.
- Singelis TM. The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*. 1994; 20(5):580–591.
- Stevens EP. The prospects for a women's liberation movement in Latin America. *Journal of Marriage and the Family*. 1973; 35(2):313–321.

- Triandis HC, Marin G, Lisansky J, Betancourt H. Simpatía as a cultural script of Hispanics. *Journal of Personality and Social Psychology*. 1984; 47(6):1363–1375.
- Trimble JE. Ethnic specification, validation prospects, and the future of drug use research. *The International Journal of the Addictions*. 1990; 25(2A):149–170. [PubMed: 2269551]
- Trimble, JE. Introduction: Social change and acculturation. In: Chun, PBOKM.; Marín, G., editors. *Acculturation: Advances in theory, measurement, and applied research*. Washington, DC: American Psychological Association; 2003. p. 3-13.
- Warda MR. Mexican Americans' perceptions of culturally competent care. *Western Journal of Nursing Research*. 2000; 22(2):203–224. [PubMed: 10743411]
- Ware JE Jr. Effects of acquiescent response set on patient satisfaction ratings. *Medical Care*. 1978; 16(4):327–336. [PubMed: 651398]
- Weech-Maldonado R, Elliott MN, Oluwole A, Schiller KC, Hays RD. Survey response style and differential use of CAHPS rating scales by Hispanics. *Medical Care*. 2008; 46(9):963–968. [PubMed: 18725851]
- Winkler JD, Kanouse DE, Ware JE Jr. Controlling for acquiescence response set in scale development. *Journal of Applied Psychology*. 1982; 67(5):555–561.

Biographies

Rachel Davis is a research assistant professor in the Human Nutrition Program in the Department of Environmental Health Sciences at the University of Michigan. She has a Ph.D. in health behavior and health education from the University of Michigan and a certificate in survey methodology from the University of Michigan's Institute for Social Research. Dr. Davis's research explores the role of culture and ethnic identity in tailored health behavior change intervention programs and interviewer-administered health surveys. Her work currently focuses on Latino and African American populations.

Ken Resnicow is a professor in the Department of Health Behavior and Health Education at the University of Michigan. He has a Ph.D. in health psychology from Albert Einstein College of Medicine and the Ferkauf Graduate School. His research interests include: the design and evaluation of health promotion programs for special populations, particularly chronic disease prevention for African Americans; health communications; understanding the relationship between ethnicity and health behaviors; substance use prevention and harm reduction; and training health professionals to conduct motivational interviewing interventions for obesity and other chronic diseases.

Mick Couper has a Ph.D. in sociology from Rhodes University, South Africa. He is currently a research professor in the Survey Research Center in the Institute for Social Research at the University of Michigan and a research professor in the Joint Program in Survey Methodology at the University of Maryland. Dr. Couper's current research interests include survey nonresponse, design and implementation of survey data collection, effects of technology on the survey process, and computer-assisted interviewing. Many of his current projects focus on the design of web surveys, and in 2008 he authored *Designing Effective Web Surveys* (Cambridge University Press). He collaborates with colleagues in many different countries on aspects of survey design in different cultural settings and is interested in the cross-cultural effects of design on survey responses.

Table 1
Acculturation Variables as Covariates of Extreme Response Style (ERS) – Linear Regression Estimates and Standard Errors (n=288)

	Proportion of ERS on 1-5 and 1-10 Response Scales
Spanish Use	0.09 (0.02) ^a
Value for Preserving Mexican Culture	0.01 (0.02)
Interaction with Mexican Americans	-0.04 (0.02) ^b
Interview Language (Spanish) ^c	-0.04 (0.03)
Sex (Female) ^c	0.03 (0.02)
Age (10-Year Increments) ^c	0.01 (0.01)
Education ^c	0.01 (0.02)
R ²	0.13
Overall Model Significance	F(7, 263)=5.47 ^a

^aSignificant at p≤.0001

^bMarginally significant at p≤.10

^cControl variables

Table 2
Acculturation Variables as Covariates of Acquiescent Response Style (ARS) – Logistic Regression Odds Ratios and 95% Confidence Intervals (n=272)

	Odds Ratios of Answering 10 to All Four Items (95% CI)	Odds Ratios of Answering 8-10 to All Four Items (95% CI)
Spanish Use	1.60 (0.97-2.63) ^b	1.90 (1.17-3.07) ^a
Importance of Preserving Mexican Culture	1.13 (0.71-1.78)	1.29 (0.84-1.98)
Interaction with Mexican Americans	1.03 (0.56-1.91)	1.13 (0.64-1.99)
Interview Language (Spanish) ^c	1.21 (0.49-2.99)	0.87 (0.37-2.05)
Sex (Female) ^c	0.47 (0.24-0.90) ^a	0.64 (0.35-1.17)
Age (10-Year Increments) ^c	1.25 (0.95-1.64)	1.18 (0.92-1.51)
Education ^c	0.58 (0.36-0.94) ^a	0.56 (0.36-0.87) ^a
Pseudo-R ²	0.14	0.18

^aSignificant at p≤.05

^bMarginally significant at p≤.10

^cControl variables

Table 3
Cultural Factors as Covariates of Extreme Response Style (ERS) – Linear Regression
Estimates and Standard Errors ^a

	Proportion of ERS on 1-5 and 1-10 Response Scales (Excluding Cultural Factor Items)
<i>Familismo</i> (n=278)	0.02 (0.01) ^b
<i>Simpatía</i> (n=275)	0.01 (0.004) ^b
<i>Machismo</i> (n=117)	-0.03 (0.02) ^b
<i>Caballerismo</i> (n=111)	0.05 (0.02) ^c
<i>La Mujer</i> (n=147)	0.06 (0.02) ^b
<i>La Mujer Abnegada</i> (n=161)	0.002 (0.02)

^a All models controlled for age and education. Models for *familismo* and *simpatía* additionally controlled for sex.

^b Significant at p≤.05

^c Marginally significant at p≤.10

Table 4
Cultural Factors as Covariates of Acquiescent Response Style (ARS) – Logistic
Regression Odds Ratios and 95% Confidence Intervals ^a

	Odds Ratios of Answering 10 to All Four Items (95% CI)	Odds Ratios of Answering 8-10 to All Four Items (95% CI)
<i>Familismo</i> (n=264)	1.31 (1.09-1.57) ^b	1.36 (1.15-1.61) ^b
<i>Simpatía</i> (n=262)	1.33 (1.15-1.53) ^b	1.32 (1.16-1.49) ^b
<i>Machismo</i> (n=113)	1.16 (0.81-1.67)	1.30 (0.91-1.84)
<i>Caballerismo</i> (n=107)	1.34 (0.65-0.2.78)	1.63 (0.77-3.48)
<i>La Mujer</i> (n=149)	1.68 (0.92-3.07) ^c	1.30 (0.84-2.03)
<i>La Mujer Abnegada</i> (n=151)	1.55 (0.99-2.41) ^b	1.42 (0.97-2.08) ^c

^a All models controlled for age and education. Models for *familismo* and *simpatía* additionally controlled for sex.

^b Significant at p≤.05

^c Marginally significant at p≤.10

Table 5
Summary of Predicted and Observed Relationships Between Acculturation, Cultural Factors, Extreme Response Style, and Acquiescent Response Style

Relationship Assessed	Predicted Relationship	Observed Relationship
Extreme Response Style (ERS)		
Spanish Use – ERS	Positive Association	Positive Association
Importance of Preserving Mexican Culture – ERS	Positive Association	No Association
Interaction with Mexican Americans – ERS	Positive Association	Marginal Positive Association
<i>Familismo</i> – ERS	Positive Association	Positive Association
<i>Simpatía</i> – ERS	Positive Association	Positive Association
<i>Machismo</i> – ERS	Positive Association	Negative Association
<i>Caballerismo</i> – ERS	Negative Association	Marginal Positive Association
<i>La Mujer</i> – ERS	Positive Association	Positive Association
<i>La Mujer Abnegada</i> – ERS	Negative Association	No Association
Acquiescent Response Style (ARS)		
Spanish Use – ARS	Positive Association	Positive Association
Importance of Preserving Mexican Culture – ARS	Positive Association	No Association
Interaction with Mexican Americans – ARS	Positive Association	No Association
<i>Familismo</i> – ARS	Positive Association	Positive Association
<i>Simpatía</i> – ARS	Positive Association	Positive Association
<i>Machismo</i> – ARS	Negative Association	No Association
<i>Caballerismo</i> – ARS	Positive Association	No Association
<i>La Mujer</i> – ARS	Positive Association	Marginal Positive Association / No Association
<i>La Mujer Abnegada</i> – ARS	Positive Association	Positive Association / Marginal Positive Association