AN INTERPERSONAL ANALYSIS OF SUBJECTIVE SOCIAL STATUS AND PSYCHOSOCIAL RISK

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Subjective social status (SSS) predicts health independently of traditional measures of socio-economic status (SES; Adler et al., 2008; Cohen et al., 2008). Although interpersonal variables are known to be related to both SES and health (Gallo, Smith, & Cox, 2006) and might contribute to their association, little research has examined the association of interpersonal variables with SSS. The present study of 300 middle-aged and older married couples found that individuals who rated themselves high on measures of SSS tended to display a warm and dominant interpersonal style. Further analyses revealed that partner reported warmth and dominance partially mediated the association of SSS with both marital satisfaction and depressive symptoms after controlling neuroticism. Results suggest that interpersonal theory provides a useful framework for the study of SSS and health, and that interpersonal processes may account for a significant portion of the relationship between SSS and health-relevant psychosocial risk factors.

The relationship between socioeconomic status (SES) and physical health is well documented; low SES is associated with increased risk of morbidity and mortality from a number of diseases, as well as reduced life expectancy (Adler et al., 1994, 2008). Psychosocial variables such as stress, low social support, pessimism, negative emotions, and depression have been identified as potential mechanisms linking SES and health (Adler & Snibbe, 2003; Gallo & Matthews, 2003). These characteristics are well-established risk factors for important health outcomes (Everson-Rose & Lewis, 2005; Smith & Ruiz, 2002) and they are more common in low SES groups (Gallo, Bogart, Vranceanu, & Matthews, 2005; Taylor et al., 1999).

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Further, marital discord and disruption also predict negative health outcomes (DeVogli, Chandola, & Marmot, 2007; Kiecolt-Glaser & Newton, 2001; Matthews & Gump, 2002) and are associated with low SES (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Hence, psychosocial vulnerabilities may contribute to the association between low SES and poor health outcomes.

In a refinement of research and theory on SES and health, subjective social status (SSS) has emerged as a related but conceptually distinct construct that predicts health independently of traditional indicators of SES (e.g., education, income, occupation; Cohen et al., 2008). SSS refers to the individual's perceived standing in a status hierarchy, and hence reflects appraisals of social status relative to others (Adler, Epel, Castellazzo, & Ickovics, 2000). The most commonly used measure of SSS presents respondents with the image of a ladder, and asks them to indicate the rung that best represents their standing in the specified group, most-commonly the population of their country or their local community (Adler, 2009; Adler et al., 2000).

The bulk of these studies find that SSS provides incremental predictive utility for health outcomes when controlling more traditional indicators of SES (e.g., Adler, 2009; Cohen et al., 2008). Thus, relative to traditional indicators of SES, SSS may be a more proximal influence on health, perhaps because it more directly captures the individual's perceived standing in a social group.

Preliminary evidence indicates that low SSS is associated with many of the same aspects of stress, negative affect, and interpersonal difficulties hypothesized to link low SES with adverse physical health outcomes, including depressive symptoms and other aspects of negative affect, pessimism, and marital strain (Adler et al., 2000; Cundiff, Smith, Uchino, & Berg, under review; Lundberg & Kristenson, 2008). Yet, the nature of these associations is unclear. Specifically, little research has examined the processes that may account for the association between low SSS and emotional and social risk factors for negative health outcomes.

AN INTERPERSONAL PERSPECTIVE ON PSYCHOSOCIAL RISK

We have proposed the interpersonal perspective in personality and clinical psychology (Horowitz et al., 2006; Kiesler, 1996; Pincus & Ansell, 2003) as a useful framework in efforts to understand psy-

chosocial risks for poor physical health (Smith & Cundiff, 2010; Smith, Gallo, & Ruiz, 2003; Smith, Glazer, Ruiz, & Gallo, 2004; Smith, Traupman, Uchino, & Berg, 2010). The interpersonal perspective comprises concepts and methods that are useful in explicating and integrating psychosocial risk factors that are typically considered aspects of the individual (e.g., depression, hostility) and those that are typically considered to be aspects of the social environment (e.g., social isolation, conflict; Gallo & Smith, 1999). In more recent work we have extended this perspective to include SES (Gallo, Smith, & Cox, 2006).

In interpersonal theory (Horowitz et al., 2006; Kiesler, 1996; Pincus & Ansell, 2003) individual differences in negative emotions and related characteristics (e.g., depressive symptoms, neuroticism) are seen as having a reciprocal relationship with the social environment. That is, individual differences both influence and are influenced by aspects of the individual's social environment. Further, the individual's interpersonal behavior and the behavior of others can be described through the same structural model--the interpersonal circumplex (IPC). Variations in social behavior can be characterized along the affiliation (i.e., warmth vs. hostility) and control (i.e., dominance vs. submissiveness) dimensions of the IPC, as depicted in Figure 1 (Carson, 1969; Kiesler, 1983, 1996).

These dimensions can be used to compare and contrast a variety of psychosocial risk factors, including both personality traits and aspects of the social environment. For example, individuals reporting higher levels of depressive symptoms and anxiety describe their behavior as unfriendly (i.e., cold) and submissive, and their social behavior is described similarly by significant others (Smith et al., 2010). Further, individuals who report high levels of marital satisfaction describe their spouses as quite warm, whereas those who report marital conflict describe their spouses as unfriendly and controlling (Smith et al., 2010). Lower SES is associated with describing the behavior of others encountered during everyday social interactions as lower in warmth, higher in hostility, and as reflecting more dominance (Gallo et al., 2006). Hence, across seemingly distinct psychosocial characteristics, increased risk for poor health is associated with both expressing higher levels of hostility toward others and experiencing more hostility from others. Higher psychosocial risk for poor health is also associated with lower levels of warmth in interactions with others, as well as experiencing others as more controlling. Further, these patterns of high hostility, low warmth,
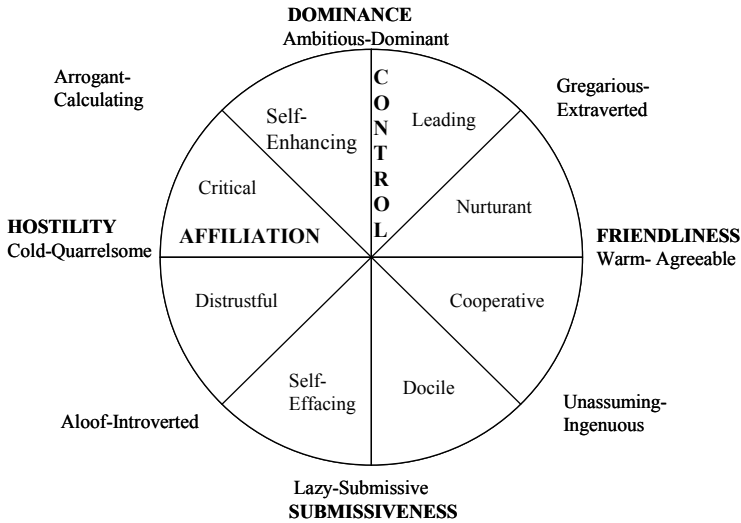
FIGURE 1. Interpersonal Circumplex (Leary, 1957).

and greater control from others are more common in low SES environments. These processes may represent a common avenue of risk across psychosocial vulnerabilities that involve individual differences (i.e., depression) and aspects of the social environment (i.e., marital satisfaction, social support; Smith et al., 2010).

In interpersonal theory, the principle of complementarity provides an explanation of this convergence of interpersonal experience (Horowitz, 2004; Kiesler, 1996). Although other models of interpersonal complementarity exist (Byrne, 1971; Gurtman, 2001), the most widely studied and best validated model asserts that an actor's behavior encourages, evokes, or invites behavior from others that is similar along the affiliation dimension of the IPC (e.g., warmth invites warmth) and opposite along the control dimension (e.g., dominance invites submission). A variety of methods can be used to identify the interpersonal style associated with any given trait (Gurtman & Pincus, 2003; Wiggins & Trapnell, 1996). Once that style is identified, the principle of complementarity provides predictions about likely interpersonal experiences associated with that style. Thus, if IPC-based analyses indicated that low SSS is associated with a cold/hostile and submissive style, it is likely to be associated with responses from others that are hostile and control-

ling, consistent with the previously cited work on SES (Gallo et al., 2006).

Identification of the interpersonal style associated with SSS permits theory-based predictions about associated interpersonal experiences related to risk and resilience. It also clarifies the extent to which SSS is similar to the personality trait of dominance. Social standing, rank, or status is sometimes confused with individual differences in dominant versus submissive social behavior (e.g., Mendelson, Thurston, & Kubzansky, 2008), but conceptual definitions clearly suggest that they are not synonymous (Newton, 2009). Prior research suggests that SSS should be positively associated with warm and dominant interpersonal behavior (Cundiff et al., under review). According to interpersonal theory in general, and the principle of complementarity in particular, a warm and dominant interpersonal style should at least partially account for lower levels of psychosocial risk factors among individuals reporting higher SSS.

THE CURRENT STUDY

The current study examined the interpersonal style associated with measures of SSS among married couples. We examined the association of SSS with affiliation and control both as general individual differences (i.e., personality traits), and in the specific context of behavior during typical marital interactions. We predicted that high levels of SSS would be associated with a warm and dominant interpersonal style. Based on the principle of complementarity, we also predicted that high levels of SSS would be associated with perceptions of one's spouse as being warm and somewhat submissive during marital interactions. We also tested this interpersonal style and related interpersonal experiences (i.e., spouse's behavior) as mediators of associations between SSS and two psychosocial risk factors—depressive symptoms and low marital adjustment (Kiecolt-Glaser & Newton, 2001; Nicholson, Kuper, & Hemingway, 2006).

Associations among low SSS, an unfriendly and submissive interpersonal style, depression, and marital adjustment could reflect the fact that each of these variables is related to individual differences in neuroticism (Cohen et al., 2008; Whisman, Uebelacker, Tolejeko, Chatav, McKelvie, 2006; Wiggins & Broughton, 1991). To evaluate this potential confounding, we also examined the mediational role of interpersonal style in the association between SSS and psycho-

social risks (i.e., depression, marital adjustment) while controlling neuroticism. Finally, we also evaluated the discriminant validity of SSS relative to trait dominance.

METHOD

Participants and Procedure

The sample consisted of 300 older and middle-aged couples enrolled in the Utah Health and Aging Study (see Smith et al., 2007, Smith, Berg et al., 2009, Smith, Uchino et al., 2009). Prior to attending laboratory appointments involving research procedures not related to the present report, couples received through the mail separate questionnaire packets for husbands and wives. They were instructed to complete them separately, without consulting each other, and to return them at their laboratory appointment. All couples were married for a minimum of 5 years, had at least one member who was either between 40 and 50 years old or between 60 and 70 years old. Mean age for husbands was 55.3 years and 53 years for wives, and average length of marriage was 19 years (*SD* = 5.7) for middle-aged couples and 37 years (*SD* = 9.4) for older couples. The majority of the sample was Caucasian (Wives, 96.6%; Husbands, 95.8%) and recruited from the greater Salt Lake City, Utah community through a polling firm, advertisements in newspapers and newsletters, and community programs. We used Full Information Maximum Likelihood to account for missing data, as we had less than 5% missing data (Graham, 2009).

Measures

Subjective Social Status. The MacArthur Scale of Subjective Social Status consists of two visual analogue scales in the form of ladders, one rating perceived status within the United States and one rating perceived status within the community, where *community* is defined by the individual (Adler et al., 2000; Jackman & Jackman, 1973). Directions for the community scale read:

> Think of this ladder as representing where people stand in their community. People define community in different ways; please define it in whatever way is most meaningful to you. At the top of the ladder are the people who have the highest standing in their community. At

the bottom are the people who have the lowest standing in their com-
munity.

Directions for the U.S. scale read:

Think of this ladder as representing where people stand in the United
States. At the top of the ladder are the people who are the best off—
those who have the most money, the most education, and the most
respected jobs. At the bottom are the people who are worst off—who
have the least money, least education, and the least respected jobs or
no job. The higher up you are on this ladder, the closer you are to the
people at the very top and the lower you are, the closer you are to the
people at the very bottom.

These measures assess the individual's perception of his or her sta-
tus as opposed to aggregating objective measures of status as is done
to compute SES, and research suggests that subjective social status
is not simply a composite measure of education, occupation, and
income (Lundberg & Kristenson, 2008) and thus is not likely sim-
ply a finer gradation of SES. This 10-rung ladder scale has shown
good test-retest reliability, and expected associations with objec-
tive indicators of SES (Operario, Adler, & Williams, 2004), as well
as convergent and discriminant validity with measures of income
and psychosocial risk and resilience factors (Cundiff et al., under
review; Lundberg & Kristenon, 2008). Here, we added community
subjective social status and U.S. subjective social status scores to
form a composite subjective social status measure. The community
and U.S. scales were moderately correlated in this sample, $r(300) =$
.64 for women and men. For all three measures, higher scores indi-
cate perception of higher social standing.

Depression. Depressive symptoms were measured using the Cen-
ter for Epidemiological Studies-Depression Scale (CES-D; Rad-
loff, 1977). This commonly used, 20-item scale assesses depressive
symptoms over the past week and has extensive evidence of reli-
ability and validity (Myers & Weissman, 1980; Radloff, 1977; Rad-
loff & Teri, 1986).

Marital Satisfaction. Marital satisfaction was measured using the
Locke-Wallace Marital Adjustment Test (MAT), a self-report mea-
sure of the couple's overall level of marital adjustment (Locke &
Wallace, 1954). Past research has provided extensive support for the

reliability and construct validity of this measure (Snyder, Heyman, & Haynes, 2005).

Neuroticism. Neuroticism was measured using the self-report (form S) version of the NEO-PI-R (Costa & McCrae, 1992). This 48-item self-report scale has extensive evidence of internal consistency, test-retest reliability, and construct validity (Costa & McCrae, 1992).

Self-Reported Interpersonal Style. To assess individual differences in the affiliation and control dimensions of the IPC (i.e., interpersonal style), participants completed self-report and spouse-rating versions of items from the NEO-PI-R (Costa & McCrae, 1992). On the basis of item content and related research (McCrae & Costa, 1989; Trapnell & Wiggins, 1990), Wiggins and Trobst (1998) identified items from the NEO-PI-R domains of Extraversion and Agreeableness to measure IPC octants (see Figure 1), and established the internal consistency of the octant scales, as well as their circumplex structure. In the current sample, internal consistency of these 6-item octant scales ranged from .75 to .54 with a median value of alpha = .68. In previously reported analyses of the present sample, we confirmed that the self-report and spouse rating versions of NEO-PI-R IPC octant scores had the predicted circular structure, and that the self-report and spouse-rating versions displayed expected patterns of convergent and discriminant validity (Traupman et al., 2009). Further, weighted affiliation and control dimension scores (c.f. Trapnell & Wiggins, 1990) also displayed expected convergent and discriminant validity.

Spouse Rated Interpersonal Style. To assess participants' affiliation and control during marital interaction, ratings of spouse behavior were obtained using a 32-item version of the Impact Message Inventory (IMI-C; Schmidt, Wagner, & Kiesler, 1999) which assesses perceptions of the target individual's behavior on the IPC dimensions. In this version (Nealey-Moore, Smith, Uchino, Hawkins, & Olson-Cerny, 2007; Smith, Berg et al., 2009) participants rated their spouses' behavior in general during marital interactions. The items form octant scales, combined to obtain IPC affiliation and control scores. These scales demonstrate acceptable reliability across all dimensions (alpha = .69 or greater for all scales), and several studies with this version demonstrate good construct validity (e.g., Nealey-Moore et al., 2007; Smith, Berg et al., 2009).

Overview of Analyses

To describe the interpersonal correlates of SSS using the IPC, we regressed each SSS measure on the affiliation and control dimensions concurrently, as in our related work using the IPC to describe psychosocial risk factors (Gallo & Smith, 1998; Ruiz, Smith, & Rhodewalt, 2001; Smith et al., 2010). In this approach (cf., Gurtman, 1992; Gurtman & Pincus, 2003; Trapnell & Wiggins, 1990), the multiple R provides an index of the extent to which a given measure is represented in the IPC. Regression weights for the affiliation and control dimensions are used to determine the particular interpersonal style or behavior associated with that measure.

To test the role of interpersonal processes as mediators of the association of SSS with depressive symptoms and marital satisfaction, we used Structural Equation Modeling (SEM; Kenny, Kashy, & Cook, 2006) as well as Sobel tests (MacKinnon & Fairchild, 2009). Sobel tests provide a test for the significance of a particular mediated pathway by calculating a Z-score from the product of the a and b paths of the mediational model (taking error into consideration) and comparing that product to 0; values above 1.96 and below -1.96 are statistically significant at $p < .05$. Spouse perceptions of participant's affiliation and control, as well as participants' perceptions of their spouse's affiliation and control, were measured using partner-reported IMI ratings. To evaluate mediation, we used the IMI measures of general behavior during everyday marital interaction for these mediational analyses rather than the NEO-PI-R measures of trait affiliation and control, because the IMI measures of perceived and experienced interpersonal behavior more closely reflect the specific processes described in interpersonal theory as potential mediators of associations between individual differences in SSS and psychosocial risk factors. Means and standard deviations for the variables of interest are presented in Table 1.

RESULTS

INTERPERSONAL STYLE AND SSS

To reiterate, in Table 2, we examined the trait interpersonal style associated with SSS from two perspectives: how participants view themselves (i.e., self-reported affiliation and control) and how they

TABLE 1. Means, Standard Deviations, and Correlations Among Main Variables of Interest

|	Wives' Depression	Husbands' Depression	Wives' Marital Adj.	Husbands' Marital Adj.	Wives' Subj. Social Status	Husbands' Subj. Social Status	Wives' Control	Husbands' Control	Wives' Affiliation	Husbands' Affiliation	Mean	SD
Wives' Depression		.27***	-.37***	-.17**	-.35***	-.17**	.17**	-.15**	-.34***	-.17**	9.5	8.7
Husbands' Depression			-.26***	-.30***	-0.09	-.37***	-0.08	.21***	-.33***	-.33***	7.7	7.3
Wives' Marital Adj.				.56***	.23***	.17***	-.27***	-.31***	.72***	.46***	112.8	26.2
Husbands' Marital Adj.					0.07	.25***	-0.07	-.51***	.50***	.72***	114.9	24.1
Wives' Subj. Social Status						.39***	-.20***	.18**	.19***	0.06	12.2	3.1
Husbands' Subj. Social Status							.12*	-.15**	.19***	.18**	12.8	3.2
Wives' Control								-0.09	-.20***	-0.08	-0.3	1.3
Husbands' Control									-.33***	-.41***	-0.3	1.2
Wives' Affiliation										.44***	2.9	2
Husbands' Affiliation											3.4	1.7

Notes. $N = 300$. Affiliation and Control = dimensional ratings calculated from the IMI-C. SD = standard deviation. *$p < .05$, **$p < .01$, ***$p < .001$

TABLE 2. Multiple Regression Analyses of SSS Predicted by Self-Reported and Spouse-Rated Interpersonal Style (i.e., Trait Affiliation and Control)

	DV	R	R2	F	Intercept	MS Error	Control		Affiliation	
							B	r	B	r
Self-Report of W	WSSS	0.32	0.10	16.45***	12.15***	8.70	.28***	.31***	0.08	.14*
H	HSSS	0.36	0.13	22.44***	12.83***	8.90	.29***	.32***	.18**	.22***
H Rating of W	WSSS	0.18	0.03	4.88**	12.15***	9.30	.17**	.18**	0.03	0.04
W Rating of H	HSSS	0.36	0.13	21.50***	12.83***	8.90	.27***	.29***	.19***	.23***

Notes. DV = dependent variable, W = wives, H = husbands, SSS = total subjective social status (SSSus + SSSc), B = Unstandardized regression coefficients, r = simple correlation coefficient, *p < .05, **p < .01, ***p < .001

A: Self-Reported Interpersonal Style
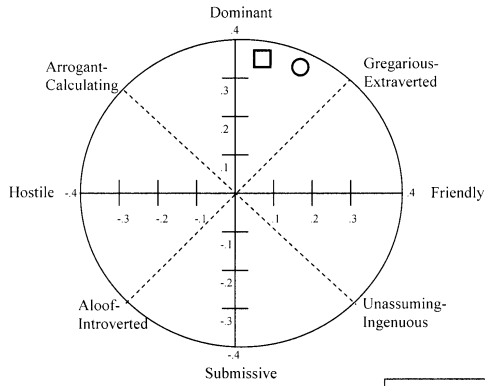
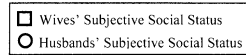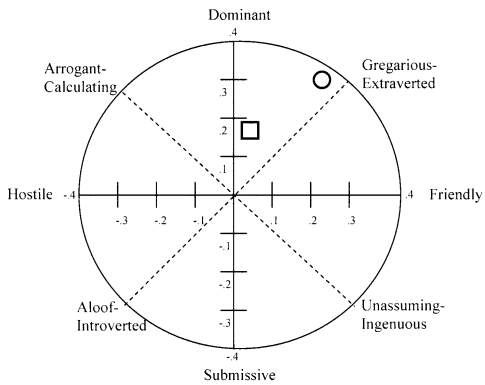**B: Interpersonal Style As Rated by Partner**

FIGURE 2. Association of SSS with Self-Reported (Panel A) and Spouse-Rated (Panel B) Interpersonal Style (Trait Affiliation and Control as measured with NEO-PI-R IPC scales). Radius = 0.4, reflecting multiple R and standardized betas for associations with affiliation and control.

were viewed by their spouse (i.e., spouse ratings of participant's affiliation and control). Using the related NEO-PI-R IPC scales, we regressed wives' and husbands' SSS on the affiliation and control dimensions (Gurtman, 1992). The results presented in Table 3 represent four separate regression equations in which the individual's rating of his or her status were regressed simultaneously on control and affiliation as rated by the individual or the individual's spouse (NEO-PI-R). The IPC locations for total subjective social status are depicted in Figure 2; the first panel displays participants' IPC ratings of themselves and the second displays spouse ratings of the

TABLE 3. Association of SSS with General Marital Interaction Ratings of Affiliation and Control

	DV	R	R2	F	Intercept	MS Error	Control		Affiliation	
							B	r	B	r
Ratings of Spouse as Predictors of Participants' Social Status										
W Rating of H	W SSS	0.26	0.07	10.68***	11.30***	8.92	-.39**	-.20***	.25**	.20***
H rating of W	H SSS	0.19	0.04	5.59**	11.84***	9.79	-0.22	-.14*	.26*	.17**
Ratings By Spouse as Predictors of Participants' Social Status										
H Rating of W	W SSS	0.24	0.06	9.17***	11.38***	9.01	.63***	.19***	.29*	0.06
W Rating of H	H SSS	0.25	0.07	10.25***	11.90***	9.51	.40**	.12*	.36***	.20***

Notes. DV = dependent variable, B = Unstandardized regression coefficients, r = simple correlation coefficient, $*p < .05$, $**p < .01$, $***p < .001$

A: Spouse Behavior during Marital Interactions as Rated by Participant
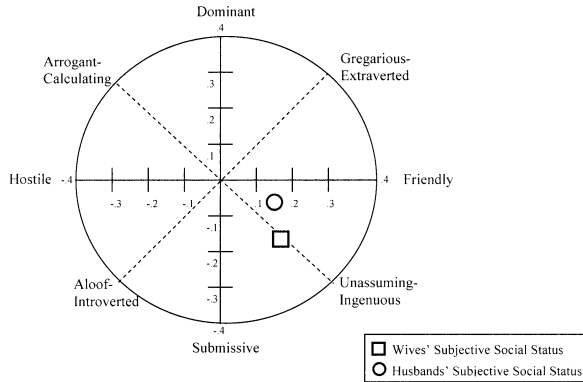
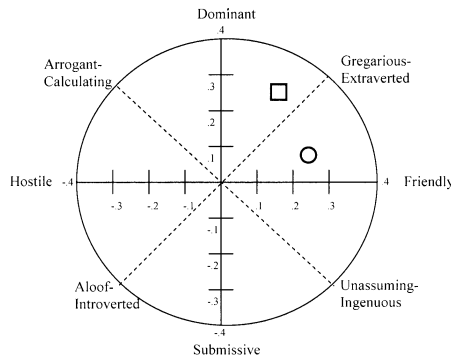B: Participant Behavior during Marital Interactions as Rated by Spouse

FIGURE 3. Association of SSS with Marital Interaction Style (Affiliation and Control during Marital Interaction, measured with IMI): Spouse Rating of Participant marital interaction style (Panel A) and participant rating of spouse style (Panel B) Radius = 0.4, reflecting the multiple R and standardized betas for associations with affiliation and control.

participant. As predicted, for both husbands and wives, and for both self-reports and spouse ratings, high SSS was consistently associated with a more dominant interpersonal style, and to a lesser extent a warmer style, as well. Two exceptions to this general pattern are notable. First, wives' SSS was somewhat less closely associated with affiliation, as assessed by both self-reports and spouse ratings, than was husbands' SSS, suggesting a possible sex difference in the interpersonal style associated with SSS. That is, SSS is associated with a dominant and warm style among men, and a dominant but only slightly warm style among women. Second, the overall association

between wives' SSS and husbands' ratings of wives' interpersonal style is significant but small, suggesting that SSS is weakly associated with general interpersonal style for women, at least as seen by their husbands.

To assess social behavior associated with SSS in the specific context of marital interactions, similar analyses were performed using responses to the IMI. The results of these analyses are presented in Table 3. Here, four separate regression equations were performed in which SSS measures were regressed on the participant's ratings of their spouse's control and affiliation (IMI-C) or their spouse's ratings of the participant's control and affiliation. The resulting IPC location of SSS is depicted in Figure 3; Panel A depicts participants' ratings of their spouses and Panel B displays how participants were rated *by* their spouses.

As predicted, participants reporting higher SSS saw their partner as warm and somewhat submissive (Panel A). As expected on the basis of the complementarity principle, participants who rated themselves higher on SSS were, in turn, seen by their spouses as warm and somewhat dominant during marital interactions (Panel B). Hence, the general interpersonal style associated with SSS (i.e., higher trait dominance and warmth) was also apparent during marital interactions, and is associated with spouse behavior that is complementary (i.e., warm and submissive). Associations were generally stronger between SSS and ratings of marital behavior than associations between SSS and the individual's more generalized interpersonal style, as described previously.

MEDIATIONAL ANALYSES: DEPRESSION
AND MARITAL SATISFACTION

As discussed above, the warm and dominant interpersonal behavior associated with higher levels of SSS could contribute to the association between SSS and psychosocial risk factors. To test this hypothesis, we performed mediational analyses of the association of SSS with depressive symptoms and marital satisfaction for both wives and husbands, using ratings of interpersonal behavior during general marital interactions, as potential mediators. Specifically, a set of four interpersonal variables (i.e., husbands' and wives' ratings of their spouses' control and affiliation during marital interactions) were tested as potential mediators. We employed the actor-
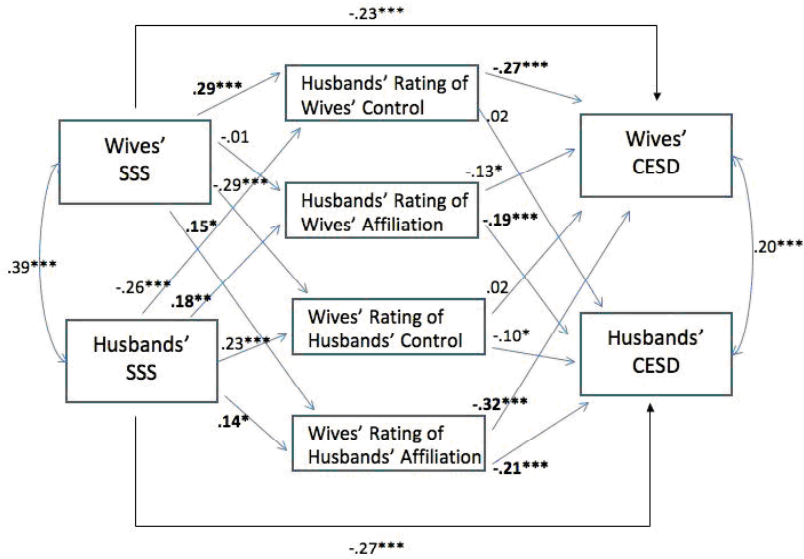
FIGURE 4. Results of Mediational Analyses of the association between
SSS and Depressive Symptoms for Wives and Husbands. Curved,
two headed arrows reflect correlations. Straight, one-headed arrows
reflect regression, and values are standardized regression coefficients.
Significant mediated effects are in bold.
*$p < .05$, **$p < .01$, ***$p < .001$(two-tailed).

partner interdependence model within a linear structural equation
modeling framework, which allows estimation of effects of multiple
predictor variables on correlated dependent variables (Kenny et
al., 2006), thus accounting for dependency between husbands' and
wives' SSS, husbands' and wives' behavior during marital interac-
tions, and husbands' and wives' depression or marital adjustment.

Depression. Before adding the mediating variables, the model with
only direct paths from wives' and husbands' SSS to his or her own
depression was tested and was a good fitting model ($X^2(2) = 1.58$, $p
= .45$; *CMIN/DF* = .79; *RMSEA* = .000). The full meditational model
is shown in Figure 4; although not depicted, all mediating variables
were correlated with one another to reflect within–person depen-
dence as well as dependence between husbands' and wives' inter-
personal behavior. A chi-squared difference test was performed in
order to compare the model depicted in Figure 4 to a model without
direct paths from each member's status to his or her own depres-
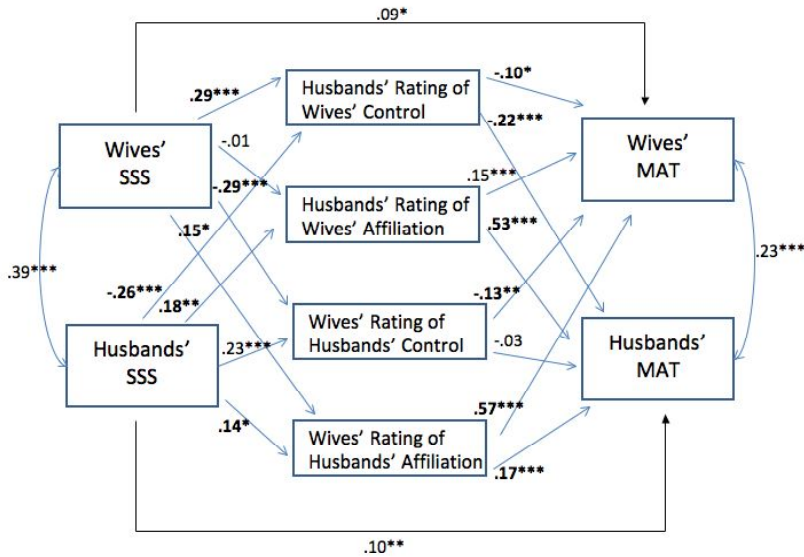sion. The model including the direct pathways fit the data signifi-

FIGURE 5. Results of Mediational Analyses of the association between
SSS and Marital Adjustment for Wives and Husbands. Curved, two
headed arrows reflect correlations. Straight, one-headed arrows reflect
regressions, and values are standardized regression coefficients.
Significant mediated effects are in bold.
*$p < .05$, **$p < .01$, ***$p < .001$(two-tailed).

cantly better (X^2 difference = 40.83, df = 2, $p < .001$), suggesting the
model reflects partial (not full) mediation. This difference in models
cannot be attributed simply to adding more parameters as RMSEA
(a fit index which is sensitive to the addition of paths that do not
significantly add to the model's description of the data) was .000 for
the model including the direct paths.

   In order to determine which meditational pathways in the model
were significant, Sobel tests were performed for pathways linking
an individual's SSS to his or her own depression (we did not test
mediators of associations between partner SSS to one's own depres-
sion, as we had no a-priori theoretical reason for doing so). Tests of
the mediated effect for each of the interpersonal variables indicated
that the association between wives' and husbands' SSS and depres-
sion was significantly mediated by interpersonal processes. Specifi-
cally, for wives the association was significantly mediated by their
own degree of controlling or dominant behavior during marital in-
teractions (as rated by their husbands; $z = 3.4$, $p < .001$), and their

husband's level of affiliation during marital interactions (as rated by the wives; $z = 2.78$, $p < .05$). That is, wives who reported higher SSS described their husbands as warmer during marital interactions, and were described by their husbands as more controlling. These interpersonal processes, in turn, provided a significant, albeit partial, meditational account of the inverse association between wives' SSS and depression.

The association between husbands' SSS and their own depression was significantly mediated by both their own levels of affiliation during marital interactions (as rated by wives; $z = 1.93$, $p = .05$) and their wives' affiliation (as rated by husbands; $z = 2.2$, $p < .05$). Thus, husbands who reported higher SSS described their wives as warmer during marital interactions, and were described by their wives as warmer. These interpersonal processes, in turn, provided a significant, albeit partial, meditational account of the inverse association between husbands' SSS and depression.

Marital Adjustment. To examine whether or not the relationship between SSS and marital adjustment was mediated by interpersonal processes, we used a similar model to the one described above (see Figure 5). Again, before adding the mediating variables, we tested the model with only direct paths from wives' and husbands' SSS to his or her own marital adjustment, and this was a good fitting model, $X^2 (2) = 2.72$, $p = .26$; *CMIN/DF* = 1.36; *RMSEA* = .034. Again, a chi-squared difference test was performed in order to compare the model depicted in Figure 5 to a model without direct paths from each member's status to his or her depression. The model including the direct pathways fit the data significantly better (X^2 difference = 10.59, *df* = 2, $p < .01$), again suggesting that the model reflects partial (not full) mediation. This difference in model fit when direct pathways are included again cannot be attributed to simply adding additional, unuseful parameters (*RMSEA* = .000).

In order to determine which meditational pathways in the model were significant, Sobel tests were performed for pathways linking an individual's SSS to his or her own martial adjustment (as in the case of depression, we did not test mediators of associations between the partner's SSS to one's own marital adjustment). As predicted, these associations were significantly mediated by interpersonal processes. Specifically, for wives the association was significantly mediated by their own levels of control during marital interactions (as rated by their husbands; $z = 2.04$, $p < .05$), their husbands' levels of control

(as rated by wives; $z = 2.59$, $p < .01$), and their husbands' levels of affiliation (as rated by wives; $z = 2.45$, $p = .01$). That is, wives who reported higher SSS rated their husbands as warmer and less controlling during marital interactions. These interpersonal processes, in turn, significantly, albeit partially, mediated the positive association between wives' SSS and their reported marital adjustment. The association between wives' SSS and their marital satisfaction was significant despite the significance of an additional meditational path in which (a) women who reported higher SSS were rated by their husbands as more controlling during marital interactions, and (b) husbands' ratings of their wives' control were inversely associated with wives' marital satisfaction.

For husbands, the association between SSS and marital adjustment was significantly mediated by husbands' levels of affiliation during marital interaction (as rated by wives; $z = 1.98$, $p < .05$), wives' affiliation (as rated by husbands; $z = 2.94$, $p < .01$), and wives' level of control (also as rated by husbands; $z = 3.38$, $p < .001$). Thus, husbands who reported higher SSS also rated their wives as warmer and less controlling during marital interaction, and were rated by their wives as warmer. This interpersonal processes, in turn, significantly but partially mediated the positive association between husbands' SSS and marital adjustment.

CONFOUNDING EFFECTS OF NEUROTICISM

We repeated these meditational analyses including (i.e., controlling) self-reported neuroticism scores in our models. In each case SSS continued to significantly predict the outcome of interest. Further, when neuroticism was added as a mediator in addition to the interpersonal variables, the relationships between SSS and the interpersonal mediator variables described previously remained significant, as did the associations between those mediator variables and outcomes of interest. Finally, the tests of mediation described previously also remained significant when neuroticism scores were controlled. Hence, overlapping variance with neuroticism does not provide an alternative explanation for associations of SSS with CESD and MAT scores, nor does it provide an alternative explanation for the role of related interpersonal variables in these associations.

DISCRIMINANT VALIDITY OF SSS VERSUS A DOMINANT INTERPERSONAL STYLE

The largest correlation between any measure of SSS and any measure of interpersonal dominance (i.e., control) was $r(300) = .33$. The correlation between SSS measures was greater than the correlation of either SSS measure with interpersonal dominance, all values for $t(297)$ were greater than 5.0, and $p < .001$. This pattern provides evidence of the convergent validity of the SSS measures, as well as discriminant validity relative to individual differences in dominance, a related but distinct construct reflecting the hierarchical or vertical dimension of social life.

DISCUSSION

The present results indicate that high SSS is generally associated with a dominant and at least somewhat warm interpersonal style, both when individual differences in social behavior (i.e., trait affiliation and control) are measured by self-report and when measured by spouse ratings. Similarly, participants who reported higher SSS were generally rated by their spouse as dominant and warm during marital interactions. Consistent with the complementarity principle, higher SSS was also associated with ratings of the spouse as warm (i.e., similar on affiliation) but slightly submissive (i.e., opposite on control) during marital interactions.

Complementarity provides a framework for understanding the health consequences of SSS. Specifically, if high SSS individuals are more likely to exhibit an interpersonal stance that is warm and dominant, this is likely to invite or evoke warm and submissive (i.e., friendly, cooperative) responses from others. Warm and cooperative responses from others should have positive effects on subsequent health, as they represent higher levels of social support and reduced levels of interpersonal conflict (Smith et al., 2010). In contrast, the cold and submissive interpersonal stance of individuals reporting low SSS would invite or evoke expressions of hostility and dominance by others, which in turn could increase the risk of health problems.

Other results reported here are consistent with this general view of SSS, interpersonal processes, and psychosocial risks for poor

health. We previously demonstrated that SSS is inversely related to self-rated health through psychosocial risk and resilience factors in this sample (Cundiff et al., under review). For the present report, we performed additional analyses to determine if the associations between SSS and psychosocial risk factors (i.e., marital adjustment, depressive symptoms) were mediated by these interpersonal processes. Results indicated that the interpersonal correlates of SSS partially mediated its association with depressive symptoms and marital adjustment. Specifically, for both men and women, viewing their spouse as warm and less dominant, and being seen by their spouse as warm, were significant mediators of the positive association between SSS and marital satisfaction. Hence, SSS is related to qualities of close relationships that have important consequences for health (Kiecolt-Glaser & Newton, 2001), at least in part through the mechanisms of processes described in interpersonal theory.

Mediators of the inverse association between SSS and depressive symptoms were significant and generally consistent with predictions. However, they differed somewhat for men and women. For women, perceptions of their husbands as warm and their husbands' perceptions of wives as dominant were significant mediators of the association between women's higher SSS and lower depressive symptoms. For men, both husbands' and wives' perceptions of their spouses as warm mediated the association between SSS and depressive symptoms. We tested the significance of this difference using equality constraints for the full path in SEM and found no significant difference between chi-squared values. Additionally, there were no significant differences between husbands and wives results for individual parameters. Hence, this apparent sex differences should be seen as tentative but possibly worthy of additional study.

Mediators of the positive association between SSS and marital satisfaction also suggested similarities and differences in the effects for husbands and wives. As noted previously, for both husbands and wives, ratings of their spouse as warmer and less controlling were significant mediators of associations between self-reports of SSS and marital adjustment. For husbands, their wives' perception of them as warmer was also a significant mediator, but the parallel path was not significant for wives (i.e., husbands rating wives as warmer). For women, the positive association between SSS and marital satisfaction was significant despite a significant path involving husbands perceiving high SSS wives as more controlling, which

in turn was associated with lower marital adjustment among wives. This suggests that the associations of wives' SSS with their perceptions of their husbands as warmer and less controlling were stronger predictors of wives marital adjustment than the path involving wives' levels of control. Importantly, this meditational path was not significant for husbands' SSS and marital functioning. Again, we used equality constraints in SEM to test these possible sex differences, but again we found no significant differences between men and women when comparing the full path or the individual parameters. Hence, such sex differences should perhaps be examined in future research, but as in the case of depressive symptoms the present results provide only a tentative suggestion of their presence.

It is important to note that although SSS is consistently associated with dominant interpersonal behavior, tests of discriminant validity clearly demonstrated that SSS is not simply another measure of trait dominance. This discriminant validity is important in that it indicates that SSS can be examined as distinct from other aspects of the vertical dimension of social life often examined as potential influences on health. Further, distinguishing these two constructs might help clarify why high SSS has been shown to be a protective factor for health, whereas having a dominant interpersonal style has not (Newton, 2009; Smith et al., 2008). That is, high SSS is associated specifically with warm dominance (i.e., gregariousness or extraversion), and this warmth might mitigate the otherwise unhealthy effects of a controlling interpersonal style. Finally, although individual differences in neuroticism are related to each of the main study variables, statistical control of neuroticism did not alter any of the results reported here.

LIMITATIONS AND QUALIFICATIONS

There are some noteworthy limitations of the current study. First, mediational analyses were conducted using a composite measure of SSS, in order to avoid multiple and potentially redundant analyses. The psychosocial correlates of SSSus and SSSc have been shown to differ in that SSSc may be more psychologically relevant (Goodman et al., 2001), and hence the present results might underrepresent associations with SSSc and overrepresent associations with SSSus.

Additionally and perhaps most importantly, the cross-sectional design of the current study does not allow us to make conclusions

about directionality. Replication of these findings in prospective research would be necessary to make statements about temporal precedence. The reverse of the meditational models tested here (e.g., depression or marital adjustment predicting affiliation and control, which in turn predict subjective status) cannot be compared against current models, as they are mathematically equivalent. However, prospective studies provide support for the directional paths tested in our mediational analyses (Singh-Manoux et al., 2005). We also tested plausible, alternative models in which the interpersonal mediators (i.e., affiliation and control) were treated as outcome variables and the outcome variables (i.e., depressive symptoms and marital adjustment) were treated as mediators (i.e., SSS predicts CESD or MAT, which in turn predict affiliation and control). These alternative models also provided a good fit with our data (CESD: $X^2 = 1.5$, $p = .47$, $CFI = 1.0$; MAT: $X^2 = 2.82$, $p = .25$, $CFI = .99$). Because these latter alternative models are not nested with our previous models, we cannot directly compare them with our primary interpretation. Again, until appropriate prospective studies can be conducted, support for our underlying conceptual models should be considered tentative.

Further, our findings should not be generalized beyond the largely Caucasian and generally middle- to upper-middle-class population studied here, as correlates of SSS likely vary across racial and socioeconomic factors (Adler et al., 2008; Ostrove, Adler, Kuppermann, & Washington, 2000). Also, although aspects of the results are consistent with the principle of complementarity in interpersonal behavior, we did not conduct a formal test of complementarity for this report. Finally, although our results are consistent with the hypothesis that SSS is possibly related to physical health outcomes through its associations with recurring interpersonal processes and related psychosocial risk factors, we did not address associations with actual health outcomes here. Hence, a more complete and definitive test of this hypothesis requires additional research addressing the role of these interpersonal and psychosocial processes as links between SSS and actual health outcomes.

CONCLUSIONS AND FUTURE DIRECTIONS

Our findings support prior research (Gallo et al., 2006) indicating that interpersonal processes may be an important contributor to

the widely studied associations among social status, psychological well-being, and health. The results extend this literature specifically to subjective indicators of social status. Low SSS could contribute to poor psychical health in part through the mechanism of greater emotional distress and strained personal relationships. The association between low SSS and higher levels of such psychosocial risk, in turn, could reflect specific interpersonal experiences involving low warmth, high hostility, and dominance.

These results also provide further evidence of the value of the interpersonal perspective (Horowitz, 2004; Kielser, 1996; Pincus & Ansell, 2003) as an integrative framework in efforts to understand psychosocial influences on physical health and well-being (Smith et al., 2004; Smith et al., 2010). A wide variety of individual differences and aspects of the social environment that predict important health outcomes—including SSS—can be organized in the IPC, and may influence health through the specific mechanism of recurring patterns of affiliation and control in everyday social interactions. The concepts and methods of the interpersonal perspective not only provide useful tools in pursuing this hypothesis, but also eventually can guide the design and evaluation of preventive interventions intended to reduce psychosocial risk for serious health problems (Smith et al., 2010).

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