

THE ROLE OF CULTURE IN THE PROCESS OF COPING WITH STRESS

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ABSTRACT

This study explored coping as a cultural adaptation by studying the role of ethnicity and acculturation stage in shaping coping strategies. One hundred and twenty eight Asians and 155 participants of European descent filled out a survey measuring their length of US residence, coping strategies and psychological distress. Findings revealed that ethnicity interacted with stages of acculturation in influencing coping choice. However, this process worked differently for different coping categories. As acculturation increases, Asians and Europeans became more similar in their use of personal coping resources through problem solving and cognitive restructuring. However, their utilization of social resources such as support seeking became more distinct. This can be attributed to differences in acculturation success and distress associated with social relatedness. Thus, culture serves as both a person variable and a contextual variable in influencing coping choice.

BIOGRAPHICAL SKETCH

Ruohong (Rola) Wei grew up in China and received her B.A. in Psychology from Beijing Normal University in 2001. She received her M.S. in Psychology from Lehigh University in 2004. Since Fall 2004 she has been enrolled in the department of Human Development and Family Studies at Cornell University. Ruohong completed the requirements for the M.A. degree in January, 2007.

To my grandmother

Li, Shenyi.

Your soul is my reason

to grow,

to love,

and to cope with everything in life.

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Introduction

The ability to adapt to stress and adversity is a central aspect in people's survival and adjustment to the ever-changing environment. Successful adaptation requires individuals to manage their emotions, adjust their thinking, and regulate their behaviors when utilizing their personal and social resources to reduce stress. These processes are all part of the coping construct (Compas, Conner-Smith, Saltzman, Thomsen, & Wadsworth, 2001).

Lazarus and Folkman (1984) were among the first to incorporate these components (cognition, emotion, and behavior) in studying the coping process. They proposed the transactional model of coping, which inspired many researchers later to incorporate psychological control and motivation into coping models (e.g. Compas et al., 2001; Schulz & Heckhausen, 1996; Skinner, Edge, Altman, & Sherwood, 2003). These models suggest that coping is affected not only by the nature of stressful events but also by the coper's goals and motivations. Furthermore, both can be shaped by the culture in which one is embedded.

Many studies have examined the role that culture plays in shaping people's choice of coping strategies as well as coping effectiveness. East Asians and West Europeans tend to have different coping preferences. In addition, coping strategies have different effectiveness as a function of the individual's membership in collectivistic/interdependent or individualistic/independent cultures (Chang, 1996; Lam & Zane, 2004; Lee & Liu, 2001; Liao, Rounds, & Klein, 2005; Yoo & Lee, 2005). This approach considers people as the recipients of cultural transmission, and their coping strategies as the consequences of this transmission. As a result, coping becomes a trait associated with one's culture.

Rather than viewing the influence of culture on coping as static and people's coping behaviors as unchangeable traits associated with their cultural background, this project conceptualizes coping as a cultural adaptation and explores the dynamic process of coping among persons experiencing acculturation

into American society. The study selects people of Asian or European descent in different stages of acculturation to the US, and investigates how ethnicity and length of residence in the host culture act together to shape one's coping strategies and coping effectiveness.

Evolution of coping theories

Derived from the work on defense mechanisms evoked by extreme events, the concept of coping began to receive attention among researchers in the 1970s. Coping was once viewed as a personality characteristic, with individuals possessing habitual styles for dealing with stressful situations (see Parker & Endler, 1996 for a review).

In the transactional model proposed by Lazarus and Folkman (1984), coping was defined as the cognitive and behavioral efforts that people use to manage specific external and/or internal demands of a situation appraised as stressful. During the stage of appraisal, people first evaluate whether what is happening is relevant to their values, goal commitments, beliefs about self and world, and situational intentions. Then they think about what they can do to deal with the situation if it is perceived as stressful and threatening.

If an event has been appraised as stressful, individuals begin to engage in the coping process and try to return to their previous emotional state. Coping strategies are generally divided into two types: problem-focused and emotion-focused (Lazarus & Folkman, 1984; Lazarus, 1993). Problem-focused coping acts directly on the environment or the individual to allow the person to re-adjust to the changed environment. Emotion-focused coping reduces emotional distress by helping the individual to avoid things that cause the stress or by changing the meaning of what is occurring (Lazarus, 1993; Lazarus & Folkman, 1984).

Lazarus' model emphasizes coping as a process, and its change over time is contingent upon a variety of factors such as demands and resources from the

environment, and personality dispositions that affect appraisal (Folkman & Moskowitz, 2004). According to this model, coping is oriented towards resolving stress and managing emotions, which are the result of how we cognitively appraise or evaluate the fate of our goals in adaptational transactions (Lazarus, 1999).

Other researchers have also viewed coping as goal directed and motivational in nature (Rothbaum, Weisz, & Snyder, 1982; Schulz & Heckhausen, 1996; Weisz, 1990). However, these frameworks focus on the relationship between perception of controllability and subsequent coping behaviors. The sense of controllability, which refers to the ability to cause an intended event, is crucial in human being's adaptation. The motivation to feel in control is expressed in two types of coping behaviors. Primary control refers to attempts to change objective conditions so that they fit one's self and needs. The targets of change are people, objects, events, circumstances, symptoms, and problems. Secondary control is defined as one's attempt to fit in with the objective conditions while controlling the psychological impact. The changes are directed towards one's own expectations, wishes, goals, perceptions, and attitudes.

Skinner and Wellborn (1994) also used a motivational approach, and defined coping as "how people regulate their behavior, emotion, and motivational orientation under conditions of psychological distress" (p. 112). This model posits that there are three kinds of basic psychological needs: the need for relatedness, which involves close relationships with important social partners; the need for competence, which refers to the need to achieve positive outcomes and avoid negative ones in interactions with the environment; and the need for autonomy, which is the need to freely make one's choice and decisions. Unsatisfied needs lead to coping behaviors, which are further identified based on whether they are triggered by challenge or threat, and based on whether they target the self or the context. When coping is regulated flexibly, "behavior is active and intentional,

emotion is channeled, and orientation is goal directed” (p. 113, Skinner & Wellborn, 1994).

Compas and colleagues defined coping as “conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and environment in response to stressful events or circumstances” (p.89) (Compas et al., 2001). Stress responses are distinguished along two dimensions: voluntary versus involuntary, and engagement (fight) versus disengagement (flight). Since coping refers to voluntary responses in this model, it is further distinguished by goals that direct coping behaviors towards primary control or secondary control.

Built on the models above which advocate for a motivational component in coping, Skinner et al. argued for a system of multidimensional action categories to create higher order taxonomies of coping (Skinner, Edge, Altman, & Sherwood, 2003). Action refers to behaviors but simultaneously takes into consideration the individual’s emotions, attention, and goals. Goals and emotions energize and direct attention and behavior. Thus, the authors suggested that when identifying the unit of analysis for conceptualizing transactions between people and their context, it should be action instead of behavior.

Using action type as the unit of analysis for conceptualization and drawing on coping research, Skinner and colleagues proposed 5 core higher order categories of coping: problem solving, support seeking, avoidance/escape, distraction, and cognitive restructuring. Problem solving is oriented towards resolving problems by using instrumental action, strategizing, planning, logical analysis, etc., and it is compatible with primary control in some coping frameworks (e.g. Conner-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Rothbaum, Weisz, & Snyder, 1982; Schulz & Heckhausen, 1996). Support seeking includes looking for both emotional and informational support. Escape/avoidance includes efforts to orient away from the stressful transactions, such as denial and avoidant actions. Distraction refers to actively deal with

problems by engaging in activities that direct attention away from the stressful situations. Cognitive restructuring is defined as active attempts to view stressful situations from a positive perspective, and accommodate oneself to the external conditions. This construct is considered as secondary control by some coping theories (e.g. Conner-Smith et al., 2000; Rothbaum, Weisz, & Snyder, 1982; Schulz & Heckhausen, 1996).

Culture and coping

The model proposed by Skinner and colleagues (2003) to examine coping systematically within the motivational framework of psychological control has only been used to study within American Whites. Researchers have yet to explore whether this model fits people from other cultures. In fact, one's internalized cultural background shapes the way the person handles social environments and reconciles them with his or her goals and beliefs (Lazarus, 1999), which directly affects one's coping behaviors.

According to Markus and Kitayama (1991), people from different cultures have remarkably different construals of the self, of others, and of the interdependence of the two. In many Western cultures that emphasize independence and uniqueness, construing the self requires that "individual behavior is organized and made meaningful primarily by reference to one's own internal repertoire of thoughts, feelings, and action" (p. 226). In many Asian cultures, however, the development of an interdependent self that focuses on the relationships of the person to others is central.

As a result, these models of self affect individual's cognition, emotion, and motivation (Markus & Kitayama, 1991; Trandis, 1989; Trandis, 1995). In terms of the influence on cognition, people with interdependent selves are more attentive and sensitive to others than those with independent selves. Being knowledgeable about others in various social relationships serves the function of maintaining a

harmonious relationship with others, which is crucial for one to survive in an interdependent culture. These principles have been deeply rooted in people's minds and daily practice since Ancient years in Asian cultures. For example, Confucius once said: "Do not be dismayed when others don't understand you. Be dismayed when you failed to understand others" ("不患人之不己知，患不知人也", from The Analects of Confucius).

Emotional expression varies upon whether an individual has an interdependent or an independent self. People with interdependent selves are more likely to express and experience other-focused emotions such as sympathy and shame (Markus & Kitayama, 1991). In addition, people with interdependent selves often avoid negative emotions such as anger to promote harmony in social situations (Wang, 2001). As a result, they use more obliging, avoiding, integrating, and compromising styles to deal with conflict (Triandis, 1995). In contrast, people with independent selves manage and practice more ego-focused emotions like anger, frustration, and pride to maintain and affirm the construal of the self as an autonomous entity.

In terms of the influence on motivation, those with interdependent selves are more likely to be motivated by socially oriented goals such as belonging, fitting in, occupying one's proper place, promoting others' goals, and maintaining harmony. As a result, self-control and self-restraint are highly valued because they instrumentally facilitate one's adjustment to social contingencies. However, people with independent selves are more likely to be driven by self-oriented motives that promote autonomous desires and individual needs.

Research that has compared coping and coping effectiveness among participants from Asian and Anglo cultural backgrounds has confirmed some of these cultural differences. For instance, social support was used more widely among Asians such as Indians than White Americans (Sinha, Willson, & Watson, 2000), and perceived social support was found effective in buffering stress among

Chinese who had an external locus of control (Liang & Bogat, 1994). Asians used more problem avoidance than White Americans, and avoidance coping did not seem to be dysfunctional for Asians (Chang, 2001). In addition, Asians were more likely to use secondary control strategies which are oriented towards changing oneself to fit the situation when dealing with stress, whereas White participants in America tended to use primary control which targets changing the situation to fit the self (Flammer, Ito, Luthi, Plaschy, Reber, Zurbriggen & Sugimine, 1995; Lam & Zane, 2004; McCarty, Weisz, Wanitromanee, Eastman, Suwanlert & Chaiyasit, 1999; Weisz, Rothbaum, & Blackburn, 1984).

A major pitfall in previous research that has examined cultural influence on stress, coping, and emotions is that most of extant research only restates the cultural values of countries and ethnic groups (Lazarus, 1999). That is, these studies portray the relationship between coping and cultural influence as static and uni-directional: people are the recipient of cultural transmission, and their coping strategies are the consequences of such transmission. As a result, coping becomes a trait associated with one's culture.

However, people are not just passive receivers of cultural information. Rather, they actively reconstruct their own internal world and their external environments through the semiotic and instrumental mediation of culture (Cole, 1996; Cole, 2005; Valsiner, 2000). Individuals constantly experience the dual process of internalization of information from the larger culture and externalization of their personal meaning systems that help them to make sense of the world. When there is conflict between one's internalized personal-cultural principles and socially suggested demands from the larger collective-cultural world composed by others, individual reconstructs his or her thinking, feelings, and actions to resolve the conflict. As a result, he/she incorporates, neutralizes, or rejects incoming social suggestions.

This bi-directional cultural transfer model suggests some important directions for studying how culture influences coping. Coping should be viewed as a cultural adaptation (Bailey & Dua, 1999), rather than either as a person variable that determines one's coping style (Pearlin & Lieberman, 1979) or as a peripheral environmental factor that does not directly affect one's coping behaviors (Lazarus, 1999). The choice of coping strategy is dependent on the interaction between social demands and individual's negotiation with and co-construction of the environment.

An ideal population in which to study this process is people with bi-cultural backgrounds who are in the process of acculturation. In acculturation, people experience conflicts due to the discrepancies between their original culture and host culture with regard to social structures, institutional arrangements, political processes, and value systems (Church, 1982; Ward, Bochner, & Furnham, 2001). One needs to cope with these conflicts effectively to re-gain the person-environment match. However, coping strategies promoted in the home culture might not be effective in the new cultural environment. As a result, people must learn coping strategies that are defined by the new cultural setting as appropriate and use these new strategies in place of those from their culture of origin.

Purposes of the present study

The present study examines coping as a cultural adaptation process among Asians who have acculturated in the US for various lengths of time. People of European descent were used as a comparison group since their culture of origin is more similar than Asian culture to US culture. The study had the following goals. The first goal was to test the validity of Skinner's coping model among participants other than White Americans. The second goal was to study the interaction between ethnicity and length of US residence on the use of various types of coping. Since a simple examination of the frequency of use of various

coping strategies reveals very little about how coping relates to adjustment outcomes, the third goal was to systematically explore the influence of ethnicity and length of US residence on the coping effectiveness of each coping category.

The following hypotheses were formed, built on the theoretical framework on cultural differences between Asian and Western cultures and its implication on coping behaviors. First, an interaction between ethnicity and length of US residence would be observed in the use of several coping categories: with increasing time in the US, Asians would tend to use less support seeking, less avoidance and less cognitive restructuring. In addition, ethnic differences may be observed in the use of these coping at the beginning of people's acculturation in the US due to the original difference between Asian and European cultures, but such discrepancy may be lessened as their acculturation proceeds. No specific prediction was formed in terms of the use of problem solving and distraction since relevant research in previous literatures is scarce. Second, it was predicted that support seeking, avoidance coping and cognitive restructuring would be effective among Asians who were in their early stage of acculturation, but not among people of European descent.

Method

Participants

The participants in this study were graduate students enrolled in a university in upstate New York. The data collection was conducted by using two methods and at two time points. The first half of the data was collected in Fall 2005, by using paper-based survey. One hundred and eight participants were recruited individually or in small groups in various social gatherings on campus. The second half of the data collection was conducted in Summer 2006, by using the online version of the same survey. Two hundred and six participants were recruited with the assistance of the graduate school. Electronic mail messages

were sent to enrolled graduate students, including those who subscribed to listserv's of graduate student organizations focused on international students.

A final sample of 283 graduate students completed the whole survey, with 128 Asian students (62 women and 66 men) and 155 students with European descent (72 women and 83 men). The participants were between the ages of 20 and 40 years old, and the average age of the Asian sample ($M = 26.62$, $SD = 4.25$) was the same as that of the European sample ($M = 26.70$, $SD = 3.59$).

Procedures

The survey was designed to be completed in less than 10 minutes. During the first part of data collection which used paper-based survey, participants were approached in the social gatherings by a female researcher and were asked politely to participate in a survey. If they agreed to take part in the survey, participants were given a consent form containing information about the study. Participants read the form, asked any questions that they had, and signed the form. Then participants were left alone to work on the survey. The researcher later collected the signed consent forms and the completed surveys and thanked participants.

For the online survey, a survey company (surveymonkey.com) was used to place the survey on the web. The consent form was put on the first page, and participants were required to click on the button "I have read the consent form, and I agree to participate in the study" before they could go to the second page which contained the survey content. The researcher's contact information was contained on the consent form, and participants were instructed to telephone or email the researcher if they had any questions regarding the study. Participants were also informed that they could quit the survey at any time by closing the browser if they felt uncomfortable answering any of the questions in the survey. After participants finished and submitted the survey online, a webpage popped up with a thank you message and some stress management tips as a compensation for their time.

Participant recruitment was assisted by the graduate school and various graduate students' listservs. A message including a brief description of the study and the weblink of the survey was sent to the email accounts of graduate students who were enrolled at Cornell. The survey kept open online for two months after the messages were sent out. Participants could get access to the survey anytime in these two months from any place with an internet connection.

Materials

The survey included three sections: demographic information, coping strategies, and psychological adjustment.

Demographic characteristics. Participants were asked to report their age (in years), gender, marital status (single, married, or other), ethnicity (Asian, European, or other), their birthplace (US-born or foreign-born), and length of residency in the U.S. (by months).

Coping strategies. The Brief COPE (Carver, 1997) was used to measure the use of different coping strategies in response to stress and problems in people's life in general. It consists of 14 2-item subscales, with each subscale assessing a different type of coping strategy: Self-Distraction (e.g. "I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping"), Active Coping (e.g. "I've been taking action to try to make the situation better"), Denial (e.g. "I've been refusing to believe that it has happened"), Substance Use (e.g. "I've been using alcohol or other drugs to make myself feel better"), Use of Emotional Support (e.g. "I've been getting comfort and understanding from someone"), Use of Instrumental support (e.g. "I've been getting help and advice from other people"), Behavioral Disengagement (e.g. "I've been giving up trying to deal with it"), Venting (e.g. "I've been expressing my negative feelings"), Positive Reframing (e.g. "I've been trying to see it in a different light, to make it seem more positive"), Planning (e.g. "I've been

thinking hard about what steps to take”), Humor (e.g. “I’ve been making fun of the situation”), Acceptance (e.g. “I’ve been accepting the reality of the fact that it has happened”), Religion (e.g. “I’ve been praying or meditating”), and Self-Blame (e.g. “I’ve been blaming myself for things that happened”). Participants rated each coping statement in terms of how much they had used it on a 4-point scale. The response scale is: 1 = Not at all, 2 = A little bit, 3 = Medium amount, 4 = A lot. The score of each coping strategy was the average for the two items within the subscale.

The Brief COPE was originally created based on the full COPE inventory (Carver Scheier, & Weintraub, 1989). The data was from a study of survivors of Hurricane Andrew, and the Brief COPE has been shown to have adequate internal reliability (Carver, 1997). The Brief COPE was chosen for the present study, because it has been used to measure general coping styles among Asians in their adjustment to Western culture and has been reported to have acceptable reliability (Bailey & Dua, 1999).

Psychological adjustment. Participants completed the K6 Mental Health Screening Scale (Kessler et al., 2002). It includes 6 items measuring psychological distress (sadness, nervousness, restless or fidgety, hopelessness, everything being an effort, and worthlessness). Respondents indicated on a 5-point Likert scale the degree to which they had experienced each feeling during the past four weeks. The response scale is: 0 = None of the time, 1 = A little of the time, 2 = Some of the time, 3 = Most of the time, 4 = All of the time. K6 was selected to assess psychological distress in the present study because it has proven to be a brief and valid measure for use in general-purpose health surveys (Kessler et al., 2002). Reliability analysis of the 6 items yielded a Cronbach alpha of .85 in the current sample.

Results

First, preliminary analyses were performed to assess the need for control variables in the main analyses. Subsequent analyses were in connection with hypotheses testing, and focused on the individual variation (ethnicity and length of US residence) in the use of the five coping categories. The final analyses examined the effectiveness of each coping category among these different sociocultural groups.

Preliminary analyses to identify control variables

Subgroups of the participants with various length of US residence.

Subgroups of participants with different acculturation stages as follows. Participants' length of US residence was coded into five categories: less than 1 year, between 1 and 3 years, between 3 and 5 years, between 5 and 10 years, and longer than 10 years. Table 1 classifies participants by ethnicity (Asian vs. European descent) and their length of US residency. Among the 127 Asian participants, each subgroup has approximately the same number of people. However, among the students with European descent, participants were not equally distributed across the five subgroups, and a large number of participants had resided in the US for more than 10 years.

Correlations among the variables. Correlations among the demographic variables (age, gender, marital status, ethnicity, birthplace, and length of US residence), the five coping categories, and distress level are shown in Table 2. Age, gender, and marital status were significantly correlated with some coping categories. Specifically, being older was positively correlated with the use of problem solving, support seeking, and cognitive restructuring. Being female was positively related to the use of support seeking. Being married was correlated with greater use of problem solving, support seeking, and cognitive restructuring. In addition, birthplace was positively related to ethnicity and negatively related to

length of US residence. That is, foreign-born participants were more likely to be Asians and tended to have shorter length of US residence.

Distress across ethnicity and length of US residence. A regression analysis was conducted to test whether level of distress varied as a function of ethnicity, length of US residence, and the interaction of these two variables. Neither main effect nor interaction was detected. That is, distress level was independent from both ethnicity and the length of US residence.

Thus, age, gender, marital status, and birthplace were set as control variables for all analyses predicting the use of coping categories and coping effectiveness.

Research question I: Testing the validity of Skinner and colleague's model of 5 higher order categories of coping in the current sample.

First, a factor analysis was conducted using the 14 Brief COPE subscales. An oblique rotation was adopted to allow for correlations among the factors (Skinner et al., 2003). This analysis yielded five factors with eigenvalues equal to or greater than 1.0 (ranging from 0.995 to 3.598), and these factors together accounted for 65.14% of the response variance. Table 3 presents the eigenvalues and the variance explained by each factor.

The first factor was composed of Active Coping, Planning, and Acceptance. Denial and Behavioral Disengagement formed the second factor. The third factor included Use of Emotional Support, Use of Instrumental Support, and Venting. The fourth factor was composed of Substance Use, Religion, and Self-Blame. The fifth factor was composed of Self-Distraction, Positive Reframing, and Humor. The factor loadings for each of the five factors are shown in Table 4.

Table 1. Number (and Percentage) of Participants Falling into Specific Categories by Ethnicity and Length of Residence

Length of Residence	Ethnicity	
	Asian (%) (n = 127)	European (%) (n = 154)
US Residency		
< = 1 year	23 (76.7)	7 (23.3)
1-3 years	21 (55.3)	17 (44.7)
3-5 years	19 (65.6)	10 (34.4)
5-10 years	15 (57.7)	11 (42.3)
> 10 years	49 (31.0)	109 (69.0)

Table 2. Correlations Among Demographic Variables, Coping Categories, and Psychological Distress

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Age (years)	--											
2. Gender ^a	.02	--										
3. Marital status ^b	.39**	-.05	--									
4. Ethnicity ^c	-.01	.02	.02	--								
5. Birthplace ^d	.07	-.08	.05	.41**	--							
6. US residency (months)	.07	.12*	-.00	-.36**	-.91**	--						
7. Distress	.02	.06	-.04	-.02	-.03	.03	--					
8. Problem solving	.19**	.09	.14*	.03	.05	-.01	.02	--				
9. Avoidance	-.01	-.07	-.05	.13*	.10	-.12*	.54**	-.05	--			
10. Support Seeking	.12*	.28**	.15*	-.17**	-.10	.11	.20**	.41**	.08	--		
11. Distraction	.00	.10	.03	.05	-.02	.03	.28**	.14*	.25**	.24**	--	
12. Cognitive restructuring	.16**	.03	.19**	.15*	.04	-.01	-.02	.51**	-.04	.37**	.22**	--
<i>N</i>	281	280	283	283	282	282	282	283	283	283	283	283
<i>M</i>	26.66	0.47	0.19	0.45	.49	189.80	7.05	5.67	2.77	7.22	2.57	5.35
<i>SD</i>	3.89	0.50	0.40	0.50	.50	138.10	4.55	1.43	1.03	2.00	0.75	1.27

Note. ^aDummy variables within this category are measured as 0 = male, 1 = female. ^bDummy variables within this category are measured as 0 = single, 1 = married. ^cDummy variables within this category are measured as 0 = European, 1 = Asian. ^dDummy variables within this category are measured as 0 = US-born, 1 = Foreign-born.

* $p < .05$, ** $p < .01$

This factor structure fits nicely though not perfectly with the model proposed by Skinner et al. (2003), which suggested 5 core higher order families of coping: problem solving, escape/avoidance, support seeking, distraction, and cognitive restructuring. Table 5 compares the two and reveals some discrepancies: (1) In Skinner's model, problem solving did not include Acceptance, and the construct of problem solving was instrumental action and strategy oriented; (2) Substance use, Religion, and Humor were not part of Skinner's model; (3) cognitive restructuring in Skinner's model was defined as "active attempts to change one's view of a stressful situation in order to see it in a more positive light" (p. 242). It did not include Self Distraction which was categorized separately as distraction.

Several steps were performed to address the discrepancies between the theoretical model developed by Skinner and colleagues and results from factor analysis. First, since Substance Use, Religion, and Humor were not covered in Skinner's model, they were eliminated from the categorization. Secondly, in our factor analysis, Self Blame loaded on the fourth factor (-.41), but with a strong secondary loading on the second factor (.40). Thus, it was omitted from further categorization as well. Finally, Acceptance was put together with Positive Reframing as one category named "Cognitive restructuring", since this construct reflects changing the self to accommodate the stressful situation (Conner-Smith et al., 2000, Skinner & Wellbourn, 1994; Skinner et al., 2003).

Table 3. Coping Factors, Eigenvalues, and Percentage of Variance Explained By Each Factor

Factors	Coping strategies	Eigenvalues	% of Variance
Factor 1	Active coping Planning	3.597	25.70
Factor 2	Acceptance Denial Behavioral disengagement	2.266	16.19
Factor 3	Emotional supp Instrumental supp Venting	1.187	8.48
Factor 4	Substance use Religion Self blame	1.073	7.66
Factor 5	Self distraction Positive reframing Humor	0.995	7.11

Table 4. Factor Loadings for Each Coping Factor

Coping strategies	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Active coping	0.85	-0.05	-0.05	-0.03	-0.17
Planning	0.85	-0.01	-0.05	-0.02	-0.03
Acceptance	0.61	-0.06	0.10	0.04	0.36
Denial	0.00	0.86	0.12	0.04	0.05
Behavioral disengagement	-0.16	0.80	0.02	0.02	0.09
Emotional support	-0.09	-0.18	-0.94	0.02	0.07
Instrumental support	0.05	0.01	-0.86	0.15	-0.01
Venting	0.20	0.12	-0.52	-0.34	0.10
Substance use	0.10	0.32	-0.06	-0.60	-0.11
Religion	0.18	0.37	-0.22	0.72	-0.17
Self blame	0.15	0.40	-0.16	-0.41	0.11
Self distraction	0.01	0.21	-0.11	-0.15	0.53
Positive reframing	0.41	-0.07	-0.09	0.31	0.47
Humor	-0.07	0.05	-0.05	-0.02	0.81

Therefore, five higher order categories of coping were produced for subsequent analyses to study the effects of culture on coping (Table 5): (1) “Problem solving” includes Active Coping and Planning, with a Cronbach’s Alpha of .78 in the current sample; (2) “Avoidance/Escape” includes Denial and Behavioral Disengagement, $\alpha = .70$; (3) “Support Seeking” includes Emotional Support, Instrumental Support, and Venting, $\alpha = .75$; (4) “Distraction” includes Self-Distraction only; and (5) “Cognitive restructuring” includes Positive Reframing and Acceptance, $\alpha = .56$. The score for each higher order of coping was created by summing individual coping strategy scores within the category.

Research question II: How might people’s use of coping categories vary as a function of their ethnicity and length of US residence?

To investigate this research question, five hierarchical regressions were conducted to test the use of each coping category, with ethnicity, length of US residence, and the interaction of the two as predictors. I began by entering control variables (age, gender, marital status, and birthplace), followed by dummy variables for ethnicity (European descent as 0, Asian descent as 1). Next I entered length of US residence, and finally an interaction term for ethnicity and length of US residence.

The use of avoidance coping was found to vary by ethnicity, with Asians using avoidance more often than Europeans independent of their length of US residence, $B = .240$, $p = .08$.

In addition, ethnicity significantly interacted with length of US residence for three coping categories. In the case of problem solving, the length of US residence did not significantly predict the use of problem solving for either Europeans or Asians. However, the direction of the regression line for Europeans was opposite to that for Asians although neither was significant (Europeans: $B =$

Table 5. Comparison of Skinner’s Multidimensional Higher Order Coping Categories, Factor Structures from Factor Analysis, And the Model Used in Current Study

Factors from factor analysis	Skinner’s model	Model used in current study
Factor 1	Problem solving	Problem solving
Active coping	Instrumental action	Active coping
Planning	Direct action	Planning
Acceptance	Planning	
Factor 2	Escape	Escape
Denial	Avoidance	Denial
Behavioral	Disengagement	Behavioral
disengagement	Denial	disengagement
Factor 3	Support seeking	Support seeking
Emotional support	Comfort seeking	Emotional support
Instrumental support	Help seeking	Instrumental support
Venting		Venting
Factor 4	Distraction	Distraction
Substance use	Behavioral	Self distraction
Religion	distraction	
Self blame	Cognitive	
	distraction	
Factor 5	Cognitive restructuring	Cognitive restructuring
Self distraction	Positive thinking	Positive reframing
Positive reframing	Self-encouragement	Acceptance
Humor		

.004, $p > .10$; Asians: $B = -.002$, $p > .10$). This may account for the significant interaction ($p < .05$).

Similar trends were observed in the use of support seeking. Although the length of US residence did not significantly predict support seeking for either Europeans or Asians, the direction of the regression line for Europeans was opposite to that for Asians (Europeans: $B = .003$, $p > .10$; Asians: $B = -.003$, $p > .10$), which may account for the significant interaction ($p = .08$).

Ethnicity also interacted with length of US residence to predict use of cognitive restructuring, $p < .05$. Although longer US residence tended to predict greater use of cognitive restructuring among Europeans ($B = .004$, $p = .08$), there was no link between the length of US residence and use of cognitive restructuring among Asians ($B = -.002$, $p > .10$).

In order to further explore the interaction effects of ethnicity and length of US residence on the above three coping categories (i.e. to study the change of ethnic difference across various acculturation stages), a series of 2 (ethnicity: European or Asian) * 5 (length of US residence: less than 1 year, 1-3 years, 3-5 years, 5-10 years, and longer than 10 years) analyses of covariance (ANCOVA) were conducted. In each ANCOVA, the covariates were age, gender, marital status, and birthplace. The dependent variable was each of the three coping categories. The means and standard deviations for each coping category with effect for ethnicity and length of US residence are shown in Table 6.

For the use of problem solving, the interaction between ethnicity and the length of US residence was significant, $F(4, 264) = 2.66$, $p < .05$. Figure 1 displays the least squares means for the use of problem solving among participants with various lengths of US residence, for each ethnic group. Between group comparisons indicated that Asians used more problem solving than Europeans when they were in the US for less than 3 years. Specifically, among those whose US residence length was less than 1 year, Asians ($M = 5.59$, $SD = 1.30$) used more

problem solving than Europeans ($M = 4.43$, $SD = 2.11$), $F(1, 264) = 3.67$, $p = .06$. A similar result was found for participants whose US residence length was between 1 and 3 years. Asians ($M = 6.38$, $SD = 1.30$) used more problem solving than Europeans ($M = 5.24$, $SD = 1.56$), $F(1, 264) = 5.93$, $p < .05$. Such ethnic differences in the use of problem solving disappeared, however, when the length of US residence was longer than 3 years.

For the use of support seeking, the interaction between ethnicity and the length of US residence was significant, $F(4, 264) = 3.44$, $p < .01$. Figure 2 presents the least squares means for the use of support seeking among people with various lengths of US residence, for each ethnic group. Between group comparisons indicated that Asians sought less social support than Europeans when their length of US residence was longer than 5 years. For participants whose US residence length was between 5 and 10 years, Asians ($M = 6.35$, $SD = 1.67$) used less social support than Europeans ($M = 8.23$, $SD = 1.86$), $F(1, 264) = 10.54$, $p < .01$. Similarly, for participants whose US residence length was greater than 10 years, Asians ($M = 6.65$, $SD = 2.10$) used less social support than Europeans ($M = 7.67$, $SD = 1.99$), $F(1, 264) = 6.73$, $p = .01$. Such ethnic differences in the use of support seeking were not observed, however, among those whose length of US residence was shorter than 5 years.

For the use of cognitive restructuring, the interaction between ethnicity and the length of US residence was significant, $F(4, 264) = 2.48$, $p < .05$. Figure 3 displays the least squares means for the use of cognitive restructuring for participants with various lengths of US residence, for each ethnic group. Between group comparisons indicated that Asians used more cognitive restructuring than Europeans when their length of US residence was shorter than 3 years. Specifically, for participants whose US residence length was less than 1 year, Asians ($M = 5.52$, $SD = 1.19$) used more cognitive restructuring than Europeans ($M = 4.36$, $SD = 1.57$), $F(1, 264) = 4.17$, $p < .05$.

Table 6. Means (and Standard Deviations) for the Five Coping Categories in the Sample, with Effects for Ethnicity and Length of US Residence

Coping Categories	European					Asian				
	Residence <= 1 yr	Residence 1-3 yr	Residence 3-5 yr	Residence 5-10 yr	Residence > 10 yr	Residence <= 1 yr	Residence 1-3 yr	Residence 3-5 yr	Residence 5-10 yr	Residence > 10 yr
Problem solving	4.43 (2.11)	5.24 (1.56)	5.85 (1.23)	6.15 (1.57)	5.69 (1.47)	5.59 (1.30)	6.38 (1.30)	5.82 (1.03)	5.80 (1.16)	5.36 (1.56)
Support seeking	6.21 (1.87)	6.82 (2.17)	7.05 (2.01)	8.23 (1.86)	7.67 (1.99)	7.09 (2.03)	7.70 (1.82)	7.06 (1.91)	6.35 (1.67)	6.65 (2.10)
Cognitive restructuring	4.36 (1.57)	4.62 (1.43)	5.25 (1.21)	5.42 (0.89)	5.29 (1.25)	5.52 (1.19)	6.00 (1.27)	5.82 (0.92)	5.48 (1.37)	5.35 (1.27)

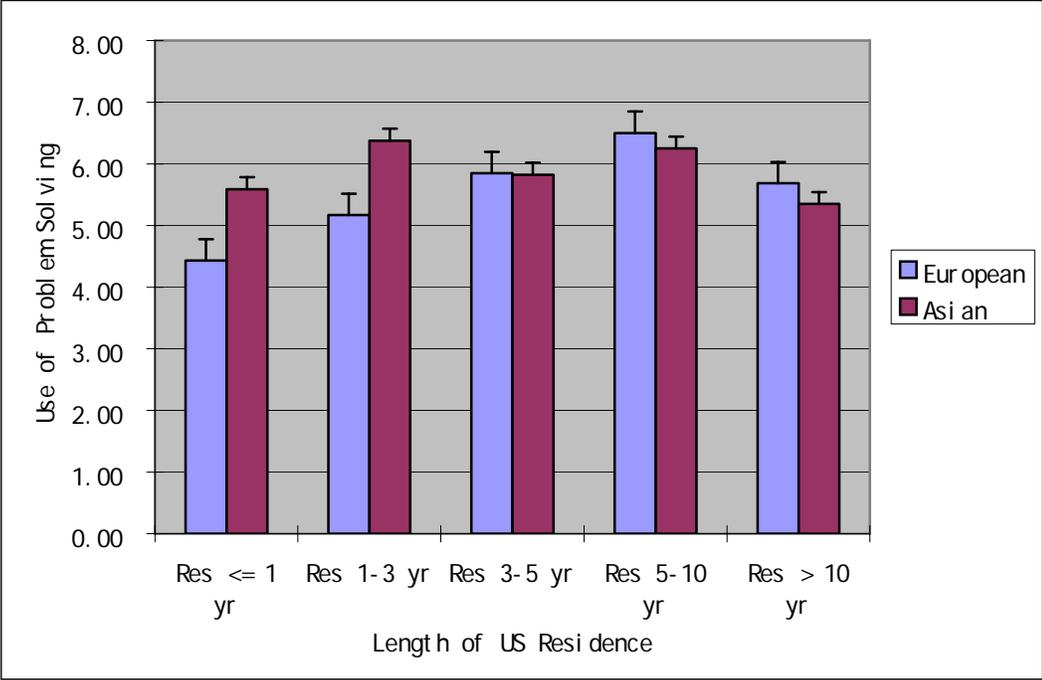


Figure 1. Use of problem solving across each subgroup of US residence length between Europeans and Asians

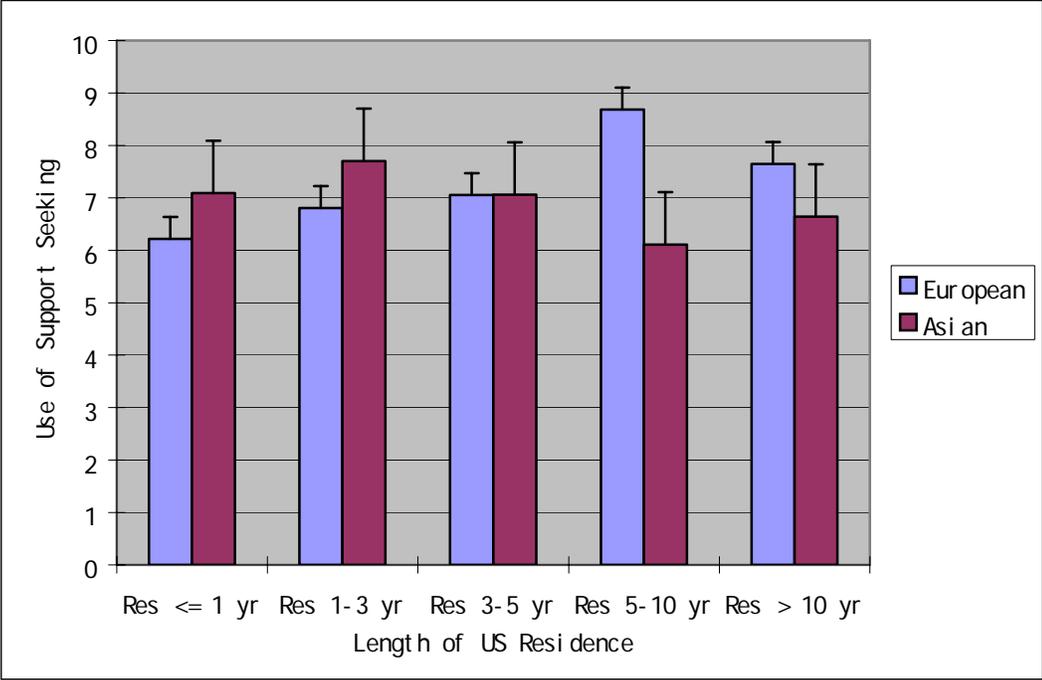


Figure 2. Use of support seeking across each subgroup of US residence length between Europeans and Asians

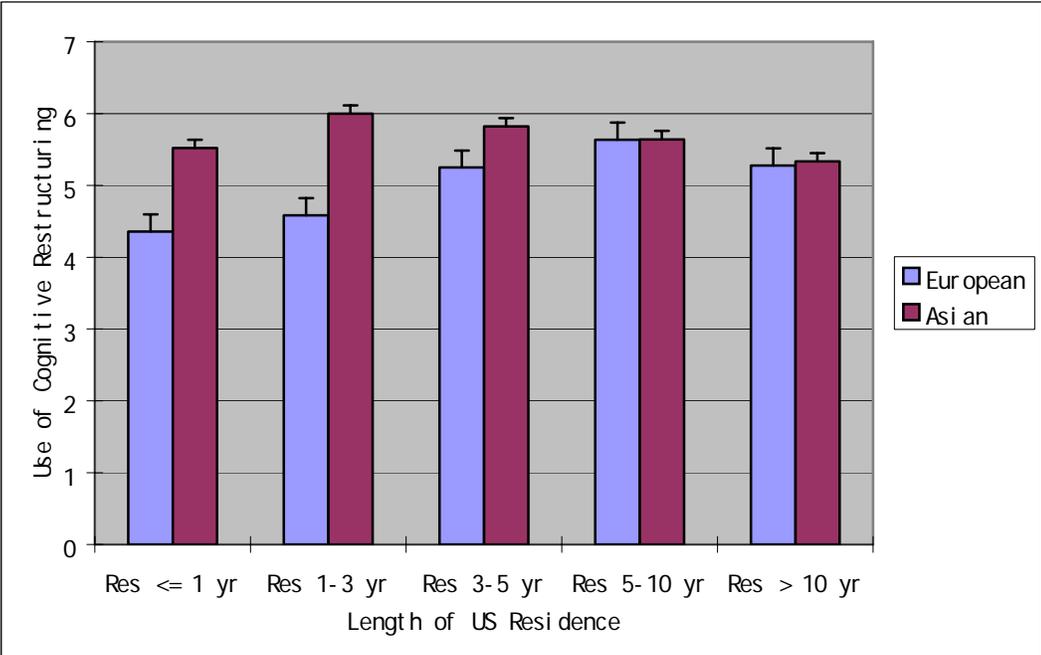


Figure 3. Use of cognitive restructuring across each subgroup of US residence length between Europeans and Asians

Similarly, for participants whose US residence length was between 1 and 3 years, Asians ($M = 6.00$, $SD = 1.27$) used more cognitive restructuring than Europeans ($M = 4.62$, $SD = 1.43$), $F(1, 264) = 12.05$, $p < .01$. However, such ethnic differences in the use of cognitive restructuring disappeared after they have resided in US for longer than 3 years.

Research question III: How might the effectiveness of the five coping categories vary as a function of people's ethnicity and length of US residence?

To investigate this research question, five hierarchical regressions (one for each higher order category of coping) were conducted with psychological distress as the outcome, and with ethnicity, length of US residence, each of the five coping category, and the interaction as predictors. In step 1, I entered control variables (age, gender, marital status, and birthplace), followed by dummy variables for ethnicity in step 2, length of US residence in step 3, and one of the five coping categories in step 4. In step 5, I entered the interaction between ethnicity and length of US residence, followed by the interaction between ethnicity and the coping category in step 6 and the interaction between length of US residence and the coping category in step 7. In step 8, the three way interaction ethnicity*length of US residence*coping was entered.

Significant main effects were found for four coping responses. Specifically, use of problem solving predicted more distress ($B = 0.369$, $p = .06$), as did the use of avoidance ($B = 2.480$, $p < .001$), the use of support seeking ($B = .494$, $p < .01$), and the use of distraction ($B = 1.70$, $p < .001$). This was the case across both Asian and European groups, as well as for participants with various lengths of US residence.

Only one interaction was detected. Specifically, cognitive restructuring interacted with length of US residence to predict distress level, $B = .003$, $p = .05$. In order to explore this interaction effect in more detail, separate regressions were

conducted for each of the five subgroups with different lengths of US residence (≤ 1 year, 1-3 years, 3-5 years, 5-10 years, and > 10 years). The control variables were age, gender, marital status, and birthplace. It was found that the relationship between the use of cognitive restructuring and distress level was negative for both the group whose length of US residence was less than 1 year ($B = -1.974, p < .05$) and the group whose US residence length was between 5 and 10 years ($B = -2.493, p < .05$). No significant relationship between the use of cognitive restructuring and distress level was observed among the other subgroups of US residence length.

Discussion

The purposes of the current study were three fold: (1) to test the validity of the five higher order categories of coping proposed by Skinner et al. (2003) among people other than White Americans; (2) to explore people's use of these coping categories within the framework of cultural adaptation by studying the effect of the interaction between ethnicity and length of US residence; and (3) to systematically investigate the relation between coping and adjustment outcomes by studying the interaction effect of ethnicity and length of US residence on coping effectiveness.

The factor analysis results showed that Skinner and colleague's model is valid within populations other than White Americans. Two higher order categories of coping from the model avoidance coping and support seeking overlapped with the results produced by the factor analysis. Substance use, religion, humor, and self blame from our coping measures were eliminated either because they were not included in Skinner and colleague's model or because they had equal loadings on more than one factors. Acceptance was grouped together with positive reframing to form the category of cognitive restructuring and a separate category for self distraction was created. As a result, five higher order categories of coping were formed: problem

solving; avoidance; support seeking; distraction; and cognitive restructuring. The Cronbach's Alphas for each coping category had adequate internal reliability, which suggests the soundness of the classification.

Consistent with the hypotheses, ethnicity interacted with length of US residence in shaping the use of cognitive restructuring and support seeking. However, contrary to our prediction, Asians' use of these coping strategies was stable over time and did not fluctuate with acculturation. That is, participants of Asian descent who were from an interdependent/collectivistic cultural background, maintained coping strategies encouraged by their culture of origin despite acculturation in the independent/individualistic US culture.

At the first glance, these results seem to suggest that coping is a trait associated with the culture of origin, independent from the current cultural context. Asians' habitual coping behaviors for dealing with stressful situations are not affected by their acculturation process. However, after participants of European descent were compared with Asians across different acculturation stages, ethnic differences in the use of three coping categories were found during certain acculturation stages but not during the others. In comparison to people of European descent, Asians used more problem solving and cognitive restructuring when the length of their US residence was less than 3 years. This ethnic difference disappeared, however, in the later acculturation stages. In addition, no ethnic difference was found in the use of support seeking during the early stage of acculturation, but Asians became less likely to use social support than Europeans after the length of their US residence was longer than 5 years.

These findings raise two interesting questions: (1) Why would Asians use problem solving more often than Europeans only during their early stage of acculturation? (2) What mechanism leads to distinct patterns that vary by ethnicity in

the use of the three coping categories (problem solving, cognitive restructuring, and support seeking) as length of US residence increases?

We did not form a specific hypothesis regarding the use of problem solving in relation to ethnicity and the length of US residence due to the lack of theoretical support and relevant empirical studies. Some researchers consider problem solving as a type of primary control (Skinner et al., 2003). Asians are expected to use little primary control which targets the environment rather than the self for the sake of conforming to social norms and maintaining social harmony (Weisz, Rothbaum, & Blackburn, 1984). Thus our findings might seem counterintuitive to some extent. However, our results are consistent with some research that has found that Asians such as Filipino Americans used problem solving more than Caucasian Americans (Bjorck, Cuthbertson, Thurman, & Lee, 2001). These researchers did not provide a clear explanation for this ethnic difference, but other studies lend some support to justify Asian's use of problem solving. For example, researchers have suggested that Asians not only have a "harmonizing self" which relates to acceptance to self, others, and nature, but also have a "endeavoring self" that allows them to be pragmatic, action-oriented, and motivated to overcome obstacles (Kwan, Sodowsky, & Ihle, 1994). This duality leads to Asians' utilization of acceptance and endurance simultaneously in their coping (Hepper, Hepper, Lee, Wang, Park, & Wang, 2006). Our data confirmed such duality and suggest that in the context of dealing with acculturative stress (i.e. general problems in one's acculturation process), Asians were able to utilize both primary control and secondary control: problem solving and cognitive restructuring.

Our results showed that in comparison to Europeans, Asians used both types of control at a higher frequency in the early stage of their acculturation. This difference between the two ethnic groups may be the result of different amounts of individual effort needed to meet situational demands of growing up in their culture of origin. In

comparison to European countries that are more affluent and have a more relaxed life style, many Asian countries have relatively low economic status which leads to harsher competition and more a stressful environment within the society. For example, 26 million college students graduated in China in 2004, but available jobs in the society were only half of this amount (Educational Department of China, 2004). Thus, the coping capacities required to guarantee survival in Asian cultures may promote greater utilization of both primary control and secondary control.

The distinct cultural environments where Asians and Europeans grew up and developed their coping styles may have created the gap in their coping behaviors during the initial stage of their acculturation to the U.S. As a result, Asians used more problem solving and cognitive restructuring than Europeans when the length of their US residence was less than 3 years. However, this gap was bridged over time because their shared acculturation experience shaped participants from different cultures so that their coping behaviors became more similar to one another.

An alternative explanation is that in comparison to Europeans, Asians may face some extra challenges in their initial stage of acculturation that lead to higher use of primary and secondary control. For example, research has found that Asians experience some unique difficulties such as language barriers and lack of familiarity with Western cultural norms (Yeh & Inose, 2002). As acculturation proceeds, however, the ethnic gap in challenge and difficulties in acculturation is reduced. As a result, their use of primary control become more similar to one another, so does their use of secondary control. Both explanations reflect a dynamic process in which coping is affected not only by one's personal characteristics such as ethnicity but also by the context such as the stage of acculturation.

One might ask why then the opposite trend was observed for support seeking? Specifically, Asians used the same amount of social support as Europeans did in the

early stage of their acculturation, but ethnic differences started to occur after the length of their US residence went above years with Asians using less social support than Europeans. One argument is that social support is a qualitatively different type of coping from problem solving and cognitive restructuring. It involves social network and interpersonal relationships of various kinds (Cohen, 2004), whereas problem solving and cognitive restructuring are coping strategies at more of an individual and personal level.

In the model proposed by Skinner et al. (2003), the authors also distinguished these two types of coping (i.e. coping strategies that use intrapsychic resources versus those that utilize interpersonal resources). Perceived control is a type of personal coping, that includes both primary control and secondary control (Rothbaum, Weisz, & Snyder, 1982). Our results suggest that as the length of acculturation increases, Asians and Europeans become similar in terms of utilizing personal resources of perceived control to deal with stress.

However, communal coping that uses social resources such as support seeking might be different in that it involves the needs for relatedness. In the early stage of acculturation, Asians and Europeans may have the same resources for social support which would be their family members and friends in their home culture for emotional support and international students' office for informational support. Thus, they may not differ in the utilization of support seeking. With increasing time in the US, Asians and Europeans start to differ in terms of how well they acculturate in the US society. Europeans may become more acculturated than Asians because the shorter distance between European culture and American culture enables Europeans to acculturate faster than Asians. This leads to the difference in how much the two ethnic groups value social relatedness and how much they utilize social resources existent in the US society.

Our findings also showed that Asians used avoidance coping more often than Europeans independent of their length of US residence, which is consistent with other findings (Chang, 2001). This result indicates that not every type of coping is sensitive to contextual change. In comparison to Europeans, Asians are more likely to give up on actively coping with stressful situation and to use denial more often, and this is the case across various stages in their acculturation. This might reflect Asians' internal tendency to avoid conflicts, directed by their motivation to maintain social harmony (Triandis, 1995).

In terms of coping effectiveness, cognitive restructuring negatively predicted distress among those whose length of US residence was less than 1 year and those whose US residence length was between 5 and 10 years. This might indicate that coping effectiveness is shaped by environment. During the first year of acculturation, adjustment difficulties are the most salient (Church, 1982). Between the fifth and tenth years in the US, it is likely time for many graduate students to look for a job. These situations sometimes could be perceived as uncontrollable, which makes cognitive restructuring (i.e. secondary control) more effective (Rothbaum, Weisz, & Snyder, 1982).

Limitations of the study

There are limitations of the present study that bear mention. First, this study measured general coping style instead of one's coping with specific stressors. Although it examined coping within the context of acculturative stress, particular types of stressors were not explored. Previous findings suggest that coping preferences and coping effectiveness are largely determined by specific stressors (Eckenrode, 1991; Wethington & Kessler, 1991). For example, avoidance coping

appears to be maladaptive in dealing with interpersonal stressors or chronic illness (Mattlin, Wethington, & Kessler, 1990).

Second, information about coping and adjustment was obtained retrospectively, and it is unclear to what extent these reports accurately reflect one's coping behaviors and adjustment. It will be helpful in the future to shorten the lag between experience and reporting to minimize recall biases by using methods such as daily diary methods (Eckenrode & Bolger, 1997; Ong, Bergeman, & Bisconti, 2004).

Third, the number of participants was not equally distributed across subgroups with different lengths of US residence in the two ethnic groups. For people of European descent, more participants were in the subgroup whose length of US residence was longer than 10 years. Although we do have at least 7 participants in each cell for analysis, this unbalanced data may reduce the validity of our results. In addition, the cross-sectional design may be a less accurate way to capture one's acculturation process than a within-subject design.

Finally, measurement limitations in the current study require caution in interpreting the results regarding coping effectiveness. Coping effectiveness was assessed by regressing the level of psychological distress onto coping strategy, controlling for covariates. However, there was no time lag between the observation of coping and that of adjustment outcomes. As a result, the relationship found in the regression might only reveal a co-variation rather than a prediction of distress by coping. In that case, our result is in concordance with prior research findings that one's sense of uncontrollability of a stressful situation may trigger his/her use of cognitive restructuring (Heckhausen & Schulz, 1995; Skinner et al., 2003).

Conclusions

This project extended existing research on how culture shapes one's coping choice and effectiveness by examining the effect of ethnicity and length of US residence in the context of acculturation. In addition, it explored the validity of the motivational framework of psychological control in categorizing coping strategies among populations other than White Americans.

It appears that rather than viewing coping as a trait associated with one's cultural background, it should be considered as a cultural adaptation which is shaped by both a person variable such as ethnicity and an environmental variable such as the stage of acculturation. However, this process may work differently for different coping categories. As acculturation proceeds, Asians and Europeans become more similar in using personal coping resources (i.e. problem solving and cognitive restructuring). Their utilization of social resources such as social support, however, becomes more distinct due to the differing success in acculturation to the US culture. Coping strategies like avoidance coping are not affected by the acculturation process. Thus, we concluded that the role of culture in influencing one's coping behaviors should not be viewed either as a person variable or an environmental variable. Rather, coping reflects a process of cultural adaptation, and it is influenced differently by one's cultural background, the social context, and the interaction of the two, depending on the specific type of coping measured.

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