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Shyness and Marriage: Does Shyness Shape Even Established Relationships?

Levi Baker¹ and James K. McNulty¹

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Abstract

Do shy people struggle to maintain their relationships just as they struggle to develop them? The current research addressed this question through one cross-sectional and one longitudinal study in which recently married couples reported their levels of shyness, relationship self-efficacy, marital problem severity, and marital satisfaction. Multilevel modeling revealed that (a) shyness was negatively associated with concurrent marital satisfaction in Study 1 and with declines in marital satisfaction in Study 2, (b) the association between shyness and satisfaction was mediated by low levels of relationship self-efficacy in Study 1 and Study 2, and (c) the association between relationship self-efficacy and concurrent marital satisfaction was mediated by concurrent marital problems in Study 1, and the association between relationship self-efficacy and declines in marital satisfaction was mediated by worsening marital problems in Study 2. These findings join a growing body of research demonstrating the cognitive mechanisms through which personality shapes relationships.

Keywords

shyness, marriage, relationship self-efficacy, relationship maintenance, personality, longitudinal

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For shy people, no task may be more difficult than developing new relationships. Not only do more shy individuals take longer than less shy individuals to form friendships (e.g., Asendorpf, 2000), they also form fewer of them (Asendorpf & Wilpers, 1998; Jones & Carpenter, 1986). Similarly, not only do more shy individuals take longer than less shy individuals to form romantic relationships (Asendorpf, 2000), they also enter into marriage at later ages (Caspi, Elder, & Bem, 1988).

Nevertheless, shy individuals marry with the same frequency as non-shy individuals (Cole & Robinson, 2002; Erwin, 2007; Jackson, Towson, & Narduzzi, 1997). Do shy individuals struggle to maintain these established relationships just as they struggle to develop them? Or do the interpersonal difficulties associated with shyness disappear in the more familiar context of such relationships? The goal of the current research was to address this issue.

Theory and Empirical Research Regarding Shyness and New Relationships

Shyness is an individual difference marked by chronic feelings of social anxiety and interpersonal inhibition (Cheek & Busch, 1981; Leary, 1986). Given that socially anxious individuals aspire to make positive impressions on others but doubt their ability to do so (Leary & Kowalski, 1995; Schlenker & Leary, 1982), it is not surprising that shy individuals tend to expect to be rejected by others (Jackson et al., 1997) and feel anxious in novel social situations (Leary, 1986). In fact, mea-

asures of shyness are virtually indistinguishable from measures of trait social anxiety (e.g., Anderson & Harvey, 1988).

This social anxiety explains why shy people struggle to form new relationships. First, their fears that they will make poor impressions lead shy individuals to avoid social situations and interactions—likely limiting their opportunities to meet new people. For example, compared to non-shy individuals, shy individuals avoid sitting near others (McCroskey, 1976) and avoid eating meals with people they do not know well (Arkin & Grove, 1990). Second, even when shy and socially anxious individuals do meet new people, their intense levels of social anxiety frequently lead them to behave in ways that make poor impressions (Garcia, Stinson, Ickes, Bissonnette, & Briggs, 1991; Hill, 1989; Meleshko & Alden, 1993)—likely limiting their abilities to form new relationships. For example, compared to those who do not experience chronic social anxiety, shy and socially anxious individuals initiate fewer conversations (Pilkonis, 1977), express less warmth and interest (Alden & Wallace, 1995), say less (Cheek & Buss, 1981; Pilkonis, 1977), and self-disclose less (Alden & Wallace, 1995).

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Theory Regarding Shyness and Established Relationships

Yet, as mentioned previously, shy individuals are just as likely as non-shy individuals to establish long-term relationships such as marriage (Asendorpf, 2000; Cole & Robinson, 2002; Erwin, 2007; Jackson et al., 1997). How does shyness shape such relationships? There is reason to expect shyness to be unrelated to the processes and outcomes of established relationships. Specifically, the social anxiety and interpersonal difficulties that lead shy individuals to have trouble forming new relationships appear to emerge mostly around strangers (Arkin & Grove, 1990; Russell, Cutrona, & Jones, 1986; Van Der Molen, 1990; Watson & Cheek, 1986). Accordingly, though shy individuals avoid interacting with strangers, they may not avoid interacting with their established partners. Indeed, Arkin and Grove (1990) reported that shy individuals not only reported less anxiety when they ate lunch with familiar others but were also just as likely as non-shy individuals to eat with those familiar others. Likewise, though shy people may behave in ways that make poor impressions around strangers, they may not behave in those ways around their partners. Indeed, Pontari and colleagues (Pontari, 2009; Pontari & Glenn, 2010) recently reported that socially anxious individuals are more likely to engage in relationship-promoting behaviors and to be rated as more socially competent when around close friends.

Nevertheless, theory and research on the maintenance of established relationships suggest shyness may be related to poor outcomes in established relationships for another reason. As suggested by interdependence theory (Thibaut & Kelley, 1959) and recent empirical work (e.g., McNulty, O'Mara, & Karney, 2008), maintaining a satisfying intimate relationship requires minimizing costs by resolving problems—and shy people may be particularly ineffective problem solvers. Specifically, according to Bradbury and Fincham's (1988) contextual model of relationships, distal factors such as shyness shape important interpersonal processes such as problem solving through proximal intrapersonal processes such as cognition. One such cognition, relationship self-efficacy, appears to be particularly important to problem solving (Cui, Fincham, & Pasley, 2008) and particularly low among shy people (Caprara, Steca, Cervone, & Artisticco, 2003; Hill, 1989; Jackson et al., 1997). For instance, Caprara et al. (2003) reported that compared to non-shy adolescents, shy adolescents believe themselves to be less able to initiate discussions, work cooperatively with others, voice opinions, and manage interpersonal conflicts in their families. Such low levels of relationship self-efficacy may prevent shy individuals from being satisfied with their established relationships by preventing them from addressing and resolving the problems that arise in those relationships.

Empirical Research Regarding Shyness and Established Relationships

Despite these theoretical reasons for a connection between shyness and poor relationship functioning, empirical research addressing that connection has yielded inconsistent results; three studies have demonstrated negative associations between shyness-related traits and relationship satisfaction, whereas three studies have demonstrated no association between shyness-related traits and relationship satisfaction. For instance, Wenzel (2002) reported that the relationship satisfaction reported by 7 individuals with social phobia did not differ from the relationship satisfaction reported by 7 non-anxious controls. Similarly, Wenzel, Graff-Dolezal, Macho, and Brendle (2005) reported that the relationship satisfaction and relationship problems reported by 13 individuals high in social anxiety did not differ from the relationship satisfaction and relationship problems reported by 14 nonanxious controls. Likewise, Kashdan, Volkmann, Breen, and Han (2007) reported that trait social anxiety was unrelated to initial relationship closeness or changes in relationship closeness over 3 months in a sample of undergraduate women. Nevertheless, Moller and Stattin (2001) reported that mothers' reports of adolescent male participants' shyness were negatively related to participants' relationship satisfaction 20 years later. Additionally, Casten (2004) reported that a clinical sample of individuals scoring high on a measure of social phobia reported being less satisfied with their romantic relationships than a matched control group. Finally, Filsinger and Wilson (1983) reported that trait social anxiety was related to relationship distress in a sample of married couples.

Unfortunately, several qualities of all these studies limit the conclusions that can be drawn from them, making it difficult to resolve these inconsistencies. First, two of the studies that failed to demonstrate significant effects of trait social anxiety used very small samples (i.e., $N = 14$, Wenzel, 2002; $N = 27$; Wenzel et al., 2005), likely yielding insufficient power. Second, the third study failing to demonstrate significant effects (Kashdan et al., 2007) only examined females, whereas Moller and Stattin (2001) demonstrated their effects of shyness among males but not females. Third, whereas one of the studies suggesting negative effects of shyness (Casten, 2004) used clinical samples of individuals with social phobia, it is unclear whether the effects of social phobia generalize to shyness as it is experienced in nonclinical samples. Fourth, one of the other studies suggesting significant negative effects of shyness (Moller & Stattin, 2001) assessed participants' shyness with a single item that was reported by the participants' mothers. Because the criteria for shyness are based on internal experiences (i.e., experiencing social anxiety), these mothers' reports of shyness may have been confounded with other psychological factors (e.g., depression) that lead to similar behavioral manifestations (e.g., avoidance). Finally,

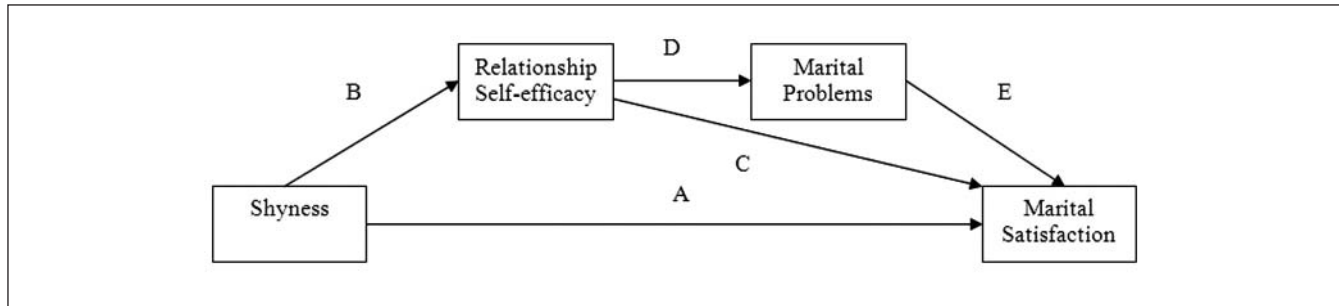


Figure 1. Summary of hypotheses

none of these studies addressed the *process* through which shyness may influence relationships. For instance, although Filsinger and Wilson (1983) found that trait social anxiety was related to marital distress, they did not identify the mechanism of such effects.

Study 1

Study 1 attempted to clarify the role of shyness in established relationships by assessing the levels of shyness and marital self-efficacy, severity of marital problems, and relationship satisfaction in a sample of newlywed couples. Newlyweds are an appropriate sample in which to investigate these issues for several reasons. First, in the early years of marriage, spouses likely experience a number of new challenges and thus should demonstrate significant variability in the outcomes of central interest to the current study—severity of marital problems and marital satisfaction. Second, by studying new marriages, we were able to further maximize the variance in these marital processes by assessing couples that will eventually divorce.

Our hypotheses are summarized in Figure 1. First, we predicted that shyness would be negatively associated with marital satisfaction (Path A). Second, we predicted that this negative association between shyness and marital satisfaction would be mediated by relationship self-efficacy, such that shyness would lead to poorer relationship self-efficacy (Path B) that would lead to lower marital satisfaction (Path C). Finally, we predicted that the positive association between relationship self-efficacy and marital satisfaction would be mediated by marital problems, such that poorer relationship self-efficacy would lead to more severe problems (Path D) that would lead to lower marital satisfaction (Path E). Given that the greater marital problems experienced by shy spouses might affect their partners' satisfaction, we also explored the possibility that partner shyness may lead to lower levels of satisfaction.

Method

Participants. Participants in Study 1 were 70 couples who had completed the third phase of data collection in a larger

longitudinal study of 135 newlywed couples recruited from eastern Tennessee. Participants were recruited through advertisements placed in community newspapers and bridal shops and through invitations sent to eligible couples who had applied for marriage licenses in counties near the study location. Couples who responded were screened in a telephone interview to ensure they met the following criteria: (a) they had been married for less than 6 months, (b) neither partner had been previously married, (c) they were at least 18 years of age, (d) they spoke English and had completed at least 10 years of education (to ensure comprehension of the questionnaires), and (e) they did not yet have children (a larger aim of the study was to examine the transition to parenthood).

When the current measures were completed (approximately 1 year after marriage), husbands were, on average, 26.90 years old ($SD = 4.57$) and had 16.85 years ($SD = 2.54$) of education. Ninety-two percent were Caucasian, and 76% were Christian. Seventy percent were employed full-time, and 26% were full-time students. Wives were, on average, 25.21 years old ($SD = 3.59$) and had 19.91 years ($SD = 2.30$) of education. Ninety-four percent were Caucasian, and 82% were Christian. Fifty-six percent were employed full-time, and 28% were full-time students.

Procedure. At the third wave of data collection, couples were contacted by phone or e-mail and were mailed two packets of questionnaires (one for each spouse) that each contained measures of shyness, relationship self-efficacy, marital problem severity, marital satisfaction, and neuroticism; postage-paid return envelopes; and an instruction letter reminding couples to complete the questionnaires separately from each another. Couples were paid \$50 when the questionnaires were received. Data from this third wave were used because this was the first wave that included the measure of shyness.

Measures

Shyness. Shyness was assessed using the Revised Cheek and Buss Shyness Scale (RCBSS; Cheek & Melchior, 1985). The RCBSS requires individuals to report agreement with 20 items (e.g., I am often uncomfortable at parties and other

social gatherings) using a 5-point Likert response scale (1 = *strongly disagree*, 5 = *strongly agree*). Internal consistency was high (coefficient alphas = .94 for husbands and .94 for wives).

Relationship self-efficacy. Spouses' relationship self-efficacy was assessed using a measure of marital self-efficacy developed by Bradbury (1989; also see Cui et al., 2008). This seven-item measure assesses individuals' beliefs about their ability to resolve marital conflicts (e.g., I often feel helpless in dealing with the problems that come up in my marriage) on a 5-point Likert scale (1 = *very uncharacteristic or untrue, strongly disagree*, 5 = *very characteristic or true, strongly agree*). Internal consistency was adequate (coefficient alphas = .86 for husbands and .83 for wives).

Marital problems. The severity of spouses' marital problems was assessed using a modified version of the Inventory of Marital Problems (IMP; Geiss & O'Leary, 1981). This measure asks participants to rate 19 potential problems (e.g., trust, jealousy, gender, children, money management, household management) on an 11-point Likert scale, (1 = *not a problem*, 11 = *major problem*). Participants' reports were averaged to create a mean index of problem severity, with higher scores indicating more severe problems. Although intimates' reports of one problem area may not necessarily predict reports of other problem areas, the measure demonstrated high internal consistency (coefficient alphas = .92 for husbands and .91 for wives).

Marital satisfaction. We assessed global marital satisfaction using a version of the Semantic Differential (SMD; Osgood, Suci, & Tannenbaum, 1957). This 15-item version of the SMD asks participants to evaluate their relationship according to sets of opposing adjectives (e.g., good–bad, pleasant–unpleasant, satisfying–unsatisfying) on a 7-point scale. Thus, scores on the SMD could range from 15 to 105, with higher scores indicating greater satisfaction with the marriage. Internal consistency was high (coefficient alphas = .97 for husbands and wives).

Neuroticism. Because neuroticism is strongly associated with both shyness (e.g., Asendorph & Wilpers, 1998) and relationship processes and outcomes (e.g., Fisher & McNulty, 2008; McNulty, 2008), we measured and controlled neuroticism in all analyses using the Neuroticism subscale of the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1978). This 23-item measure asks participants to answer yes or no to questions regarding their negative affectivity (e.g., "Are you a worrier?" "Does your mood go up and down often?"). Internal consistency was adequate (coefficient alphas = .84 for husbands and .83 for wives).

Results

Descriptive statistics and preliminary analyses. Descriptive statistics of and correlations between the variables examined in Study 1 are presented in Table 1. Several items are worth

noting. First, the means and standard deviations for the shyness measure were similar to those obtained in previous studies (e.g., Cheek & Melchior, 1985), suggesting this sample was an appropriate one in which to understand associations between shyness and marriage. Second, the correlations provide preliminary support for our predictions that shy people have low relationship self-efficacy that is associated with greater levels of marital problems and lower marital satisfaction. However, these zero-order correlations do not take into account the shared variances among these variables, do not control for other influential variables (e.g., neuroticism), and do not provide information regarding the predicted mediating roles of relationship self-efficacy and marital problems. Addressing these issues was the goal of the primary analyses described next.

Primary analyses were conducted using multilevel modeling and the HLM computer program. In all analyses, the criterion variables were regressed onto the predictor variables and a dummy code for gender in the first level of the model, and the shared variance between husbands' and wives' data was controlled in the second level of the model that allowed for a randomly varying intercept. Consistent with the criteria described by Kenny, Kashy, and Cook (2006) for demonstrating that the data from these dyads were nondistinguishable, none of the significant effects varied by gender.

Is shyness associated with marital satisfaction? We first estimated the association between shyness and marital satisfaction. Specifically, reports of marital satisfaction were regressed onto own shyness, partners' shyness, own neuroticism, and gender. As can be seen in the top section of Table 2, shyness was significantly and negatively associated with marital satisfaction. A test of the Shyness \times Gender interaction revealed that this effect did not vary across husbands and wives, $t = -.64, p = .52$. Partners' shyness was unrelated to own marital satisfaction.

Does relationship self-efficacy mediate the association between shyness and marital satisfaction? We predicted that the negative association between shyness and marital satisfaction would be mediated by relationship self-efficacy. We tested for mediation by computing asymmetric confidence intervals for the mediated effect, following the procedures described by MacKinnon, Fritz, Williams, and Lockwood (2007). Those procedures required two sets of additional analyses. First, we estimated the association between shyness and the expected mediator—relationship self-efficacy—by regressing relationship self-efficacy onto shyness, partners' shyness, neuroticism, and gender. As can be seen in the left half of the middle section of Table 2, shyness was significantly and negatively associated with relationship self-efficacy. This effect did not vary across husbands and wives, $t = 0.99, p = .32$. Second, we estimated the association between relationship self-efficacy and marital satisfaction, controlling for shyness, by regressing marital satisfaction onto relationship self-efficacy, shyness, partners' shyness, neuroticism, and

Table 1. Descriptive Statistics and Correlations for Husbands and Wives in Study 1

	1	2	3	4	5	M	SD
1. Shyness	.15	.15	-.36**	.36**	-.42**	2.81	0.81
2. Partner shyness	.15	.15	-.08	.10	-.15	2.78	0.74
3. Relationship self-efficacy	-.34**	-.23	.32**	-.59**	.53**	5.66	0.57
4. Problems	.23*	.19	-.70**	.45**	-.57**	2.51	1.10
5. Satisfaction	-.23*	-.13	.77**	-.71**	.28*	94.89	9.87
M	2.78	2.81	5.34	2.60	92.96		
SD	0.74	0.81	0.79	1.41	12.74		

Descriptive statistics and correlations for wives are presented above the diagonal (in boldface); husbands are presented below the diagonal; correlations between wives and husbands are presented on the diagonal.

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

Table 2. Associations of Shyness, Relationship Self-Efficacy, and Marital Problem Severity, With Marital Satisfaction in Study 1

Is shyness associated with marital satisfaction?					
Dependent variable					
Marital satisfaction ^a					
Independent variables	B		r		
Gender	3.61		.17*		
Neuroticism	-0.63		-.21*		
Partner shyness	-0.92		-.06		
Own shyness	-2.61		-.17*		
Does relationship self-efficacy mediate the association between shyness and marital satisfaction?					
Dependent variables					
Independent variables	Relationship self-efficacy ^b		Marital satisfaction ^c		
	B	r	B	r	
Gender	0.44	.34**	-0.97	-.07	
Neuroticism	-0.04	.25**	-0.18	-.08	
Partner shyness	-0.08	-.10	-0.05	-.00	
Own shyness	-0.16	-.17*	-0.90	-.07	
Relationship self-efficacy	—	—	10.43	.53**	
Do marital problems mediate the association between relationship self-efficacy and marital satisfaction?					
Dependent variables					
Independent variables	Marital problems ^d		Marital satisfaction ^e		
	B	r	B	r	
Gender	0.10	.11	-0.13	-.02	
Neuroticism	0.03	.11	-0.11	-.05	
Partner shyness	0.04	.03	0.08	.01	
Own shyness	0.05	.04	-0.75	-.07	
Relationship self-efficacy	-1.09	-.58***	6.76	.33**	
Problems	—	—	-3.23	-.31**	

^adf = 134.

^bdf = 134.

^cdf = 133.

^ddf = 133.

^edf = 132.

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

gender. As can be seen in the right half of the middle section of Table 2, relationship self-efficacy was significantly and positively associated with marital satisfaction. This effect did not vary across husbands and wives, $t = -1.25$, $p = .21$. Finally, we multiplied these two effects to obtain an estimate of the mediated effect, $B = -1.67$, and computed the 95% CI [-3.51, -0.03] that indicated that the mediated effect was significant. Notably, once self-efficacy was controlled, shyness was no longer associated with marital satisfaction, suggesting full mediation and thus ruling out the alternative possibility that shyness mediated the positive relation between relationship self-efficacy and marital satisfaction.

Do marital problems mediate the association between relationship self-efficacy and marital satisfaction? We also tested the prediction that the positive association between relationship self-efficacy and marital satisfaction would be mediated by the severity of marital problems by conducting two additional analyses. First, we estimated the association between relationship self-efficacy and the expected mediator—marital problems—by regressing marital problems onto relationship self-efficacy, own shyness, partner shyness, neuroticism, and gender. As can be seen in the left half of the bottom section of Table 2, relationship self-efficacy was significantly and negatively associated with marital problems. This effect did not vary across husbands and wives, $t = .48$, $p > .50$. Second, we estimated the association between marital problems and marital satisfaction, controlling for relationship self-efficacy, by regressing marital satisfaction onto marital problems, relationship self-efficacy, own shyness, partners' shyness, neuroticism, and gender. As can be seen in the right half of the bottom section of Table 2, the severity of marital problems was significantly and negatively associated with marital satisfaction. This effect did not vary across husbands and wives, $t = -1.59$, $p = .12$. Finally, we multiplied these two effects to obtain an estimate of the mediated effect, $B = 3.52$, and computed the 95% CI [1.60, 5.70] that indicated that the mediated effect was significant.

Does relationship self-efficacy mediate the negative association between marital problems and marital satisfaction? Although the previous analyses are consistent with the prediction that marital problems mediate the negative association between relationship self-efficacy and marital satisfaction, it is also possible that relationship self-efficacy mediates the negative association between marital problems and marital satisfaction. We conducted additional analyses to determine whether this alternative mediational model fit the data as well as the predicted model that was supported previously. Indeed, the severity of marital problems was significantly and negatively associated with self-efficacy, $B = -0.32$, $SE = 0.03$, $t(133) = -9.89$, $p < .01$, $r = .65$, controlling for shyness, partner shyness, neuroticism, and gender, and self-efficacy was significantly and positively associated with marital satisfaction, $B = 6.76$, $SE = 1.68$, $t(132) = 4.02$, $p < .01$, $r = .33$, controlling for

problems, shyness, partner shyness, neuroticism, and gender. Finally, we multiplied these two effects to obtain an estimate of the mediated effect, $B = -2.13$, and computed the 95% CI [-3.31, -1.06] that indicated that the mediated effect was significant.

Discussion

This first study provided preliminary support for the prediction that shy individuals possess lower levels of relationship self-efficacy that lead them to experience greater marital problems and consequently lower levels of marital satisfaction. Specifically, shy spouses reported lower levels of marital satisfaction that appeared to emerge because of their lower levels of relationship self-efficacy that appeared to lead, in turn, to more severe problems. Partners' shyness was unrelated to own satisfaction.

Despite this support, the cross-sectional nature of the data from Study 1 limited conclusions in two important ways. First, although the predicted model that relationship self-efficacy mediates the effects of shyness on marital satisfaction fit the data better than the alternative model that shyness mediated the effects of relationship self-efficacy on marital satisfaction, both the predicted model that problem severity mediated the effects of relationship self-efficacy on marital satisfaction and the alternative model that self-efficacy mediated the effects of problem-severity on marital satisfaction fit the data. Second, although it is unlikely that lower levels of marital satisfaction led people to report greater levels of shyness, less satisfied shy people may have reported greater problems and lower levels of self-efficacy due to processes of sentiment override (see Weiss, 1980).

Study 2

Study 2 attempted to provide stronger support for the direction of our predicted model by using longitudinal data. Specifically, Study 2 assessed own and partner shyness, self-efficacy, neuroticism, marital problems, and marital satisfaction at baseline, and then assessed marital satisfaction and marital problems 6 months later. Analyses examined whether shyness predicted *changes* in satisfaction that were mediated by self-efficacy and *changes* in the severity of marital problems.

Method

Participants. Participants in Study 2 were 42 couples who had completed the seventh and eighth phases of data collection in a larger longitudinal study of 72 newlywed couples recruited from northern Ohio. Participants were recruited through the same means as those in Study 1 and had to meet the same eligibility requirements, except that couples with children were included.

Table 3. Descriptive Statistics and Correlations for Husbands and Wives in Study 2

	1	2	3	4	5	6	7	M	SD
1. Shyness	.18	.18	-.41**	.35*	.38*	-.37**	-.30*	2.81	0.87
2. Partner shyness	.18	.18	-.24	.40**	.02	-.30*	-.26	3.08	0.89
3. Relationship self-efficacy	-.51**	-.08	.32*	-.62**	-.33*	.50**	.44**	3.71	0.66
4. Problems (baseline)	.41**	.20	-.44**	.44**	.49**	-.71**	-.59**	3.00	1.24
5. Problems (follow-up)	.38**	.22	-.54**	.75**	.31*	-.41**	-.37*	2.88	1.80
6. Satisfaction (baseline)	-.35**	-.01	.62**	-.63**	-.59**	.48**	.76**	91.80	10.95
7. Satisfaction (follow-up)	-.38**	.00	.75**	-.34**	-.61**	.74**	.59**	92.32	11.45
M	3.08	2.81	3.57	2.87	2.78	89.37	88.67		
SD	0.89	0.87	0.80	1.21	1.35	12.94	15.04		

Descriptive statistics and correlations for wives are presented above the diagonal (in boldface); husbands are presented below the diagonal; correlations between wives and husbands are presented on the diagonal.

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

When the current baseline measures were completed (approximately 4 years after marriage), husbands were, on average, 27.92 years old ($SD = 4.39$) and had 15.15 years ($SD = 2.48$) of education. Ninety percent were Caucasian, and 84% were Christian. Seventy-five percent were employed full-time, and 11% were full-time students. On average, wives were 27.40 years old ($SD = 6.10$) and had 15.72 years ($SD = 2.25$) of education. Ninety-six percent were Caucasian, and 85% were Christian. Forty-nine percent were employed full-time, and 26% were full-time students.

Procedure. At the seventh wave of data collection, couples were contacted by phone or e-mail and mailed two packets of questionnaires (one for each spouse) that each contained measures of shyness, relationship self-efficacy, marital problem severity, marital satisfaction, and neuroticism; postage-paid return envelopes; and an instruction letter reminding couples to complete the questionnaires separately from one another. Couples were paid \$50 when the questionnaires were received. Data from this seventh wave were used because this was the first wave that included the measure of shyness. Approximately 6 months later, couples were recontacted by phone or e-mail and either mailed or e-mailed packets that contained the same measures of marital problems and marital satisfaction, an instruction letter reminding them to complete the questionnaires separately from each other, and in the cases in which couples were mailed their packets, a postage-paid return envelope. Couples were paid \$50 when their questionnaires were received.

Measures. The same measures used in Study 1 were used here in Study 2. Reliability was adequate for all measures (for the RCBS, coefficient alphas = .96 for husbands and .94 for wives; for the relationship self-efficacy measure, coefficient alphas = .87 for husbands and .80 for wives; for the IMP, coefficient alphas = .90 for husbands and .88 for wives at baseline and .91 for husbands and .95 for wives at the 6-month follow-up; for the SMD, coefficient alphas = .97 for husbands and .96 for wives at baseline and .95 for husbands and .97 for wives at the 6-month follow-up; for neuroticism, coefficient alphas = .88 for husbands and .81 for wives).

Results

Descriptive statistics and preliminary analyses. Descriptive statistics of and correlations between the variables examined in Study 2 are presented in Table 3. As in Study 1, the means and standard deviations for shyness were similar to those obtained in previous studies (e.g., Cheek & Melchior, 1985), again suggesting this sample was an appropriate one in which to examine associations between shyness and marriage. Although marital satisfaction at baseline did not differ significantly from satisfaction at the 6-month follow-up on average—for husbands, $t(41) = .54, p = .59$; for wives, $t(41) = -.09, p = .93$ —and the severity of marital problems at baseline did not differ significantly from the severity of marital problems at the 6-month follow-up on average—for husbands, $t(41) = .53, p = .60$; for wives, $t(41) = .33, p = .74$ —differences between baseline and follow-up marital satisfaction ranged from -25.47 to 35.00 , and differences between baseline and follow-up problem severity satisfaction ranged from -9.16 to 2.79 , suggesting that some spouses experienced more change than others. Finally, as in Study 1, the correlations reported in Table 3 provide preliminary support for our predictions. Nevertheless, as in Study 1, these zero-order correlations do not account for variance shared among these variables and between these variables and neuroticism and partner shyness.

Does shyness predict declines in marital satisfaction? All predictions were tested in the first level of a multilevel model as they were in Study 1. Our first set of analyses addressed whether shyness was associated with declines in marital satisfaction. We addressed this possibility by regressing reports of marital satisfaction at the 6-month follow-up onto marital satisfaction at baseline, own shyness, partners' shyness, neuroticism, and gender. As can be seen in the top section of Table 4, shyness was significantly and negatively associated with marital satisfaction at the 6-month follow-up. This effect did not vary across husbands and wives, $t = 0.91, p = .37$. Partners' shyness was unrelated to marital satisfaction at the 6-month follow-up.

Table 4. Associations of Shyness, Relationship Self-Efficacy, and Changes in Relationship Problem Severity, With Changes in Marital Satisfaction in Study 2

Does shyness predict declines in marital satisfaction?				
Independent variables	Dependent variable			
	Changes in marital satisfaction ^a			
	B	r		
Gender	0.36	.03		
Neuroticism	0.21	.14		
Satisfaction (baseline)	0.80	.67**		
Partner shyness	0.12	.02		
Own shyness	-2.07	-.22*		

Does relationship self-efficacy mediate shyness and changes in marital satisfaction?				
Independent variables	Dependent variables			
	Relationship self-efficacy ^b		Changes in marital satisfaction ^c	
	B	r	B	r
Gender	0.10	.11	0.17	.01
Neuroticism	-0.02	-.14	0.31	.22
Satisfaction (baseline)	—	—	0.60	.58**
Partner shyness	-0.06	-.08	0.24	.03
Own shyness	-0.32	-.40**	-0.64	-.07
Relationship self-efficacy	—	—	6.37	.36**

Do changes in marital problems mediate relationship self-efficacy and changes in marital satisfaction?				
Independent variables	Dependent variables			
	Changes in marital problems ^d		Changes in marital satisfaction ^e	
	B	r	B	r
Gender	-0.00	-.00	0.21	.02
Neuroticism	0.04	.12	0.33	.26*
Problems (baseline)	0.69	.55**	—	—
Satisfaction (baseline)	—	—	0.62	.63**
Partner shyness	-0.15	-.09	0.02	.00
Own shyness	-0.09	-.05	-0.77	.10
Relationship self-efficacy	-0.30	-.22†	5.49	.36**
Changes in problems	—	—	-2.62	-.31**

^adf = 78.^bdf = 87.^cdf = 77.^ddf = 77.^edf = 76.

†p = .05. *p < .05. **p < .01.

Does relationship self-efficacy mediate the association between shyness and changes in marital satisfaction? We predicted that the negative association between shyness and changes in marital satisfaction would be mediated by relationship self-efficacy. We again computed asymmetric confidence intervals to test the mediated effect. First, we estimated the association between shyness and the expected mediator—relationship self-efficacy—by regressing relationship self-efficacy onto shyness, partners' shyness, neuroticism, and gender. As can

be seen in the left half of the middle section of Table 4, shyness was significantly and negatively associated with relationship self-efficacy. This effect did not vary across husbands and wives, $t = 0.74$, $p = .46$. Second, we estimated the association between relationship self-efficacy and changes in marital satisfaction, controlling for shyness, by regressing marital satisfaction at the 6-month follow-up onto marital satisfaction at baseline, relationship self-efficacy, shyness, partner shyness, neuroticism, and gender. As can be seen in the right

half of the middle section of Table 4, relationship self-efficacy was significantly and positively associated with marital satisfaction at the follow-up. This effect did not vary across husbands and wives, $t = .85$, $p = .40$. Finally, we multiplied these two effects to obtain an estimate of the mediated effect, $B = -2.04$, and computed the 95% CI $[-3.83, -.70]$ that indicated that the mediated effect was significant. Notably, when relationship self-efficacy was controlled, shyness was no longer associated with changes in marital satisfaction, again suggesting full mediation and thus ruling out the possibility that shyness mediated the effect of relationship self-efficacy on changes in satisfaction.

Do changes in marital problems mediate the association between relationship self-efficacy and changes in marital satisfaction? We predicted that the positive association between relationship self-efficacy and changes in marital satisfaction would be mediated by changes in the severity of marital problems. To test this possibility, we first estimated the association between relationship self-efficacy and the expected mediator—changes in the severity of marital problems—by regressing marital problems at the 6-month follow-up onto the severity of marital problems at baseline, relationship self-efficacy, own shyness, partner shyness, neuroticism, and gender. As can be seen in the left half of the bottom section of Table 4, relationship self-efficacy was significantly and negatively associated with marital problems at the follow-up. This effect did not vary across husbands and wives, $t = 1.26$, $p = .21$. Second, we estimated the association between changes in marital problems and changes in marital satisfaction, controlling for relationship self-efficacy, by regressing marital satisfaction at the follow-up onto marital satisfaction at baseline, changes in marital problems (the standardized residuals from regressing marital problems at the follow-up onto marital problems at baseline in a separate regression), relationship self-efficacy, own shyness, partner shyness, neuroticism, and gender. As can be seen in the right half of the bottom section of Table 4, changes in the severity of marital problems were significantly and negatively associated with marital satisfaction at the 6-month follow-up. This effect did not vary across husbands and wives, $t = -1.78$, $p = .08$. Finally, we multiplied these two effects together to obtain an estimate of the mediated effect, $B = .79$, and computed the 95% CI $[0.01, 1.92]$ that indicated that the mediated effect was significant.

Discussion

Study 2 extended the findings of Study 1 in two important ways. First, Study 2 replicated the findings of Study 1 that shyness is associated with low levels of relationship self-efficacy that lead to unresolved problems and thus lower levels of marital satisfaction. Second, Study 2 eliminated several directional ambiguities of the results obtained in Study 1. For instance, one alternative interpretation of

findings in Study 1 was that the lower levels of satisfaction experienced by shy individuals led to perceptions of worse problems and poorer relationship self-efficacy through processes of sentiment override (Weiss, 1980). The longitudinal data in Study 2 helped rule out this alternative interpretation by revealing that the low levels of self-efficacy reported by shy individuals led to *changes* in marital satisfaction through changes in problems. Likewise, a second alternative interpretation of the results of Study 1, and one that was consistent with subsequent analyses, is that relationship self-efficacy mediates the association between the severity of marital problems and marital satisfaction rather than vice versa. Although we were unable to rule out the possibility that more severe problems lead to less relationship self-efficacy because we did not have longitudinal data regarding changes in relationship self-efficacy, we were able to provide much stronger support for the proposed mediational role of marital problems by demonstrating that changes in marital problems mediate the effects of self-efficacy on changes in marital satisfaction. Future research may benefit by examining whether the negative association between problem severity and relationship self-efficacy is reciprocal, such that more severe problems also lead to less relationship self-efficacy.

General Discussion

Study Rationale and Summary of Results

How do shy individuals fare in their marital relationships? The two studies presented here revealed consistent answers to this question: Shyness is negatively associated with marital cognitions and outcomes. Specifically, more shy spouses reported lower levels of relationship self-efficacy that were associated with more serious marital problems that were in turn associated with lower levels of marital satisfaction (Study 1) and increases in marital problems that led to declines in marital satisfaction (Study 2). Notably, these patterns emerged in two independent studies of marriages of slightly different durations and did not vary across husbands and wives, suggesting they are robust.

In contrast, partner shyness was unrelated to marital problems or marital satisfaction in both studies. One explanation for this finding is that the problems that shy people leave unaddressed in their relationships are not the same problems that affect their partners' satisfaction with the relationship. For example, although a shy wife who does not address her concern that her husband does not respect her may experience decreases in marital satisfaction, her husband may remain perfectly content. Consistent with this possibility, spouses' reports of their marital problems were relatively independent, as at least 80% of the variance in spouses' reports of the severity of their relationship problems was unique in both studies.

Theoretical and Practical Implications

The current findings have several theoretical and practical implications. First, these findings have implications for understanding the role of shyness in established relationships. Although numerous studies have addressed how shyness limits the formation of new relationships (e.g., Arkin & Grove, 1990; Asendorpf, 2000; Caspi et al., 1988; Garcia et al., 1991; Hill, 1989), previous studies have been inconsistent in demonstrating whether shyness also has negative effects on established relationships, possibly due to several limiting qualities of those studies (e.g., small sample size, limited measures). The research described here, in contrast, improved on prior limitations and demonstrated consistent negative effects of shyness in one cross-sectional and one longitudinal study of marriage. Furthermore, the current studies demonstrated an important mechanism through which shyness affects established relationships. Whereas shyness appears to affect the formation of new relationships through avoiding and engaging in negative behaviors during social encounters, shyness appears to affect established relationships through low levels of relationship self-efficacy that lead to worsening problems.

Second, the current studies also have implications for our understanding of the processes of relationship maintenance more generally. First, the findings of Study 2 that changes in problems predicted changes in satisfaction join others (e.g., McNulty et al., 2008) to provide support for a central prediction derived from interdependence theory (Thibaut & Kelley, 1959)—that growing costs of a relationship lead to declines in relationship satisfaction. Second, the findings of both studies that shyness negatively affects established relationships through relationship self-efficacy provide support for a prediction derived from Bradbury and Fincham's (1988) contextual model of relationship interaction that cognitions play an important role in mediating the effects of distal variables, such as personality, on relationship outcomes.

In addition to these theoretical implications, the current findings have important implications for interventions designed to treat and prevent marital distress. Specifically, whereas personality traits such as shyness tend to be relatively stable and resistant to change (e.g., Caspi & Roberts, 1999), the current studies suggest a more malleable target for interpersonal interventions involving shy individuals: relationship self-efficacy. Indeed, interventions have demonstrated some success in changing cognitive patterns such as self-efficacy (e.g., Gaudiano & Herbert, 2003). By instilling confidence in shy individuals regarding their ability to resolve marital problems, practitioners may be able to help shy people take the steps needed to correct the problems that will inevitably arise over the course of their long-term relationships.

Directions for Future Research

The current findings suggest at least two potentially fruitful avenues for future research. First, future research may benefit by examining the extent to which conceptually similar variables, such as attachment anxiety, attachment avoidance, and/or extraversion, operate on established relationships through the same or similar mechanisms. For example, a consistent literature demonstrates that both attachment anxiety and attachment avoidance are negatively associated with relationship satisfaction (for a review, see Cassidy & Shaver, 1999), and recent research suggests that both these vulnerabilities are also negatively associated with social self-efficacy (Mallinckrodt & Wei, 2005). Although social self-efficacy is the tendency to feel confident in forming new relationships, insecurely attached individuals may have similar doubts about their abilities to maintain their existing relationships (i.e., relationship self-efficacy). Accordingly, future research may benefit by examining whether shyness and insecure attachment uniquely operate on relationship outcomes and, if so, the extent to which they do so through the same or unique mechanisms.

Second, future research may benefit by more thoroughly examining the factors that account for the effects of shyness and relationship self-efficacy on established relationships. Regarding the effects of shyness, although relationship self-efficacy fully mediated the effects of shyness on relationship satisfaction in both studies, the moderate sample sizes in both studies may have prevented us from detecting additional effects of shyness on satisfaction that may operate through other mechanisms. Given that shyness is defined by the tendency to experience social anxiety, future research may benefit by examining whether specific experiences of social anxiety, as well as conceptually similar variables, such as rejection sensitivity and/or other specific components of self-esteem, account for any additional variance in the association between shyness and relationship satisfaction. Regarding the effects of self-efficacy, although both studies demonstrated that low self-efficacy leads to more severe problems, neither study examined the mechanism of that effect. Given that intrapersonal factors such as shyness are likely to affect interpersonal variables such as relationship problems through behavior, future research may benefit by examining whether shy people experience more severe problems because their low levels of relationship self-efficacy lead them to behave in ways that elicit more negative responses from their partners, or because they lead them to behave in ways that fail to resolve their existing problems, or both.

Study Strengths and Limitations

Several strengths of the current research enhance our confidence in the results reported here. First, the overall pattern of results replicated across husbands and wives in two independent

samples, reducing the likelihood that the results were unique to gender or sample. Second, the data from Study 2 were longitudinal, which helped reduce the possibility that the effects reported in both studies were due to processes of sentiment override. Third, analyses in both studies controlled for neuroticism, a correlate of both shyness and marital satisfaction, ensuring that the results reported here were not spurious because of associations with that personality trait. Finally, the married spouses within each sample were fairly homogenous on many variables not considered here, such as relationship length, religion, and ethnicity, helping to reduce unnecessary error variance and thus provided greater power to detect the effects here.

Despite these strengths, several factors limit the interpretation of these results until they can be replicated and extended. First, although the longitudinal nature of Study 2 helped resolve issues of directional ambiguity that resulted from the cross-sectional design of Study 1, and although both studies controlled for neuroticism, causal conclusions should still be drawn with caution. Second, although the two samples did vary in some important ways (e.g., relationship length, education obtained, relationship self-efficacy, problems, and satisfaction), they also were similar on other characteristics such as age, ethnicity, and religion. Accordingly, although we are not aware of any reasons why the processes investigated here should vary across such demographic factors, variables that covary with such factors (e.g., stress and problem severity) may moderate these effects. Future research may benefit by examining this possibility.

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