Gender-Role Differences in Susceptibility to the Influence of Support Availability on Depression

Cecilia Cheng

The Hong Kong University of Science and Technology

ABSTRACT   Previous gender-role research on depression has revealed a consistent inverse relationship between masculinity and depression, but a non-significant relationship between femininity and depression. In light of the stronger affiliative needs for feminine individuals, received social support was speculated to moderate the relationship between femininity and depression in the present research. In a longitudinal study of a sample of Hong Kong college students, the relationships among gender-role orientation, received social support, and depression were examined. Consistent with previous findings, masculinity and androgyny were inversely related to depression. Moreover, the present study supplemented previous research by revealing that femininity was related to depression through its interaction with received social support. When the amount of received social support was increased, femininity was associated with a reduction in depression level over time. In contrast, when the amount of received social support was decreased, depression tended to increase with femininity over time. The findings are discussed in terms of their implications for the gender-role literature.

Research that has examined environmental influences on depression (e.g., Bell, LeRoy, & Stephenson, 1982; Cohen, McGowan, Fooskas, & Rose, 1984) has revealed that social support is an environmental resource that mitigates depression. In addition, research (e.g., Payne & Futterman, 1983; Zeldow, Clark, & Daugherty, 1985) has found that gender-role orientation is a major personality factor that accounts for individual differences in susceptibility to depression, with higher levels of masculinity consistently associated with lower depression levels. Femininity, however, is usually found to be unrelated to depression. Hence, masculinity is widely regarded in the research literature as an ameliorative personality quality that mitigates depression, whereas femininity is not.

Gender-role orientation and social support are generally considered to be two separate variables, each having its own contribution to depression. However, these two variables can be integrated into a unified framework to provide additional insights into the complex phenomenon of depression. Although research has revealed a consistent inverse relationship between masculinity and depression as well as a nonsignificant relationship between femininity and depression, such findings do not necessarily imply that masculinity plays a more important role than femininity in mitigating depression. For instance, it is possible that the relationship between femininity and depression is moderated by a third variable, such that femininity may be an important mitigating factor for depression under some conditions, but may not be related to depression under other conditions. Although most research has not attempted to identify such moderators systematically (Flett, Vredenburg, & Pliner, 1985), social support may be one such moderator.

The proposed moderating role of social support in the relationship between femininity and depression is depicted in the upper panel of Figure 1. To elaborate, compared to individuals with lower levels of femininity, individuals with higher levels of femininity are expected to have stronger needs for affiliation, succorance, and nurturance (see Bakan, 1966; Erikson, 1964; Parsons & Bales, 1955). Having stronger affiliative needs, feminine individuals may be especially sensitive to features of their social environment. Specifically, compared to less feminine individuals, they may have a greater concern for harmonious relations with others, and be more ready to seek social resources for emotional support and assistance in tackling problems. If significant others render support, their stronger needs for succorance and affiliation will be satisfied. Fulfillment of the affiliative needs may produce a more

Femininity
(Strong needs for Affiliation and Succorance)

Social Support ⟶ Reduce Depression *(needs fulfilled)*

Lack of Social Support ⟶ Increase Depression *(needs frustrated)*

Masculinity
(Strong needs for Autonomy and Achievement)

Reduce Depression *(needs fulfilled)*

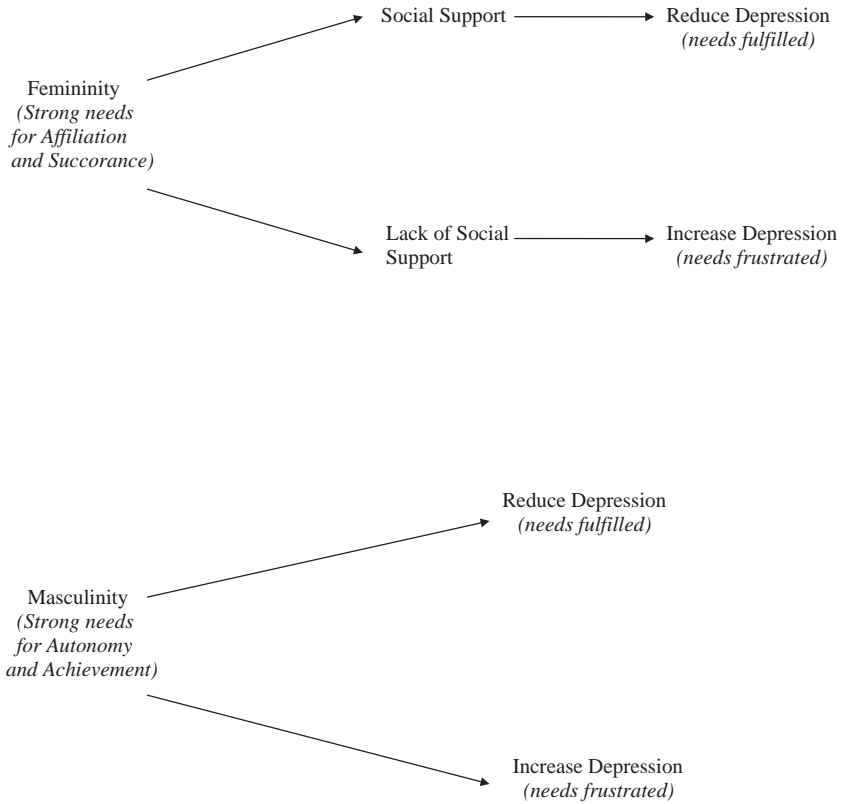Increase Depression *(needs frustrated)*

Figure 1
Hypothesized relationships between gender-role
orientation and depression.

positive mood and thereby protect individuals against depression. However, if significant others fail to provide the assistance needed, frustration of their stronger needs for succorance and affiliation may precipitate a higher level of depression. Such a proposition is consistent with recent depression research on sociotropy or social dependency (e.g., Allen, Horne, & Trinder, 1996; Clark, Beck, & Brown, 1992; Hammen, Ellicott, & Gitlin, 1992; Robins, 1990; see also Beck, 1983; Blatt, D'Afflitti, & Quinlan, 1976; Hirschfeld et al., 1977; Nietzel & Harris, 1990 for detailed descriptions of sociotropy), which revealed that individuals higher in sociotropy were sensitive to the reactions of others and especially vulnerable to interpersonal stressors such as social rejection. In these respects, femininity is proposed to be related to depression, depending largely on the amount of social support a feminine individual receives. The proposed interaction between femininity and social support suggests that femininity may be potentially functional when environmental resources (social support) are available for alleviating depression. However, when social support is needed but not available, feminine individuals may be relatively vulnerable to depression.

Compared to individuals with lower levels of masculinity, individuals with higher levels of masculinity may have stronger needs for achievement, autonomy, and endurance (see Bakan, 1966; Erikson, 1964; Parsons & Bales, 1955). Possibly driven by these achievement-related needs, masculine individuals have a greater tendency than less masculine individuals to show mastery over events and to persist in goal pursuits (Spence & Helmreich, 1978). However, such orientations toward mastery and goal-attainment need not be facilitated by assistance from or cooperation with others. Rather, relative to individuals who have lower levels of masculinity, individuals who have higher levels of masculinity value independence more and prefer to exercise instrumental control by themselves (Vollmer, 1984), and may be more motivated to solve problems alone. Accordingly, the unavailability of social support may have less impact on individuals who have higher levels of masculinity. It is thus possible that the higher the level of masculinity, the lower the depression level, and that this inverse relationship between masculinity and depression is not moderated by the availability of social support.

In a broader perspective, the present proposal is consistent with an interactionist approach to personality, which emphasizes dynamic relationships between personality and environmental factors (e.g., Endler & Magnusson, 1976; Mischel, 1973). Specifically, the present research

explores the interaction of femininity and social support in predicting depression. I predicted that femininity would be inversely related to depression when social support was available, and directly associated with depression when social support was absent. In addition, masculinity was hypothesized to be inversely associated with depression regardless of whether or not social support was available.

In this study, a two-wave longitudinal design was used to examine longitudinal changes in depression as a function of the interaction between (a) the individual's gender-role orientation and (b) the increase versus decrease in social support over time.

METHOD

Research Participants

Participants were 175 Hong Kong undergraduates (103 females, 72 males) who voluntarily participated in this study. Their age ranged from 19 to 21. Ninety-seven percent of the participants (102 females, 68 males) took part in both waves of the study 6 months apart. Participants who took part in both sessions did not differ significantly on any Time 1 measures from those who dropped out from the Time 2 session.

Measures

Gender-role orientation. The Short Form of the Bem Sex Role Inventory (S-BSRI; Bem, 1974, 1981) was employed to measure gender-role orientation. The S-BSRI assesses personality characteristics related to masculinity (e.g., "forceful," "dominant") and femininity (e.g., "gentle," "understanding"). Each of these subscales consists of 10 items. Participants rated how characteristic they were on these 20 items on a 7-point scale, ranging from 1 ("never or almost never true") to 7 ("always or almost always true").

The Chinese version of the S-BSRI, which was translated by Lau (1989), has been widely used to measure gender role in Hong Kong research, and thus was adopted in the present study. The measure has adequate internal consistency in Lau's (1989) study ($\alpha = .88$ for the masculinity subscale and $\alpha = .70$ for the femininity subscale) and in the present study ($\alpha = .85$ for the masculinity subscale and $\alpha = .80$ for the femininity subscale).

To assess the validity of this Chinese measure, the Edwards Personal Preference Schedule (EPPS; Edwards, 1959; see Hwang, 1976, for details of the Chinese EPPS) was included in the present study to assess participants' manifest needs. Femininity was positively correlated with needs for succorance and needs

for affiliation, rs > .33, ps < .001; whereas masculinity was positively correlated with needs for achievement, needs for endurance, and needs for autonomy, rs > .25, ps < .01. These results provided support for the validity of the Chinese S-BSRI, and for the assumption that femininity and masculinity are related to different but theoretically meaningful clusters of psychological needs.

Moreover, participants' masculinity and femininity ratings were factor analyzed. Two factors were extracted by a varimax orthogonal rotation, and the factor structure of the Chinese S-BSRI was comparable to that reported by Bem (1981). These results revealed that the Chinese S-BSRI had adequate construct validity.

To provide further validity information of the Chinese S-BSRI, a study was conducted in which 57 Hong Kong college students (36 females and 21 males, age range from 19 to 21) were asked to rate on a 7-point scale the extent to which each of the S-BSRI item would characterize (a) a typical Hong Kong male, and (b) a typical Hong Kong female. The scale ranged from 1 ("highly characteristic of a typical Hong Kong male"), to 4 ("neutral") and 7 ("highly characteristic of a typical Hong Kong female"). Based on participants' ratings, the S-BSRI items were grouped by the minimum variance method of hierarchical clustering analysis, which minimizes the variance within clusters. In comparison to other possible solutions, the two-cluster solution was the most interpretable and stable. Items included in one of the two clusters were items in the masculinity subscale of the S-BSRI, and items included in the other cluster were items from the femininity subscale of the S-BSRI. Moreover, the intercorrelations of these 20 items were examined. The confidence interval of the between-subscales correlations (–.55, .03) did not overlap with that of the within-subscale correlations for the 10 femininity items (.14, .59) and the 10 masculinity items (.21, .64), indicating that the Chinese S-BSRI items were related to each other within each subscale but items of these two subscales were different from each other. These results provide further evidence for the internal (within-subscale) consistency and empirical independence of the two subscales of the Chinese S-BSRI.

Social support. The provision of support by others was assessed by the Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981). The ISSB contains 40 items that assess specific behaviors of social support as defined by Caplan (1976). Examples of the items are "suggested some action that you should take" and "listened to you talk about your private feelings." Participants rated the frequency with which they received supportive behaviors over the past 4 weeks on a 5-point scale, ranging from 1 ("not at all") to 5 ("about every day").

The Chinese version of the ISSB, which was translated by Ma and associates (1990), was employed in the present study. In their pilot study, cultural differences in the meaning of social support were found in 10 ISSB items and these items were excluded. Hence, the Chinese ISSB comprises 30 items. The Chinese

ISSB had adequate internal consistency in Ma et al.'s (1990) study ($\alpha = .89$) and in the present study ($\alpha = .90$).

The aforementioned validation study not only tested the validity of the Chinese S-BSRI but also that of the Chinese ISSB. Conceptually, social support should be positively related to self-esteem (see e.g., Cobb, 1976; Rosenberg, 1981), perception of internal control (see e.g., Caplan, 1974; Kahn & Antonucci, 1980), and satisfaction with the social environment (see e.g., Gottlieb, 1981; Sarason & Sarason, 1985). Previous validation research also revealed that social support had nonsignificant relationships with extroversion and neuroticism (e.g., Duncan-Jones, 1981; Henderson, Duncan-Jones, Byrne, & Scott, 1980) as well as with anxiety mood states (Norbeck, Lindsey, & Carrieri, 1981; Procidano & Heller, 1983). In the present validation study, participants were given a packet of questionnaires, including the ISSB, Rosenberg Self-Esteem Inventory, Rotter's Locus of Control Inventory, Appraisal Scale of Social Relations, Eysenck Personality Questionnaire, and A-State Scale of the State-Trait Anxiety Inventory. All these measures were in Chinese, the native language of the participants. The validity of the Chinese versions of these measures when used in Hong Kong samples has been demonstrated in previously research (see C. Cheng, 1998; S. T. Cheng & Hamid, 1995; Eysenck & Chan, 1982; Shek, 1988). Results from the present validation study revealed that social support was significantly related to self-esteem [$r(57) = .39, p < .01$], locus of control [$r(57) = .35, p < .01$], and satisfaction with social relations [$r(57) = .30, p < .05$]. However, its relationships with extroversion, neuroticism, and anxiety mood states were nonsignificant, rs $< .10$, *ns*. In short, the Chinese ISSB was significantly associated with only those variables that were theoretically expected to be related, and not with theoretically unrelated variables. Thus, the Chinese ISSB shows adequate convergent and discriminant validity in the Hong Kong sample.

Depression. The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was adopted for measuring depression. The BDI consists of 21 items in which respondents choose 1 of 4 alternative statements that best describes how they have felt for the past week. Four domains of depressive symptoms, namely affective, cognitive, motivational, and physiological, are assessed. A consistent weighted score of 0, 1, 2, or 3 was recommended by Beck and his associates (1961) for scoring the BDI items.

The Chinese version of the BDI, which was translated by Chan and Tsoi (1984), was employed in the present study because it is the most frequently used depression inventory in Hong Kong research. The Chinese BDI had adequate internal consistency in Shek's (1990) study ($\alpha = .86$) and in the present study ($\alpha = .82$). Previous research has found the Chinese BDI scores to be positively related to anxiety, somatic disturbance, inadequate coping, interpersonal dysfunctioning, and sleep disturbance, but inversely related to ego strength and

psychological well-being (Shek, 1991). These findings attest to the criterion validity of the Chinese BDI.

Procedure

For both sessions of the main study, packages of questionnaires were group administered to participants in October and readministered in April of the following year. Research participants were allowed to take as much time as needed to complete the questionnaires.

RESULTS

The present study examined the relationship among gender-role orientation, social support, and depression. The hypothesized main effects and interaction effects of masculinity and femininity at each wave of the study were examined first. Longitudinal analyses of the main effects and interaction effects of gender-role orientation and social support on changes in depression were then explored. Lastly, variables that covaried with participants' shifting depression level were scrutinized.

Pearson product-moment correlations among all the variables are presented in Table 1. At both Time 1 and Time 2, participants with higher levels of masculinity tended to be less depressed, and those who received a greater amount of social support were generally less depressed as well. Moreover, participants who received more social support at Time 1 also tended to have lower depression levels at Time 2, but no such relationships were found between Time 2 social support and Time 1 depression level.

A repeated measures multivariate analysis of variance (MANOVA) was used to examine between-participant effects of sex and gender-role orientation as well as the within-participant effect of time (Time 1 vs. Time 2) on the major variables. In this analysis, both masculinity and femininity were coded as "dummy" categorical (high vs. low) variables. Following the procedures recommended by Bem (1981; see also Lau, 1989), participants were categorized as high/low in masculinity and femininity respectively by using the medians of these two subscales as cut off points. Participants were classified into one of the four gender-role groups, namely the androgynous (i.e., high in both masculinity and femininity), masculine (i.e., high in masculinity but low in femininity), feminine (i.e., low in masculinity but high in femininity), and undifferentiated

Table 1

Table 1

Zero-Order Correlation Coefficients Among Major Variables (*n*=170)

	2	3	4	5	6	7	8
1. Time 1 Masculinity	.30***	.14	−.32***	.89***	.29***	.10	−.37***
2. Time 1 Femininity	—	.10	−.12	.25**	.85***	.06	−.13
3. Time 1 Social Support		—	−.18*	.17*	−.08	.44***	−.22**
4. Time 1 Depression			—	−.29***	−.05	−.11	.57***
5. Time 2 Masculinity				—	.26**	.05	−.36***
6. Time 2 Femininity					—	.12	−.10
7. Time 2 Social Support						—	−.25**
8. Time 2 Depression							—

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

(i.e., low in both masculinity and femininity) groups. Membership in these gender-role groups was stable when using Time 1 and Time 2 S-BSRI scores as the criteria of categorization, and thus only Time 1 S-BSRI scores were reported in all subsequent analyses. Moreover, the social support (ISSB) scores and depression (BDI) scores were centered around their own means.

The MANOVA results revealed significant multivariate main effects for gender-role orientation, $F(4, 156) = 18.79$, $p < .001$; and for time, $F(4, 156) = 72.46$, $p < .001$. These main effects should be interpreted in light of the significant Gender-Role Orientation × Time interaction, $F(12, 464) = 13.08$, $p < .001$. Follow-up univariate analyses of variance (ANOVAs) revealed that significant differences were found among the four gender-role groups for all the Time 1 variables, $Fs > 3.66$, $ps < .05$. Post hoc Tukey HSD tests showed that androgynous participants and masculine participants scored higher on Time 1 masculinity than did feminine participants and undifferentiated participants; androgynous participants and feminine participants scored higher on Time 1 femininity than did masculine participants and undifferentiated participants; androgynous participants scored higher on Time 1 social support than did feminine participants; and androgynous participants scored lower on Time 1 depression than did feminine participants ($ps < .05$).

For Time 2 variables, significant differences were found in all variables, $Fs > 8.05$, $ps < .001$, with the exception of Time 2 social support, $F(1,166) = 1.18$, ns. Post hoc Tukey HSD tests showed that androgynous participants and masculine participants scored higher on Time 2 masculinity than did feminine participants and undifferentiated participants; androgynous participants and feminine participants scored higher on Time 2 femininity than did masculine participants and undifferentiated participants; androgynous participants and masculine participants scored lower on Time 2 depression than did feminine participants and undifferentiated participants ($ps < .05$).

However, no significant effects were found for sex nor for the other interaction terms. Table 2 presents the means and standard deviations of all the variables for the four gender-role groups by time.

Table 2
Means and Standard Deviations of Major Variables for the Sex-Role Groups by Time

	Androgynous (n = 39)		Masculine (n = 46)		Feminine (n = 45)		Undifferentiated (n = 37)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Time 1								
Masculinity	56.26	(6.74)	55.68	(6.68)	33.36	(7.18)	26.26	(6.98)
Femininity	55.74	(7.08)	37.26	(6.96)	54.09	(5.76)	25.97	(6.94)
Social Support	47.43	(5.69)	43.63	(6.31)	42.76	(6.38)	45.08	(6.53)
Depression	7.54	(5.19)	7.65	(4.04)	10.67	(4.61)	10.00	(4.97)
Time 2								
Masculinity	54.69	(5.98)	55.48	(6.89)	32.22	(5.29)	25.08	(7.03)
Femininity	54.72	(7.74)	38.09	(7.54)	53.91	(5.97)	25.92	(6.87)
Social Support	46.64	(6.01)	42.00	(6.17)	43.78	(6.70)	44.01	(6.74)
Depression	6.54	(5.99)	5.63	(4.53)	10.91	(5.30)	11.30	(5.20)

Relationships Among Gender Role, Social Support, and Depression

To examine the main effects and interaction effects between gender-role orientation and social support on depression, hierarchical multiple regression analysis was employed because it allows for the testing of interactions after linearly partialing out main effects (see J. Cohen & Cohen, 1983). Three sets of hierarchical multiple regression analyses were performed: The first set of regression analyses was conducted to provide a general picture depicting the relationships among sex-role orientation, social support, and depression at Time 1 and Time 2, respectively. Another set was carried out to test the proposed hypotheses through the separate conduction of regression analyses on the masculinity effects and the femininity effects. The third set was concerned with longitudinal analyses, which examined the influence of Time 2 predictor variables on Time 2 depression after controlling for their initial scores at Time 1.

For the cross-sectional analysis of masculinity effects at Time 1, the variables of masculinity and Time 1 social support were entered into the regression model as a first-step predictor of Time 1 depression.[1] Following the main effects, the interaction between these two variables, which was calculated as the simple cross-product of the two main effects, was entered into the regression model. These procedures were repeated for analyzing (1) data collected at the second wave, except for all the Time 1 variables being replaced by Time 2 variables; and (2) the femininity effects, with femininity scores replacing the masculinity scores at each wave. For the longitudinal analyses, the procedures were similar to those of the cross-sectional analyses, except the initial (Time 1) scores of social support and depression were entered first, then followed by the entering of Time 2 social support as a predictor of Time 2 depression in subsequent steps.

In these analyses, apart from sex, which was a "dummy" (female vs. male) variable, all the predictor variables were continuous variables. All these predictor variables (except sex) were centered around their own means before entering into the regression model. Alternative models with different orders of variables entering into the regression equation were

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1. The variable of sex was entered into alternative regression models, but no significant main effects and interaction effects were found.

examined, but such varied orders did not alter the resultant parameter estimates.

Cross-sectional analyses: The full models.   The relationships among sex-role orientation, social support, and depression were first examined at Time 1 and Time 2 respectively. As shown in Table 3, results of Time 1 and those of Time 2 were highly similar. Significant effects were found for the main effect of masculinity at both Time 1, $\beta = -.34$, $F(1, 166) = 19.24$, $p < .001$, and Time 2, $\beta = -.40$, $F(1, 166) = 33.40$, $p < .001$. Moreover, significant interaction effects were found between femininity and Time 1 social support, $\beta = -.39$, $F(1, 163) = 30.15$, $p < .001$, as well as between femininity and Time 2 social support, $\beta = -.50$, $F(1, 163) = 12.70$, $p < .001$. The three-way Masculinity × Femininity × Social Support interaction was also significant at both Time 1, $\beta = -.53$, $F(1, 162) = 4.93$, $p < .001$, and Time 2, $\beta = -1.11$, $F(1, 162) = 8.17$, $p < .001$. These results indicate that (a) higher levels of masculinity were associated with lower levels of depression, (b) femininity and social support had a conjoint influence on depression, and (c) androgyny (as indicated by the Masculinity × Femininity interaction) and social support also had a conjoint influence on depression.

Cross-sectional analyses: The masculinity effects and the femininity effects.   To test the hypotheses proposed by this research, separate analyses were conducted to examine the masculinity effects and the femininity effects respectively.

The left panel of Table 4 summarizes the results of the cross-sectional regression analyses for the masculinity effects at both Time 1 and Time 2. As shown in the upper left panel of Table 4, a significant masculinity main effect was found at Time 1, $\beta = -.30$, $F(1, 166) = 14.00$, $p < .001$. Similarly, as revealed in the lower left panel of Table 4, a significant main effect was found at Time 2 as well, $\beta = -.37$, $F(1, 166) = 28.04$, $p = .001$. Such significant masculinity main effects were consistent with the inverse correlations between masculinity and both Time 1 and Time 2 depression ($rs > -.32$, $ps < .01$), indicating that participants with higher masculinity scores generally reported lower levels of depression. However, the nonsignificant Masculinity × Social Support interaction at both Time 1 and Time 2 showed that the relationship between masculinity and depression was not moderated by social support.

Table 3
Cross-Sectional Hierarchical Regression Analyses on Depression

Time 1					Time 2			
Variable	B	$SE\ B$	β		Variable	B	$SE\ B$	β
Step 1 ($R^2 = .13$***)					Step 1 ($R^2 = .27$***)			
MAS	−.11	.03	−.34***		MAS	−.18	.03	−.40***
FEM	.04	.03	.12		FEM	.06	.03	.12
SS1	−.10	.05	−.14		SS2	−.27	.05	−.36***
Step 2 ($\Delta R^2 = .14$***)					Step 2 ($\Delta R^2 = .06$***)			
MAS × FEM	.00	.00	.39		MAS × FEM	.00	.00	.23
MAS × SS1	.01	.00	.89		MAS × SS2	.00	.00	.01
FEM × SS1	−.02	.00	−.39***		FEM × SS2	−.00	.00	−.50***
Step 3 ($\Delta R^2 = .02$***)					Step 3 ($\Delta R^2 = .03$***)			
MAS × FEM × SS1	−.54	.01	−.53*		MAS × FEM × SS2	−.02	.05	−1.11**

Note. MAS = Time 1 Masculinity; FEM = Time 1 Femininity; SS1 = Time 1 Social Support.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Note. MAS = Time 1 Masculinity; FEM = Time 1 Femininity; SS2 = Time 2 Social Support.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4
Cross-Sectional Hierarchical Regression Analyses on Depression

Masculinity Effects				Femininity Effects			
Variable	B	$SE\ B$	β	Variable	B	$SE\ B$	β
Time 1				Time 1			
Step 1 ($R^2 = .12$***)				Step 1 ($R^2 = .13$***)			
MAS	−.30	.07	−.30***	FEM	.02	.08	.02
SS1	−.14	.07	−.14	SS1	−.18	.08	−.18*
Step 2 ($\Delta R^2 = .0006$)				Step 2 ($\Delta R^2 = .17$***)			
MAS × SS1	.02	.07	.02	FEM × SS1	−.40	.07	−.41***
Time 2				Time 2			
Step 1 ($R^2 = .20$***)				Step 1 ($R^2 = .16$***)			
MAS	−.37	.07	−.37***	FEM	−.05	.07	−.05
SS2	−.25	.07	−.25***	SS2	−.11	.07	−.11
Step 2 ($\Delta R^2 = .0013$)				Step 2 ($\Delta R^2 = .15$***)			
MAS × SS2	.02	.07	.02	FEM × SS2	−.40	.07	−.39***

Note. MAS = Time 1 Masculinity; SS1= Time 1 Social Support;
SS2 = Time 2 Social Support.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Note. FEM = Time 1 Femininity; SS1= Time 1 Social Support;
SS2 = Time 2 Social Support.
* $p < .05$. ** $p < .01$. *** $p < .001$.

The right panel of Table 4 summarizes the results of the cross-sectional regression analyses for the femininity effects at both Time 1 and Time 2. As shown in the upper right panel of Table 4, the femininity main effect at Time 1 was nonsignificant, $\beta = .02$, $F(1, 166) = .02$, *ns*. Moreover, as hypothesized, a significant interaction effect was found between femininity and Time 1 social support, $\beta = -.41$, $F(1, 166) = 24.90$, $p < .001$ ($\Delta R^2 = .17$, $p < .001$). Similarly, as shown in the lower right panel of Table 4, the femininity main effect was again nonsignificant at Time 2, $\beta = -.05$, $F(1, 166) = .54$, *ns*. Moreover, as expected, the interaction between femininity and Time 2 social support was significant, $\beta = -.39$, $F(1, 166) = 25.47$, $p < .001$ ($\Delta R^2 = .15$, $p < .001$). These significant interactions between femininity and social support at both Time 1 and Time 2 indicated that the association between femininity and depression was moderated by social support.

Longitudinal analyses. For longitudinal analyses, the results were highly similar to those of the cross-sectional analyses. Results of the longitudinal analyses for the masculinity effects were summarized in the left panel of Table 5. After controlling for the initial levels of social support and depression, a significant masculinity main effect was found, $\beta = -.37$, $F(1, 164) = 32.80$, $p < .001$. As in the cross-sectional analyses for the masculinity effects, the Masculinity $\times$ Social Support interaction was nonsignificant in the longitudinal analysis, $\beta = -.08$, $F(1, 166) = 1.40$, *ns*.

Results of the longitudinal regression analyses for the femininity effects are summarized in the right panel of Table 5. After controlling for the initial levels of social support and depression, a significant main effect for Time 2 social support was obtained, $\beta = -.26$, $F(1, 164) = 18.15$, $ps < .001$, but no significant femininity main effects were found, $\beta = -.02$, $F(1, 164) = .17$, *ns*. Also as expected, the Femininity $\times$ Time 2 Social Support interaction was significant, $\beta = -.37$, $F(1, 160) = 33.19$, $ps < .001$ ($\Delta R^2 = .13$, p .001). It is noteworthy that the significant Femininity $\times$ Social Support interaction was reliably found in different statistical analyses (i.e., regression analysis and ANOVA) using various treatments of the social support scores (i.e., social support scores treated as a continuous variable, and social support scores treated as a "dummy" categorical [high vs. low] variable).

To clarify the nature of this significant interaction, regression lines depicting changes in depression level as a function of the Femininity $\times$ Social Support interaction are shown in Figure 2. For changes in

Table 5
Longitudinal Hierarchical Regression Analyses on Depression

	Masculinity Effects				Femininity Effects		
Variable	B	$SE\ B$	β	Variable	B	$SE\ B$	β
Step 1 ($R^2 = .33$***)				Step 1 ($R^2 = .33$***)			
SS1	−.12	.06	−.12	SS1	−.12	.06	−.12
DEP1	−.54	.06	−.54***	DEP1	−.54	.06	−.54***
Step 2 ($\Delta R^2 = .15$***)				Step 2 ($\Delta R^2 = .08$***)			
MAS	−.37	.06	−.37***	FEM	−.02	.06	−.02
SS2	−.22	.06	−.22***	SS2	−.26	.06	−.26***
Step 3 ($\Delta R^2 = .0061$)				Step 3 ($\Delta R^2 = .13$***)			
MAS × SS2	−.08	.06	−.08	FEM × SS2	−.38	.05	−.37***

Note. SS1 = Time 1 Social Support; DEP1 = Time 1 Depression;
MAS = Time 1 Masculinity; SS2 = Time 2 Social Support.
* $p < .05$. **$p < .01$. ***$p < .001$.

Note. SS1 = Time 1 Social Support; DEP1 = Time 1 Depression;
FEM = Time 1 Femininity; SS2 = Time 2 Social Support.
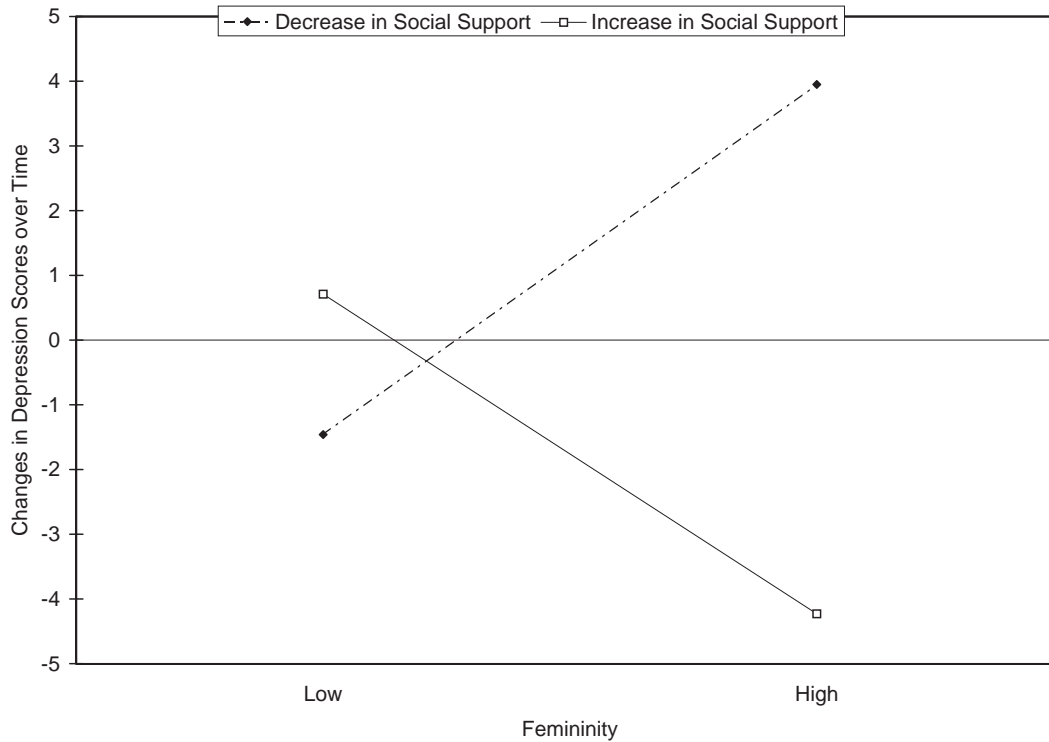* $p < .05$. **$p < .01$. ***$p < .001$.

Figure 2

Changes in depression scores as a function of the interaction between femininity and changes in social support.

depression level, a positive score indicates an increase in depression, whereas a negative score indicates a reduction in depression. For participants who received more social support, those with higher levels of femininity generally reported a decrease in depression level over time (mean BDI-D score = –4.23), whereas those with lower levels of femininity generally reported a slight increase in depression level over time (mean BDI-D score = .71). Post hoc analyses for simple main effects (see e.g., Keeper, 1991; Kirk, 1982) revealed significant differences between these two groups of participants, $F(1,78) = 27.28$, $p < .01$. For participants who received less social support, those higher in femininity generally reported an increase in depression level over time (mean BDI-D score = 3.95), whereas those lower in femininity generally reported a reduction in depression level over time (mean BDI-D score = –1.46). Post hoc analyses for simple main effects also revealed that differences between these two groups of participants were significant, $F(1,87) = 36.61$, $p < .01$. As expected, these results revealed that femininity was inversely related to depression when a greater amount of social support was received, but femininity was positively related to depression when less social support was received, thus providing evidence for the hypothesized moderating role of social support in relation to femininity and depression.

Covariates of Shifts in Depression Level

Results of the longitudinal analyses showed that gender-role orientation and social support were related to longitudinal changes in depression. It should be noted that changes in depression level indicate experience of distinct severity of depressive symptoms. For instance, an individual who reports an increase in depression level within the nondepressed level (e.g., from 2 to 8 for the BDI scores) may have a distinct depressive experience from another one whose depression level moves from nondepressed to mildly depressed (e.g., from 7 to 13 for the BDI scores), or vice versa. In this respect, an additional analysis was conducted to identify variables that covaried with participants' shifting depression levels. Adopting Beck's (1967) original scheme for categorizing the severity of depression of BDI raters, participants were classified into four depression groups: (1) participants in the *depression increase group* whose depression scores shifted from the nondepressed range (i.e., BDI scores below 9) to the mild/moderate range of depression (i.e., BDI

scores greater than 9), (2) participants in the *depression decrease group* whose depression scores shifted from the mild/moderate range of depression to the nondepressed range, and (3) participants in the *chronic low group* whose depression scores remained in the nondepressed range, and (4) participants in the *chronic moderate group* whose depression scores remained in mild/moderate range of depression. This categorization scheme has been adopted in both American and Chinese depression research (e.g., Bumberry, Oliver, & McClure, 1978; Chan, 1991). The means and standard deviations of all the variables for these four depression groups are shown in Table 6.

MANOVA was used to examine between-participant effects of depression category shifting (nondepressed-mild/moderate, mild/moderate-nondepressed, nondepressed-nondepressed, mild/moderate-mild/moderate) and changes in social support (no changes/increase in social support vs. decrease in social support) on masculinity and femininity scores. Results revealed significant differences among the four depression groups in masculinity scores, $F(3,161) = 12.59$, $MSe = 180.95$, $p < .001$ (effect size = .44). Post hoc Tukey HSD tests showed that participants in the chronic moderate group reported significantly lower masculinity scores ($M = 32.47$) than did those in the chronic low group ($M = 48.57$) and those in the depression decrease group ($M = 43.81$), $ps < .01$.

In addition, a significant interaction effect was found between depression category shifts and changes in social support for femininity scores, $F(3,161) = 6.33$, $MSe = 169.62$, $p < .001$ (effect size = .32). Post hoc Tukey HSD tests showed that participants in the depression decrease group who received an increase in social support reported significantly higher femininity scores ($M = 55.56$) than did all the seven other groups (Ms ranged from 30.20 to 45.89), $ps < .01$.

To sum up, these results revealed that masculinity was related to depression category shifting over time, whereas femininity was related to the interaction between longitudinal changes in social support and depression category shifting over time. These results provided further support for the inverse relationship between masculinity and depression, as well as the relationship between the Femininity × Social Support interaction and depression.

Table 6

Means and Standard Deviations of Major Variables for the Depression Change Groups

	Depression Increase (n = 26)		Depression Decrease (n = 26)		Chronic Low (n = 79)		Chronic Moderate (n = 36)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Time 1								
Masculinity	41.85	(16.69)	43.81	(13.61)	48.57	(13.28)	32.47	(11.37)
Femininity	40.46	(16.71)	49.12	(12.62)	43.16	(12.59)	42.44	(14.05)
Social Support	45.00	(6.12)	44.04	(7.07)	45.86	(6.17)	41.97	(6.13)
Depression	6.00	(2.24)	13.08	(2.67)	5.87	(2.36)	14.89	(3.72)
Time 2								
Masculinity	41.73	(15.78)	41.88	(15.92)	47.92	(15.00)	30.92	(13.45)
Femininity	39.31	(15.79)	47.62	(13.80)	44.48	(13.95)	41.58	(15.11)
Social Support	40.31	(6.92)	48.50	(6.66)	45.66	(7.39)	39.81	(7.29)
Depression	12.96	(2.69)	6.46	(3.99)	3.71	(2.70)	17.36	(4.68)

DISCUSSION

The present study incorporated both the person factor of gender-role orientation and the environmental factor of social support in the study of depression. As expected, the results revealed that femininity was inversely related to depression through its interaction with social support. When a greater amount of social support was available over time, individuals with higher levels of femininity tended to be less vulnerable to subsequent depression than those with lower levels of femininity. However, when social support decreased over time, individuals with higher levels of femininity tended to be more susceptible to subsequent depression than were those with lower levels of femininity. Moreover, regardless of the availability of social support, masculinity was inversely related to depression; that is, individuals with higher levels of masculinity tended to be less susceptible to subsequent depression than were those with lower levels of masculinity, and vice versa.

This study extends previous work on gender-role orientation in revealing that high levels of both femininity and social support jointly contributes to the alleviation of depression. Previous research on gender-role orientation has consistently revealed that masculinity is positively related to psychological adjustment (e.g., Adams & Sherer, 1982; Silvern & Ryan, 1979) and mental health (e.g., Bassoff & Glass, 1982; Taylor & Hall, 1982), and inversely related to depression (e.g., Burchardt & Serbin, 1982; Holahan & Spence, 1980). The relationships between femininity and psychological health have typically been nonsignificant. Thus, previous findings suggest that psychological well-being is related more to masculinity than to femininity. However, the present research showed that when both gender-role orientation and social support are considered, femininity also may be related to depression through its interaction with social support.

Such results imply that individuals with higher levels of femininity as well as those with higher levels of masculinity may similarly experience lower levels of depression. However, the relationship between masculinity and depression and that between femininity and depression may be mediated by distinctive psychosocial qualities. Compared to individuals lower in masculinity, individuals higher in masculinity may tend to (a) consider themselves to be an independent being (Bakan, 1966), and (b) behave in a more self-assertive and self-reliant manner (Spence & Helmreich, 1978). These individuals may seek to cope with problems by

themselves, and thus have lower needs for social support. In contrast, the concern for bonding with significant others may be stronger for individuals higher in femininity than for individuals lower in femininity (e.g., Bakan, 1966; Erikson, 1964). Feminine individuals may be more ready to turn to others for support when encountering problems. In addition, feminine individuals may consider the quality of their social relations to be more important and react more emotionally to the availability or nonavailability of social support. In short, masculinity and femininity may be related to depression in distinct ways, and the quality of social relations should be taken into account when examining the relationship between gender-role orientation and depression, especially for individuals with higher levels of femininity.

Although social support moderated the influence of depression only for feminine individuals but not for masculine individuals, the present research revealed no significant differences in the amount of received social support between feminine and masculine individuals. Rather, androgynous individuals, with high levels of masculinity and femininity, consistently received the greatest amount of social support. Having stronger needs for affiliation and succorance than masculine individuals, androgynous individuals and feminine individuals might be expected to be more active in seeking support and to receive a greater amount of support. However, the present results revealed that such an intuition applies only to androgynous individuals but not to feminine individuals. One possibility is that androgynous individuals may have stronger needs for social support than do feminine individuals, and thus androgynous individuals may actually seek for more support from others. As emotional support is beneficial for social-oriented needs and informational support is beneficial for mastery-oriented needs (Harlow & Cantor, 1995), androgynous individuals, with high levels of both communal and agentic needs, may tend to seek a greater variety and amount of social support to gratify their distinctive needs.

Another possibility is that both androgynous and feminine individuals may have similar motivation to seek support when in need, but androgynous individuals may be more effective in obtaining support than are feminine individuals. Such an effectiveness in gaining support may be attributable to the "emergent property" of the high masculine and high feminine combination in androgynous individuals (see Lubinski, Tellegen, & Butcher, 1981, 1983; Spence, 1983; Tellegen & Lubinski, 1983 for a theoretical discussion). Specifically, the "emergent property"

refers to the beneficial integration of masculine and feminine qualities in androgynous individuals, with one type of qualities being complementary to the other. For instance, a person who is dependent may have a strong need for social support, but the need for support will not be gratified unless the person is assertive enough to seek it. In this respect, the feminine characteristic of dependence and the masculine characteristic of assertiveness may both be essential in eliciting social support. Therefore, androgynous individuals who are equipped with both of these characteristics may be more effective in gaining support than are their feminine counterparts, who are equipped with only feminine characteristics.

Cautionary Notes and Concluding Remarks

Before concluding, several caveats regarding the present research are noteworthy. First, a new finding regarding the moderating role of social support between femininity and depression was revealed. Although the significant Femininity × Social Support interaction held up using different statistical analyses (see the Method section), such a novel finding should only be regarded as tentative. Further research is needed to examine whether the moderating role of social support can be replicated. Second, it is noteworthy that the distribution of depression scores of the present sample was substantially skewed toward the nondepressed range. Although some of the participants had higher depression levels, their depression scores were within the nonclinical range, and thus they can be considered dysphoric or showing depressed tendencies. Third, this research aimed at incorporating components of the gender-role approach and the social-relational approach into the study of depression, and thus the variables included were confined to those proposed by these two approaches. Further research may examine how other environmental variables (e.g., life stress) or other person variables (e.g., locus of control) play a role in an integrative person-environment interactionist approach to depression. Fourth, previous research (Eckenrode, 1983; Riley & Eckenrode, 1986) revealed that higher levels of education are positively related to the amount and perceived effectiveness of social support. In this respect, without further investigations, it is premature to generalize the present findings to adults of other age groups and to clinical populations.

Last, although not many differences have been found in the perceived meaning of gender-role orientations between American and Hong Kong college students, it is noteworthy that the number of Hong Kong male

students who described themselves as androgynous ($n = 8$) or feminine ($n = 2$) was relatively scant in comparison to their American counterparts (e.g., Bem, 1974). It is suspected that Hong Kong males may have a stronger internalized gender-role standard or be more motivated to maintain consistency between their behaviors and the male gender-role norm. Moreover, although masculinity was inversely associated with psychological distress for Hong Kong college students, the study of Roos and Cohen (1987) showed that masculinity was inversely related to psychological distress through interacting with social support in times of high stress for American college students. It should be noted that Roos and Cohen's study differed from the present study in two ways. Their study employed a measure of perceived social support, but this study employed a measure of received social support, which is conceptually different from perceived social support. Also, stressful life events were examined in Roos and Cohen's study but not in this study. Therefore, it remains inconclusive whether such differences in results can be attributed to the use of different measures or to cultural differences in the influence of social support. Further cross-cultural research should explore possible differences in gender-role attitudes or perceived functions of social support between American and Hong Kong college students.

In summary, although masculinity and androgyny are widely considered to be related to psychological well-being, the present research suggests that what constitutes psychological well-being depends not only on the presence and absence of certain gender-role characteristics. What is most needed is to consider how gender-role characteristics may interact with other facets of the environment, such as one's relations with others. It is hoped that the present study can provide some leads for developing a more comprehensive understanding of the complex phenomenon of depression.

REFERENCES

Adams, C. H., & Sherer, M. (1982). Sex-role orientation and psychological adjustment: Comparison of MMPI profiles among college women and housewives. *Journal of Personality Assessment*, **46**, 607–613.

Allen, N. B., Horne, D. J. L., & Trinder, J. (1996). Sociotropy, autonomy, and dysphoric emotional responses to specific classes of stress: A psychophysiological evaluation. *Journal of Abnormal Psychology*, **105**, 25–33.

Bakan, D. (1966). *The duality of human existence.* Chicago, IL: Rand McNally.

Barrera, M. Jr., Sandler, I. N., & Ramsey, T. B. (1981). Preliminary development of a scale of social support: Studies on college students. *American Journal of Community Psychology*, **9**, 435–447.

Bassoff, E. S., & Glass, G. V. (1982). The relationship between sex roles and mental health: A meta-analysis of twenty-six studies. *Counseling Psychologist*, **10**, 105–112.

Beck, A. T. (1967). *Depression: Clinical, experimental and theoretical aspects.* New York: Harper & Row.

Beck, A. T. (1983). Cognitive therapy of depression: New perspectives. In P. J. Clayton & J. E. Barrett (Eds.), *Old controversies and new approaches* (pp. 265–284). New York: Raven Press.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, **4**, 561–571.

Bell, R. A., LeRoy, J. B., & Stephenson, J. J. (1982). Evaluating the mediating effects of social supports upon life events and depressive symptoms. *Journal of Community Psychology*, **10**, 325–340.

Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, **42**, 155–162.

Bem, S. L. (1979). The theory and measurement of androgyny: A reply to the Pedhazur-Tetenbaum and Locksley-Colten critiques. *Journal of Personality and Social Psychology*, **37**, 1047–1054.

Bem, S. L. (1981). *Bem Sex-Role Inventory professional manual.* Palo Alto, CA: Consulting Psychologists Press.

Blatt, S. J., D'Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal adults. *Journal of Abnormal Psychology*, **85**, 383–389.

Bumberry, W., Oliver, J. M., & McClure, J. N. (1978). Validation of the Beck Depression Inventory in a university population using psychiatric estimates as the criterion. *Journal of Consulting and Clinical Psychology*, **46**, 150–155.

Burchardt, C. J., & Serbin, L. A. (1982). Psychological androgyny and personality adjustment in college and psychiatric populations. *Sex Roles*, **8**, 835–851.

Caplan, G. (1974). *Support systems and community mental health*. New York: Behavioral Publications.

Caplan, G. (1976). The family as support system. In G. Caplan & M. Killilea (Eds.), *Support systems and mutual help: Multidisciplinary explorations* (pp. 19–36). New York: Grune & Stratton.

Chan, C. M., & Tsoi, M. M. (1984). The BDI and stimulus determinants of cognitive-related depression among Chinese college students. *Cognitive Therapy and Research*, **8**, 501–508.

Chan, D. W. (1991). The Beck Depression Inventory: What difference does the Chinese version make? *Psychological Assessment*, **3**, 616–622.

Cheng, C. (1998). Psychometric properties of the Social Conflict Scales for Chinese adolescents. *Journal of Social Psychology,* **138**, 211–216.

Cheng, S. T., & Hamid, P. N. (1995). An error in the use of translated scales: The Rosenberg Self-Esteem Scale for Chinese. *Perceptual and Motor Skills*, **81**, 431–434.

Clark, D. A., Beck, A. T., & Brown, G. K. (1992). Sociotropy, autonomy, and life event perceptions in dysphoric and nondysphoric individuals. *Cognitive Therapy and Research*, **16**, 635–652.

Cobb, S. (1976). Social support as a moderator of life events. *Psychosomatic Medicine*, **38**, 300–314.

Cohen, J. & Cohen, P. (1983). *Applied multiple regression/correlational analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, L. H., McGowan, J., Fooskas, S., & Rose, S. (1984). Positive life events and social support and the relationship between life stress and psychological disorder. *American Journal of Community Psychology*, **12**, 567–587.

Duncan-Jones, P. (1981). The structure of social relationships: Analysis of a survey instrument, parts 1–2. *Social Psychiatry*, **16**, 551–558.

Eckenrode, J. (1983). The mobilization of social supports: Some individual constraints. *American Journal of Community Psychology*, **11**, 509–528.

Edwards, A. L. (1959). *Revised manual for the Edwards Personal Preference Schedule.* New York: The Psychological Corporation.

Endler, N. S., & Magnusson, D. (1976). *Interactional psychology and personality.* Washington, DC: Hemisphere Press.

Erikson, E. (1964). Inner and outer space: Reflections on womanhood. In R. J. Lifton (Ed.), *The woman in America.* New York: Houghton Mifflin.

Eysenck, S. B., & Chan, J. (1982). A comparative study of personality in adults and children: Hong Kong vs. England. *Personality and Individual Differences*, **3**, 153–160.

Flett, G. L., Vredenburg, K., & Pliner, P. (1985). Sex roles and depression: A preliminary investigation of the direction of causality. *Journal of Research in Personality*, **19**, 429–435.

Gottlieb, B. H. (1981). Social networks and social support in community mental health. In B. Gottlieb (Ed.), *Social networks and social support* (pp. 11–42). Beverly Hills, CA: Sage.

Hammen, C., Ellicott, A., & Gitlin, M. J. (1992). Stressors and sociotropy/autonomy: A longitudinal study of their relationship to the course of bipolar disorder. *Cognitive Therapy and Research*, **16**, 409–418.

Harlow, R. E., & Cantor, N. (1995). To whom do people turn when things go poorly? Task orientation and functional social contacts. *Journal of Personality and Social Psychology*, **69**, 329–340.

Henderson, S., Duncan-Jones, P., Byrne, D. G., & Scott, R. (1980). Measuring social relationships: The interview schedule for social interaction. *Psychological Medicine*, **10**, 723–734.

Hirschfeld, R. M. A., Klerman, G. L., Gough, H. G., Barrett, J., Korchin, S. J., & Chodoff, P. (1977). A measure of interpersonal dependency. *Journal of Personality Assessment*, **41**, 610–618.

Holahan, C. K., & Spence, J. T. (1980). Desirable and undesirable masculine and feminine traits in counseling clients and unselected students. *Journal of Consulting and Clinical Psychology*, **48**, 300–302.

Hwang, C. (1976). Change of psychological needs over thirteen years. *Bulletin of Educational Psychology*, **9**, 85–94.

Kahn, R. L., & Antonucci, T. (1980). Convoys over the life cycle: Attachment, roles, and social support. In P. B. Baltes & O. Brim (Eds.), *Lifespan development and behavior* (Vol. 3, pp. 207–223). Boston, MA: Lexington.

Keeper, G. (1991). *Experimental design: A researcher's handbook.* Englewood Cliffs, NJ: Prentice Hall.

Kirk, R. E. (1982). *Experimental design: Procedures for the behavioral sciences.* Belmont, CA: Brooks/Cole.

Lau, S. (1989). Sex role orientation and domains of self-esteem. *Sex Roles*, **21**, 415–422.

Lubinski, D., Tellegen, A., & Butcher, J. N. (1981). The relationship between androgyny and subjective indicators of emotional well-being. *Journal of Personality and Social Psychology*, **40**, 722–730.

Lubinski, D., Tellegen, A., & Butcher, J. N. (1983). Masculinity, femininity, and androgyny viewed and assessed as distinct concepts. *Journal of Personality and Social Psychology*, **44**, 428–439.

Ma, L. C. J., Chan, L. W. C., Chi, I., & Sham, J. S. T. (1990). *A study of the social support of cancer patients receiving chemotherapy in Hong Kong.* Hong Kong: Centre for Hong Kong Study, the Chinese University of Hong Kong.

Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, **80**, 252–283.

Nietzel, M. T., & Harris, M. J. (1990). Relationship of dependency and achievement/autonomy to depression. *Clinical Psychology Review*, **10**, 279–297.

Norbeck, J. S., Lindsey, A., & Carrieri, V. L. (1981). The development of an instrument to measure social support. *Nursing Research*, **30**, 264–269.

Parsons, R., & Bales, R. F. (1955). *Family, socialization and interaction process.* New York: Free Press.

Payne, F. D., & Futterman, J. R. (1983). "Masculinity," "Femininity," and adjustment in college men. *Journal of Research in Personality*, **17**, 110–124.

Procidano, M. E., & Heller, K. (1983). Measures of perceived social support from friends and family: Three validational studies. *American Journal of Community Psychology*, **11**, 1–24.

Riley, D., & Eckenrode, J. (1986). Social ties: Subgroup differences in costs and benefits. *Journal of Personality and Social Psychology*, **51**, 770–778.

Robins, C. J. (1990). Congruence of personality and life events in depression. *Journal of Abnormal Psychology*, **99**, 393–397.

Roos, P. E., & Cohen, L. H. (1987). Sex roles and social support as moderators of life stress adjustment. *Journal of Personality and Social Psychology,* **52**, 576–585.

Rosenberg, M. (1981). The self-concept: Social product and social force. In M. Rosenberg & R. H. Turner (Eds.), *Social psychology: Sociological perspectives* (pp. 593–625). New York: Basic Books.

Sarason, I. G., & Sarason, B. R. (Eds.). (1985). *Social support: Theory, research and applications.* The Hague, The Netherlands: Martinus Nijhoff.

Shek, D. T. L. (1988). Reliability and factorial structure of the Chinese version of the State-Trait Anxiety Inventory. *Journal of Psychopathology and Behavioral Assessment*, **10**, 303–317.

Shek, D. T. L. (1990). Reliability and factorial structure of the Chinese version of the Beck Depression Inventory. *Journal of Clinical Psychology*, **46**, 35–42.

Shek, D. T. L. (1991). What does the Chinese version of the Beck Depression Inventory measure in Chinese students: General psychopathology or depression? *Journal of Clinical Psychology*, **47**, 381–390.

Silvern, L. E., & Ryan, V. L. (1979). Self-rated adjustment and sex-typing on the Bem Sex-Role Inventory: Is masculinity the primary predictor of adjustment? *Sex Roles*, **5**, 739–763.

Spence, J. T. (1983). Comment on Lubinski, Tellegen, and Butcher's "Masculinity, femininity, and androgyny viewed and assessed as distinct concepts." *Journal of Personality and Social Psychology*, **44**, 440–446.

Spence, J. T., & Helmreich, R. L. (1978). *Masculinity and femininity: Their psychological dimensions, correlates, and antecedents.* Austin, TX: University of Texas Press.

Taylor, M. C., & Hall, J. A. (1982). Psychological androgyny: Theories, methods, and conclusions. *Psychological Bulletin*, **92**, 347–366.

Tellegen, A., & Lubinski, D. (1983). Some methodological comments on labels, traits, interaction, and types in the study of "femininity" and "masculinity": Reply to Spence. *Journal of Personality and Social Psychology*, **44**, 447–455.

Vollmer, F. (1984). Sex differences in personality and expectancy. *Sex Roles,* **11**, 1121–1139.

Ward, J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association,* **58**, 236–244.

Zeldow, P. B., Clark, D., & Daugherty, S. R. (1985). Masculinity, femininity, Type A behavior, and psychosocial adjustment in medical students. *Journal of Personality and Social Psychology*, **48**, 481–492.