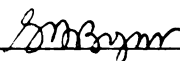This is to certify that the

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CULTURE, CONTROL, AND COPING:
THE NEW SOCIAL SUPPORT MODEL

By

Belle Liang

ABSTRACT

CULTURE, CONTROL, AND COPING:
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Researchers contend that whether social support buffers stress or provides direct benefits depends on how support is measured, as well as specific person variables (e.g., locus of control). It is not known whether current research findings generalize to cultures other than Anglo-Americans. This study integrates the issues of measure type, personality, and cultural influence in a comprehensive comparison of support utilization among Anglo-Americans and Chinese nationals. Measures appropriate for testing the stress-buffering model of social support were given to 198 students in a Midwestern university and 200 students in mainland China. Both measure type and locus of control orientation mediated the process of support utilization in each culture, but not in the same manner across cultures. For Anglos, stress-buffering effects of both *perceived* and *received* support were found only with internals. For Chinese, direct effects and a buffering pattern from *perceived* support were found with Chinese externals but not Chinese internals. The *received* support measure yielded negative buffering effects with the latter culture.

To My Grandmother--
who inspires my faith
and love of culture

ACKNOWLEDGEMENTS

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INTRODUCTION

Virtually every segment of the American population is touched by stress-inducing life experiences. Broadly defined, a stressful event is one that requires some adaptation on the part of the individual, and may be one that requires greater emotional, physical, or material resources than the individual generally possesses (cf., Dowrenwend & Dowrenwend, 1974; Seyle, 1956). Researchers now acknowledge, however, that the effect of stressful life events on adjustment, life satisfaction, and overall health is not invariant or universal. Gauging every individual's risk for disorder strictly by his or her level of exposure to stressful life events is an over-simplification. Rather, individuals invoke varying resources and behaviors that influence the actual outcome of adversity. Hence, the inquiry regarding psychological and physiological outcomes of stressful life events has evolved into a more complicated discussion of psychosocial mediators.

Social support: stress-buffering or main effect?

Much of this discussion has centered on social support as a stress-buffer. Specifically, the perceived or actual functional and/or expressive provisions rendered

by formal and informal social relationships have been thought to alleviate the potentially harmful effects of a significant yet undesirable life event. However, scholarly efforts to elucidate and generalize the buffering effects of social support have been frustrated by inconsistent findings across populations. While some studies have shown that support moderates the impact of stressful circumstances (e.g., Caplan, 1974; Cohen & McKay, 1984; Eaton, 1978; Gore, 1981), others fail to find buffering effects and demonstrate that social resources have an overall beneficial effect ("main effect"), irrespective of stress level (Cohen, Struening, Muhlin, Genevie, Kaplan, & Peck, 1982; Lin, Simeone, Ensel, & Kuo, 1979; Williams, Ware, & Donald, 1981).

In an oft-cited review of the literature, Cohen and Wills (1985) acknowledge evidence for both processes. They contend that the detection of either buffering or direct effects depends on the type of support, and ultimately, the mode of measurement; that is, whether social network structure versus function is assessed, or whether the measure assesses a specific structure/function versus combining several structural/functional measures into an undifferentiated global index.

Buffering effects are expected when researchers employ specific functional support scales which measure and find functional support relevant to the recipient's needs. For instance, the ISEL (Cohen & Hoberman, 1983) provides four separate scores that assess the availability of (1) esteem, (2) tangible, (3) social companionship or belongingness, and (4) appraisal or informational support. The ISSB (Barrera, Sandler, & Ramsey, 1981), which assesses actual receipt of social support, is also a functional type measure.

While specific functional measures show more interaction effects, global structural measures better detect main effects. The latter combine a variety of items about connections with neighbors, relatives, and community organizations (e.g., frequency of talking with friends/neighbors, degree of neighborhood cohesion). Hence, global structural scales indicate social integration (i.e., large number of relationships, embeddedness, and high network density); more socially integrated individuals experience greater direct effects from support resources. Specific structural measures that provide a quantitative count of social connections (e.g., number of nearby relatives) typically do not show significant main effects unless they index the presence of a significant interpersonal relationship (e.g., confidant measures), in which case they may also yield buffering effects.

Ethnicity and support process

Although this formulation seems sufficient to explain the presence and absence of buffering effects with Anglo-American populations, whether the theory holds true across cultures remains a question. In particular, the present study examines the stress-mediating effects of social support among Chinese nationals.

In their review, Cohen and Wills (1985) included only one study of an ethnic (Chinese-American) population (Lin et al., 1979). The lack of buffering effects detected in this study (Lin et al., 1979) was attributed to the use of a "global," rather than a "specific and appropriate" functional measure. In actuality, without further evidence, one cannot conclude whether the lack of buffering effects is an artifact of the support measure or is related to ethnic factors. For instance, it may be that

Chinese populations are less inclined than Anglos to utilize their social support in times of difficulty. This latter interpretation would be corroborated if, in a comparative study, Chinese indicated a lack of (or weak) buffering effects vis-a-vis Anglos, despite comparable levels of functional support resources. In fact, there is some evidence suggesting that precisely such results are likely.

Chinese support resources. While research explicitly comparing social networks and support between Chinese and Anglo-American populations is virtually nonexistent, a number of inferences regarding social support and network differences between these focal populations may be deduced from the related literature.

First, the emphasis on collectivism rather than individualism (Hsu, 1953; Hwang, 1982; Kuo & Spees, 1983; Nuttal, Chieh, & Nuttall, 1988; Yang, 1981; Yu, 1980) and traditional Asian values have promoted strong extended family ties within a system of mutual obligation in China (Bengtson, 1968; Chang, Chang, & Shen, 1984; Hsu, 1953; Nuttall et al., 1988). In addition, lower levels of modernization, technology, and subsequent decreases in mobility among Chinese contribute to the establishment of geographically proximate social networks, which, in turn, lead to greater network density and multiple-roled relationships. Conversely, the greater mobility of American populations leads to geographically dispersed networks, limited to immediate kin, and an increase in other social connections. Based on these observations, Chinese populations should exhibit smaller networks of greater density, a greater proportion of family members, and more multiple-roled relationships.

Determining the extent to which these relationships may provide particular

support functions, entails moving beyond structural assessments that merely describe

the existence of relationships. Hence, researchers have included the categories of

"source" (e.g., kin, friend, community) and "content" (e.g., instrumental or emotional)

of support into their analyses. Especially relevant in the comparison of Chinese and

American networks is the differentiation of generalist and specialist support. Support

generalists--versatile network members who provide multiple forms of support--render

different outcomes than support specialists who offer only a limited type of support.

Bogat, Caldwell, Rogosch, and Kriegler (1985) suggest that network size has less

influence on satisfaction than the consistency with which network members yield

support (i.e., support generalists). In their study, family members were found to be

the most consistent individuals in networks and thus represented support generalists.

Further, individuals whose networks consisted of a larger proportion of family

members reported greater satisfaction with support.

This research lends evidence to the importance of "multidimensionality," or the

quantity of functions served by a relationship (Mitchell & Trickett, 1980). The role of

a network member may range from strictly a coworker to a combination of functions,

such as tennis partner, confidante, classmate, and roommate. Studies assessing the

networks of college students (Hirsch, 1979, 1980) and parents (Cochran & Brassard,

1979) have found multidimensional relationships to be more satisfying and

stress-buffering. Relationships of this type demonstrate how a few quality friends and

relatives potentially supply more adequate and functional support than a large network of superficial relationships.

Therefore, according to specialist-generalist and multidimensionality research, Chinese, whose networks are expected to consist of a greater proportion of family members and more multiple-roled relationships, should also have greater access to functional support than Anglo-Americans. Hence, according to Cohen and Wills' (1985) formulation, if both populations were administered a specific functional measure, buffering effects comparable to or greater than those detected for Anglos should also be detected for Chinese.

Chinese support process. Interestingly, research employing Chinese (Chan, 1986; Lin et. al, 1979) and other Asian populations (Aldwin & Greenberger, 1987; Graves & Graves, 1985; Uomoto, 1983; cited by Vaux, 1985) does not indicate that tight-knit ethnic families provide more stress-buffering social support for their members, nor that Asian college students provide higher levels of support to each other. In fact, Lin et al. (1979) failed to find a significant buffering effect between stressors and illness for Chinese-American social support. Similarly, no buffering effects from social support were detected for a Polynesian population (Graves & Graves, 1985). Further, increased perceived crisis support not only did not buffer the effects of stressful life events on the physical symptoms of Hong-Kong Chinese, but even elevated psychological symptoms (Chan, 1986). Korean and Caucasian college students showed no difference in level of parental support, and Korean students reported confiding less often in their peers and receiving much less support from them

than did Anglo-American students (Aldwin & Greenberger, 1987). In a similar study, Asian-Americans reported fewer supportive behaviors from family and friends, and perceived their families as less supportive (Uomoto, 1983; cited by Vaux, 1985).

Social support research with African-American populations may further corroborate these findings, since African-Americans generally share the Chinese affinity for large, close-knit family networks (Ball, Warheit, Vandiver, & Holzer, 1979, 1980; Cauce, Felner, & Primavera, 1982; McTavish, 1971; Raymond, Rhoads, & Raymond, 1980). Some research has demonstrated that low-income African-American women have similar friendship networks and larger family networks than poor Anglo women, but were less willing to utilize these resources during difficult circumstances (Ball et al., 1979, 1980). In another study (Stewart & Vaux, 1983), Anglo- and African-American college students reported remarkably similar support network resources (in terms of size, composition, and characteristics of relationships); yet African-American women reported friends as less supportive than did Anglo women.

Measurement of buffering effects. All of these studies place in question the mediating effect of social support among Chinese and other ethnic groups possessing functionally resourceful networks. However, not one of these studies can wholly refute Cohen and Wills' (1985) hypothesis on the relationship between functional support and stress-buffering, because none uses functional measures of support that Cohen and Wills (1985) have deemed "specific and appropriate." Instead, several studies employed structural support measures (Ball et al., 1979, 1980; Graves & Graves, 1985; Lin et al., 1979), and others utilized global functional measures (Chan

et al., 1986; Lin et al., 1979; Uomoto, 1983); neither of which are expected to detect

significant buffering effects. Specifically, Lin et al.'s (1979) social support measure

consisted of a 9-item index that assessed feelings about neighborhood, frequency of

talking with friends and neighbors, and involvement in the community. Chan (1986)

employed a 5-item scale constructed by Andrews, Tennant, Hewson, and Vaillant

(1978) termed crisis support, consisting of such questions as "In an emergency do you

have friends/neighbors who would look after your family for a week?" and "If

everything went badly, how many people could you turn to for comfort and support?"

Cohen and Wills (1985) categorize the former index as a "global structural support

measure" and the latter as a "global functional support measure."

A true test of Cohen and Wills' (1985) stress-buffering hypothesis necessitates

a comparative design where analogous Chinese and American populations are assessed

by way of a "specific and appropriate functional measure." If, in this case, Chinese

still do not evidence the interaction effects of stress and social support while

Anglo-Americans do, the buffering hypothesis (Cohen & Wills, 1985) may require

some revision to incorporate ethnic factors.

Locus of control and support utilization

The possibility that Cohen and Wills' (1985) theory may not pertain to certain

cultures is suggested by two studies (Lefcourt, Martin, & Saleh, 1984; Sandler &

Lakey, 1982) which take into account personality differences between individuals and

populations and their impact on social support. In both studies, subjects were assessed

for their locus of control and the effects of their social support. Although a functional

support measure was administered to all subjects (ISSB), buffering effects were found only with individuals having an internal locus of control.

Cohen and Wills (1985) attempted to explain this discrepancy in buffering effects by suggesting that the ISSB "confounds the availability of support with the need for and use of support." However, they also contended that "work with compound but internally consistent functional measures provides evidence for the buffering model when measures assess perceived availability of support, but not when they assess use of support in the recent past." Hence, Cummins (1988) later replicated the studies and appended an additional functional support measure (i.e., the Social Provision Scale) which assessed the perceived availability of support. His results indicated that received social support (ISSB) buffers the effect of stress on symptoms for internals, just as was demonstrated in the previous research. Both perceived reassurance of worth (esteem support) and perceived guidance (appraisal support) failed to produce positive buffering effects for internals.

Support availability vs. utilization. Since only received social support buffered stress, these findings seem to indicate a distinction between the availability of functional support and its actual utilization. Ball et al.'s (1979, 1980) study comparing Anglo- and African-American low-income women corroborates this distinction through the use of a measure assessing the availability of support resources and respondents' willingness to utilize them in times of difficulty. Their data indicate that, despite larger family networks and similar friendship networks, African-Americans are less willing to request help from family and friends than

Anglos. Because African-Americans generally indicate more external locus of control tendencies than Anglo-Americans (Levenson, 1974; Strickland, 1971; Sue, 1978), a plausible explanation for these results may be found in Sandler and Lakey's (1982) contention that while externals amass more support connections, internals better utilize their available support.

Based on Schacter's (1959) study that demonstrates the tendency for individuals under stress to affiliate more, one might predict that externals would utilize more support than internals, since externals report greater stress and anxiety (Lefcourt, 1976; Nelson & Phares, 1971, cited by Phares, 1976). However, Sandler and Lakey's (1982) alternative view ensues from research demonstrating that although externals experienced more negative feedback in response to threat, internals more actively sought resolution to the problem indicated by the feedback (Phares et al., 1968). The inclination to act on their own behalf may prompt internals to avail themselves of information; externals have less need of information since they are more apt to rely on competent others. In one interesting example, involving hospitalized tuberculosis patients, internals exerted more effort in seeking out the cause and cure of their disease, and then attempted to act on this information (Seeman & Evans, 1962). Hence, based on a fund of literature indicating that internals are more active information-gatherers and more effective consumers of the available information (Lefcourt et al., 1973; Phares, 1968; Seeman, 1963; Strickland, 1978; Wolk & DuCette, 1974), researchers theorized that internals in locus of control would be more

likely to utilize informational support as an aid to coping with and diffusing stress (Lefcourt, Martin, & Saleh, 1984; Sandler & Lakey, 1982).

Cummins (1988) also argued the likelihood of internals to derive greater benefit from esteem support, since internal attributions of negative events threaten self-esteem, and in turn, lead to depression (Peterson & Seligman, 1984, cited by Cummins, 1988). This deduction led Cummins (1988) to suggest that internals' self-esteem support may act as a buffer from the possible depressive effects of negative events.

Evidence that attests that internals are better able to utilize informational and esteem support is apropos because these two types of support are most broadly applicable to needs salient during times of stress, and thus, are most likely to produce buffering effects. Corroborative data for this expected relationship between locus of control and support utilization during stress was obtained when significant interactions between negative life events and social support in predicting measures for psychological distress were detected for internals but not for externals.

Chinese locus of control. The lack of buffering effects detected for Chinese, despite adequate functional support resources, is also consistent with Sandler and Lakey's theory, since Chinese, as a whole, are more likely to evidence an external locus of control.

The earliest cross-cultural comparison of locus of control with Chinese subjects is that by Hsieh, Shybut, and Lotsof (1969). Based on Rotter's (1966) I-E scale, Hong-Kong Chinese indicated a greater belief in external control of reinforcement than

American-born Chinese, who in turn indicated greater external control beliefs than Anglo-Americans. Other studies (e.g., Tseng, 1972) have since corroborated the finding of higher externality among Chinese. These results seem consistent with research that purports a relationship between internality and access to power, economic opportunity, social mobility, and individualistic ideology (Cook & Chi, 1984; Lefcourt, 1982; Phares, 1976; Sue, 1978).

In a multidimensional analysis of Rotter's I-E scale (Chan, 1989), Hong-Kong Chinese demonstrated greater externality on a general luck (or fate) factor, but not on the achievement factor. Lao (1977) employed another multidimensional I-E Scale developed by Levenson (1974) to measure the belief in powerful others, the belief in internal control, and the belief in chance. Cross-cultural differences were found on all but the last factor. On the first factor, Chinese were found to hold stronger beliefs in powerful others than were Americans. Analysis of the second factor revealed differences across culture and sex, in that American females had a greater tendency to believe in internal events than Chinese females, while both male groups showed no significant difference.

In another study (Lao, Chuang, & Yang, 1977), sex differences were found only for Chinese subjects. Compared to females, Chinese males indicated greater internal control on all three factors, and less control by chance. In contrast, American females did not score lower on internality than American males.

Differences in locus of control between cultures have been attributed to varying degrees of modernity. For instance, level of modernity correlates negatively to

Rotter's (1966) I-E scale; the more modernized tend to attribute causality to greater personal effort, foresight, and acceptance of responsibility (Lefcourt, 1982). Further support to this theory is provided by the study of 'yuan' (Yang, 1982). This exclusively Chinese concept represents a set of fatalistic beliefs in which almost every interpersonal relationship or transaction is largely predetermined by fate, some unknown force, or an individual's conduct during a former life. In a large sample of Chinese students, those scoring high on individual modernity were less inclined to believe in 'yuan'. Since 'yuan' exemplifies a type of external control belief, these results may be interpreted as indicating a weaker tendency among the more modernized to have external attributions.

Locus of control and social support x stress interaction

In view of explications evolving from locus of control research (Cummins, 1988; Lefcourt et al., 1984; Sandler & Lakey, 1982), Cohen and Wills' (1985) formula for predicting social support's buffering effects appears to be an oversimplification. Locus of control, as a moderator of social support's buffering effects, may be a critical variable missing from their equation. Such a conclusion would be especially germane in comparisons between Chinese and Anglo-American populations, since both typically fall on opposite poles of the Internal-External Locus of Control continuum, Chinese tending toward externality, and Americans toward internality. The lack of stress-buffering effects found in Chinese populations could then be attributed to externally-oriented individuals' lesser utilization of functional support resources during times of difficulty.

However, studies which examine the influence of locus of control on stress and social support have yet to be replicated cross-culturally. By comparing data across two different cultures, Chinese and Anglo-American, the present study attempted to substantiate the cross-cultural applicability of Sandler and Lakey's Locus of Control hypothesis. This study employed six measures: a daily hassles inventory, eight measures of social support, one of psychological adjustment, and a locus of control scale.

Support and network scales. The ISSB was utilized in previous studies (Cummins, 1988; Lefcourt et al., 1984; Sandler & Lakey, 1982); the latest of which (Cummins, 1988) also included a measure of perceived availability of support, which Cohen and Wills suggest to be more appropriate for assessing the buffering hypothesis. Hence, the present study represents a replication and extension of these former studies by employing a three-part social support questionnaire. First, a global structural network measure was administered in order to assess multidimensionality, network density, and composition. As discussed previously, these measures were used to predict the potential availability of functional support. Second, the ISEL (Cohen & Hoberman, 1983), a "specific functional support measure" appropriate for testing the buffering hypothesis (Cohen & Wills, 1985), was used to assess the perceived availability of support. These two scales were administered in conjunction with the Inventory of Socially Supportive Behaviors (ISSB) -- a functional support measure requiring respondents to report on support received in the last month. Making this distinction between availability of and receipt of functional support is especially

apropos in the present study, because Chinese are predicted to have access to social support, but to be less likely to utilize or receive it during times of stress.

Measurement of stress. Ethnic factors were also taken into account in the selection of a life stress measure. To date, "episodic" life events indices have been utilized extensively with ethnic populations following the seminal work of Holmes and Rahe (1967). These authors reported substantial agreement in the rating of life events across status groups differing in age, and in sociocultural and ethnic backgrounds. In a study explicitly comparing life event scaling between a Chinese and Anglo population, Chan, Chan-Ho, and Chan (1984) reported a general correspondence across cultures in the degree of distress experienced from negative events. Although less research has evaluated the cross-cultural validity of "ongoing" life events indices, the present study utilizes a "Daily Hassles and Uplifts" measure (abridged version of Kanner, Coyne, Schaefer, & Lazarus, 1981), because chronic sources of stress better predict psychological and somatic health-related outcomes (Burks & Martin, 1985; DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1962).

Adjustment index. Traditionally, cross-cultural research indicated that Chinese commonly experienced distress in somatic forms. However, more recent research (e.g., Cheung, 1982, 1984; Kleinman, 1982) has suggested a distinction between symptom presentation and manifestation. While the majority of Chinese depressives initially presented with somatic complaints, when directly asked, most admitted having some form of dysphoria. Hence, the tendency of Chinese to evince distress through a mixture of affective and somatic complaints necessitates an adjustment measure that

assesses both psychological and physical symptomatology. The 60-item version of the General Health Questionnaire (GHQ) was selected for its proven reliability and validity with Chinese populations (Chan, 1983; 1985), as well as Anglo populations (Vieweg & Hedlund, 1983).

Locus of control measurement. A number of cross-cultural studies (Bond & Tomatzky, 1973; Hsieh et al., 1969; Mahler, 1974; Tseng, 1972) have utilized Rotter's (1966) Internality-Externality scale to assess locus of control. However, critics of the scale cast doubt on its validity with non-Anglo populations. First, contrary to Rotter's findings with an Anglo-American population, separate factors were detected for personal and general causality in the African-American sample. Taking into account political factions, it seems also feasible that mainland Chinese would reveal some disjunction between ways in which they perceive their own experience versus others' of the "free world." A second problem in the scale's generalizability arises from the varying impacts of diverse controlling agents. For instance, "control by chance" and "control by powerful others" have often been regarded as separate factors. Levenson's (1973) efforts to remedy both forms of multidimensionality in Rotter's (1966) I-E scale, have produced a three-factor index termed "Internal, Powerful Others, and Chance" (IPC) which refers strictly to personal outcomes.

Hypotheses

Part (I): Univariate comparisons between populations.

A. It was expected that Chinese, as compared to Anglos, would have higher scores on density, and family composition, and subsequently higher scores on perceived

availability of social support as measured by the ISEL-Composite and ISEL-*subscales*.

B. Greater receipt of supportive behaviors as measured by the ISSB and higher internality, was predicted for Anglos, relative to Chinese.

Part (II): Multivariate comparisons within populations.

A. For Anglo and Chinese internals, it was predicted that significant effects would be detected for the stress x social support terms (i.e., HASSLE-INTENSITY x ISSB, HASSLE-INTENSITY x ISEL-Composite or ISEL-*subscales*).

B. For Anglo and Chinese externals, the stress x social support terms were expected to be nonsignificant.

METHOD

Participants

Participants consisted of two samples of college students. The first group was comprised of 198 Anglo-American students (45% male, 55% female) attending a typical Midwestern university. The second group included 200 Chinese students (59% male, 41% female) from six universities/colleges in Beijing, China and five universities/colleges in Nanjing, China.

Measures

Levenson's Multidimensional Locus of Control Scale (1981) was chosen to assess perceptions of control (see Appendix A for a copy of the scale). This 24-item index (three 8-item subscales) applies a 6-point Likert format (ranges from "strongly disagree" to "strongly agree") and differentiates three dimensions of control: Internality (I), Powerful Others (P), and Chance (C). All items are phrased in terms of personal outcomes, rather than a generalized world view.

Reliability for the I, P, and C subscales ranges between .51-.67, .72-.82, and

.73-.79 respectively, with various populations (Levenson, 1973, 1974). In the present study, I, P, and C reliabilities were .57, .73, and .77, for Anglos, and .50, .48, and .42, for Chinese, respectively. Previous studies indicate that the correlation between the P and C scales tends to fall between .41-.60, while the correlation between these two subscales and the I subscale is only .19-.25 (Levenson, 1973).

The present study obtained a measure of high and low internality by analyzing only the Internality (I) subscale. The I factor is scored in the internal direction, whereas the P and C factors are scored in the external direction.

The Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981) measures the receipt of supportive behaviors (see Appendix B for a copy of the scale). In this 40-item, 5-point Likert scale (ranges from "not at all" to "about every day"), respondents report the frequency of occurrence in the past month of such support as "having had someone stay with you [the subject] in a stressful situation" and "having had someone provide you with information to help you understand your situation."

Barrera (1981) reported test-retest correlation coefficients for individual items ranging from .44 to .91. Coefficient alphas of .93 and .94 confirmed the instrument's high internal consistency; this justifies the use of total composite scores by summing frequency ratings across all forty items. (In the present study, the alpha coefficient of the ISSB was .94 for both the Chinese and Anglos.) Additionally, the ISSB was positively correlated with a qualitative index of support (i.e., perceived supportiveness).

The Interpersonal Support Evaluation List (ISEL--college student version; Cohen & Hoberman, 1983) assesses perceived availability of potential support resources (see Appendix C for a copy of the scale). This 48-item index differentiates four types of social support (12-items per subscale): ISEL-Tangible (material aid); ISEL-Appraisal" (help in defining, understanding, and coping with problematic circumstances); ISEL-Esteem (sources confirming one's worth and acceptance by others); and ISEL-Belonging (companions to spend time with in leisure and recreational activities). The respondent answers "probably TRUE" or "probably FALSE" to items such as "There is really no one I can trust to give me good financial advice" and "Most people I know think highly of me."

Cohen, Mermelstein, Kamarck, and Hoberman (1985) found that the ISEL is moderately correlated with the existing structural, past support, and perceived availability measures. Second, both the total scale and subscales have evidenced adequate internal and test-retest reliabilities in several samples. Furthermore, the ISEL's discriminant validity has been demonstrated by its lack of correlation with the Crowne-Marlowe Social Desirability Scale and a social anxiety scale. In the present study, the alpha reliability for the ISEL-Composite was .86 for Anglos and .76 for Chinese. Alpha coefficients of ISEL-Tangible, ISEL-Belonging, ISEL-Appraisal, and ISEL-Esteem were .62, .67, .81, and .46 for Anglos, and .46, .63, .60., and .30 for Chinese, respectively.

Social networks or potential support resources were measured by a density chart (Hirsch, 1979) and an assessment of multidimensional relationships developed

for this study (see Appendix D and E for copies of these instruments). Respondents were required to list up to 20 names of currently significant friends or relatives, including people with whom they interacted in a variety of activities (e.g., studying, going to the movies, or sharing personal concerns) on a regular basis (at least once during any 2- to 3- week period). Each of these relationships was placed in one or more of the following categories of support: self-esteem, appraisal, tangible assistance, and appraisal/informational. Density was calculated through the procedure outlined by Hirsch (1979).

The Daily Hassles Scale (Kanner et al., 1980), in modified form, served as a chronic stress index (see Appendix F for a copy of this measure). Only those items germane to both Chinese and American cultures were included (e.g., "misplacing or losing things," "not getting along with a friend"). Less relevant items were discarded (e.g., "auto maintenance problems"). The respondent was instructed to check items, and suggest any other hassles, that have occurred in the past month. They also rated each hassle for severity (1=somewhat severe, 2=moderately severe, 3=extremely severe).

For each subject, three summary scores were generated: (1) frequency--a count of the number of checked items; (2) cumulated severity--the sum of the 3-point severity ratings; and (3) intensity--the cumulated severity divided by the frequency.

The General Health Questionnaire (GHQ; Goldberg, 1972) consists of 60 questions concerned with psychological distress or altered behavior (see Appendix G for a copy of this scale). For each item, respondents compared their recent state (past

month) with their usual state; only those symptoms experienced more than usual are scored. Sample items include, "Have you recently lost much sleep over worry" and "...tended to lose interest in your ordinary activities?"

In a review of GHQ studies (Vieweg & Hedlund, 1983), internal consistency reliability for the GHQ was reported to range from .78 to .95, test-retest estimates ranged from .51 to .90, and concurrent validity coefficients ranged from .55 to .83. The Chinese version of the 60-item GHQ (Chan, 1985) has demonstrated comparable psychometric properties. In addition to high internal consistency, test-retest reliability, and concurrent validity, factor analyses have revealed overall correspondence of the factor structures for both versions of the GHQ. Data of the present study revealed an alpha coefficient of .95 for Chinese and .96 for Anglos.

Procedure

Each of the measures were transcribed into Chinese by a translator of mainland Chinese descent, except the GHQ which had previously been translated and used by Chan (e.g., 1983, 1985, 1986). In order to validate the Chinese versions, two fluently bilingual judges independently translated them back into English. These procedures confirmed that the questionnaires were accurately translated.

Questionnaires were shipped to a primary contact person in Beijing and and another in Nanjing, China. Both contact persons independently elicited the cooperation of several faculty persons at each of six universities and colleges in Beijing and five universities and colleges in Nanjing. These faculty members announced the experiment to their classes and then distributed questionnaires to

students interested in participating. Another set of questionnaires was given to Anglo-American Introductory Psychology students at Michigan State University in exchange for extra course credit. After signing a consent form (see Appendix H), each respondent was required to complete, in an anonymous fashion, one of three randomly ordered questionnaires in his or her own native language.

RESULTS

Univariate Between Group Comparisons

Preliminary analyses revealed several significant relationships between variables. These relationships can be seen on Tables I and II. For Anglos, internality was significantly correlated with adjustment ($r = .22, p < .01$), negative life events ($r = .30, p < .01$), ISEL-Appraisal ($r = .32, p < .01$), ISEL-Esteem ($r = .38, p < .01$), ISEL-Tangible ($r = .32, p < .01$), and ISEL-Belonging ($r = .35, p < .01$). For Chinese, internality was also significantly correlated to adjustment ($r = .15, p < .05$) and negative life events ($r = .16, p < .05$), but it was only significantly related to two perceived support subscales, ISEL-Appraisal ($r = .16, p < .05$) and ISEL-Tangible ($r = .17, p < .05$). For both Anglo-Americans and Chinese, internal locus of control individuals reported fewer negative symptoms and life events and more perceived support. Regarding the dependent measure, the GHQ was not only related to internality, but also overall perceived support ($r = .40, p < .01$ for Anglos; $r = .24, p < .01$ for Chinese) and negative life events ($r = .58, p < .01$ for Anglos; $r = .35, p < .01$

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Table I. Pearson Correlations for U.S. Sample

	2	3	4	5	6	7	8	9
1. Gender	.004	.230[b]	.068	.221[b]	.247[b]	.007	.103	.022
2. Internality	--	-.220[b]	-.303[b]	.062	.320[b]	.382[b]	.320[b]	.349[b]
3. GHQ		--	.579[b]	-.008	-.317[b]	-.306[b]	-.309[b]	-.322[b]
4. Hassles			--	.141[a]	-.263[b]	-.070	-.326[b]	-.171[a]
5. ISSB				--	.366[b]	.179[a]	.295[b]	.314[b]
6. ISEL-Appraisal					--	.319[b]	.604[b]	.553[b]
7. ISEL-Esteem						--	.375[b]	.563[b]
8. ISEL-Tangible							--	.600[b]
9. ISEL-Belonging								--

[a] $p < .05$
[b] $p < .01$

Table II. Pearson Correlations for Chinese Sample

	2	3	4	5	6	7	8	9
1. Gender	-.213[b]	.208[b]	.013	.076	-.009	.012	.040	.040
2. Internality	--	-.151[a]	-.162[a]	.039	.156[a]	.006	.166[a]	.120
3. GHQ		--	.347[b]	.071	-.208[b]	-.148[b]	-.194[b]	-.116
4. Hassles			--	.225[b]	-.155[a]	-.103	-.237[b]	-.115
5. ISSB				--	.092	.107	.151[a]	.367[b]
6. ISEL-Appraisal					--	.136	.275[b]	.331[b]
7. ISEL-Esteem						--	.268[b]	.406[b]
8. ISEL-Tangible							--	.314[b]
9. ISEL-Belonging								--

[a] p < .05
[b] p < .01

for Chinese). Chinese and Anglos that indicated a greater number of symptoms, were lower in perceived support and higher in negative life events. For Chinese, the number of family members within an individual's network was related to two types of functional support, the ISSB ($r = .26$, $p < .01$) and ISEL-Appraisal ($r = .25$, $p < .05$).

Demographic differences between the Anglo and Chinese groups were assessed by two separate 2 x 2 analyses of variance for Age and Gender with one between-group factor (Culture). Significant differences were found for both Age [$F(1, 334)=160.81$, $p < .001$)] and Gender [$F(1, 388)=7.10$, $p < .01$)]. Chinese subjects ($\underline{M} = 21.17$ yrs.) were significantly older than Anglo-American subjects ($\underline{M} = 19.77$ yrs.). The Anglo sample consisted of more females (n = 108) than males (n = 90) and the Chinese sample was comprised of more males (n = 112) than females (n = 79).

In order to assess differences in social support level between the Chinese and Anglo samples, nine separate 2 x 2 x 2 analyses of variance with two between factors (Culture and Gender) were conducted on nine measures of social support as the dependent variables (NUMBER OF SUPPORTERS, KIN RATIO, DENSITY, ISSB, ISEL–Composite, ISEL-Appraisal, ISEL-Esteem, ISEL-Tangible, ISEL-Belonging). See Table III for means and standard deviations of these variables. Significant culture effects were detected for NUMBER OF SUPPORTERS [$F(1, 386)=69.42$, $p < .001$)], DENSITY [$F(1, 297)=9.64$, $p < .005$)], the ISSB [$F(1, 384)=20.17$, $p < .001$], ISEL-Composite [$F(1, 385)=100.17$, $p < .001$)], ISEL-Appraisal [$F(1, 385)=43.59$, $p < .001$)], ISEL-Esteem [$F(1, 385)=31.32$, $p < .001$)], ISEL-Tangible [$F(1, 386)=82.92$, $p < .001$)], and ISEL-Belonging [$F(1, 386)=69.99$, $p < .001$)]. Anglos, relative to

Table III. Descriptive Statistics of Key Variables

| | Anglos | | | | Chinese | | | |
| | Males | | Females | | Males | | Females | |
	M	SD	M	SD	M	SD	M	SD
GHQ	1.76	0.40	1.94	0.38	1.79	0.33	1.95	0.42
Internality	36.72	4.99	36.75	4.49	30.58	4.80	27.86	7.72
Hassles	0.96	0.49	1.02	0.39	0.88	0.61	0.89	0.60
Kin Ratio	0.27	0.15	0.30	0.13	0.29	0.176	0.34	0.17
Density	0.79	0.29	0.88	0.22	0.72	0.43	0.71	0.35
# Supporters	14.35	4.75	15.60	4.40	12.63	4.94	11.92	5.17
ISSB	2.41	0.58	2.66	0.53	2.24	0.55	2.32	0.59
ISEL Composite	1.75	0.16	1.78	0.14	1.61	0.13	1.62	0.15
* ISEL Appraisal	1.77	0.25	1.88	0.20	1.68	0.21	1.67	0.24
* ISEL Esteem	1.66	0.14	1.66	0.14	1.58	0.14	1.58	0.16
* ISEL Tangible	1.83	0.19	1.87	0.16	1.67	0.22	1.69	0.22
* ISEL Belonging	1.71	0.21	1.72	0.20	1.53	0.21	1.55	0.22

Chinese, reported more social network members ($\underline{M}$ = 14.98, $\underline{M}$ = 12.28; respectively), network density ($\underline{M}$ = .84, $\underline{M}$ = .72; respectively), actual receipt of support ($\underline{M}$ = 2.54, $\underline{M}$ = 2.28; respectively), perceived appraisal support ($\underline{M}$ = 1.83, $\underline{M}$ = 1.68; respectively), perceived esteem support ($\underline{M}$ = 1.66, $\underline{M}$ = 1.58; respectively), perceived tangible support ($\underline{M}$ = 1.85, $\underline{M}$ = 1.68; respectively), perceived belonging support ($\underline{M}$ = 1.72, $\underline{M}$ = 1.54; respectively). KIN RATIO was not significantly different across cultures. Significant gender differences were found for KIN RATIO [$F(1, 297)$=3.69, p = .05], the ISSB [$F(1, 384)$=8.61, $p < .005$], and ISEL-Appraisal [$F(1, 384)$=5.59, $p < .02$]. Males for both groups, relative to females, indicated a smaller proportion of family members in their social networks ($\underline{M}$ = .24 for males, $\underline{M}$ = .28 for females) and less actual receipt of support ($\underline{M}$ = 2.33 for males, $\underline{M}$ = 2.49 for females), whereas females had more perceived appraisal support ($\underline{M}$ = 1.78 for females; $\underline{M}$ = 1.73 for males). The Culture by Gender interaction was significant for ISEL-Appraisal [$F(1, 386)$=6.45, $p < .02$]. Anglo-American females ($\underline{M}$ = 1.88) and Chinese males ($\underline{M}$ = 1.68) perceived more availability of appraisal support than did Anglo males ($\underline{M}$ = 1.77) and Chinese females ($\underline{M}$ = 1.67).

A 2 x 2 (Culture by Gender) analysis of variance was conducted to determine differences in internal locus of control. Findings revealed significant differences between cultures for the I scale [$F(1, 371)$=172.55, $p < .001$] -- Anglos were more internal than Chinese ($\underline{M}$ = 36.74, $\underline{M}$ = 29.22; respectively). Significant gender differences were also found [$F(1, 371)$=5.51, $p < .02$]. Males indicated more internality that females ($\underline{M}$ = 33.65, $\underline{M}$ = 64.61; respectively). Further, results indicated a

significant Culture by Gender interaction effect [F(1, 371)=5.80, p <.02]. Chinese males (M = 30.58) were more internal than Chinese females (M = 27.86), whereas Anglo males and females were not significantly different in their level of internality (M = 36.72, M = 36.75; respectively).

Although there was no significant culture difference for the GHQ, a significant gender difference was found [F(1, 369)=18.63, p <.001]. Findings revealed a greater number of symptoms for females than for males in both cultures (M = 1.95, M = 1.78; respectively). Finally, no significant main effects or interaction were detected for the stress variable (HASSLES-INTENSITY). Findings from these analyses of variance can be found in Table IV.

Multivariate Within Group Analyses

The direct and stress-buffering effects of received and perceived support for internal and external individuals were tested through separate hierarchical multiple regressions for each of the four locus of control groups (Anglo-internal, Anglo-external, Chinese-internal, Chinese-external). Subjects were divided into these respective internal and external groups using the average of the I scale means from both populations as the mean split. In each of the regressions, Gender was entered as the first variable, the Stress term (HASSLE-INTENSITY) was entered next, Social Support (ISSB or ISEL-*subscale*) was entered third, and the product of the last two terms (HASSLE-INTENSITY x ISSB or ISEL-*subscale*) was entered as the fourth variable. A "main effect" for social support was indicated by significant effects for the ISSB and ISEL terms, whereas a "buffering" effect was evidenced by significant

Table IV. Separate Two-Way Anova's for Key Variables

	Gender (G)	Culture (C)	(G X C)	Within
GHQ				
MS	2.69	0.05	0.01	0.14
F	18.63[b]	0.37	0.10	
Internality				
MS	165.64	5183.43	174.31	30.04
F	5.51[a]	172.55[b]	5.80[a]	
Hassles				
MS	0.14	1.00	0.05	0.28
F	0.49	3.62	0.17	
Kin Ratio				
MS	0.10	0.00	0.00	0.03
F	3.69[a]	0.01	0.08	
Density				
MS	0.12	0.94	0.17	0.10
F	1.24	9.31[b]	1.64	
# Supporters				
MS	5.71	582.29	76.26	22.74
F	0.25	25.61[b]	3.35	

Note. $df = 1$ for gender, culture, and g x c
[a] $p < .05$.
[b] $p < .01$.

Table IV. (cont'd).

	Gender (G)	Culture (C)	(G X C)	Within
ISSB				
MS	2.69	6.30	0.62	0.31
F	20.17[b]	8.61[b]	1.99	
ISEL-Composite				
MS	0.04	2.09	0.01	0.02
F	1.79	100.17[b]	0.64	
ISEL-Appraisal				
MS	0.29	2.23	0.33	0.05
F	5.59[a]	43.59[b]	6.45[a]	
ISEL-Esteem				
MS	0.00	0.66	0.00	0.02
F	0.05	31.32[b]	0.01	
ISEL-Tangible				
MS	0.07	2.88	0.01	0.03
F	2.15	82.92[b]	0.18	
ISEL-Belonging				
MS	0.02	3.09	0.00	0.04
F	0.37	69.99[b]	0.04	

Note. df = 1 for gender, culture, and g x c

[a] $p < .05$.

[b] $p < .01$.

effects for the interaction terms (HASSLE-INTENSITY x ISSB and HASSLE-INTENSITY x ISEL-*subscale*).

Results for the regression analyses employing Anglo-American data are presented in Tables V, VI, VII, VIII, IX, and X. For this population, the ISSB X HASSLE-INTENSITY interaction was significant in the prediction of Adjustment (GHQ) only for internal subjects (ΔR^2 = .04, ΔF = 9.96, p < .01), not externals (see Figures 1 and 2). Findings revealed that received social support (ISSB) buffers the effect of stress on adjustment for Anglo internals as expected. Further, main effects for received support were detected for only Anglo externals (ΔR^2 = .07, ΔF = 5.08, p < .01). Those individuals who report greater receipt of social support indicate fewer symptoms of negative adjustment, irrespective of stress level. Similarly, buffering effects of perceived social support were found only for Anglo internals (ISEL-Appraisal--ΔR^2 =.042, ΔF = 10.17, p < .005; ISEL-Esteem--ΔR^2 = .026, ΔF = 6.36, p < .05; ISEL-Tangible--ΔR^2 = .028, ΔF = 6.46, p < .05; and ISEL-Belonging--ΔR^2 = .039, ΔF = 10.02, p < .002). Anglo internals also demonstrated main effects for all four types of perceived support--ISEL-Appraisal (ΔR^2 =.03, ΔF = 6.90, p < .01), ISEL-Esteem (ΔR^2 = .052, ΔF = 12.18, p < .001), ISEL-Tangible (ΔR^2 = .02, ΔF = 4.08, p < .05), and ISEL-Belonging (ΔR^2 = .07, ΔF = 16.45, p < .001). Externals showed main effects for only ISEL-Appraisal (ΔR^2 = .08, ΔF = 6.03, p < .02) and ISEL-Esteem (ΔR^2 = .07, ΔF = 5.77, p < .02).

In comparison with the U.S. sample, Chinese data yielded strikingly dissimilar results (see Tables XI, XII, XIII, XIV, XV, XVI). The ISSB X HASSLE-INTENSITY
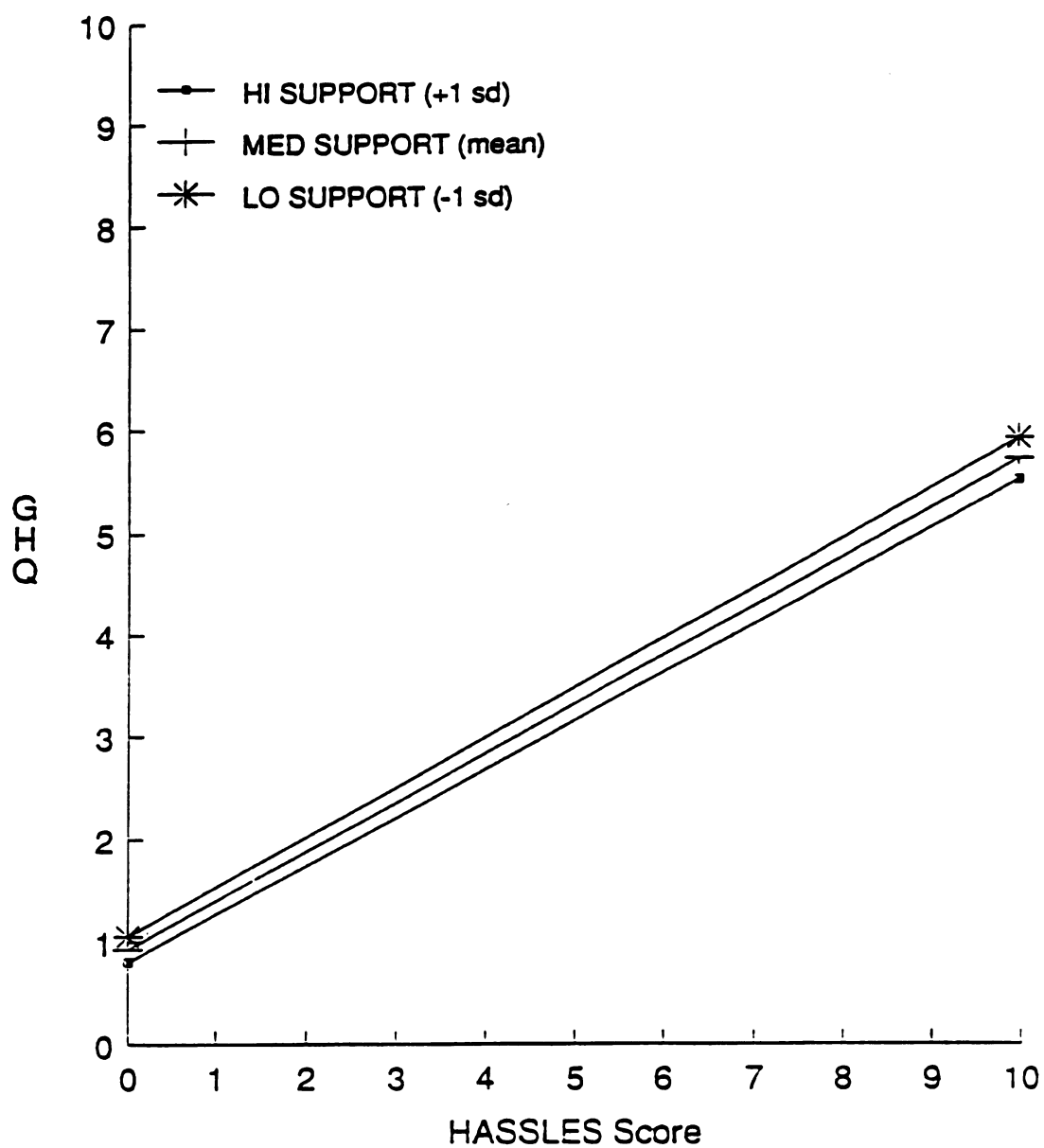
Figure 1. Regression of GHQ on HASSLES for 3 values of ISSB: Anglo Externals
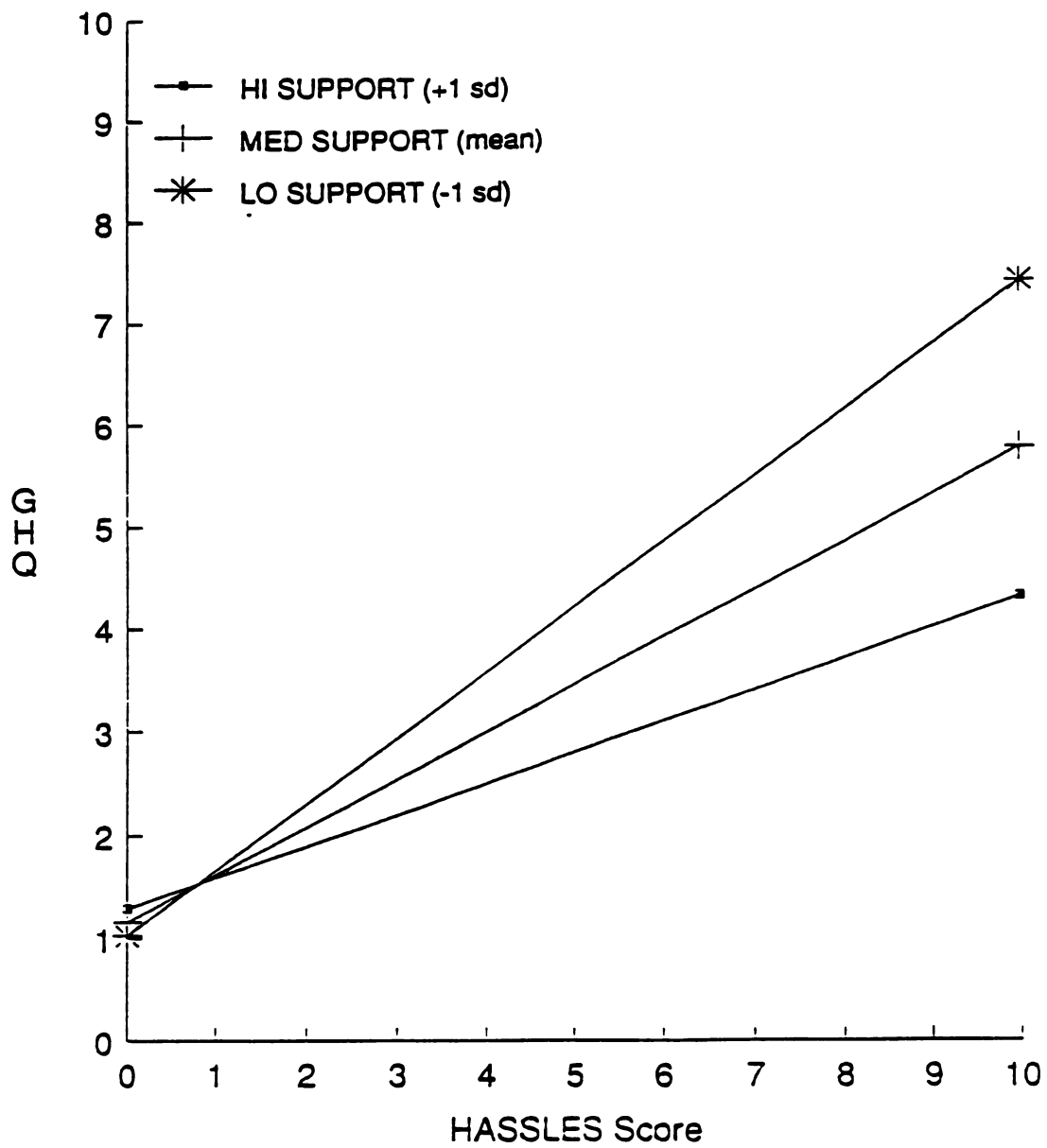
Figure 2. Regression of GHQ on HASSLES for 3 values of ISSB: Anglo Internals

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Table V. Hierarchical Regression With ISSB Predicting to Adjustment: Anglos

Variable	F	ΔF	ΔR^2	β
Externals[*]				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISSB	10.10[b]	5.08[a]	0.07	-0.29
Hassles X ISSB	7.42[b]	0.00	0.00	-0.02
Internals[**]				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.63[b]	0.34	0.58
ISSB	27.45[b]	1.55	0.01	-0.09
Hassles X ISSB	24.44[b]	9.96[b]	0.04	-1.08

[*] $N = 51$. $R^2 = .39$, $SE = .37$.
[**] $N = 140$. $R^2 = .42$, $SE = .28$.
[a] $p < .05$.
[b] $p < .01$.

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Table VI. Hierarchical Regression with ISEL-Composite predicting to Adjustment: Anglos

Variable	F	ΔF	ΔR²	β
Externals*				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISEL	10.50[b]	5.88[a]	0.07	-0.29
Hassles X ISEL	8.63[b]	2.21	0.03	1.30
Internals**				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.62[b]	0.34	0.58
ISEL	36.19[b]	18.03[b]	0.07	-0.28
Hassles X ISEL	32.10[b]	11.43[b]	0.04	-2.46

* $N = 51$. $R^2 = .43$, $SE = .36$.
** $N = 140$. $R^2 = .49$, $SE = .26$
[a] $p < .05$.
[b] $p < .01$.

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Table VII. Hierarchical Regression with ISEL-Appraisal predicting to Adjustment: Anglos

Variable	F	ΔF	ΔR²	β
Externals[a]				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISEL-Appraisal	10.57[b]	6.03[a]	0.08	-0.30
Hassles X ISEL-Appraisal	8.76[b]	2.39	0.03	0.39
Internals[b]				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.63[b]	0.34	0.58
ISEL-Appraisal	30.29[b]	6.90[b]	0.03	-0.19
Hassles X ISEL-Appraisal	26.80[b]	10.17[b]	0.04	-1.49

[a] $N = 51. R^2 = .43, SE = .36.$
[b] $N = 140. R^2 = .44, SE = .28$
[a] $p < .05.$
[b] $p < .01.$

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Table VIII. Hierarchical Regression with ISEL-Esteem predicting to Adjustment: Anglos

Variable	F	ΔF[*]	ΔR^2	β
Externals[*]				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISEL-Esteem	10.45[b]	5.77[a]	0.07	-0.27
Hassles X ISEL-Esteem	8.07[b]	0.98	0.01	1.04
Internals[**]				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.63[b]	0.34	0.58
ISEL-Esteem	33.09[b]	12.19[b]	0.05	-0.23
Hassles X ISEL-Esteem	27.89[b]	6.36[a]	0.03	-2.65

[*] $N = 51. R^2 = .41, SE = .37.$
[**] $N = 140. R^2 = .45, SE = .27$
[a] $p < .05.$
[b] $p < .01.$

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Table IX. Hierarchical Regression with ISEL-Tangible predicting to Adjustment: Anglos

Variable	F	ΔF	ΔR^2	β
Externals[*]				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISEL-Tangible	8.37[b]	1.59	0.02	-0.16
Hassles X ISEL-Tangible	6.61[b]	1.21	0.02	1.00
Internals[**]				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.63[b]	0.34	0.58
ISEL-Tangible	28.79[b]	4.08[a]	0.02	-0.14
Hassles X ISEL-Tangible	24.08[b]	6.46[a]	0.03	-1.58

[*] $N = 51. R^2 = .37, SE = .38.$
[**] $N = 140. R^2 = .42, SE = .28$
[a] $p < .05.$
[b] $p < .01.$

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Table IX. Hierarchical Regression with ISEL-Tangible predicting to Adjustment: Anglos

Variable	F	ΔF	ΔR^2	β
Externals[*]				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISEL-Tangible	8.37[b]	1.59	0.02	-0.16
Hassles X ISEL-Tangible	6.61[b]	1.21	0.02	1.00
Internals[**]				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.63[b]	0.34	0.58
ISEL-Tangible	28.79[b]	4.08[a]	0.02	-0.14
Hassles X ISEL-Tangible	24.08[b]	6.46[a]	0.03	-1.58

[*] $N = 51. R^2 = .37, SE = .38.$
[**] $N = 140. R^2 = .42, SE = .28$
[a] $p < .05.$
[b] $p < .01.$

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Table X. Hierarchical Regression with ISEL-Belonging predicting to Adjustment: Anglos

Variable	F	ΔF	ΔR^2	β
Externals[a]				
Gender	4.20[a]	4.20[a]	0.08	0.28
Hassles	11.63[b]	17.63[b]	0.25	0.50
ISEL-Belonging	8.46[b]	1.76	0.02	-0.16
Hassles X ISEL-Belonging	6.48[b]	0.71	0.01	0.70
Internals[b]				
Gender	5.15[a]	5.15[a]	0.04	0.19
Hassles	40.24[b]	72.63[b]	0.34	0.58
ISEL-Belonging	35.35[b]	16.45[b]	0.07	-0.26
Hassles X ISEL-Belonging	30.79[b]	10.02[b]	0.04	-1.67

[a] $N = 51. R^2 = .36, SE = .38.$
[b] $N = 140. R^2 = .48, SE = .27$
[a] $p < .05.$
[b] $p < .01.$

Table XI. Hierarchical Regression With ISSB Predicting to Adjustment: Chinese

Variable	F	ΔF	ΔR²	β
Externals[*]				
Gender	6.26[a]	6.26[a]	0.05	0.21
Hassles	14.48[b]	21.72[b]	0.14	0.37
ISSB	9.72[b]	0.34	0.00	-0.05
Hassles X ISSB	9.89[b]	8.65[b]	0.05	1.20
Internals[**]				
Gender	0.54	0.54	0.01	0.11
Hassles	0.97	1.40	0.03	0.17
ISSB	0.77	0.40	0.01	0.10
Hassles X ISSB	0.84	1.03	0.02	0.69

[*] $N = 142. R^2 = .23, SE = .35.$
[**] $N = 53. R^2 = .05, SE = .28.$
[a] $p < .05.$
[b] $p < .01.$

Table XII. Hierarchical Regression with ISEL-Composite Predicting to Adjustment: Chinese

Variable	F	ΔF	ΔR²	β
Externals[*]				
Gender	6.26[a]	6.26[a]	0.05	0.21
Hassles	14.98[b]	22.67[b]	0.14	0.38
ISEL	12.58[b]	6.52[a]	0.04	-0.21
Hassles X ISEL	9.38[b]	0.60	0.00	-0.24
Internals[**]				
Gender	0.54	0.54	0.01	0.11
Hassles	1.43	2.31	0.05	0.21
ISEL	1.03	0.28	0.06	0.08
Hassles X ISEL	0.87	0.43	0.01	1.32

Table XIII. Hierarchical Regression with ISEL-Appraisal Predicting to Adjustment: Chinese

Variable	F	ΔF	ΔR²	β
Externals[*]				
Gender	6.26[a]	6.26[a]	0.05	0.21
Hassles	14.98[b]	22.67[b]	0.14	0.38
ISEL-Appraisal	12.49[b]	6.29[a]	0.04	-0.20
Hassles X ISEL-Appraisal	9.46[b]	0.51	0.00	0.45
Internals[**]				
Gender	0.54	0.53	0.01	0.10
Hassles	1.43	2.04	0.05	0.22
ISEL-Appraisal	1.40	1.33	0.03	0.17
Hassles X ISEL-Appraisal	1.10	0.24	0.01	-0.76

[*] $N = 142. R^2 = 23, SE = .36.$
[**] $N = 53. R^2 = .09, SE = .28$
[a] $p < .05.$
[b] $p < .01.$

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Table XIV. Hierarchical Regression with ISEL-Esteem Predicting to Adjustment: Chinese

Variable	F	ΔF	ΔR^2	β
Externals[*]				
Gender	6.26[a]	6.26[a]	0.05	0.21
Hassles	14.98[b]	22.67[b]	0.14	0.38
ISEL-Esteem	10.62[b]	1.73	0.01	-0.10
Hassles X ISEL-Esteem	8.03[b]	0.42	0.00	-0.57
Internals[**]				
Gender	0.40	0.40	0.01	0.09
Hassles	1.23	2.04	0.04	0.21
ISEL-Esteem	0.85	0.13	0.00	-0.06
Hassles X ISEL-Esteem	1.26	2.40	0.05	3.44

[*] $N = 122$. $R^2 = 20$, $SE = 36$.
[**] $N = 53$. $R^2 = 10$, $SE = 28$
[a] $p < .05$.
[b] $p < .01$.

Table XV. Hierarchical Regression with ISEL–Tangible Predicting to Adjustment: Chinese

Variable	F	ΔF	ΔR²	β
Externals[*]				
Gender	6.26[a]	6.26[a]	0.05	0.21
Hassles	14.98[b]	22.67[b]	0.14	0.37
ISEL–Tangible	11.53[b]	3.96[a]	0.02	-0.16
Hassles X ISEL–Tangible	8.84[b]	0.82	0.01	-0.63
Internals[**]				
Gender	0.54	0.54	0.01	0.11
Hassles	1.43	2.31	0.05	0.22
ISEL–Tangible	0.40	0.18	0.00	0.06
Hassles X ISEL–Tangible	0.50	0.46	0.01	1.02

[*] $N = 142. R^2 = .22, SE = .36.$
[**] $N = 53. R^2 = .07, SE = .28$
[a] $p < .05.$
[b] $p < .01.$

Table XVI. Hierarchical Regression with ISEL-Belonging Predicting to Adjustment: Chinese

Variable	F	ΔF	ΔR²	β
Externals[*]				
Gender	6.26[a]	6.26[a]	0.05	0.21
Hassles	14.98[b]	22.67[b]	0.14	0.38
ISEL-Belonging	10.32[b]	1.00	0.01	-0.08
Hassles X ISEL-Belonging	8.01[b]	1.07	0.01	0.59
Internals[**]				
Gender	0.54	0.54	0.01	0.11
Hassles	1.43	2.31	0.05	0.22
ISEL-Belonging	0.96	0.06	0.00	0.04
Hassles X ISEL-Belonging	0.82	0.44	0.01	0.82

[*] $N = 142. R^2 = 20, SE = 36.$
[**] $N = 53. R^2 = .07, SE = .28$
[a] $p < .05.$
[b] $p < .01.$

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interaction was significant for externals rather than internals ($\Delta R^2 = .05$, $\Delta F = 8.65$, $p < .01$). Further, social support in this interaction acts as a negative buffer (see Figure 3). That is, the stress to negative adjustment relation is higher for Chinese externals who received more social support than for those who lack such support. Although Chinese revealed no significant buffering effects for the ISEL-Composite or ISEL-*subscales*, significant main effects of ISEL-Appraisal ($\Delta R^2 = .04$, $\Delta F = 6.29$, $p < .02$) and ISEL-Tangible ($\Delta R^2 = .024$, $\Delta F = 3.96$, $p < .05$) were found for Chinese externals. Further, although the HASSLE-INTENSITY x ISEL-Composite term was not significant for Chinese externals, the graph of regression lines (see Figure 4) indicates a buffering pattern; individuals with high levels of perceived support (ISEL-Composite) had few or no symptoms.
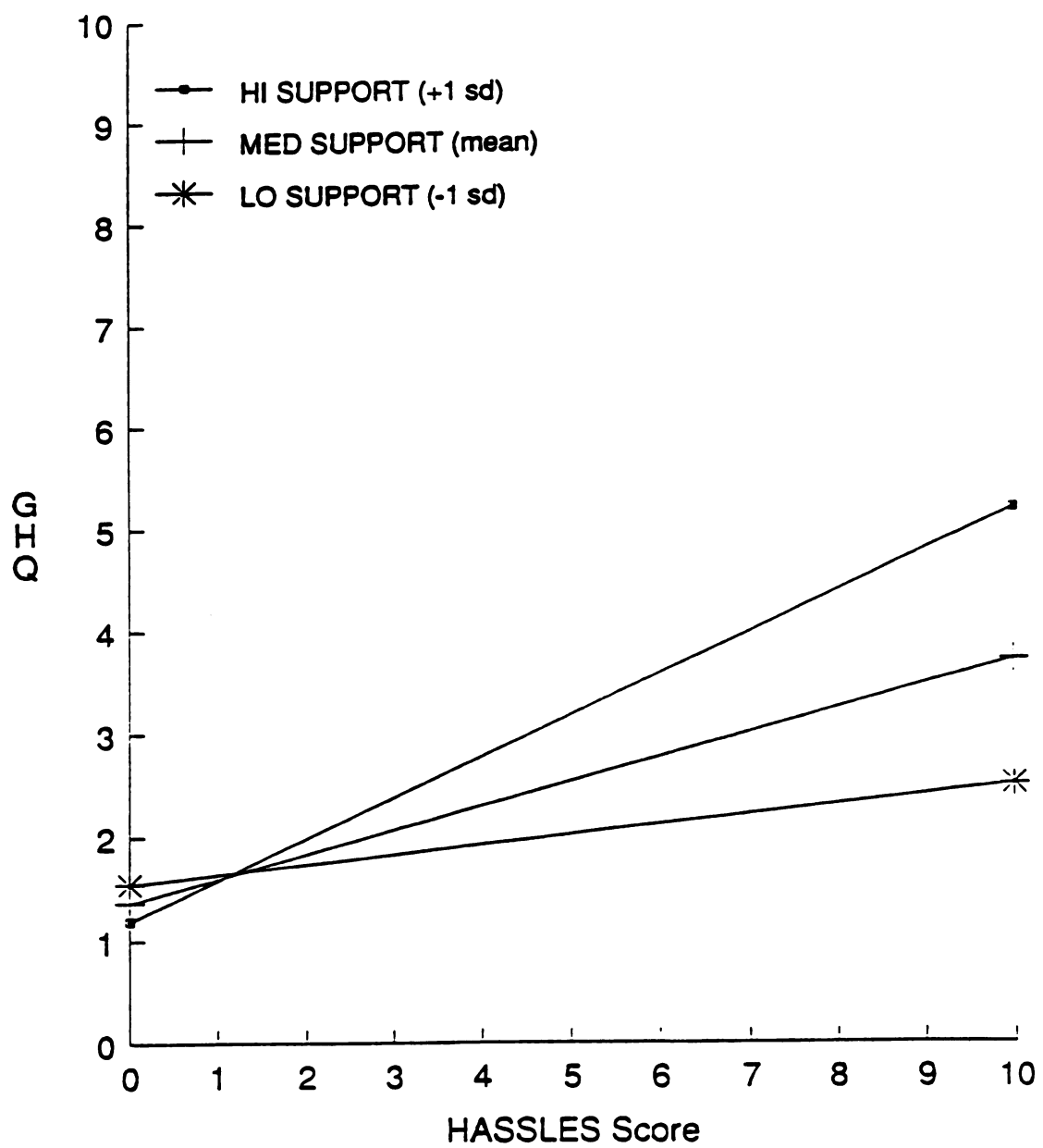
Figure 3. Regression of GHQ on HASSLES for 3 values of ISSB: Chinese Externals
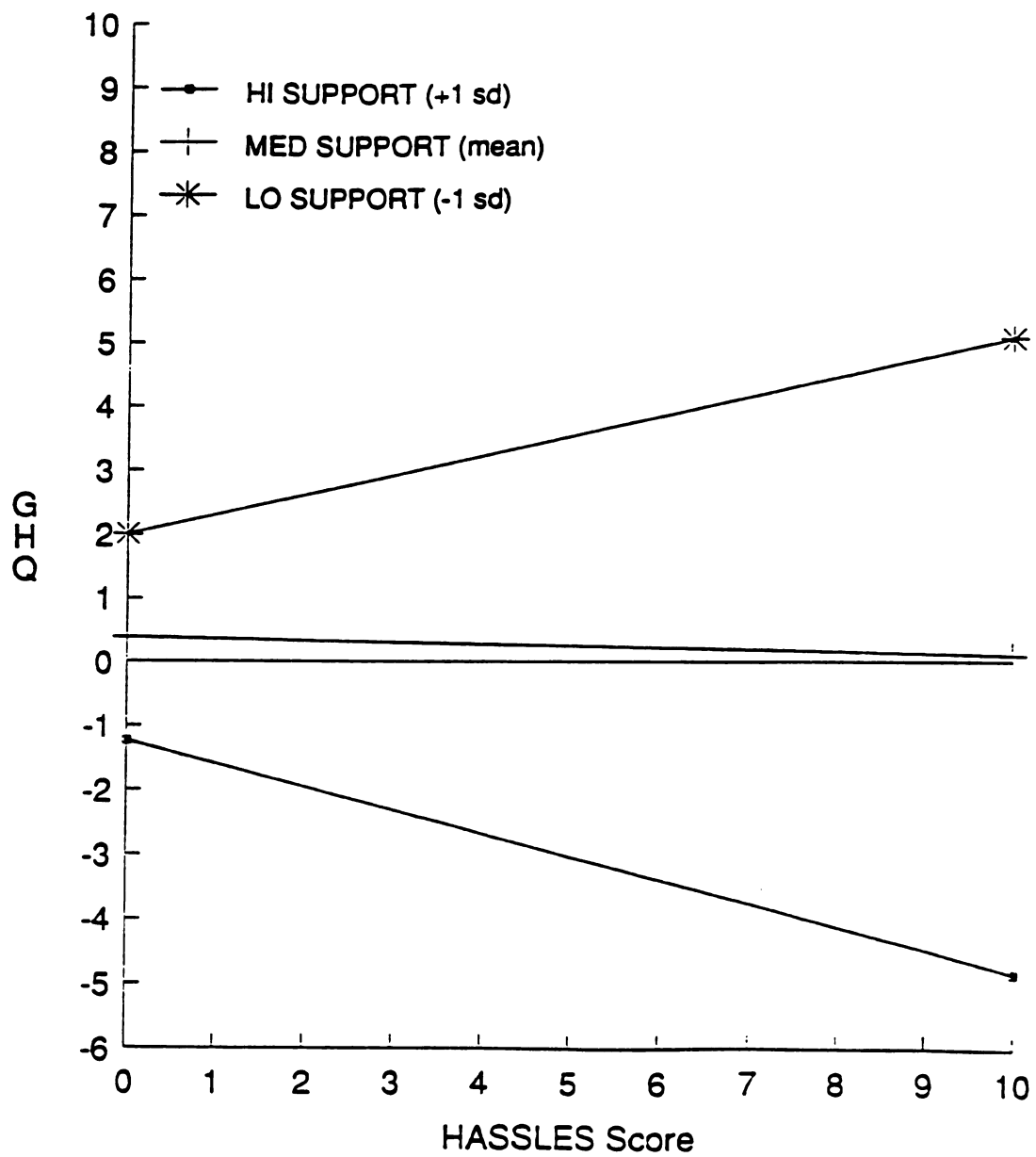
Figure 4. Regression of GHQ on HASSLES for 3 values of ISEL: Chinese Externals

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DISCUSSION

The present study had two major purposes: (1) to examine cultural variations in the structure of social networks and the perceived availability and actual receipt of functional support; and (2) to compare the support utilization process (i.e., the presence of stress-buffering effects from social support) across cultures.

Structurally, Anglos demonstrated larger and denser networks. The proportion of family members in Chinese and Anglo-American social networks was equivalent, but because Anglos had a greater total number of supporters, the number of family members in their networks was greater than that for Chinese. These results may be an artifact of the present research samples. Anglo students, who were younger then their Chinese counterparts (m = 19 yrs., m = 21 yrs.; respectively) may report larger family networks and more support received from this source due to developmental issues such as "attachment." Extensive research indicates that adolescents rely heavily on parents for assistance (see Hill & Holmbeck, 1986 for a review of the literature). Functional support comparisons showed that, Anglos, relative to Chinese, reported

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greater levels of received support (ISSB) as anticipated, but unexpectedly higher levels of perceived support (ISEL). Correlational data for the Chinese sample corroborates the generalist-specialist theory (Bogat et al., 1985) in that the number of family members was positively related to the amount of received support and perceived appraisal support. Therefore, the smaller number of family members in Chinese networks may help explain their lower levels of perceived support.

In addition to differences in network structures, as well as perceived availability and actual receipt of functional support, the present study found differences in process of support utilization across cultures. Anglos generally indicated greater stress-buffering effects from social support than Chinese. While locus of control appears to mediate the predictive power of the stress by social support interaction for adjustment in both cultures, the specific relationship between locus of control and these three variables--stress, social support, and adjustment--seems to vary across cultures. Anglo results were in accordance with extant research that evidences stress-buffering effects for only internal locus of control individuals (e.g., Cummins, 1988; Lefcourt et al., 1984; Sandler & Lakey, 1982). Interestingly though, neither received nor perceived social support were directly or indirectly beneficial for *Chinese* internals.

These findings not only suggest that the influence of social support is differential across cultures, it also appears that the influence of locus of control is not absolute. Instead, locus of control may interact with cultural norms and values to affect behavior and experience differentially across ethnic groups. Being internal,

versus external, may have the universal effect of amplifying one's ability or tendency to respond actively and adaptively; but what is considered active or adaptive may be relative to one's own cultural climate.

Among Anglo-Americans, the more adaptive response to stress may involve actively and effectually accruing and utilizing support resources. The Chinese cultural ideal, which expects self-discipline from those with high education and high social status, may prescribe more self-directed coping strategies (e.g., controlling oneself, modifying personal expectations), rather than help-seeking. For instance, Wu (1982) suggested that the dilution of stress for Chinese is associated with the ability to "correct the mind and train the temperament" (p. 297). A study employing Hong Kong university students demonstrated that in situations of mild distress, the most prevalent strategies of active coping involved analyzing the problem, resetting goals, and working harder (Cheung, Lee & Chan, 1983). Psychological endurance (i.e., telling oneself to be calm, to accept or forget the problem, and to control one's thoughts) was also a frequent coping strategy for individuals undergoing mild stress. When problems became more severe, students consulted with medical professionals, rather than family or friends. This behavior seems likely to be related to the documented tendency for Asians to somaticize emotional distress or the need to "save face" and protect the reputation of one's family by concealing severe problems from network members.

For Chinese externals, received support was not only unrelated to better adjustment, but also had a *negative* stress-buffering effect. That is, the stress-illness

relationship was strongest for Chinese externals who received the most social support. The Chinese tendency to evince emotional restraint (Argyle, Henderson, Bond, Iizuka, & Contarello, 1984; cited by Bond, 1986) may make stressful/difficult times less readily detectable to others so that help is seldom initiated without a direct request from an individual. Therefore, in order to receive help Chinese may be forced to request it explicitly; this may be a stressful undertaking in itself. Among Chinese, requesting assistance from others may signify exposing one's vulnerability and/or incompetence, and risking rejection. These potential consequences are antithetical to seeking "face," the Chinese endeavor to enhance one's social status by presenting oneself as better adjusted, more competent, and possessing better social ties than may actually be the case (Bond, 1986). The tendency for Chinese to act in accordance with external expectations or social norms, rather than with internal wishes may further explain their reluctance to request help in times of need (e.g., Yang, 1981). Based on these theories, the cost incurred in soliciting support may well outweigh the benefits gained from its receipt.

Perceived appraisal and perceived tangible support, however, had a beneficial effect for Chinese externals, irrespective of stress level. Perceived support also exhibited a buffering pattern for this group. Hence, perceiving that these types of support are available if needed may be more instrumental in alleviating the effects of stress on adjustment than actually receiving support for Chinese.

The findings discussed thus far corroborate Cohen and Wills' contention that the detection of stress-buffering effects depends on the type of social support measure

employed. Specifically, the ISEL and ISSB were differentially successful in predicting adjustment and yielding stress-buffering effects. Measure type alone, however, does not account for the results of this study. A more precise social support theory would incorporate the instrument's interaction with the culture to which it is applied. Specifically, a nonstatistical comparison of Anglo-American beta weights for received versus perceived support suggests that received support (ISSB) is more stress-buffering, whereas perceived support (ISEL-Composite) is more directly beneficial (main effect). In contrast, the differential effects of received versus perceived support were even greater for Chinese; received support is not only unhelpful during times of high stress, but is related to greater negative adjustment under these circumstances. Further, perceived availability of support, relative to actual receipt of support, is of greater direct benefit (main effect) for the Chinese. Hence, despite the use of what Cohen and Wills (1985) deem "appropriate" measures to detect buffering effects, results of this study corroborate previous research that suggests a lack of buffering effects among Chinese (e.g., Lin et al., 1979).

The present findings suggest a new, more complicated model for social support utilization than those proposed by past studies (see Figure 5). While former studies have acknowledged the separate influences of locus of control, culture, and measure type, the present study demonstrates the interaction of these variables to determine the presence of stress-buffering effects. Specifically, culture moderates the influence of locus of control on social support process differentially across measure types.
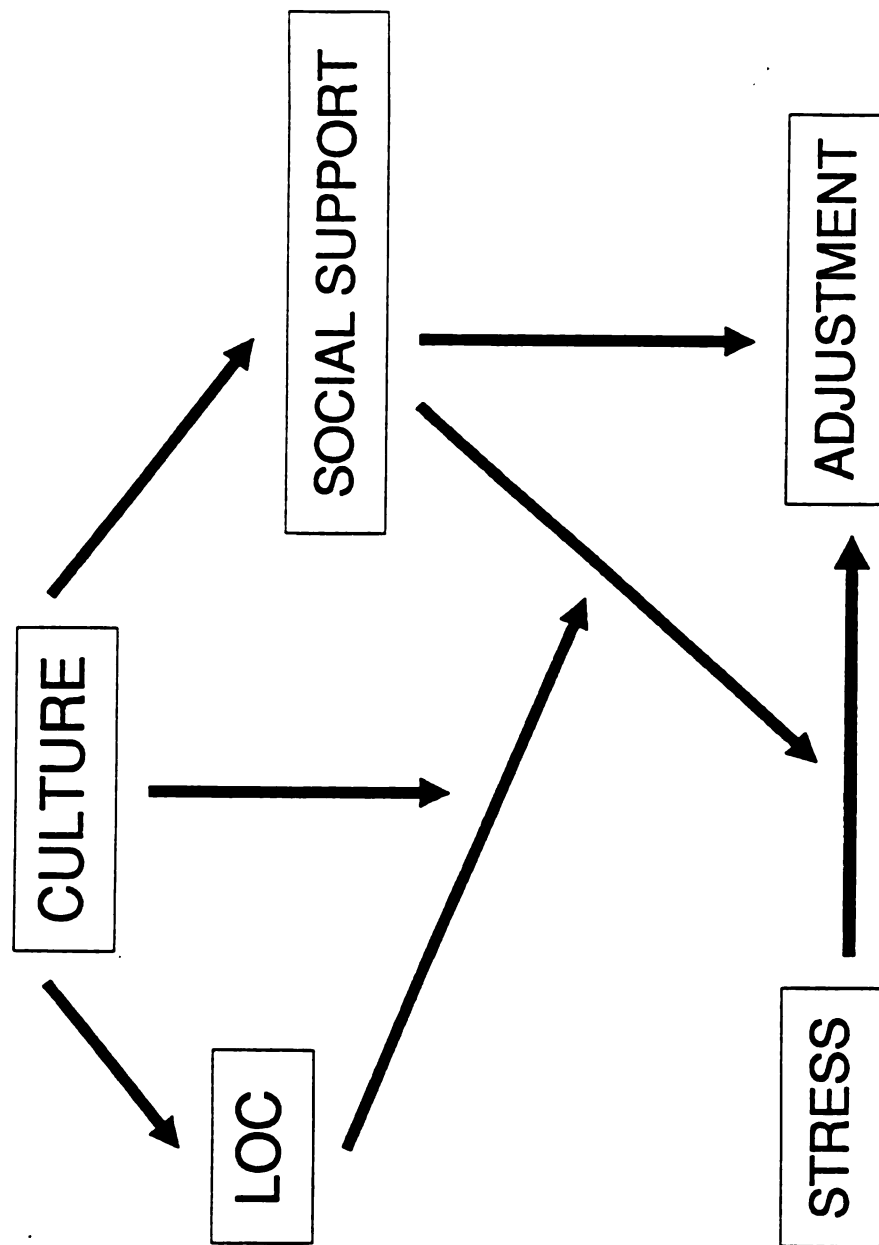
Figure 5. The New Social Support Model

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Limitations of the Study

The present research represents a first attempt to integrate former research on social support models with measurement/methodology issues, person variables, and ethnic or cultural influences. Future researchers should be advised of limitations specific to this study, as well as those more generally inherent in cross-cultural research.

Sample Biases

The Chinese sample may lack generalizability for two reasons. First, university students make up a considerably smaller proportion of the population in China than in America. Entry into virtually any university in China is uncommon and limited to only the most competent, most motivated, and perhaps the most independent individuals who defy the standards of the status quo (as exemplified by historical uprisings led by students in Beijing). Further, as a result of the scarcity of universities in China, students are typically forced to relocate to cities that are geographically removed from their hometowns. Family and other established support resources may be less accessible to these individuals, than to American students who have relocated, due to the lack of transportation and communication resources. Finally, the present sample involves Chinese universities that are located in two of the most urbanized and Westernized regions of the country. Hence, students in both of these locations, relative to the whole of China, may be more apt to resemble American values and qualities in their interpersonal relationships.

Measurement Biases

Another methodological difficulty present in cross-cultural research is that culture-based explanations can often be rivaled by those implicating measurement artifacts. In this study, each structural and functional support finding may not only be a result of cultural influences but also measurement biases. First, responses on the structural assessment items may be unreliable for the Chinese sample due to the inherent complexity of the instructions and because these types of measures are simply less familiar to foreign populations. This hypothesis is supported by the low completion rate of the structural measures among Chinese.

Second, substantially smaller reliability coefficients for the ISEL subscales among Chinese may also suggest an artifactual explanation for lower levels of perceived support. Lower ISEL scores for Chinese may be due, in part, to the presence of many items in this scale that are less germane to Chinese culture. Because a number of items from the ISEL pertain to specific displays of support (e.g., "If I wanted a date for a party next weekend, I know someone at school or in town who would fix me up"), this scale is highly susceptible to cultural bias. For example, due to cultural mores that limit "casual dating" in China, it is less conventional for Chinese than for Americans to "fix a friend up for a weekend date." Other examples of items less relevant to Chinese may be "I don't know someone who would loan me several hundred dollars to pay a doctor bill or dental bill" or "Even if I needed it my family would (or could) not give me money for tuition or books," both because Chinese typically have less financial resources and because the Chinese government

generally subsidizes medical care and tuition.

Third, the failure to find positive, buffering effects of received support among Chinese may similarly result from a measurement artifact suggested by previous research (Cohen & Hoberman, 1983; Sandler & Lakey, 1982; both cited by Cohen & Wills, 1985). Specifically, the ISSB is likely to reflect increased use of support due to psychological distress for certain populations. This theory is corroborated by both the positive correlation between the ISSB and stressful life events (especially significant for Chinese) and the presence of crossed interactions in each case where the ISSB's buffering effects are detected (see Figures 2 and 3). For Anglos, the ISSB was associated with lower levels of symptomatology for high-stress individuals and higher levels of symptomatology for low-stress individuals. A negative relation between the ISSB and symptomatology existed for Chinese individuals under low stress, but not for those under high stress. Hence, because the ISSB confounds the availability of support with the need for and use of support, it may not accurately reflect the positive consequences of using available support among Chinese.

Finally, as previously mentioned, measures initially developed for Western populations are potentially biased and insensitive to certain social support qualities specific to Chinese. For example, government subsidies for medical care, tuition, room and board, and job placement/security can be considered types of support available to Chinese students that are not included in support measures developed for Western populations. The present study corroborates previous research suggesting that different attributes of social support may be beneficial in different cultures. In two

such studies (Cauce, Felner, & Primavera, 1982; Jung & Khalsa, 1989), lower levels

of depression were related to perceived *family* support for African-Americans, and

perceived *friend* support for Anglo-Americans. Unfortunately, the social support

measures employed in the present study fail to discriminate between perceived family

support and perceived friend support. Based on the similarities described earlier

between Asian and African-American social network characteristics and use of social

support, it is likely that Chinese, in comparison with Anglos, would report greater

perceived family support and stress-buffering effects from this type of support. Future

research may begin investigating this hypothesis by including Procidano and Heller's

(1979) perceived support of family and friends scales.

Future Directions

The present study provides clear evidence of the need to implicate cultural

factors in future examinations of the provision, perception, receipt, and utilization of

social support. Not only would such a pursuit generate a broader information base

regarding social support in other countries, but it would also enhance

conceptualizations regarding social support across subcultures within America.

Therefore, the present research should be replicated with various ethnic populations.

A subsequent step may involve expanding two-culture comparisons to

multicultural comparisons for the purposes of minimizing plausible rival hypotheses.

For instance, in order to isolate ethnic influences from political, economic, and social

influences, future investigations should obtain a more representative sample of

mainland Chinese with which other segments of the Chinese population at large (e.g.,

Chinese in Hong Kong, Taiwan, and Singapore) can be compared. A more stringent test of the present hypotheses would be affirmed if findings of this study generalized, in varying degrees, across the host of cultures outside of China that describe themselves as "Chinese."

To assure cross-cultural validity of such studies, scale development is recommended. In particular, social support measures should be tailored for cross-cultural relevance by the addition of items assessing Chinese displays of social support and the exclusion of irrelevant items.

In sum, findings of the present study demonstrate the need to recognize the unique (emic) features, as well as the comparable (etic) features of social relations in various cultures. What is needed is a theory of cultural variation that can be incorporated into existing theories regarding the relationship between stress, social support, adjustment, and relevant person variables. The resulting theory would place each ethnic group on some map of cultural dimensions, with groups that share social, economic, or political qualities in closer proximity. In this way, we could begin predicting how individuals from cultures differing in known ways should differ from one another in relevant behaviors and responses. Information about an individual's culture could then function like information about his or her personality (e.g., locus of control, social competency) in generating predictions from theories of social support.

Appendix A

Directions: In this section you will find a series of attitude statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. We are interested in the extent to which you agree or disagree with such matters of opinion. Read each statement carefully. Then circle the number that best indicates the extent to which you agree or disagree. First opinions are usually best. Give your opinion on every statement.

Strongly Agree = 1
Disagree Somewhat = 2
Slightly Disagree = 3
Slightly Agree = 4
Agree Somewhat = 5
Strongly Agree = 6

1. Whether or not I get to be a leader depends mostly on my ability.

2. To a great extent my life is controlled by accidental happenings.

3. I feel like what happens in my life is mostly determined by powerful people.

4. Whether or not I get into a car accident depends mostly on how good a driver I am.

5. When I make plans, I am almost certain to make them work.

6. Often there is no chance of protecting my personal interests from bad luck happenings.

7. When I get what I want, it's usually because I'm lucky.

8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.

9. How many friends I have depends on how nice a person I am.

10. I have often found that what is going to happen will happen.

11. My life is chiefly controlled by powerful others.

12. Whether or not I get into a car accident is mostly a matter of luck.

13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.

14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.

15. Getting what I want requires pleasing those people above me.

16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.

17. If important people were to decide they didn't like me, I probably wouldn't make many friends.

18. I can pretty much determine what will happen in my life.

19. I am usually able to protect my personal interests.

20. Whether or not I get into a car accident depends mostly on the other driver.

21. When I get what I want, it's usually because I worked hard for it.

22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.

23. My life is determined by my own actions.

24. It's chiefly a matter of fate whether or not I have a few friends or many friends.

Appendix B

INSTRUCTIONS

We are interested in learning about some of the ways that you f
people have helped you or tried to make life more pleasant for
over the *past four weeks*. Below you will find a list of activiti
other people might have done for you, to you, or with you i
weeks. Please read each item carefully and indicate how r   *
activities happened to you during the *past four weeks*.

Use the following scale to make your ratings:

   A. Not at all
   B. Once or twice
   C. About once a week
   D. Several times a week
   E. About every day

Make all of your ratings on the answer s'   nas been provided.
If, for example, the item:

   45. Gave you a ride to the docto'

happened once or twice during   .our weeks, you would make
your rating like this:

```
       A   B   C   D   E
  45.  □   ■   □   □   r
```


Please read each '   .fully and select the rating that you think is
the most accur?

During the past four weeks, how often did other people do tl'
activities for you, to you, or with you:

1. Looked after a family member when you were away.
2. Was right there with you (physically) in a stressful situ'
3. Provided you with a place where you could get away   .e.
4. Watched after your possessions when you were away   ants,
   home, apartment, etc.).
5. Told you what she/he did in a situation that was ?   yours.
6. Did some activity with you to help you get your '   Jf things.
7. Talked with you about some interests of yours
8. Let you know that you did something well.
9. Went with you to someone who could take '
10. Told you that you are OK just the way yo'
11. Told you that she/he would keep the th'   you talk about
    private — just between the two of you.
12. Assisted you in setting a goal for your
13. Made it clear what was expected of '
14. Expressed esteem or respect for a c   .y or personal quality
    of yours.
15. Gave you some information on h   something.
16. Suggested some action that yor   Ake.
17. Gave you over $25.
18. Comforted you by showing '   physical affection.
19. Gave you some informatior   ou understand a situation you
    were in.
20. Provided you with some   .ation.
21. Checked back with you'   you followed the advice you were
    given.
22. Gave you under $25.
23. Helped you unders   you didn't do something well.
24. Listened to you tr   your private feelings.
25. Loaned or gav/   .nething (a physical object other than
    money) that yo   .
26. Agreed that v   wanted to do was right.
27. Said things '   ; your situation clearer and easier to under-
    stand.
28. Told you '   ne felt in a situation that was similar to yours.
29. Let you '   (he/she will always be around if you need assist-
    ance.
30. Exprr   rest and concern in your well-being.
31. Tol/   she/he feels very close to you.
32. To'   (o you should see for assistance.
33. T   /hat to expect in a situation that was about to happen.
34. '   ou over $25.
35.   you how to do something.
3f   /ou feedback on how you were doing without saying it was
             gu、 or bad.
37. Joked and kidded to try to cheer you up.
38. Provided you with a place to stay.
39. Pitched in to help you do something that needed to get done.
40. Loaned you under $25.

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Appendix C

Directions: This scale is made up of a list of statements each of which may or may not be true about you. For each statement we would like you to enter T if the statement is true about you or F if the statement is not true about you.

You may find that many of the statements are neither clearly true nor clearly false. In these cases, try to decide quickly whether probably TRUE or probably FALSE is most descriptive of you. Although some questions will be difficult to answer, it's important that you pick one alternative or the other. Remember to circle only one of the alternatives for each statement.

Please read each item quickly but carefully ˙ ˙re responding. Remember that this is not a test and there are r   t or wrong answers.

---

70) I know someone who would loan me $50 to g‍   for the weekend.

71) I don't know anyone at school or in towr   ⅃kes my problems clearer and easier to understand.

72) Most of my friends have more control   nat happens to them than I.

73) I will have a better future than mc   ⅃r people will.

74) I hang out in a friend's room or   ⅃nt quite a lot.

75) I don't talk to a member of my '   at least once a week.

76) I can get a date who I enjoy ʳ   ⅃g time with whenever I want.

77) If I decided at dinner time   ⅃ a study break this evening and go to a movie, I could easily   ⅃omeone to go with me.

78) Most of my friends don't   well as I do in school.

79) Most of my friends are   ⅃atisfied or happier with themselves than I am.

80) I know someone at sʳ   ⅃r in town who would bring my meals to my room or apartment if I   ⅃ck.

81) If I needed it, ˙   ⅃ly would provide me with an allowance and spending money

82) Most people v‍   ⅃ me well think highly of me.

83) I don't knoʳ   ⅃e at school or in town who would loan me their bicycle oʳ   ⅃or a couple of hours.

84) If I war   date for a party next weekend, I know someone at school or in   ⅃o would fix me up.

85) Peopˣ   ⅃ out in my room or home during the day or in the evening.

86) I ʳ   ⅃now anyone at school or in town who would get assignments f   from my teachers if I was sick.

87) La. ʲ, when I've been troubled, I keep things to myself.

88) I am not a member of any social groups (e.g., clubs, teams).

89) I don't often get invited to do things with other people.

90) I know someone who I see or talk to often with whom I would feel perfectly comfortable talking about any problems I might have meeting people.

91) Most people are more attractive than I am.

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92) I know someone who I see or talk to often with whom I would feel perfectly comfortable talking about any problems I might have making friends.

93) I don't know anyone at school or in town who would help me study for an exam by spending several hours reading me questions.

94) I know someone who I see or talk to often with wh⌐ ⌐ would feel perfectly comfortable talking about any difficuJ   ith my social life.

95) Lately, I often feel lonely, like I don't hav   ⌐e to reach out to.

96) I know someone who I see or talk to often wⱼ   ⌐m I would feel perfectly comfortable talking about any pr⌐   I might have getting along with my parents.

97) There isn't anyone at school or in town   ⌐hom I would feel perfectly comfortable talking about my   ⌐gs of loneliness and depression.

98) Most of my friends think that I'm s⌐

99) I don't usually spend two evening⌐   ⌐e weekend doing something with others.

100) I know someone who I see or ta⌐   often with whom I would feel perfectly comfortable taking   problems I might have budgeting my time between school and my   life.

101) Most of my friends are mor   ⌐lar than I am.

102) Most of my friends have ⌐   justed to college as easily as I have.

103) Most people think I hav   ⌐od sense of humor.

104) I don't have friends ⌐   ⌐ol or in town who would comfort me by showing some physics⌐   ⌐ction.

105) I don't feel frien⌐   ⌐h any teaching assistants, professors, campus or student offici⌐

106) There are peopl⌐   ⌐hool or in town who I regularly run with, exercise with,   ⌐y sports with.

107) Most of my fr   are more interesting than I am.

108) I know some⌐   ⌐ I see or talk to often with whom I would feel perfectly   table talking about any problems I might have adjusting   ⌐llege life.

109) I belong to ⱼ group at school or in town that meets regularly or does things together regularly.

110) Even if I needed it my family would (or could) not give me money for tuition or books.

111) I don't know anyone who would loan me several hundred dollars to pay a doctor bill or dental bill.

YOU SHOULD NOW BE UP TO LINE 112 ON YOUR ANSWER SHEET

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Appendix D

In the left hand column, list the initials of up to 20 people whom you consider important in your life **and** with whom you are likely to interact at least once during any **two week period.** Next, indicate whether each person is male or female. Then, circle **only one** number that best indicates his/her relationship to you (e.g. "friend," "immediate family"). Remember, you can list **less** than 20 people.

Initials	Male (M) or Female (F)?	ROMANTIC ATTACHMENT	IMMEDIATE FAMILY (PARENTS, SIBLING)	OTHER RELATIVE	FRIEND	PERSON LIVING NEARBY	CLASSMATE	MEMBER OF GROUP TO WHICH I BELONG	PROFESSIONAL (E.G. TEACHER)	OTHER (SPECIFY IN MARGIN)
1) _____	M F	1	2	3	4	5	6	7	8	9
2) _____	M F	1	2	3	4	5	6	7	8	9
3) _____	M F	1	2	3	4	5	6	7	8	9
4) _____	M F	1	2	3	4	5	6	7	8	9
5) _____	M F	1	2	3	4	5	6	7	8	9
6) _____	M F	1	2	3	4	5	6	7	8	9
7) _____	M F	1	2	3	4	5	6	7	8	9
8) _____	M F	1	2	3	4	5	6	7	8	9
9) _____	M F	1	2	3	4	5	6	7	8	9
10) _____	M F	1	2	3	4	5	6	7	8	9
11) _____	M F	1	2	3	4	5	6	7	8	9
12) _____	M F	1	2	3	4	5	6	7	8	9
13) _____	M F	1	2	3	4	5	6	7	8	9
14) _____	M F	1	2	3	4	5	6	7	8	9
15) _____	M F	1	2	3	4	5	6	7	8	9
16) _____	M F	1	2	3	4	5	6	7	8	9
17) _____	M F	1	2	3	4	5	6	7	8	9
18) _____	M F	1	2	3	4	5	6	7	8	9
19) _____	M F	1	2	3	4	5	6	7	8	9
20) _____	M F	1	2	3	4	5	6	7	8	9

Please think about your interactions with the people that you listed in the left hand column. Of the categories described below, indicate which kind(s) of support each person can give you. (CIRCLE ALL THAT APPLY):

A. EMOTIONAL SUPPORT includes: listening to your troubles, being understanding, comforting, and sympathetic.

B. ADVICE & INFORMATION includes: sharing what they would do in a situation like yours, helping you get the info you need to help yourself helping you think through a problem.

C. PRACTICAL ASSISTANCE includes: helping by doing things for you (for example, running errands for you, taking notes for you, taking notes for you in class), lending you money.

D. COMPANIONSHIP includes: spending time with you in leisure and recreational activities (for example, going with you to dinner or to the movies.

1) A B C D

2) A B C D

3) A B C D

4) A B C D

5) A B C D

6) A B C D

7) A B C D

8) A B C D

9) A B C D

10) A B C D

11) A B C D

12) A B C D

13) A B C D

14) A B C D

15) A B C D

16) A B C D

17) A B C D

18) A B C D

19) A B C D

20) A B C D

Appendix E

Label the columns and rows with the initials of up to ten people (from your list on the previous page) whom you feel closest to. Then, indicate who of these people know each other by placing an 'X' in the square where the two names intersect. (Only fill in the unshaded squares.)

For example: If JL knows SR, place an 'X' in the square where JL and SR intersect.

	JL	SR	TM	BC
JL		X		
SR				
TM				
BC				

	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Appendix F

Directions: Hassles are irritants that can range from minor annoyances to fairly major pressures, problems, or difficulties. They can occur few or many times.

Listed below are a number of ways in which a person can feel hassled. On the answer sheet, indicate (by entering a 1, 2. or 3) how SEVERE each hassle has been for you in the past month. For ea   hassle that did NOT occur in the last month, enter a five (5).

--   ------------------

                                                          ᴄᴙ
                                              1. S   ᴣ severe
HASSLES   2. ᴉ   .ely severe
                                              3. '   .ely severe
                                              5.   ot occur

112) Misplacing or losing things

113) Troublesome neighbors

114) Social obligations

115) Inconsiderate smokers

116) Troubling thoughts about your

117) Thoughts about death

118) Health of a family member

119) Not enough money for cloth

120) Concerns about owing mone

121) Concerns about money for   ancies

122) Someone owes you money

123) Financial responsibil'   someone who doesn't live with you

124) Smoking too much

125) Use of alcohol

126) Too many responsib   ᴀ

127) Concerned about ʳ   ning of life

128) Trouble relaxin'

129) Trouble making   .ons

130) Problems gett   ɪng with roommates

131) Don't like ᴄ   area of study

132) Don't like   ates

133) Not enoug'   for basic necessities

134) Not enou   .y for food

135) Too man   .ruptions

136) Unexpe   ɔmpany

137) Too much   ʂe on hands

138) Having to wait

139) Concerns about accidents

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140) Being lonely
141) Fear of confrontation
142) Financial security
143) Silly practical mistakes
144) Inability to express yourself
145) Physical illness
146) Side effects of medication
147) Concerns about medical treatment
148) Physical appearance
149) Fear of rejection
150) Concerns about health in general
151) Not seeing enough people
152) Friends or relatives too far
153) Wasting time
154) Being exploited
155) Not getting enough sle
156) Problems with aging r
157) Problems with your   cant other
158) Overloaded with ʿ   esponsibilities
159) Too many thing
160) Unchallenginⲅ
161) Concerns aᵇ   .cing high standards
162) Academic   .es
163) Gossip
164) Conc   ⱷut weight
165) Noʿ   ⱷ time to do the things you need to do
166) ˙   ᴀgh personal energy
167   .ns about inner conflicts
)   ⱷ conflicted over what to do
        ⱷgrets over past decisions
ⱷ   The weather
171) Nightmares
172) Concerns about getting ahead
173) Difficulties with friends
174) Not enough time for family
175) Not enough money for transportation
176) Not enough money for entertainment and recreatior.
177) Concerns about news events

Appendix G

Please read this carefully:

We would like to know if you have had any medical complaints, and how your health has been in general, *over the past few weeks.* Please answer ALL the questions on the following pages simply by circling the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is impor*   *hat you try to answer ALL the questions.

Thank you ve.   ` for your cooperation.

HAVE YOU RECENTLY:

1. — *been feeling perfe. well and in good health?*	...tter \ usual	Same as usual	Worse than usual	Much worse than usual
2. — *been feeling in need of some medicine?*	...ll	No more than usual	Rather more than usual	Much more than usual
3. — *been feeling tired and exhausted?*	No	No more than usual	Rather more than usual	Much more than usual
4. — *felt that you are ill?*	Not at .	'o more n usual	Rather more than usual	Much more than usual
5. — *been getting any pains in your head?*	Not at all	...ore ...sual	Rather more than usual	Much more than usual
6. — *been getting a feel- ing of tightness or pressure in your head?*	Not at all	. th. '	Rather more than usual	Much more than usual
7. — *been able to con- centrate on what- ever you're doing?*	Better than ' usual	Same as usual	'...ess .n usual	Much less than usual
8. — *been afraid that you were going to col- lapse in a public place?*	Not at all	No more than usual	r more ·ual	Much more than usual
9. — *been having hot or cold spells?*	Not at all	No more than usual	Rat. : than	Much more than usual
10. — *been perspiring (sweating) a lot?*	Not at all	No more than usual	Rather than usu.	Much more 'han usual
11. — *found yourself wak- ing early and unable to get back to sleep?*	Not at all	No more than usual	Rather mo than usual	Much more than usual

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12. — been getting up feeling your sleep hasn't refreshed you?	Not at all	No more than usual	Rather more than usual	Much more than usual
13. — been feeling too tired and exhausted even to eat?	Not at all	No more than usual	Rather more than usual	Much more than usual
14. — lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
15. — been feeling totally alert and awake?	Better than usual	Same as usual	Less alert than usual	Much less alert
16. — been feeling, energy?	Better than usual	Same as usual	Less energy than usual	Much less energetic
17. — had difficulty in getting off to sleep?	Not at all	No more than usual	Rather more than usual	Much more than usual
18. — had difficulty in staying asleep once you are off?	at all	No more than usual	Rather more than usual	Much more than usual
19. — been having frightening or unpleasant dreams?		No more than usual	Rather more than usual	Much more than usual
20. — been having restless, disturbed nights?	Not a.	No more than usual	Rather more than usual	Much more than usual
21. — been managing to keep yourself busy and occupied?	More so than usual	ne usual	Rather less than usual	Much less than usual
22. — been taking longer over the things you do?	Quicker than usual		Longer than usual	Much longer than usual
23. — tended to lose interest in your ordinary activities?	Not at all	No than	Rather more than usual	Much more than usual
24. — been losing interest in your personal appearance?	Not at all	No more than usual	her more usual	Much more than usual
25. — been taking less trouble with your clothes?	More trouble than usual	About same as usual	uble	Much less trouble
26. — been getting out of the house as much as usual?	More than usual	Same as usual	Les. than	Much less than usual
27. — been managing as well as most people would in your shoes?	Better than most	About the same	Rather less well	Much less well
28. — felt on the whole you were doing things well?	Better than usual	About the same	Less well than usual	Much less well

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29. — *been late getting to work, or getting started on your housework?*	Not at all	No later than usual	Rather later than usual	Much later than usual
30. — *been satisfied with the way you've carried out your task?*	More satisfied	About same as usual	Less satisfied than usual	Much less satisfied
31. — *been able to feel warmth and affection for those near to you?*	Better than usual	About same as usual	Less well than usual	Much less well
32. — *been finding it easy to get on with other people?*	Better than usual	About same as usual	Less well than usual	less
33. — *spent much time chatting with people?*	More time than usual	About same as usual	Less than u	Much less than usual
34. — *kept feeling afraid to say anything to people in case you made a fool of yourself?*	Not at all	No more than usual	R' ce , al	Much more than usual
35. — *felt that you are playing a useful part in things?*	More so than usual	Same as us·	less useful than usual	Much less useful
36. — *felt capable of making decisions about things?*	More so than usual	S	Less so than usual	Much less capable
37. — *felt you're just not able to make a start on anything?*	Not at al'	more an usual	Rather more than usual	Much more than usual
38. — *felt yourself dreading everything that you have to do?*	No·	No more than usual	Rather more than usual	Much more than usual
39. — *felt constantly under strain?*	all	No more than usual	Rather more than usual	Much more than usual
40. — *felt you couldn't overcome your difficulties?*	ot at all	No more than usual	Rather more than usual	Much more than usual
41. — *been findi· struggle ne?*	Not at all	No more than usual	Rather more than usual	Much more than usual
42. — *been r ,oy you day-to-day . ities?*	More so than usual	Same as usual	Less so than usual	Much less than usual
43. — *been taking things hard?*	Not at all	No more than usual	Rather more than usual	Much more than usual
44. — *been getting edgy and bad-tempered?*	Not at all	No more than usual	Rather more than usual	Much more than usual

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45. — *been getting scared or panicky for no good reason?*	Not at all	No more than usual	Rather more than usual	Much more than usual
46. — *been able to face up to your problems?*	More so than usual	Same as usual	Less able than usual	Much less able
47. — *found everything getting on top of you?*	Not at all	No more than usual	Rather more than usual	Much more than usual
48. — *had the feeling that people were looking at you?*	Not at all	No more than usual	Rather more than usual	Much more than usual
49. — *been feeling unhappy and depressed?*	Not at all	No more than usual	Rather more than usual	Much more than usual
50. — *been losing confidence in yourself?*	Not at all	No more than usual	Rather than usual	Much more than usual
51. — *been thinking of yourself as a worthless person?*	Not at all	No more than usual	Rather more than usual	Much more than usual
52. — *felt that life is entirely hopeless?*	Not at all	No more than usual	Rather more than usual	Much more than usual
53. — *been feeling hopeful about your own future?*	More so than usual	About same as	Less so than usual	Much less hopeful
54. — *been feeling reasonably happy, all things considered?*	More so than usual	About same as usual	Less so than usual	Much less than usual
55. — *been feeling nervous and strung-up all the time?*	Not at all	No more than usual	Rather more than usual	Much more than usual
56. — *felt that life isn't worth living?*	Not at all	No more than usual	Rather more than usual	Much more than usual
57. — *thought of the possibility that you might end your life?*	Definitely not	I don't think so	Has crossed my mind	Definitely have
58. — *found at times you couldn't do anything because your nerves were too bad?*	Not at all	No more than usual	Rather more than usual	Much more than usual
59. — *found yourself wishing you were dead and away from it all?*	Not at all	No more than usual	Rather more than usual	Much more than usual
60. — *found that the idea of taking your own life kept coming into your mind?*	Definitely not	I don't think so	Has crossed my mind	Definitely has

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Appendix H

MICHIGAN STATE UNIVERSITY PARTICIPATION CONSENT FORM

This project regards the social networks, health, and perspectives of college students. You will receive 3 extra credit points for completing a questionnaire that will take between 60-90 minutes to complete. Your answers will be totally anonymous and confidential. PLEASE DO NOT PUT YOUR NAME ON THE QUESTIONNAIRE. We do ask, however, that you answer the questions honestly and thoughtfully. Thank you for your time and consideration.

1) The study has been explained to me. I understand the explanation that has been given and what my participation involves.

2) I understand that my participation is entirely voluntary and that I am free to stop participating in the testing session at any time without penalty.

3) I understand that my responses on the questionnaire will be strictly confidential and anonymous.

4) I understand that my participation in this research will not quarantee any direct benefits to me.

5) I am at least 18 yrs. of age or have signed parental consent.

6) I understand that I can discuss any feelings about my participation in this study with Belle Liang (52 Baker Hall, phone #: 355-7440).

7) I understand that I will no receive the 3 credits unless and until I participate in my scheduled testing session.

8) My completion of the following questionnaire is proof of my consent to partcipate in the research project.

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