

Resilience in Young Adulthood: The Moderating Influences of Gender-related Personality Traits and Coping Flexibility

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Abstract The study was designated to explore the resilient (moderating) influences of gender-related personality traits and coping flexibility on the relations between life event stress and psychosocial adjustment in a sample of 291 Chinese young adults. Multiple outcomes (i.e., psychological, physical, and interpersonal aspects of adjustments) were separately examined with regression analysis. The interaction effects explained 5% of the unique variance in the psychological distress model and 4% of the unique variance in the interpersonal functioning model beyond the main effects. Coping flexibility tended to reduce the associations between life event stress and depression. Furthermore, masculinity buffered the link between life event stress and interpersonal functioning. The three-way interaction masculinity \times femininity \times stress also predicted additional unique variance in interpersonal functioning, which indicates that non-gender-typed respondents showed greater resilience to recent life stress than did their gender-typed counterparts. Implications of these findings are discussed.

Keywords Resilience · Masculinity · Femininity · Androgyny · Coping flexibility

The construct of resilience represents a dynamic process in which individuals adapt positively despite significant adversity and risk (Luthar, Cicchetti, & Becker, 2000). Its origin can be traced back to Werner and Smith's (2001) foundational study in which a high-risk group of Kauai children were followed from 1955 onward. The group was

termed high-risk because it had four or more cumulative risk factors (e.g., perinatal problems, poverty, or parental mental instability) by age 2 years. It had generally been expected that a large number of risk factors would inevitably cause behavioral problems and psychiatric disturbances. Yet Werner and Smith's results came as a complete surprise: About one-third of the residents followed were doing very well despite the adversity. Those children developed into "competent, confident, and caring adults" (Werner, 1995, p. 82). These groundbreaking findings, aligned with those of other pioneering psychologists and psychiatrists (Anthony, 1974; Garmezy, 1971, 1974; Murphy, 1976; Rutter, 1979), inspired two decades of scientific investigation. An array of protective factors have been identified, and these factors fall into three broad sets of variables (Masten & Garmezy, 1985; Werner, 1995): (1) personal characteristics, such as IQ, optimism, temperaments that elicit positive responses, and a close bond with a caregiver; (2) family conditions, such as warm, secure family relations, structures and rules in the household, supportive siblings, and parental competence; and (3) community support, such as supportive teachers and other extrafamilial role models.

Resilience continues to enjoy high popularity in the area of scientific inquiry for its conceptual and applied implications. The recognition and study of resilient individuals offer a positive alternative to the deficit-focused view about development under the threat of adversity and disadvantages (Masten, 2001). As stated by Windle (1999), rather than emphasizing risk factors and inevitable disease progression, focus has been directed toward the identification of protective factors and adaptation. Also, resilience studies are believed to hold great promise for helping at-risk children and families because, by explaining why and how individuals succeed under stressful situations, they

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offer new directions for improving the effectiveness of preventive programmes (Kumpfer, 1999).

Adversity and Positive Outcomes

Adversity and positive outcome represent two main concepts that define resilience. The measurement of stress and positive outcomes are thus particularly important. According to Luthar and her associates (Luthar, 1991; Luthar & Cushing, 1999), three approaches are frequently adopted to conceptualize adversity: the life event approach, the specific stressor approach, and the constellation of multiple risk approach. The life event approach uses multiple-item measures to count the frequency of an array of adverse events or influences (e.g., hospitalization, losing a close friend, or parental divorce) in a person's recent life. A high frequency of negative life events indicates a stressful living environment. The specific stressor approach has been based on specific adverse life circumstances (e.g., war, trauma, chronic illnesses, or institutionalization). Living in obviously disruptive environments is presumed to be stressful by nature. The constellation of the multiple risk approach considers sociodemographic and familial characteristics (e.g., poverty, low parental income, or absence of a parent in the household). Among these three approaches, the life event approach represents the most widely used measurement strategy (Luthar & Cushing, 1999). The approach surpasses others with its comprehensive coverage of various adverse incidents across an individual's life. The identification of a more generic protective factor against a range of major life events is more practical and desirable than that against a specific stressor. In addition, the continuous stress score can easily be split into high and low groups and thus provides a built-in control group comparison; there is no need to collect data from specific high-risk and low-risk groups (Luthar & Zigler, 1991). Given these advantages, we used life event measurement to conceptualize stress in the present study.

As with adversity, a number of different methods have been used to measure positive outcomes. Psychological adjustment (e.g., Dumont & Provost, 1999; Herman-Stahl & Petersen, 1996; Steinhausen & Metzke, 2001), physical health (e.g., Higgins & Endler, 1995), social competence (e.g., Luthar, 1991), and general functioning (e.g., Tiet et al., 2001) have been employed in various studies as outcome criteria. However, as noted by Thoits (1995), most studies have focused primarily on one domain of outcomes (usually psychological health as indicated by depression or anxiety measures), which underestimates the impact of stress and limits the understanding of the relations between stress and adjustment. In fact, researchers of resilience have already observed sizeable heterogeneity

in the functioning of resilient individuals across various indices of adjustment (Criss, Pettit, Bates, Dodge, & Lapp, 2002). Luthar (2006) also highlighted the importance of defining positive adaptation across multiple spheres because "overly narrow definitions can convey a misleading picture of success in the face of adversity" (p. 8). In response to previous writers' advocacy of the use of multiple outcomes in stress/resilience research, in the present study we used three distinct indices of adjustment (i.e., psychological distress, physical health, and interpersonal functioning) as outcome criteria.

The Moderators

Roosa (2000) contended that "interactions [between stress and protective factors] are the heart and soul of resilience and arguably the most important and distinguishing feature of [the] concept" (p. 567). A resilient factor exerts a buffering effect at high risk but has no or little effect at low risk. Factors that have a beneficial effect at both low and high risk are distinguished from resilient factors and are named resource factors. In the present study, we employed hierarchical regression analyses to examine the stress buffering effect of gender-related personality traits and coping flexibility across different domains of adjustment indices.

Masculinity, Femininity, and Androgyny

Masculinity and femininity may be important in understanding resilience to stressful events during young adulthood. Masculinity includes traits that are characterized by an instrumental orientation or a cognitive focus on "getting the job done." Femininity includes traits that are characterized by an interpersonal orientation or an "affective concern for the welfare of others" (Bem, 1974, p. 156). The two clusters of traits were once thought to be opposite poles of a single continuum. However, in the 1970s, Bem (1974) proposed that masculinity and femininity should be viewed as distinct and relatively independent clusters of traits. A person can score high on one dimension but low on the other (e.g., feminine or masculine); high on both dimensions (androgynous), or low on both dimensions (undifferentiated).

Bem also challenged the traditional congruence model of mental health, which posited that it was masculine men and feminine women who enjoyed the highest levels of psychological well-being (Whitley, 1985). According to her theory, different situations warrant behaviors that are stereotypically masculine or feminine. Gender-typed people tend to suppress any behavior that would violate the gender

role standard, and thus they reduce the range of behavioral repertoire available to them. In contrast, androgynous people “engage in whatever behavior seems most effective at the moment, regardless of its stereotype as appropriate for one sex or the other” (Bem, 1975, p. 634). They are, thus, expected to secure the greatest behavioral flexibility and to form the most adaptive group.

Bem’s original model of androgyny implied an additive effect of masculinity and femininity on psychological well-being. That is, both femininity and masculinity are associated with certain attributes of “effectiveness” that can be combined into a net composite score in an additive (i.e., linear) manner (Lubinski, Tellegen, & Butcher, 1981). However, as elaborated by Betz (1995), if an androgynous individual enjoys the highest levels of adaptability simply by virtue of possessing masculine and feminine characters in a straightforward, additive way, the concept of androgyny would not be needed because any predictive power could be adequately estimated by a simple combination of the two scores. The usefulness of the concept of androgyny lies in its interactive nature. That is, femininity enhances the positive effect of masculinity and vice versa. Feminine aesthetic sensitivity and masculine engineering skills, for example, may be multiplicatively combined to yield creativity in architects (Harrington & Anderson, 1981).

Based on the modified interactive model (Lubinski, Tellegen, & Butcher, 1983), a few researchers have studied the buffering effect of gender-related personality traits against life adversity. Whether masculinity, femininity, and androgyny work together as a resilient factor, however, remains elusive. A. M. Nezu, C. M. Nezu, and Peterson (1986) found masculinity to serve as a resilient factor against negative stressful events: Young adults with high masculinity scores reported lower levels of depression in stressful situations. Roos and Cohen (1987) reexamined Nezu et al.’s (1986) hypotheses and replicated their results longitudinally. Their analyses also revealed a significant interaction, negative life event \times masculinity \times femininity, which suggests that non-gender-typed respondents showed greater resilience than did their gender-typed counterparts. Both of the studies revealed no differences as a function of sex and little contribution of the femininity dimension to the prediction of depression/anxiety symptoms. Towbes, Cohen, and Glyshaw (1989), however, could only find the stress buffering effect of masculinity in a subsample of middle adolescent girls, but not in early adolescent girls or in any adolescent boys. Femininity was also revealed to be negatively related to anxiety in girls and to depression in boys (Towbes et al., 1989). Wagner and Compas (1990) continued to explore the roles of gender, masculinity, and femininity as moderators only to make the overall picture more difficult to interpret. In fact, they found little evidence that masculinity, femininity, or androgyny moderated the relations between negative life

stress and psychological distress in samples of junior high, senior high, and college students.

In addition to the inconclusive moderating roles played by masculinity, femininity, and androgyny, one obvious weakness in studies of gender-related personality traits as resilient factors is the inclusion of only a few psychological health indices (e.g., self esteem, depression, or anxiety) as the outcome measure. The buffering effect of gender-related constructs in mitigating the negative impact of life event stress on other domains of adjustment is virtually unknown. Another point of note is that these limited studies have been mainly conducted in North America. Questions remain as to whether gender-related personality traits operate as resilient factors in Chinese samples. Although Chinese culture has been prejudiced by centuries of male-dominated ideology that places women in a subordinate role (Hong, Veach, & Lawrenz, 2005) and rewards adherence to traditional gender roles (McKeen & Bu, 2005), Western modernization continues to contribute to the gradual acceptance of gender equality and balanced gender roles. Previous researchers have examined the validity of Bem’s theory of adaptive androgyny in Chinese samples and found it largely applicable (e.g., Cheng, 1999, 2005; Wang & Creedon, 1989; Zhang, Norvilitis, & Jin, 2001).

Modern Chinese society favors men and women who are assertive, competent, influential, and independent (Cheng, 2005). People who perceive themselves as having more of these socially desirable instrumental qualities may tend to develop more positive self-concepts (I. K. Broverman, Vogel, D. M. Broverman, Clarkson, & Rosenkrantz, 1994) and thus to perceive stressful events as less threatening (Roos & Cohen, 1987; Towbes et al., 1989; Wagner & Compas, 1990). Both of these tendencies are believed to be important in times of adversity (Werner, 1995). There is also evidence in support of the stress buffering effect of androgyny. Werner (1995), in a 30-year longitudinal study, found that resilient children demonstrated “healthy androgyny” (p. 121) and treasured their special interests or hobbies that were not narrowly gender-typed. Moreover, resilient girls appear to come from households that shun overprotection and that emphasize risk-taking and independence, whereas resilient boys came from households that encourage emotional expressiveness (Werner, 2000). In other words, resilient children tend to be socialized in non-gender-typed manners. Thus, we hypothesized that both masculinity and androgyny moderate the relations between stress and adaptation.

Coping Flexibility

According to Lazarus and Folkman (1984), coping is the process of managing internal or external demands, which

are appraised as taxing or exceeding one's ability. The strategies can be problem-focused, that is, they can be directed at changing or removing the demands (e.g., doubling the effort to solve the problem). They can also be emotion-focused and aimed at regulating the emotional reactions triggered by the demands (e.g., avoiding the stressor). There are also strategies that serve both problem-focused and emotion-focused functions. Seeking social support, for example, alleviates emotional distress triggered by stressors and provides instrumental aid (e.g., money when faced with financial difficulty) or additional information (e.g., procedures of problem solving).

Several previous studies have shown that a problem-focused coping style tends to be linked to positive adjustment and that an emotion-focused coping style tends to be associated with poor mental health (e.g., Davey, Eaker, & Walters, 2003; Herman-Stahl & Petersen, 1996; Steinhausen & Metzke, 2001). However, a number of writers have questioned the position that problem-focused coping is always more adaptive than emotion-focused coping (e.g., Cheng, 2001; Thoits, 1995). They reason that no single strategy is efficacious or maladaptive across all stressful situations. In fact, even repressive coping, which has, by consensus, been viewed as maladaptive and may be associated with long-term health costs, appears to foster resilience in extreme adversity (Bonanno, 2004). In Lazarus and Folkman's (1984) foundational discussion about stress, a goodness-of-fit hypothesis was proposed to explain the efficacy of coping: An adaptive coping strategy is not defined by its problem-focused composition. Rather, it is the fit or match for the situational characteristics, such as controllability, that is important. The substantive possibility of this type of flexibility has been illustrated by Thoits (1995), who asserted that problem-focused strategies would be more effective if the stressor allows some potential for control (e.g., a student preparing for an upcoming quiz) and emotion-focused strategies would be more adaptive in the face of uncontrollable events (e.g., the death of a loved one).

Although the goodness-of-fit theory makes sense theoretically, the practicability of its measurement poses a great challenge to researchers. It is hard to measure the controllability of stressors and to group coping strategies under the problem-focused versus emotion-focused classification. The subjective rating of the controllability of a stressor is inevitably influenced by the personality and previous experience of respondents and thus varies from one to another. It is even more difficult, if not impossible, to take all dispositional and environmental factors into account and calculate the objective controllability of an event. The classification of coping strategies is further complicated by the fact that many strategies represent a blend of problem-focused and emotion-focused approaches.

Apart from measuring the goodness-of-fit, another way to operationalize coping flexibility is to tap the range of different coping strategies, defining an adaptive person as one who can flexibly adjust her coping strategies to face distinct stressors. Two studies on life stress, coping flexibility, and psychological distress (Mattlin, Wethington, & Kessler, 1990; Pearlin & Schooler, 1978) have been conducted with US households, and the results suggest that people who routinely use a large number of coping strategies in response to stressors experience lower emotional distress. In an attempt to explore the stress buffering effect of coping flexibility, Pearlin and Schooler (1978) computed a series of correlations between psychological distress and life stress in groups defined by individuals' range of coping repertoire. It was found that as the number of coping strategies a person employed increased, the specific stressors of marital and economic events became decreasingly likely to be associated with psychological distress. Although the linear decrease in the correlation did imply a moderating effect of coping flexibility, the hypothesis was not examined with a statistical significance test. Mattlin et al. (1990), on the other hand, ran multiple regression of depression and anxiety on coping flexibility and the use of other coping strategies separately for groups defined by stress severity, despite the fact that they were not intended to examine the moderating effect of coping flexibility. It was surprising that coping flexibility did not significantly predict psychological distress in any subsample even with its significant contribution to the prediction of anxiety when all the respondents were analyzed as a group. Mattlin et al. split their sample into two groups based on the stress score originally measured with a three-category scale. The nonsignificant results may be attributable to the loss of information when they classified respondents into high or low stress groups.

In the present study we employed hierarchical regression analyses that included the interaction between life event stress and coping flexibility, both of which were analyzed as continuous variables. These analyses enriched our understanding of the relations between coping flexibility and stress because we used a statistical significance test and retained the continuous nature of variables. It is thus expected that coping flexibility would moderate the relations between stress and adaptation.

The Present Study

To recap, the literature concerning the relations of life adversity, gender-related personality traits, and coping flexibility to current adjustment indices has been equivocal. Although the direct and moderating effects of masculinity and androgyny have not been consistently documented,

coping flexibility has not been examined as a moderator of life stress with hierarchical regression analyses. Further problems have arisen through the usual practice of including only one domain of outcome variables in previous resilience studies. On these bases, in the present study we tested the effects of masculinity, femininity, androgyny, and coping flexibility as moderators against life adversity. Multiple measures of outcomes, namely psychological distress, physical health, and interpersonal functioning were used.

The hypotheses that guided our study were as follows. First, when major life events and stresses accumulate, psychological distress increases and physical health and interpersonal functioning decrease. Second, masculinity, androgyny, and coping flexibility were expected to have both main and interaction effects in relation to life event stress and measures of adjustment indices. Specifically, masculinity, androgyny, and coping flexibility would result in lower levels of psychological distress and in higher levels of physical health and interpersonal functioning (main effects). The presence of any of these factors might also reduce the strength of relations between life event stress and adjustment (moderation effects). Finally, femininity was expected to have a main, but not a moderating, effect.

Method

Procedure and participants

A sample of 131 women and 160 men studying in a major university in Hong Kong was tested. The mean age of participants was 21.29 years ($SD=2.86$).

About 400 booklets that consisted of paper-and-pencil questionnaires on stress and resilience were distributed to both undergraduate and graduate students through libraries. After the consent form was read and signed, participants were asked to fill in the questionnaire and to return the completed form in an attached envelope. Two hundred thirty-four students returned the questionnaires, yielding a response rate of about 57%. After we excluded those students who did not complete the questionnaire, valid respondents were 228 college students. Participation in the study was voluntary and there was no monetary reward.

An on-line version of the questionnaire was also used to obtain a larger sample size. The on-line questionnaire can be a convenient and reliable mode of data collection because of its reduced time, lowered cost, ease of data entry, flexibility in format, and ability to capture response-set information (Granello & Wheaton, 2004). The link to the on-line questionnaire was posted in a number of Internet discussion forums that the target participants were expected

to visit (e.g., dormitory and college Internet forums). On the first page of the questionnaire, we stated that participants must be Hong Kong residents who were willing to make voluntary contribution to academic research. A total of 63 students responded to the Internet survey. The Internet response rate was not calculated because the number of potential respondents who visited the website but chose not to participate was not known.

Measures

The questionnaire included questions on demographics. It also contained questions to measure negative life events, masculinity, femininity, coping flexibility, psychological distress, physical health, and interpersonal functioning of respondents.

Negative life events A 22-item scale to measure recent experience of negative life events was constructed by reviewing the work of Cheng (1997), D. W. Chan, M. W. Chan, and T. Chan (1984), Tiet et al. (2001), and Swearingen and Cohen (1985). Based on responses from a sample of 618 Chinese adolescents, Cheng developed a 44-item scale to measure subjective ratings of life events. Chan et al., on the other hand, adapted Western measurements of life events and administered their scale in a sample of 261 university students and staff in Hong Kong. The scales used in these two local studies were expected to be culturally relevant in Hong Kong settings. In fact, when the test-retest reliability and criterion validity of Cheng's (1997) scale were examined in another sample of adolescents, the locally derived scale was found to yield stronger relationships with depression than did the translated life event measures. The items from these two studies were thus used as the skeleton of our measurement. Additional items, however, were drawn from the negative life event scales used in Swearingen and Cohen and Tiet et al.'s studies so as to extend the scope of life events we measured. Sample events are "Parents separated or divorced" and "Seriously sick/injured."

Previous life event measures tended to contain a heterogeneous mix of events that were presumed to be stressful to the general public. The events also ranged from desirable to undesirable and often included those that may themselves be manifestations of maladjustment (e.g., failing a grade at school, getting an award) (Luthar & Zigler, 1991). In order to address these limitations, the selection of items was based on three criteria: First, only life events common in the age group of our participants were selected. Events, such as marriage and menopause, were considered to be too rare to occur in our target group and were thus excluded. Second, we deleted events which themselves could be considered indices of maladjustment as they may

inflate the correlation between life event stress and adjustment. Third, only negative events were selected because positive ones, such as achieving an academic honor, were expected to be less stressful (Streiner, Norman, McFarlane, & Roy, 1981) and, thus, less suitable for conceptualizing adversity in resilience studies.

Another potential problem concerning the scale was the subjectivity in the perception of stress. The events in the scale were only judged by us to be stressful to young adults. Some respondents might not find them stressful at all. Therefore, participants were asked not just whether they had experienced a particular event, but also the extent to which it had affected their lives. Respondents were asked to answer “yes” or “no” to the question of whether a particular event had happened to them in the recent 6 months. If the event did happen, respondents were asked to indicate how stressful the event was on a 4-point Likert scale from 0 (*not stressful at all*) to 3 (*very stressful*). Two scores were computed for this scale: the simple count of experienced major life events, and the life event stress that represented the sum of stress levels respondents perceived for each experienced stressful event. The scale had an adequate internal consistency ($\alpha=0.93$).

Masculinity and femininity Masculinity and femininity were measured with the shortened version of the Bem Sex Role Inventory translated by Zhang et al. (2001). With samples of American and Chinese college students, Zhang et al. found that there were different patterns of masculinity and femininity across cultures. Only eight masculinity items and eight femininity items in Bem’s original scale had been found to be equivalent across cultures. The scale was modified such that each item represents a masculine or feminine description about self (e.g., “I am an independent person,” “I am affectionate”). Respondents rated the extent to which each item described them on a 6-point Likert scale that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). In the present study, the internal consistencies of masculinity ($\alpha=.83$) and femininity ($\alpha=.83$) subscales were found to be adequate.

Coping flexibility Coping flexibility was operationalized by a diversity of coping strategies. A modified version of the Adolescent Coping Efforts Scale (ACES; Taylor & Jose, 1995; c. f. Jose & Huntsinger, 2005) was used to measure the frequency with which respondents reported using different coping strategies. The original scale contains 21 items; however, only 14 of them were included in the present study. Items were excluded either because (1) they can be considered as potential outcomes of stress, (2) they are conceptually similar to other items, or (3) they describe doing nothing rather than coping. Respondents rated their frequency of using those coping strategies in stressful

situations (e.g., “I ignored or tried to get away from the problems,” “I talked to someone in order to feel better”) on a 4-point Likert scale that ranged from 1 (*not at all*) to 4 (*a lot*). In order to examine the component of coping strategy diversity, a summary score was created by adding the number of items on which the individual scored at or above the sample mean (Haythornthwaite, Menefee, Heinberg, & Clark, 1998). The total score ranged from 0 (a score below the sample means on all items) to 16 (a score at or above the sample means in all items). Its internal consistency in the present study was acceptable ($\alpha=.76$).

Psychological distress Psychological distress was measured by a modified version of the severe depression subscale of the General Health Questionnaire-28 (Goldberg & Hillier, 1979). The original subscale contains seven items that concern the hopeless feelings and suicide ideation of respondents. Only five items were used in the present study: The items “been thinking of yourself as a worthless person” and “thought of the possibility that you might do away with yourself” were deleted for their similarity to other items in the scale. A sample item retained in our study is “I feel that life is not worth living.” To maximize sensitivity to responses, a 6-point Likert scale, instead of the conventional 4-point scale, was used. The 6-point scale ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). It had acceptable internal consistency in the present study ($\alpha=.79$).

Physical health Physical health was assessed by a modified version of the health status subscale in the Health Orientation Scale by Snell, Johnson, Lloyd, and Hoover (1991). The five-item subscale concerned respondents’ perception of the physical status of their body. With a 6-point Likert scale that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*), respondents were asked to comment on such items as “I am in good physical health” and “I am a well-exercised person.” The internal consistency of the scale was acceptable ($\alpha=.72$).

Interpersonal functioning The interpersonal functioning of respondents was measured with five items drawn from the Inventory of Interpersonal Problem-32 (Kellest, Beail, & Newman, 2005) and one item from the General Health Questionnaire-30 (Goldberg, 1978). The Inventory of Interpersonal Problem-32 is a questionnaire designed to assess the difficulties adults typically experience in their interpersonal relationships. The original scale contains eight subscales; in our study, only the four-item Hard to be Sociable Subscale was used. Two sample items are “I find it hard to socialize with other people” and “I find it hard to join in on groups.” The single item drawn from GHQ-30 is “I am able to feel warmth and affection for those near me.” This item was expected to capture problems in interper-

sonal relationships. Respondents were asked to respond to these items on a 6-point Likert scale that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). The scale had adequate internal consistency ($\alpha=.86$).

Results

A one-way between-group multivariate analysis of variance (MANOVA) was performed to investigate the potential differences in responses collected through the two data collection methods (i.e., printed vs. on-line questionnaires). Eight variables that were subject to subsequent statistical analysis were used as the dependent variables. They were biological sex, life event stress, masculinity, femininity, coping flexibility, psychological distress, physical health, and interpersonal functioning. The independent variable was the data collection method. The multivariate results indicated no significant difference between participants recruited on-line and those recruited off-line on the dependent variables, $F(8, 278)=1.66$, n.s.; Wilks' Lambda=.97; partial eta squared=.032. Data collected through the two sources were thus combined for subsequent analysis.

Descriptive data

Table 1 presents Pearson correlations among sex (men were coded as 0 and women as 1), life event count, life event stress, masculinity, femininity, coping flexibility, psychological distress, physical health, and interpersonal functioning. Although we did not formulate hypotheses for the effects of sex, as seen in Table 1, women reported higher levels of femininity, coping flexibility, and interpersonal functioning, and lower levels of psychological distress than did men. Life event stress was significantly related to all of the adjustment indices in the expected directions. The

simple count of major life events, however, was not related to any of the outcome measures. Life adversity was therefore defined only on the basis of levels of life event stress. Further, masculinity was found to be related to all three outcomes. The associations between coping flexibility and the three outcomes also reached significance, with the exception of the variable physical health. Femininity, on the other hand, was associated with interpersonal functioning only.

Analysis strategy

To evaluate whether gender-related personality traits and coping flexibility would buffer the adverse effects of life event stress, separate hierarchical multiple regression analyses were conducted for psychological distress, physical health, and interpersonal functioning. As indicated by the correlation matrix, sex was related to femininity, coping flexibility, and interpersonal functioning. To control for its effect on other variables and to increase the overall R^2 to increase power of the statistical test, the dummy code of sex was controlled as a covariate in each regression analysis. Specifically, sex was entered in the first step of the regression equation. Statisticians have recommended that continuous variables be standardized before being entered into regression equations (Frazier, Tix, & Barron, 2004). We thus included the standardized scores of life event stress, masculinity, femininity, and coping flexibility in the second step (main effect model). In the third step, the three two-way interaction terms between the standardized score of life event stress and each of the standardized score of potential moderator variables were entered (two-way model). This step also included the two-way interaction between standardized masculinity and femininity scores, which was formed to indicate the multiplicative effect between masculinity and femininity or the main effect of androgyny. To examine the moderating effect of androgyny against negative life events, the three-way interaction term

Table 1 Intercorrelations among scales under biological sex, simple count of life event stress, masculinity, femininity, coping flexibility, psychological distress, physical health, and interpersonal functioning.

Measure	1	2	3	4	5	6	7	8	9
1. Biological sex	–								
2. Life event count	-.03	–							
3. Life event stress	-.01	.56**	–						
4. Masculinity	-.07	.12*	.01	–					
5. Femininity	.17**	.00	.01	.24**	–				
6. Coping flexibility	.13*	.08	-.02	.21**	.18**	–			
7. Psychological distress	-.11*	.08	.23**	-.19**	-.07	-.19**	–		
8. Physical health	.01	.04	-.16**	.29**	.10	.03	-.24**	–	
9. Interpersonal functioning	.16**	-.08	-.21**	.40**	.27**	.22**	-.46**	.28**	–

For biological sex, men were coded as 0 and women as 1; * $p<.05$. ** $p<.01$.

Table 2 Hierarchical regressions of masculinity, femininity, and coping flexibility in the link between life event stress and psychological distress, physical health, and interpersonal functioning in chinese young adults.

Step	Variables	Psychological distress		Physical health		Interpersonal functioning	
		β	ΔR^2	β	ΔR^2	β	ΔR^2
1	Sex	-.11*	.01*	.01	.00	.16**	.03**
2	Life event stress	.23***	.11***	-.16**	.11***	-.20***	.24***
	Masculinity	-.17**		.30***		.36***	
	Femininity	.01		.03		.15**	
	Coping flexibility	-.14*		.04		.10	
3	Life event stress×Masculinity	-.02	.05**	-.01	.00	.15**	.03*
	Life event stress×Femininity	.10		.03		.01	
	Life event stress×Coping flexibility	-.12*		-.00		-.03	
	Masculinity×Femininity	-.19**		.01		.07	
4	Life event stress×Masculinity×Femininity	.01	.00	-.04	.00	-.13*	.01*

For biological sex, men were coded as 0 and women as 1; * $p < .05$. ** $p < .01$. *** $p < .001$.

life event stress×masculinity×femininity was entered in the fourth step (three-way model). Finally, as emphasized in Frazier et al.'s (2004) comprehensive review of moderation analyses, a final step that contained the interactions between sex and all other variables was added to determine whether the covariate acted consistently across different levels of other variables. The omnibus F tests of the last steps in the three hierarchical regression analyses were nonsignificant, Psychological distress: $F_{\text{change}}(9, 270) = .91$, n. s.; Physical health: $F_{\text{change}}(9, 270) = 1.26$, n. s.; Interpersonal functioning = $F_{\text{change}}(9, 270) = 1.20$, n. s., which suggests that sex did not moderate the relations among other variables in the models. The results regarding the final steps were thus dropped from the models and are not discussed in later sections.

Significant two-way interaction effects were graphed, such that predictor-criterion regression lines are portrayed for different levels of significant moderators to probe their potential resilient effects (Luthar et al., 2000). Specifically, the predicted values of the outcome variables were calculated for groups with low (lower than -1 SD), medium (between -1 SD and +1 SD), and high (higher than +1 SD) scores on the index of moderators (Frazier et al., 2004). For clarity, significant three-way interaction effects were graphed by first dichotomizing participants based on their scores of one predictor variable (below and above the median) and then depicting regression lines for low, medium, and high levels of another predictor variable.

Hierarchical regression to predict outcome criteria

The sex of respondents contributed to the explanation of variance in psychological distress, $F_{\text{change}}(1, 288) = 3.87$, $p = .05$ and interpersonal functioning, $F_{\text{change}}(1, 288) = 7.30$, $p < .01$. Women seemed to report lower levels of psychological distress and higher levels of interpersonal function-

ing. The main effect model was significant for all three outcomes, Psychological distress: $F_{\text{change}}(4, 284) = 8.94$, $p < .001$; Physical health: $F_{\text{change}}(4, 284) = 9.13$, $p < .001$; and Interpersonal functioning = $F_{\text{change}}(4, 284) = 23.87$, $p < .001$. As hypothesized, life event stress as well as masculinity contributed unique variances and explained all three outcomes as main effects. Furthermore, femininity and coping flexibility explained interpersonal functioning and psychological distress, respectively, which indicates that more feminine adults enjoyed higher levels of interpersonal functioning and that those whose coping repertoires were broader were less depressed (see Table 2).

The two-way interaction part of the model significantly explained psychological distress, $F_{\text{change}}(4, 280) = 3.90$, $p < .01$, and interpersonal functioning, $F_{\text{change}}(4, 280) = 2.68$, $p < .05$. For psychological distress, significant two-way interactions were life event stress×coping flexibility, standardized beta = $-.12$, $t(280) = -1.94$, $p = .05$, and masculinity×femininity, standardized beta = $-.19$, $t(280) = -3.30$, $p < .01$. Figure 1 shows the main effects of life event stress and coping flexibility as well as the stress-buffering

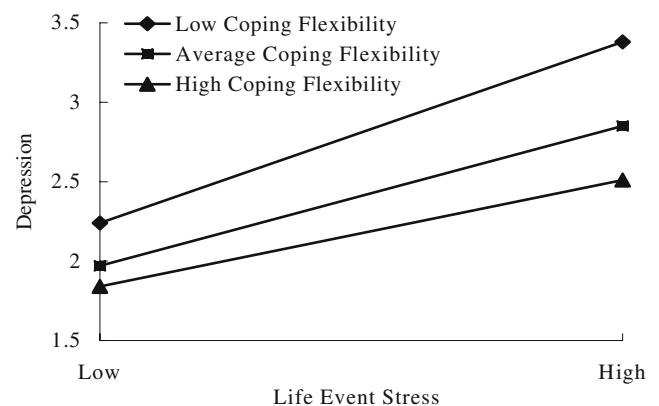


Fig. 1 Regressions of depression on life event stress for high, average, and low coping flexibility levels.

effects of the latter. The regression slopes (unstandardized betas) across ascending levels of coping flexibility were .04 (intercept=2.24), .03 (intercept=1.97), and .02 (intercept=1.84). The relation between life event stress and psychological distress became decreasingly positive when individuals used a broader range of coping strategies. By focusing on the end points of the regression lines, one can also observe that coping flexibility exerted more salient effects on psychological distress in high-risk than in low-risk conditions. Figure 2 shows the main effects of femininity and masculinity and the moderating effect of the latter. The regression slopes (unstandardized betas) across ascending levels of masculinity were .31 (intercept=1.15), $-.15$ (intercept=2.81), and $-.34$ (intercept=3.38). The results suggest that, for respondents with the lowest levels of masculinity, femininity was positively related to depression. However, when the levels of masculinity increased, femininity scores became negatively associated with depression. In support of an interactive model of androgyny, masculinity enhanced the positive effect of femininity on psychological health.

Similarly the two-way interaction term life event stress \times masculinity, standardized beta=.15, $t(280)=2.83$, $p<.01$, was significant for interpersonal functioning. Figure 3 shows the main effects of life events stress and masculinity as well as the stress-buffering effects of the latter: The regression slopes (unstandardized beta) of interpersonal functioning on life event stress at low, medium, and high levels of masculinity were $-.10$ (intercept=3.78), $-.02$

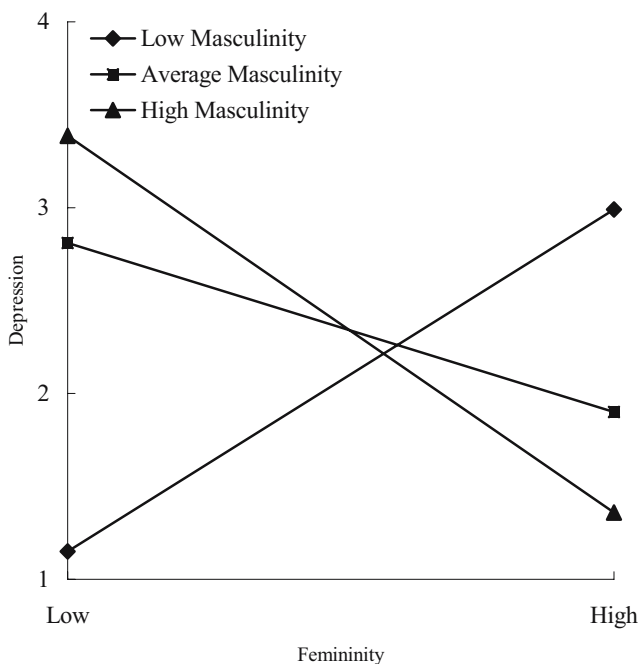


Fig. 2 Regressions of depression on femininity for high, average, and low masculinity levels.

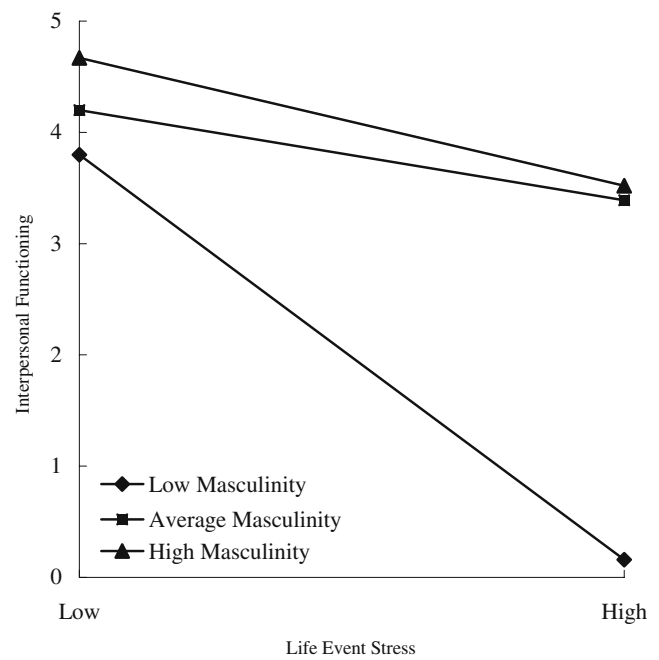
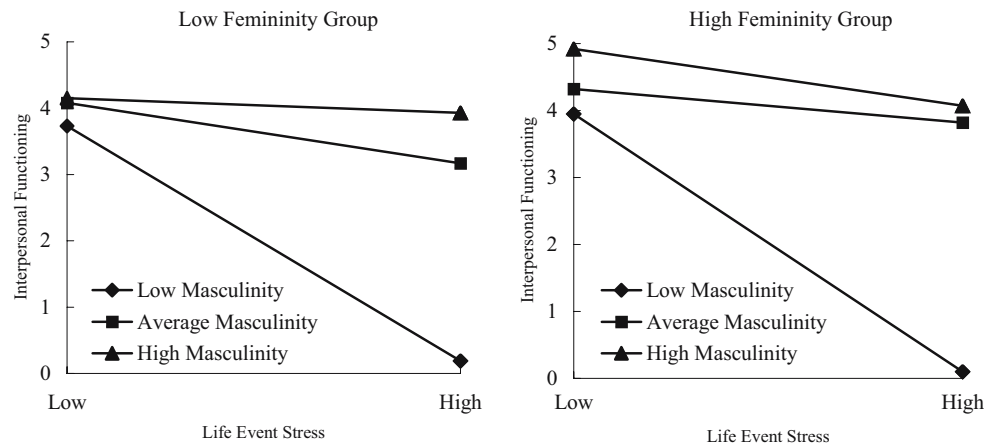


Fig. 3 Regressions of interpersonal functioning on life event stress for high, average, and low masculinity levels.

(intercept=4.20), and $-.03$ (intercept=4.66). The association between life event stress and interpersonal functioning became decreasingly negative as masculinity increased. An examination of the end points of the lines also revealed that masculinity was more related to interpersonal functioning in high-risk than in low-risk conditions.

The final exploratory hypothesis examined whether androgyny would buffer the negative effects of life events. This was done by testing the three-way interactions among life event stress, masculinity, and femininity. The three-way interaction explained significant portions of variance for interpersonal functioning, $F_{change}(1, 279)=4.45$, $p<.05$. There was a significant effect for life event stress \times masculinity \times femininity for interpersonal functioning, standardized beta= $-.13$, $t(280)=-2.11$, $p<.05$. Figure 4 presents the main effects of life event stress, masculinity, and femininity. The figure also reveals a stronger stress-buffering pattern for masculinity in the high femininity group. For respondents whose femininity scores were below the median, the unstandardized betas of interpersonal functioning on life event stress were $-.10$ (intercept=3.73), $-.03$ (intercept=4.07), and $-.01$ (intercept=4.15) at low, medium, and high levels of masculinity, respectively. For respondents who reported a femininity score above the median, the regression slopes (unstandardized beta) were $-.11$ (intercept=3.95), $-.01$ (intercept=4.32), and $-.02$ (intercept=4.92) across ascending levels of masculinity. The association between life event stress and interpersonal functioning became decreasingly negative as masculinity increased. As predicted, androgynous respondents showed

Fig. 4 Regressions of interpersonal functioning on life event stress for high, average, and low masculinity levels.



greater resilience to recent life stress than did their gender-typed counterparts.

Discussion

In the present study, we sought to further the understanding of the role of gender-related personality traits and coping flexibility in mitigating the negative influences of life events stress in a group of Chinese young adults. As predicted, when life event stress accumulated, psychological distress increased and physical health and interpersonal functioning decreased. In addition, masculinity was found to be a relatively consistent resource factor across different outcome criteria. Femininity, androgyny, and coping flexibility, on the other hand, exerted main effects in more specific domains of adjustment. There was evidence that masculinity, androgyny, and coping flexibility served as resilience factors in young adulthood. Specifically, this study revealed that masculine and androgynous individuals enjoyed relatively high levels of interpersonal functioning regardless of their life stress scores. Moreover, the findings for individuals who used a wider range of coping strategies indicated that they experienced lower levels of depression when faced with life stress.

Biological sex and psychological distress

Our results suggest that women experienced lower levels of psychological distress than did men. This finding appears to be counter-intuitive because a large number of previous studies showed that women report more internal distress than do men (e.g., Davis & Katzman, 1997; Kessler, McGonagle, Swartz, & Blazer, 1993; Nolen-Hoeksema, 1991). A consensual mechanism for producing this gender difference has not been established (McGrath, Keita, Strickland, & Russo, 1990). However, some theorists speculate that testing conditions can cause respondents to alter responses to test items based on whether the

endorsement is perceived as gender appropriate or not. Page and Bennesch (1993), for example, found that men had significantly lower scores on items that were clearly indicated as measures of depression (i.e., weak feelings) than on those that were indicated as measures of daily hassles. Page (1999) further sustained the postulation by showing that college women scored higher than did men on items that indicate depressive moods and that the patterns reversed in direction when the items measured views on hassles. During our data collection, potential participants were asked to fill in a questionnaire concerning life stress and resilience. Without clear indicators, items on depression also mingled with other items on interpersonal functioning, physical health, coping strategies, and gender role orientation. These arrangements might have helped to make the testing condition more neutral.

Impact of masculinity, femininity, and androgyny

Our analyses revealed a significant main effect of masculinity on different adjustment outcomes. This finding is consistent with previous studies that provide plenty of evidence in support of the positive effects of masculinity (e.g., Aube, Norcliffe, Craig, & Koestner, 1995; Hall, Workman, & Marchioro, 1998; Lau, 1989; Radecki & Jaccard, 1996; Whitley, 1985). However, it should be noted that femininity also explained some unique variance of interpersonal functioning. Our results, which are consistent with those obtained by Aube et al. (1995), Siavelis and Lamke (1992), and Zeldow, Daugherty, and Clark (1987), suggest that femininity is beneficial to individuals when social aspects of adjustment are assessed.

The hierarchical regression analyses also found the relation between femininity and psychological distress to be moderated by masculinity levels. Femininity was positively associated with depression in the low masculinity group. Its association with depression, however, reversed in direction and increased across medium and high levels of masculinity. Previous findings concerning the impact of

femininity on psychological distress are equivocal. A handful of studies revealed a negative relationship between the variables (e.g., Towbes et al., 1989); a larger number of studies, however, showed that higher levels of femininity were unrelated to depression levels (e.g., Lubinski et al., 1981; Roos & Cohen, 1987; Zeldow et al., 1987). In fact, observation that feminine traits were associated with greater responsiveness to experimentally induced forms of depression has also been documented (Ingram, Cruet, Johnson, & Wisnicki, 1988). A possible explanation for why a blend of feminine and masculine personality traits acts as a resource factor is that an androgynous individual is more likely to manage a good balance between being considerate to others and getting things done (Stake, 1997). In contrast, an overwhelming concern for others' welfare, without meeting one's own needs and the instrumental demands posed by contexts, may make one more susceptible to depressed feelings (Polischuk & Collins, 1991). It is noteworthy that gender undifferentiated persons also scored low on the index of depression. In an experimental study of the influence of gender roles on learned helplessness, Baucom and Danker-Brown (1979) also found undifferentiated participants, like their androgynous counterparts, to be relatively unaffected by daunting experiences, possibly due to their lukewarm involvement in tasks and their low expectation for success. Our results may also be related to the phlegmatic characteristics of undifferentiated persons.

We hypothesized that masculinity would serve as a stress buffer in young adults. The hypothesis was supported in the regression analysis of interpersonal functioning on negative life events: The relation between life event stress and interpersonal functioning was strongly negative for low-instrumental individuals but only weakly negative for moderate- and high-instrumental individuals. The interaction involving life event stress, masculinity, and femininity was also significant, which indicates that non-gender-typed respondents showed better interpersonal functioning under recent stress than did their gender-typed counterparts.

Masculinity traits represent a cluster of highly desirable agentic characteristics in a male-dominated society (Cheng, 2005). Previous studies have also shown that both men and women rate masculine attributes, activities, and occupations as more desirable and important than feminine ones (Shaffer & Wegley, 1974). It is, therefore, not surprising that masculine men and women are liked better than feminine men and women (Seyfried & Hendrick, 1973; Shaffer & Wegley, 1974). The popularity and likeableness associated with masculinity may help individuals to develop a more elaborate social network and thus to gain social support more easily. Evidence in support of the buffering effect of social support has amassed in stress- and resilience-related research (e.g., Cohen & Hoberman, 1983; Roos & Cohen, 1987; Schroevers, Ranchor, & Sanderman, 2003). Given the

positive association between masculinity and social support (Roos & Cohen, 1987), social support may play an important role in explaining why masculinity mitigates the negative effects of life event stress.

Although some studies have documented a general preference for the masculine role attitudes in both men and women (Shaffer & Wegley, 1974), femininity may not necessarily be associated with an unfavorable impression. Instead, it might even be valued as "an asset" when combined with masculinity in an androgynous individual (Arkkelin & O'Connor, 1992, p. 518). Major, Carnevale, and Deaux (1981) investigated the social likeability of people who differ in their endorsement of masculine and feminine personality traits in a sample of university students. Their results revealed that androgynous persons, regardless of sex, were liked best. Masculine and feminine persons were only rated midway between androgynous and gender-undifferentiated persons on the dimensions of social likeability. As suggested by Green and Kenrick (1994), the possession of feminine traits, in addition to masculine ones, allows individuals to carry out multiple familial and social roles. Androgynous traits may play additional resilient functions on top of masculinity through their further attraction of social support from others. Future researchers should further explore relations between gender-related personality traits, social support, and life adversity.

Impact of coping flexibility

The hypothesis concerning the main effects of coping flexibility was supported by the regression analysis of depression on life event stress. Individuals who employed a wider range of coping strategies tended to be less depressed. The specificity of the effect of coping flexibility seems to be perplexing. However, a deeper reflection on the possible underlying attributional style of people who cope flexibly puts these results in better context. In the present study, people were deemed flexible when they had tried a diversity of solutions in the face of stress, thus inevitably demonstrating some sense of control or efficacy of behaviors. In other words, individuals are willing to try a new way of coping only when they think it may bring some favorable outcomes. Such efficacious attitudes are in great contrast to the stable and negative attributional style associated with depressive symptoms. Overwhelmed by their learned helplessness experience, depressed individuals tend to expect negative outcomes and to give up at times of high stress (Seligman, 1975). Although managing to explain the specificity of the effect of coping flexibility, the proposed function of implied self efficacy in alleviating depression can only be considered tentative. Future research is needed to explore the relations between self efficacy, coping flexibility, and depression.

Our data lend support to the moderating role played by coping flexibility. As hypothesized, coping flexibility mitigated the effect of life event stress on psychological distress. Despite their extreme heterogeneity, in theory all negative life events exert effects by posing a threat to self-esteem and beliefs of personal control (Cohen & Edwards, 1989). Following this line of reasoning, at times of high stress, self-related concepts may become particularly vulnerable. The sense of control or self-efficacy implied in the behaviors of coping flexibility may develop into a crucial protective factor at times of high stress. Another possible reason may be that employing a wide range of coping strategies allows an individual to handle the demanding tasks of relieving emotions and solving problems simultaneously and thus helps one to remain relatively intact in the face of negative events.

Limitations

Our findings are limited in several ways. First, our sample was exclusively college students, and our results may be subject to sampling bias. This population's higher cognitive abilities, educational status, and general efficacy, compared with the general population, might warrant extra caution when generalizing our results to a broader population. Second, although confidentiality was ensured by anonymity and an on-line data collection method, the study was based on participants' self-reports that might lead to some response bias. It is important for future researchers to use other forms of data collection, such as multiple informants, interviews, expert judgment, or experiments to validate our findings. Third, given our study's cross-sectional design, we cannot infer any causality between the variables. To solve the issue of temporal order, longitudinal research is needed.

Despite these limitations, our findings offer some noteworthy implications for fostering resilience in individuals. If one follows a sample-specific and research-oriented intervention strategy (see, e.g., Chan, Cheung, Gray, Ip, & Lee, 2004), our results suggest that intervention programs should encourage psychological androgyny and a flexible use of coping strategies. The present study reveals that, although masculinity serves as a resilience factor, the personality traits of femininity act as a qualifier and further enhance the buffering effect of masculinity in relations between life event stress and interpersonal functioning. An effective intervention may thus attempt to promote psychological androgyny in at-risk individuals. Specifically, one can adopt Bem's (1998) ideas on how to counter cultural correlates of biological sex and to advocate gender aschematicity. Our results also highlight the importance of coping flexibility as a protective factor against negative life events. Future researchers should thus consider incorporat-

ing coping flexibility as an integral component in intervention programs for life adversity (see, e.g., Haythornthwaite et al., 1998). Helping young adults to recognize their usual range of coping strategies and urging them to cope with problems in different ways may be crucial for alleviating depression in times of high stress.

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