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Characteristic differences between Chinese and Western cultures are argued to have meaningful implications for attributional belief research and its extension into new cultural settings. This study examined attributional beliefs within and across samples from Taiwan and the United States. To meet unique demands inherent in Chinese culture, an externally oriented perspective was introduced. Accordingly, a new instrument for the assessment of attributional beliefs was developed and demonstrated as providing reliable dimension measurement. Results indicated that although the internal structure of the attributional belief construct appeared valid across the samples, the patterns of dimension relations within each sample were unique. Furthermore, internal and external locus dimensions, assessed separately, appeared to represent distinct concepts and show differential association with adjustment variables. Findings were interpreted based on socio-cultural differences between the samples.

**AN EXTERNAL ORIENTATION
TO THE STUDY OF CAUSAL BELIEFS
Applications to Chinese Populations
and Comparative Research**

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Efforts to study causal attributional beliefs in Asian populations are increasing. Because research surrounding the attribution process has largely been carried out in Western cultures (Anderson, 1983; Peterson et al., 1982; Russell, 1982; Weiner, 1979), these efforts are subject to the challenge inherent in relatively undeveloped endeavors in cross-cultural and indigenous research: that the basic tenets through which a concept is understood be reevaluated (Markus & Kitayama, 1991; Triandis, 1989; Yang & Bond, 1990; Yu & Yang, 1994). Unique aspects of previously less explored cultures will likely demand that the theoretical assumptions and methods related to a

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psychological construct be reconsidered. Furthermore, knowledge about the construct as it has been understood in one culture may inhibit objective evaluation of a construct's nature as it operates in a new culture (Ichheiser, 1944). Thus, designs for contemporary research and the interpretation of consequent findings must be considered with as open a mind as possible in an effort to avoid contamination from previous work.

This study focused on exploring causal attributions and their subsequent implications for individuals in Chinese and Western cultures. The primary challenge faced here was how to measure attributional beliefs in Chinese populations so that potentially unique Chinese patterns would be adequately represented. Further, it was hoped that results from Chinese populations would allow for comparison with results from Western populations. At the outset, it is critical to accept that beliefs about cause in the social environment, and the behavioral, psychological, and social implications of these beliefs, will involve both similarities and differences across Western and Chinese cultures. For example, the history of attribution research has been entwined with Western conceptions of achievement—conceptions that have been founded on relatively individualistic representations of the self. On the other hand, Confucian tradition has influenced the development of Chinese achievement conceptions leading to more collective representations of the self (Ho, 1986, 1994; Yang, 1995; Yu, 1996; Yu & Yang, 1994). The idea that Chinese people tend to define themselves in the contexts of their social networks has strong implications for what may be anticipated in terms of attributional belief patterns. Thus, an adequate pursuit of understanding the attribution process within Asian populations, and comparisons to the process in Western populations, requires a reconsideration of the basic approaches to exploring these issues (Crittenden, 1994).

This study was designed to address methodological issues related to the exploration of causal attributions for personal experiences both within and between Chinese and U.S. populations. Furthermore, the implications of how these attributions may contribute to understanding social and psychological adjustment were considered. It is argued that examining causal attributions through their underlying dimensions will maximize sensitivity to potential differences between cultural groups.

SPECIFIC CONSIDERATIONS FOR CHINESE POPULATIONS

Given the depth and uniqueness of Chinese culture, causal belief patterns observed in Chinese populations should be expected to show orientations that

differ from those that have been discerned and described in Western contexts. Confucian values, beliefs, and behavior in Chinese culture have been described as (a) reflecting a relatively collectivist (versus individualistic) perspective (Hui, 1988; Triandis, 1990); (b) involving serious concern for the establishment, maintenance, and protection of “face” (Gabrenya & Hwang, 1996; Hwang, 1987); and (c) guided by notions of filial piety and relational determinism (Ho, 1994; Yang, 1995). This set of characteristics that distinguish the Chinese culture may be seen as reflecting a relatively external orientation. The development of social cognitive processes within such a context involves considerably more attention to agents and forces outside the “individual” self (i.e., toward the development of a more “collective” self that may operate in place of or in coordination with an individual self). These external agents and forces are not necessarily seen as stronger or more pervasive than those that might be found in more Western societies. Rather, it is the relative attention to and consideration of external factors versus internal factors within the Chinese culture that is argued to differ from how this balance exists in Western cultures. Particularly with regard to such a relatively external orientation, currently available methods for the study of causal beliefs appear inadequate for use in Chinese populations (Crittenden, 1994). The design of the Attributional Belief Scale (ABS) introduced here, and associated data analytic strategies attended to this concern through an effort to foster sensitivity for the discovery and representation of potentially unique aspects of causal beliefs as they may differ between Chinese and U.S. groups.

RATIONALE FOR A NEW MEASURE OF ATTRIBUTIONAL BELIEFS

The development of a new instrument for assessing Chinese attribution patterns was deemed necessary given the unique demands of Chinese populations. Conceptualizations of causal thinking were developed within one setting and, for limited purposes, should not be assumed sufficient for export into new settings (Weiner, 1983; Yang & Bond, 1990). Methods must continue to evolve when important variation in a relevant causal belief system may not be adequately assessed by existing methods. The potential for unique aspects and patterns of attributional response in Chinese populations demands that research methods be flexible and receptive to diverse findings. The basis for the conceptualization of attributional beliefs on which the ABS was developed was intended to provide a new and useful strategy for assessing attributional beliefs. Crittenden (1994) stressed a need for the “development and validation of measuring instruments that are well-grounded in

research on the salience and dimensionality of causes for Chinese respondents” (p. 10). The development and application of the ABS represents an effort consistent with this agenda.

Two general approaches, attribution dimension and attribution category, have been widely applied to identify differences in attributional patterns and their relations to other variables (Anderson, Jennings, & Arnoult, 1988; Anderson & Riger, 1991; Peterson & Seligman, 1984; Robins, 1988; Russell & McAuley, 1986; Sweeney, Anderson, & Bailey, 1986; Weiner, 1979). In the dimension approach, individual differences in attributional style (AS) are represented by variation in the patterns of scores across some set of attribution dimensions (e.g., locus, stable, global), and the implications of differences in attributions for events made across these dimensions are explored. In contrast, attribution category approaches typically involve a priori decisions about categories most relevant and useful to understanding the cause of an event. Respondents rate the importance of each category to an event or decide which category best explains the event in question. Subsequently, the interpretation of results from this method usually involves assumptions about the underlying combination of attribution dimensions making up each category.

However, with regard to categorical approaches, concern has arisen that a priori determined categories may confound their underlying dimensional structure. Weiner (1983) argued that this concern is particularly pertinent to attributional analysis within new research contexts (e.g., domain of behavior, cultural setting). Moreover, the basis of these assumptions likely involves a sociocultural component that could further confound results intended for more culturally-based exploration and comparison. Thus, the decision to employ the attribution dimension approach stemmed from the view that as our knowledge of this area expands to include cultural variation, more distinctive and valid information will be available through the exploration of the underlying dimensional structure of causal beliefs.

As discussed below, the only fundamental change in current dimension approaches was the creation of separate, continuous internal and external scales. This strategy represents a top-down approach to method development—alteration of an existing, albeit Western-developed, methodology to allow for the discovery of potentially new information. It is a yet unanswered empirical question whether this expanded approach will prove adequate for the questions addressed here. More bottom-up or ethnographic approaches might be applied to discover which new or currently examined dimensions appear most meaningfully in Chinese thought. However, the dimensions applied here are relatively natural and, through a variety of possible combinations, expected to be useful in representing causal beliefs in both Western and Chinese groups.

ATTRIBUTIONAL BELIEF SCALE

The ABS was developed to provide functionally equivalent measures for use in both English- and Chinese-speaking populations. The design was intended to capitalize on existing work and, at the same time, demonstrate increased sensitivity to an external orientation and provide increased reliability within the individual dimension scales.

The ABS employs four dimensions: internal, external, stability, and globality. As most attribution dimension instruments include the locus and stability dimensions central to Weiner's (1974, 1985) attribution model, the most unique characteristic of the ABS conceptualization and measurement approach focuses on representing "locus" beliefs through separate internal and external dimensions. The idea that semantically and logically related concepts, such as internality and externality, do not represent opposing psychological constructs is not unprecedented. Examples of such distinctions can be found in work related to job satisfaction/dissatisfaction (Herzberg, Mausner, & Snyderman, 1959), modernity/traditionality (Yang, 1996), and individualism/collectivism (Gelfand, Triandis, & Chan, 1996; Singelis, Triandis, Bhawuk, & Gelfand, 1995). As such, the rationale for separating the locus dimension here was twofold. First, despite extensive study as an attribution dimension, the locus has consistently been plagued with conceptual and empirical weakness by showing low levels of internal consistency (Lieber, 1996; Peterson & Villanova, 1988). One explanation for this shortcoming may be that the concept has not been adequately represented. Whereas other dimensions have been represented in a continuous manner (low vs. high), the locus has been consistently operationalized through a bipolar scale (internal vs. external). This response format excludes the possibility that internal and external aspects of cause may be thought of as independent. As such, respondents have been unable to report distinctions between causes they may understand as both highly internal and external, and those they understand as neither internal nor external. In either case, the respondent is compelled to select the locus scale's midpoint. Allowing for independent internal and external ratings on continuous scales avoids these previous restrictions. A second aim in dividing the locus scale was to increase sensitivity to an external perspective. As argued above, although the validity of such a distinction in attribution research has not been explicitly examined, the extension of causal belief research into new cultures requires that the general utility of existing methods be reconsidered and revised wherever necessary—in this case, by inviting evidence related to more external social orientations.

ASIAN-WESTERN COMPARISONS IN ATTRIBUTION RESEARCH

In past research, consistent differences have been found when comparing American and Asian causal beliefs. Attribution category findings have shown that compared to Asians, Americans tend to report higher ability and internality attributions for success events and more evidence of a self-protective bias. They report relatively higher attributions to ability for success than for failure events (Chiu, 1988; Mizokawa & Ryckman, 1990; Yan & Gaier, 1994). Yan and Gaier (1994) observed that compared to Asians, Americans reported significantly greater effort attributions for successful achievement events than for failure. Additionally, a similar but insignificant trend in the difference between Americans and Asians in their ability attributions was observed. Asians (i.e., Chinese, Japanese, Korean, and Southeast Asians) reported equal levels of effort attributions for both success and failure events. Similarly, Mizokawa and Ryckman (1990) found that Asians reported equal levels of attributions to ability and effort across success and failure events. Viewed from a dimensional perspective, attributions to ability are often interpreted as indicating greater attribution to internal and stable causes, whereas attributions to effort indicate greater attribution to internal and unstable causes (Weiner, 1985). Taken as a whole, it appears that many of the attribution category findings that indicate differences between Americans and Asians revolve around the locus dimension. These locus differences include both findings related to the degree/level of locus attributions and to the relative differences between locus attributions for positive and negative events (see Crittenden & Bae, 1994). Additionally, although not as clearly delineated, the stability dimension may also be associated with observed differences between Americans and Asians in their attributions to effort and ability. Yet, the relative contribution of stability and locus in accounting for these findings is difficult to discern through the attribution category results. One of this study's goals was to provide a more discriminating look at these suggested American-Asian differences.

Attribution dimension methods provide another perspective to research with Chinese and American populations (Lee & Seligman, 1997; Si, Rethorst, & Willimczik, 1995). For example, Lee and Seligman (1997) argued that American students (both Caucasian and Chinese) were more optimistic than their mainland Chinese counterparts. They defined optimism through scores derived from the Attributional Style Questionnaire (ASQ) (Peterson et al., 1982)—a measure focused on locus, stability, and globality dimension ratings for sets of positive and negative events. Higher internal, stable, and global ratings for negative events have been associated with more

depressive thinking (Peterson & Seligman, 1984; Seligman, Abramson, Semmel, & von Baeyer, 1979; for review, see Abramson, Metalsky, & Alloy, 1988). According to Lee and Seligman, optimism was represented by the sum of locus, stability, and globality ratings for positive events minus the sum of locus, stability, and globality ratings for negative events. They further found that optimism in mainland China was positively related to achievement, confidence, persistence, and good health—a finding consistent with that of attribution research in the United States. However, reliance on composite scores may unnecessarily limit the information available to discover and understand within and between culture differences. Similar to category approaches, how attribution dimension ratings may contribute to representations of optimism or other psychological phenomena, and, in turn, how this representation of optimism relates to a set of other variables, cannot be discerned through composite score results. As the contribution of individual dimensions to a composite may vary given the situation, culture, or in relation to other variables (Lieber, 1996), the attribution dimension level of analysis applied here may be more useful in identifying important cultural variation (Carver, 1989).

In other dimension work, Chiu (1988) compared ratings by students in the United States and Taiwan on individual achievement responsibility (essentially a locus of control measure). The Taiwanese students reported accepting less academic responsibility for success events (lower internality) and more academic responsibility for failure events (higher internality) than U.S. students. Thus, similar to attribution category findings, accumulating dimension evidence indicates that particular attention should be paid to the locus dimension in cultural comparison research. At the same time, particularly for stability beliefs in their links to ability and effort, the role of other dimensions in cultural differences remains in question and is explored further in this study.

The main goals of this study were to (a) present a new conceptualization and operationalization—the ABS—for exploring causal beliefs; (b) examine the utility of the ABS for understanding causal beliefs within and between Chinese and U.S. populations; and (c) demonstrate the reliability and potential validity of the ABS. Data from the ABS and measures of concepts previously explored through attributional strategies (i.e., achievement, esteem, well-being, and depression) were collected from Taiwan and U.S. samples. It was anticipated that the characteristics of the ABS would provide individual attribution dimension scores with greater internal consistency than available from the application of existing measures. Given dimension scores with greater reliability, the scales could then be used to demonstrate the validity of the ABS representation of the attribution construct. Specifically, the following was expected:

1. The internal consistency of the ABS dimension scales would prove acceptable for their application in dimension-level analyses.
2. Consistent patterns of intercorrelation would be found between the ABS dimension scores across the Taiwan and U.S. samples, thus demonstrating the consistency of the attributional belief construct across these groups.
3. The validity of the ABS instrument would be supported by the convergence of mean subscale comparisons across these groups with previous findings. That is, compared to the United States, the Taiwan group would report (a) lower internal attributions for positive events; (b) higher internal attributions for negative events; (c) lower differential scores between internal ratings for positive and negative events (i.e., fewer self-enhancing biases); (d) lower stability ratings for positive and, with less certainty, for negative events; and (e) lower internal-based composite scores.
4. The pattern of relations between attribution dimension scores and other variables for the U.S. sample would converge with previous findings in Western populations, whereas a unique pattern would emerge from the Taiwan sample.
5. The externality ratings would prove independent from the internality ratings, and shed new light on our current understanding of locus differences across culture. Furthermore, particularly for the Taiwan sample, externality ratings would emerge in unique, significant relations with the adjustment variables explored here.

METHOD

PARTICIPANTS

Eighty-six midwestern U.S. university students (42 of which were female) and 118 Taiwan university students (84 of which were female) provided data for this study and received course credit for their participation. The U.S. sample was made up of mostly first- and second-year students from middle- to upper-middle-class families. Of this sample, 76% were Caucasian, 15% were African American, and the remaining 9% were students from Latino, Asian, and Indian backgrounds. The Taiwan sample was made up of first- and second-year students from middle- to upper-middle-class families, and all were of Chinese background. Both groups represented typical student characteristics in their respective universities.

INSTRUMENTS

The ABS was developed as part of the study to allow for broader consideration of attributional beliefs. Other variables, which will be described later, were included to provide validation for the attribution measure. This set of variables was selected to represent the range of correlates with which attributional beliefs have been associated in past work.

Attributional Beliefs

The ABS¹ was used to assess attributional beliefs. As with other dimension scales, the ABS instructs respondents to report a main cause for each event and make dimension ratings for this cause. Although it is common to think of events as having multiple causes, it is believed that the dimension ratings reflect respondents' broader sense of cause, and their providing a main source serves to center this general understanding (Lieber, 1996). Beyond the unique aspects described above, the ABS also differs from existing measures in its instructions and event content. The ABS instructions lead the respondent to focus on actual rather than hypothetical life events. Furthermore, the event content of ABS items, although modeled after existing measures, evolved through the process of creating meaningfully equivalent items in both Chinese and English. Events commonly experienced by respondents from both cultures and described coherently and naturally in both languages were retained. The language of the measure evolved through an iterative process as the concepts and event descriptions in the measure were clarified in both the English and Mandarin Chinese versions. Three bilingual Chinese and two native English speakers participated in a process of translation, back-translation, and modification (Brislin, 1986) until satisfactory English and Chinese instruments were developed (see the appendix for English version).

Achievement

Because many of the students participated in this research during their first year of university study, achievement was assessed through their academic course grade point average (GPA) during their last year in high school. Their GPA was recorded on a 5-point system—zero points for a failing grade and four points for an A grade.

Esteem

Esteem was assessed with the Self-Esteem Questionnaire (SEQ) (Dubois & Felner, 1991). Application of a general scale for self-esteem was seen as inadequate for the purposes of this study. Western conceptions of general self-esteem have been criticized as only appropriate for use in cultures emphasizing an individually oriented self (Yang, 1995; Yu & Yang, 1994). This instrument was selected because of its focus on distinct components of self-esteem. The SEQ scales that assessed general, peer, and student aspects of esteem were applied here.

Well-Being

Subjective well-being was assessed through a one-item satisfaction with life scale (SWLS) which has shown strong positive correlations with multi-item well-being scales (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993).

Depression

A Chinese translation of the Self-Rating Depression Scale (SRD) (Zung, 1965) was applied to assess depression. This measure of depression was selected for two reasons. First, the scale emphasizes physical manifestations of depression, which are more characteristic of a Chinese depressive experience. Second, the SRD is focused on trait depression. Given the relatively nondepressed nature of the populations under study, it was seen as more appropriate to focus on trait rather than state depression.

RESULTS²

The main purposes of the analyses carried out here were to establish the validity of the ABS instrument and its potential for use in exploring attributional beliefs within and between U.S. and Taiwan samples. The first set of analyses focused on demonstrating the psychometric strengths of the measure. Once the reliability of the attribution dimension subscales was demonstrated, they were applied in analyses intended to demonstrate their broader utility. Finally, as sample size prohibited extensive cross-cultural comparison, the main focus was on the examination of within-sample patterns of relations between the variables.

ABS SUBSCALE INTERNAL CONSISTENCY RESULTS

ABS subscale internal consistency (i.e., Cronbach's alpha coefficient) results for both samples are presented in Table 1. Aside from the internality scale results, particularly for the U.S. sample, the overall internal consistency of the attribution dimension scale scores appeared strong (see Table 1). Though caution must be observed with regard to internality scales, given the goals of this study to explore the nature of attribution dimensions within and across culture, the dimension scales were considered adequate for use in further analyses.

TABLE 1
Attributional Belief Scale (ABS)
Subscale Descriptive and Internal Consistency Findings

<i>ABS Subscale</i>	<i>Taiwan (n = 118)</i>			<i>United States (n = 86)</i>		
	M	SD	α	M	SD	α
Dimension scales						
Positive internality	5.14 ^a	.49	.60	5.70 ^a	.53	.49
Positive externality	4.14 ^a	.77	.80	3.71 ^a	.89	.68
Positive stability	5.33 ^a	.64	.82	5.80 ^a	.54	.70
Positive globality	5.21	.76	.79	5.31	.80	.73
Negative internality	4.91	.63	.64	4.74	.70	.46
Negative externality	4.11	.74	.73	4.25	.76	.49
Negative stability	4.66 ^b	.75	.82	4.93 ^b	.76	.76
Negative globality	4.85	.84	.79	4.85	.91	.78
Composite scales						
Positive internal	5.22 ^a	.50	.86	5.60 ^a	.48	.79
Negative internal	4.81	.58	.86	4.84	.63	.82
Positive external	4.80 ^a	.47	.81	5.13 ^a	.43	.63
Negative external	4.47	.52	.80	4.51	.55	.74

NOTE: Internal composite scores consist of sums across ratings for stability, globality, and internal scales. External composite scores consist of sums across ratings for stability, globality, and external scales after reverse coding of external scale responses.

a. Related means sharing this superscript differ at $p < .001$.

b. Related means sharing this superscript differ at $p < .01$.

CORRELATIONS BETWEEN ABS SUBSCALES

The correlations between the ABS subscales were examined for their indication of consistency in the structure of AS across the two populations (see Table 2). Whereas these dimensions have proven valid in studies with Western samples, similar evidence has yet to be provided for Chinese populations. The pattern of relations across the two samples indicated a remarkable degree of similarity. Using Fisher's r to z transformation, no pair of coefficients across culture was found to be significantly different. Moreover, in most cases the coefficients were strikingly similar in direction and magnitude. These results are suggestive of the construct's structural stability across the two populations studied.

TABLE 2
Correlations Among Attributional Belief Scale
Subscales by Culture (Taiwan/U.S. Samples)

	<i>Positive Event</i>				<i>Negative Event</i>			
	<i>Int</i>	<i>Ext</i>	<i>Sta</i>	<i>Glo</i>	<i>Int</i>	<i>Ext</i>	<i>Sta</i>	<i>Glo</i>
Positive								
Int		.02/-.05	.40/.44	.36/.22				
Ext			-.01/.05	.09/.31				
Sta				.59/.48				
Glo								
Negative								
Int	.31/.18	.26/.21	.03/.18	.10/.21	.17/-.32	.44/.29	.31/.36	
Ext	.35/.26	.52/.34	.25/.09	.27/.15		.02/.11	.04/.05	
Sta	.05/.17	.21/.07	.37/.42	.24/.21			.57/.66	
Glo	.02/.07	.15/.15	.20/.34	.49/.37				

NOTE: Taiwan sample $n = 118$, U.S. sample $n = 86$. Int = internality, Ext = externality, Sta = stability, and Glo = globality. Correlations were calculated after controlling for sex of subject. Taiwan sample's correlation coefficients $> .19$ ($p < .05$), $> .23$ ($p < .01$), and $> .29$ ($p < .001$). U.S. sample's correlation coefficients $> .20$ ($p < .05$), $> .26$ ($p < .01$), and $> .34$ ($p < .001$).

ABS SUBSCALE MEAN SCORE COMPARISONS ACROSS SAMPLES

Dimension Rating Comparisons

Although results showed all ABS subscale score variances to be equal across the two samples, a number of significant mean score differences were found between the Taiwan and U.S. samples. It is important to note here that any differences between groups may be partially attributable to differences in scale use and should be interpreted with caution. These results are discussed here for descriptive purposes, and more emphasis should be placed on differences between the groups based on within-group relations between the variables. As such, compared to the U.S. sample, the Taiwan group reported significantly lower internality and higher externality ratings for positive events and lower stability ratings for both positive and negative events (see Table 1). The internality and externality dimension findings were anticipated given previous work. However, the differences in stability ratings are relatively unprecedented. Although attribution category findings related to ability and

effort attributions provide some indication of stability rating differences, they have hitherto not been observed through direct dimension ratings, nor have their implications been fully explored.

In a brief follow-up to the observed stability differences, and as discussed below with regard to internal and external scores, differential scores based on the stability ratings were calculated within each group (i.e., differences between stability ratings for positive and negative events). This process serves as a control for group differences in scale use, and the results can then be compared across groups. Although raw mean score differences were found here, there were no significant differences between Taiwan and the United States on differential stability scores. This result then suggests that past observations of differences between U.S. and Asian populations in their attributions to ability (i.e., internal and stable) and effort (i.e., internal and unstable) may be driven primarily by the internal/external aspect of each attributional category.

Composite Score Comparisons

A comparison of the pattern of differences between the dimension and composite scores reveals the enhanced potential for understanding group differences through the dimension level of analysis. Although significant differences between the groups were observed for positive event composites, the contribution across the three dimensions making up these composites was not balanced. In this case, differences in the internality or externality, and stability ratings each account for a substantially greater portion of the composite differences than the globality ratings. Moreover, although differences were observed for negative event stability ratings, this finding was not reflected in differences between negative event composite ratings. Finally, without an accumulation of consistent evidence there can be no certainty about how patterns of differences between dimension scores may vary from one research context to another. Thus, the findings here indicate that, when available through reliable dimension scores, more specific information about differences between groups is available at the dimension level of analysis.

Replications of Mean Difference Findings With Chinese Populations

To support the validity of the ABS subscales as a representation of the attribution construct, attempts were made to replicate the findings of similar work carried out with more established measures. First, Crittenden and her colleagues (Crittenden, 1989, 1991; Crittenden & Bae, 1994) have considered

differences in locus across culture through differential locus scores represented by the difference between locus scores for positive and negative events. The differential locus strategy can be valuable for cross-group comparison because creating difference scores from conceptually related scales may serve to minimize the effects of culturally based method or response bias and preserve the distinctive influence of ratings for positive and negative events. As this study represents locus beliefs through internality and externality scores, average and differential locus comparisons were replicated through each set of scores. Results revealed that significant differential locus differences were observed between the Taiwan and U.S. groups when calculated through both internality scores ($M_s = .24$ and $.96$ for the Taiwan and U.S. groups, respectively, $p < .001$) and externality scores ($M_s = .01$ and $-.55$ for the Taiwan and U.S. groups, respectively, $p < .001$). With regard to the internality scores, differential scores greater than zero for both the Taiwan and U.S. groups show that causes for positive events are reported as more internal than causes for negative events—evidence of a self-enhancing bias. However, this discrepancy is significantly greater for the U.S. sample, supporting past findings of a stronger self-enhancing bias in Western groups. Externality differential scores of near and less than zero show that causes for positive events are reported as equally (Taiwan) or less (United States) external than causes for negative events. This result can be understood as complementary to that seen with the internality rating—evidence of a significantly stronger self-protective bias in the U.S. sample than the Taiwan sample, but not demonstrative of a self-effacement bias in the Taiwan sample. Overall, these findings indicate that the groups differ consistently for both internality and externality ratings across positive and negative events.

A second replication was carried out based on the Lee and Seligman (1997) comparison of American, American Chinese, and mainland Chinese optimism. Lee and Seligman defined optimism scores as the difference between positive and negative event composite scores consisting of sums across the locus, stability, and globality ratings. These comparisons were carried out separately with composites based on internality and externality (reverse scored) ratings. Results showed significant differences between groups for both pairs of scores (internal based composite $M_s = .42$ and $.76$ for the Taiwan and U.S. groups, respectively, $p < .001$; and external based composite $M_s = .33$ and $.62$ for the Taiwan and U.S. groups, respectively, $p < .001$). As with the individual dimension comparisons described above, these findings replicate those carried out with Lee and Seligman's application of the ASQ and support the ABS's validity in representing the attribution construct.

TABLE 3
Correlations Between Attributional Belief Scale (ABS)
Subscales and Adjustment Variables by Sample (Taiwan/U.S.)

<i>ABS Subscale</i>	<i>GPA</i>	<i>SEQ-Gen</i>	<i>SEQ-Peers</i>	<i>SEQ-Stu</i>	<i>SWLS</i>	<i>Zung SDQ</i>
Dimensions						
Positive internality					.16*/.00	
Positive externality	-.26**/.11			-.16*/.11		
Positive stability			.18*/.13		.24**/.04	-.28***/-.13
Positive globality			.14/.20*		.17*/.09	
Negative internality	-.17*/-.05	-.23**/-.25**		-.24**/-.28**		.17*/.29**
Negative externality		.22*/.00		.18*/.08		
Negative stability	-.18*/-.27**	-.11/-.22*	-.16*/-.18*	-.06/-.32**		.16*/.36***
Negative globality	-.32**/-.20	-.19*/-.05	-.24**/-.21*			.22**/.30**
Composites						
Positive internality			.20*/.18		.26**/.09	
Negative internality	-.27**/-.29**			-.26**/-.28**		.23**/.40***
Positive externality	-.13/.21*	.07/.25*			.24**/.01	-.22*/-.15
Negative externality	-.36***/-.24*	-.21*/-.13	-.29***/-.24*			.20*/.35***

NOTE: Taiwan sample $n = 118$, U.S. sample $n = 86$. Correlations were calculated after controlling for sex of subject. GPA = grade point average, SEQ-Gen = general self-esteem, SEQ-Peers = peer-specific self-esteem, SEQ-Stu = student-specific self-esteem, SWLS = life satisfaction, Zung SDQ = Zung depression rating. Coefficients reported for relations in which at least one sample's result reached a significant level. Internality composites consist of sums across stability, globality, and internality scores. Externality composites consist of sums across stability, globality, and externality scores after reverse coding externality scores.

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

ABS RELATIONS TO ADJUSTMENT INDICATORS

In a second approach to establishing the validity and utility of the ABS, analyses were conducted to examine the relations between the ABS subscales and indicators of psychological adjustment. For each sample, the correlations between the ABS subscales and adjustment variables representing academic achievement, self-esteem, life satisfaction, and depression—variables common in Western studies related to attributional beliefs—were examined. Descriptive results showed all scales to be measured with acceptable internal consistency: Cronbach's alpha coefficient for the Taiwan and U.S. groups of .77 and .88, .75 and .84, .85 and .82, and .77 and .82 for the SEQ-General, SEQ-Peers, SEQ-Student, and Zung SDQ (depression rating), respectively. Furthermore, although the primary focus here was on within-group ABS adjustment variable relations, adjustment variable mean differences were examined. The Taiwan group reported significantly lower scores than the U.S. group on a number of scales: GPA ($M_s = 3.42$ and 3.62 , $p < .01$), SEQ-General ($M_s = 2.51$ and 3.11 , $p < .001$), SEQ-Peers ($M_s = 2.69$ and 2.92 , $p < .001$), and SWLS ($M_s = 4.0$ and 4.84). As discussed above with regard to

the attribution scale differences, mean differences between these samples on these variables may result from differences in scale use across the groups and/or different conceptions of the meaning of each variable in the two cultural contexts. Thus, these variables are used here to examine the ABS adjustment variable relations within each group. Any interpretation of descriptive or correlational findings must consider the implications of culture-specific definition and response style for each concept, and would best be carried out in a more focused investigation.

The general pattern of significant ABS adjustment variable relations in these results, presented in Table 3, can be described through three general characteristics. First, positive event attributions showed significant relations to GPA, SWLS, and Zung scores for Taiwan participants but not U.S. participants. Second, negative event attributions and adjustment score relations were mixed: different dimensions for each of the groups were associated to SEQ and Zung scores, and only the U.S. group showed relations between negative event attributions (i.e., stability) and SWLS scores. Finally, only the Taiwan group showed relations between positive and negative event externality scores and any of the adjustment variables (see Table 3).³

Finally, as an additional illustration of differences in the type of information available through the individual dimension and composite levels of analysis, the relations between composite scores and these adjustment variables were included in Table 3. Similar to the mean difference comparisons, where significant associations were observed between composites and adjustment variable, the contribution across the three dimensions making up these composites was not consistently balanced. Additionally, there are associations between dimension scores and adjustment variables where no relation was found for the relevant composite and that variable (e.g., GPA in Taiwan sample and SWLS in U.S. sample). Thus, these results further indicate the application of dimension scales to exploring the associations between attributional beliefs and adjustment variables.

DISCUSSION

This study provides evidence related to the general study of attributional beliefs and comparisons between Chinese and U.S. samples in the levels and implications of these beliefs. Toward this goal, a new instrument for assessing the attribution construct, the ABS, was developed. ABS subscale scores (i.e., internality, externality, stability, and globality) within and between Chinese and U.S. samples were examined, and their relations with a set of adjustment variables were explored. Despite the sample size limitations, all

attempts to replicate previous work were successful, and hypotheses regarding the locus concept were confirmed. Findings indicated that ABS measurement proved adequately reliable for application at the dimension level of analysis, the structure of the causal belief construct as represented by the ABS was stable across the two cultures, unique patterns of association between ABS subscales and adjustment variables were found across culture samples, and internality and externality responses appear to represent distinct aspects of locus ratings.

VALIDITY EVIDENCE

The ABS as a Representation of the Attributional Belief Construct

Acceptable levels of internal consistency within the ABS dimension scales allowed for an exploration of the internal structure of the attributional belief construct across the two cultures. Along with the argument that the ABS subscales will prove more broadly applicable and useful for multicultural study than currently available scales, it was assumed that the dimensions assessed would provide an adequate and meaningful representation of variation in attributional patterns across these cultures. The striking similarity of dimension score interrelations across the Taiwan and U.S. samples suggests that the structure of the attributional belief construct, as represented by the ABS, is consistent across these groups. This finding is promising toward future exploration of variation in the implications of these beliefs within and across cultural groups, as the construct may be understood to represent a more basic aspect of causal thinking—a relatively universal cognitive structure. However, this does not suggest that the relations between attribution patterns and other variables should remain consistent across culture. Rather, variation in the meaning and implications of attributions and their associations to other variables must be understood through the relevant sociocultural context. This later question asks whether the construct's implications are manifested in similar ways across culture (Leung & Bond, 1989) and was addressed in further analyses here. The convergence of the construct's empirical structure across the groups is seen as establishing a foundation on which any divergence in findings of associations between ABS subscales and other variables may be understood from a more culturally based perspective. To fully understand any observed divergence, a more qualitative investigation of the cultural meaning of each dimension in terms of how cause is determined in each context should be carried out in future work. Whereas this

study sets the groundwork for such an investigation, such an undertaking was beyond the scope of the immediate project.

Mean Comparisons Within and Across Culture

Considerable support for the validity of the ABS is provided by the convergence of mean score difference findings with previous work. All attempts here to replicate previous empirical findings were successful. Moreover, an additional perspective to many of the issues addressed by these comparisons was offered through distinct measurement of an externality dimension. Consistent with predictions, ratings for internality and externality (albeit in an opposite manner) appeared to perform similarly to the locus dimension in past work exploring differences between Asian and Western groups (e.g., Crittenden & Bae, 1994; Lee & Seligman, 1997). Moreover, these findings held true for comparisons involving the individual dimensions and in differential locus scores. This set of results adds further support to the robust finding that differences exist between Asian and Western groups in the distinctiveness of their locus attributions across positive and negative events. Unique here, however, was the discrimination of internality and externality ratings and the demonstration of their relative independence through correlation analysis. This discrimination provides a substantive distinction between locus findings that have been described as both self-enhancing (Seligman et al., 1979; Snyder, Stephan, & Rosenfield, 1978) and self-effacing (Crittenden & Bae, 1994; Tetlock, 1980; Wan & Bond, 1982). The self-enhancing bias can now be specified as a function of internality ratings, whereas the self-effacing bias can be specified as a function of externality ratings.

The emergence of differences between mean stability ratings for both positive and negative events across cultures were implied but not specified in past work examining ability and effort attributions. These findings have shown Asians to report balanced levels of attributions to effort (a controllable and unstable attribution) across positive and negative events (Mizokawa & Ryckman, 1990; Yan & Gaier, 1994). Furthermore, the relatively external orientation of the Chinese culture also implies that the causes of events are, in general, more situational and less stable. This finding may reflect a general cultural difference in beliefs about the stability of causal beliefs. Alternately, given the correlation between internality and stability ratings within valence for both groups, an explanation of this finding may also be based on differences between Asian and Western groups in their tendencies toward the self-enhancing and effacing biases observed with locus ratings. That is, the same variation in sociocultural demands, given positive or negative outcomes

which determine differential locus beliefs, may similarly account for differences in the stability ratings observed here. Moreover, the positive correlation between stability and internality, but not externality, was observed for both samples, regardless of the event's valence. This correlation indicates a link between internality and stability in the perception of an event's cause. As this study was not prepared to evaluate these alternative explanations, further investigation will provide a fuller understanding of the observed differences.

Finally, composite scores comparable to those commonly used in attribution research (e.g., Cutrona, Russell, & Jones, 1985; Mitchell, 1990; Peterson et al., 1982) were calculated to illustrate the potential gains afforded by individual dimension level of analysis. Results showed significant mean differences between the groups for only positive event attributions—through both positive event, but neither negative event, composites (i.e., internally and externally based).⁴ A scrutiny of the positive event attributions shows that the stability and internal (or external) dimensions account for the differences observed in the composite scores. Although differences in the globality ratings between the groups may contribute to the observed composite differences, they do not do so with equal weighting relative to the other dimensions. Furthermore, though no differences were identified by the negative event composites, a significant difference in stability ratings was found at the dimension level. Patterns of differences across the negative event dimension ratings did not show the additive function observed for the positive event attributions. In this case, a significant stability difference was suppressed in the composite scores by the opposing relationship present in the internal and external ratings. These findings demonstrate the additional and more explicit information available through the application of reliable attribution dimension scores.

Overall, the internal consistency and descriptive results indicated that the ABS subscales show acceptable reliability within and discriminant validity across the Taiwan and the U.S. samples. This evidence was taken as supporting the scales' further application. Subsequently, additional analyses addressed questions about the scales' utility and more substantive meaning in relations to other variables.

Relations With Adjustment Variables

It is important to note that it was not the purpose of this study to provide thorough attributional explanations for the psychological adjustment variables examined. Rather, relations between ABS subscales and these variables were included to demonstrate the potential for understanding unique relations as a function of sociocultural context. Thus, only a general interpretation

of these results is offered and directions for further and more focused research is encouraged.

Patterns of associations observed between the ABS subscales converged across the two samples. However, the relations between the ABS subscales and adjustment variables diverged into distinctive patterns for each culture. More specifically, results from the U.S. sample were consistent with previous findings in Western populations—positive associations between depression and the negative event dimensions (internality, stability, and globality), and negative associations between indicators self-esteem and well being and these dimensions. On the other hand, the pattern of results from the Taiwan sample was distinctive. It was notable that significant relations between ABS scores for positive events and adjustment variables emerged only for the Taiwan sample. The most plausible explanation for this finding is provided by previous work, which offers general support for the notion that relatively more salient and meaningful attributional searches are elicited by some threat to the self concept (Bradley, 1978; Epstein, 1990; Heider, 1944). In research with Western populations, this explanation grows from findings that primarily negative events seem to elicit more substantive attribution activity and have more implications for the individual. Experiencing positive events is understood as self-affirming and, as they are consistent with self conception, does not motivate a search for further understanding. With Asians, however, positive and negative events alike can be argued to present the individual with a threat to self-concept-motivation for self-effacing behavior (e.g., Crittenden & Bae, 1994)—and hence may elicit a relatively substantive attributional search (Liu & Steele, 1986; Miller & Ross, 1975; Steele, 1988). Thus, whereas the function of causal attribution is seen as similar across culture, the meaning and implications of each attribution dimension-adjustment indicator relation is determined by distinct sociocultural factors. Consequently, unique patterns of relations between attribution dimensions and adjustment variables consistent with this theory were observed across the cultural groups. These observations seem to be a clear indication that the psychological meaning of the relations between ABS and adjustment variables varies as a function of culture. A more specific understanding of the meaning of each of these relations will emerge through more focused research related to each phenomenon.

Finally, findings related to differences in the relations between ABS subscales and adjustment variables across culture provide a second illustration of the dimension level analysis benefits. Within each culture, ABS relations with each adjustment variable demonstrate the relative clarity provided by the dimension ratings. An examination of the relations between attribution scores and each adjustment variable shows high inconsistency in the

correspondence of significant relations between composites and the individual dimensions making up the composite. For example, the relation between the internally-based negative event composite and general self-esteem, the underlying dimensions making up the composite seem to contribute in a balanced way across both cultures. In contrast, the internally based positive event composite's relation to peer self-esteem seems based primarily on the stability dimension and is only observed in the Taiwan sample. Moreover, there are a number of significant relations between individual dimensions and adjustment variables for which no corresponding composite relation was observed (e.g., negative internality-GPA, negative stability-life satisfaction, and positive stability-depression). Again, only the goals and theoretical basis of a research project can determine whether the information provided by composite scores is adequate. Yet, the findings here support the argument that whenever possible, the application of reliable attribution dimension scales is capable of providing additional information toward an understanding of group differences and the relations between attributional beliefs and other variables.

CONCLUSION

A more external orientation toward the study of causal beliefs in Chinese populations and their comparison to Western groups seems necessary. Given the sociocultural basis of causal beliefs, a great deal stands to be lost if research proceeds without attention to how the basis of this construct may vary across cultural or situational context. Toward this goal, findings here demonstrate the importance of analysis at the attribution dimension level. Particularly when extending attribution research into such new cultures or contexts, we cannot be certain about the underlying dimensional makeup of composite scores that may or may not identify group differences (Weiner, 1983).

The ABS representation of attributional beliefs provided for a relatively external orientation and reliable measurement of dimension ratings. Of particular relevance was the separation of internality and externality assessment. A most important finding here was that, by showing low intercorrelation and distinctive associations with other variables, the two scales do not appear to simply represent the poles of a common dimension. Thus, internal and external attributions seem to provide unique aspects of an individual's interpretation of cause for positive and negative events. The most substantive contribution of this discrimination, thus far, is to provide a conceptual distinction between self-enhancing and effacing attributions. A fuller appreciation of

this finding as well as of the more general utility of the external attribution dimension and ABS will require further research. At this point, however, the exploration of causal attributions is expanded through this alternative perspective on locus beliefs and the more general study of causal beliefs.

APPENDIX

The Attributional Belief Scale

Instructions

You are about to read a list of situations that are very common for people your age to have experienced. After you read each situation, remember back to the last time when that event, or something very much like it, happened to you.

Different people believe that the same event may be caused by different things. Thus, there are no right or wrong answers to these questions—only answers that are right for *you*.

When this event happened, what did you think caused it? Although situations may have many causes, we want you to pick out only one—the one you feel was the MAIN cause.

Then we want you to write down a few words to describe the cause and answer six questions—five about the cause you provide and one about the event.

So what we want you to do is

- Remember the last time each situation, or something like it, happened to you.
- Write down a few words describing what you thought was the MAIN cause.
- Answer some questions about the cause you provide and the event.

When responding to the questions, circle the number on the scale which best shows how you feel. For example, on question B,

B. How much is the CAUSE due to something about you? (circle one number)

Not at all											Totally due
due to me	1	2	3	4	5	6	7				to me

- 1 indicates that the cause was not at all attributable to you.
- 2 indicates that the cause was slightly attributable to you.
- 3 indicates that the cause was a little less than half attributable to you.
- 4 indicates that the cause was about half attributable to you.

5 indicates that the cause was a little more than half attributable to you.
 6 indicates that the cause was mostly attributable to you.
 7 indicates that the cause was completely attributable to you.

1. You do well on an exam (project evaluation).

A. Write down the ONE main CAUSE: _____

B. How much is the CAUSE due to something about you? (circle one number)

Not at all due to me	1	2	3	4	5	6	7	Totally due to me
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C. How much is the CAUSE due to other people or circumstances?
 (circle one number)

Not at all due to other people or circumstances	1	2	3	4	5	6	7	Totally due to other people or circumstances
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D. In the future, will this CAUSE be present again? (circle one number)

Never present	1	2	3	4	5	6	7	Always present
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E. Is this CAUSE something that affects just this type of situation, or does it also
 influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations
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The remaining ABS items are listed below and use the same set of response scales as those provided in item 1 above:

2. A friend helps you solve a problem.
3. You know you need to prepare for an exam (project), but the work doesn't get done.
4. A friend compliments you on your appearance.
5. You do a project that is highly praised.
6. You and your spouse (boyfriend/girlfriend) have a serious fight.
7. You do poorly on an exam (project evaluation).

8. You have good feelings about learning something new.
 9. You get into an argument with your friend.
 10. You are concerned that you won't get a good job.
 11. You get a good grade in a hard class.
 12. Your spouse (boyfriend/girlfriend) has been treating you very nicely.
 13. A friend has a problem and you aren't able to help.
 14. You can't get all the work done that others expect of you.
 15. You go out with someone new, and it goes well.
 16. An instructor (employer) yells or gets mad at you.
 17. You have a lot of trouble understanding what an instructor (employer) wants you to do.
 18. A friend says something that hurts your feelings.
 19. An instructor (employer) tells you that you have a good attitude.
 20. You apply for a position that you want very badly (e.g. important job, school admission) and you get it.
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NOTES

1. Both the English and Chinese versions of the ABS had been used in pilot work toward establishing functional equivalence in the instrument's language and event content (Lieber, 1993).

2. The unequal distribution of sex across the two samples raised concern that sex differences might confound findings related to cross-cultural comparisons. Thus, preliminary analyses were conducted to identify any sex differences within culture for all variables where mean differences across culture were to be examined—no such differences were found. Moreover, as a precautionary measure, sex was partialled out of all relations before correlations were calculated.

3. In cases where either internal or external attributions were significantly correlated with an adjustment variable, in some cases an opposite relation, there was some question as to whether the relation could be explained by a more general locus variable. Thus, all such relations were re-calculated after partialing out the effects of the internal or external score in question. In no case was the partial correlation of lesser statistical significance than was indicated by the bivariate relations.

4. The reader should recall that externality ratings were reverse scored before being included in composite sums.

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