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# Couple Resilience to Economic Pressure Over Time and Across Generations

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## Couple Resilience to Economic Pressure Over Time and Across Generations

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Research suggests that economic stress disrupts perceived romantic relationship quality; yet less is known regarding the direct influence of economic stress on negative behavioral exchanges between partners over time. Another intriguing question concerns the degree to which effective problem-solving might protect against this hypothesized association. To address these issues, the authors studied two generations of couples who were assessed approximately 13 years apart (Generation 1:  $N = 367$ , Generation 2:  $N = 311$ ). On average and for both generations, economic pressure predicted relative increases in couples' hostile, contemptuous, and angry behaviors; however, couples who were highly effective problem solvers experienced no increases in these behaviors in response to economic pressure. Less effective problem solvers experienced the steepest increases in hostile behaviors in response to economic pressure. Because these predictive pathways were replicated in both generations of couples it appears that these stress and resilience processes unfold over time and across generations.

**Keywords:** coping, couples, economic well-being, family stress, intergenerational issues, resiliency

Economic stressors can have potentially serious, adverse consequences for romantic relationships. For example, economic hardship has been linked to marital instability (e.g., Conger et al., 1990), increased conflict (e.g., Dew & Yorgason, 2010; Hardie & Lucas, 2010), negative communication patterns (e.g., Williamson, Karney, & Bradbury, 2013), and lower relationship quality (e.g., Johnson & Booth, 1990). Indeed, marital conflicts about money are more common, problematic, and likely to remain unresolved than are non-money issues (Papp, Cummings, & Goeke-Morey, 2009). Less is known, however, about couples who are resilient to financial difficulties. Because the statistical association between economic problems and distress in relationships is far from perfect, the evidence suggests that many couples may experience little or no distress in response to financial difficulties. In this article we focus on the experience of such couples.

In particular, we propose that one likely source of couple resilience to economic problems involves the degree to which partners are effective at solving problems together. Other research has shown that couples dealing with the chronic illness of a partner were less likely to experience declines in their relationship satisfaction when they actively engaged with one another (e.g., openly discussed issues, asked how the partner was feeling, and engaged in joint problem-solving strategies: Schokker et al., 2010). We expect that these general problem-solving skills will also promote a couple's ability to cope with economic stress. Consistent with this idea, effective problem-solving has been shown to reduce the positive association between marital conflict and thoughts of divorce or separation within the context of economic problems (Conger, Rueter, & Elder, 1999). The current investigation builds on and extends this earlier research.

In the present study we investigated whether couples with more effective problem-solving skills, compared to less skillful couples, would engage in fewer hostile behaviors over time in response to economic pressure. That is, we investigated whether effective problem-solving skills represent an important resource that promotes couple resilience to economic problems, which builds on concepts from the family stress and resilience literature (e.g., Conger & Conger,

2002). Furthermore, because systematic replication is essential for improved understanding in any empirical science (e.g., Schmidt, 2009), another aim of our study was to assess the degree of replication for the aforementioned stress and resilience processes in two generations of romantic couples. Participating families were involved in a long-term prospective investigation that began in the late 1980s during an economic downturn (see Conger & Conger, 2002). The first-generation couples (G1) were assessed in the early 1990s and included husbands and wives in their early 40s. Their children, in turn, were interviewed between 2005 and 2007, after they had grown into young adulthood and established romantic relationships. Having two generations of couples gave us the unique opportunity to determine if the findings for the G1 couples would replicate for the G2 couples, approximately 13 years later.

### **Economic Stress and Romantic Relationship Functioning**

Research from the era of the Great Depression and the farm crises of the 1980s provided evidence that economic stress is related to adverse consequences for families. For example, couples who experienced heavy income loss during the Great Depression years were more likely to have financial disputes and increased tensions in their marital relationships (Liker & Elder, 1983). Likewise, farm couples from Nebraska who experienced an economic crisis in the 1980s reported more disruptions in their communication skills and increased thoughts of ending their relationship in divorce (Johnson & Booth, 1990). According to the Family Stress Model (e.g., Conger & Conger, 2002; Conger, Conger, & Martin, 2010; Conger, Ge, & Lorenz, 1994), the linking mechanism between economic hardship and various aspects of marital dysfunction seems to be an increase in daily economic pressures (e.g., being unable to meet basic material needs) that an economic shock (e.g., income loss) produces. Subsequently, these pressures appear to exacerbate emotional and behavioral problems for partners in romantic relationships that, in turn, can cause tension and disruption in close relationships. As such, economic pressures give psychological meaning to events and conditions that stem from economic hardship (Conger & Conger, 2002; Conger et al., 2010). These basic economic stress processes have been shown to operate for White, African American, and Hispanic families living in the United States and for families living outside the United States (for a review, see Conger et al., 2010).

In the present study, we extend this earlier research in several important ways. First, much of the previous research has focused on couples' negative perceptions of relationship quality (e.g., satisfaction) in response to economic stress (e.g., Dew & Yorgason, 2010; Hardie & Lucas, 2010). Self-reported perceptions of relationship quality are certainly important for relationship outcomes, but they may simply reflect the overall negative dispositions of the partner reporting rather than the actual behavioral dynamics of their relationship. Here, we relied on trained observer ratings of hostility, anger, and contemptuous behavioral exchanges enacted between romantic partners as indicators of relationship dysfunction and in doing so we complement existing research that links economic stress to self-reports of relationship dysfunction (e.g., dissatisfaction). We also examined rank order (i.e., relative) changes in partners' hostile behavioral exchanges over a period of 2 years whereas earlier research has primarily been cross-sectional and thus unable to examine changes in couple behavior over time (e.g., Conger et al., 1990; Williamson et al., 2013). Moreover, we investigated the degree to which economic stress predicted relative increases in hostile behavior over time for both G1 and G2 couples who were assessed approximately 13 years apart: this research strategy provided an opportunity to determine whether the economic stress process operated similarly over time and from generation to generation.

Based on theoretical predictions proposed by the Family Stress Model (e.g., Conger et al., 2010), we expected that higher levels of economic pressure at Time 1 will predict relative increases in couples' observed hostility, anger, and contempt two years later (Time 2) for both G1 and G2 couples. As illustrated in our conceptual model (see Figure 1) we call this the *Stress Hypothesis*. As noted earlier, a major aim of the present study was to investigate particular relationship skills that might disrupt the economic stress process over time and thus promote couple resilience in the face of economic adversity.

### **Couple Resilience to Economic Stress**

*Resilience* involves the notion that some people are more able than others to overcome significant adversity in their lives (e.g., Luthar, Cicchetti, & Becker, 2000). Although research on resilience has primarily focused on individuals—mainly children—resilience and coping can also be conceptualized at a dyadic level and can extend into later development (e.g., Masten & Wright, 2009; Story & Bradbury, 2004). As Luthar (2006) stated, “Resilience rests, fundamentally, on relationships” (pp. 780). That is, positive *interpersonal* characteristics may promote relationship

success or reduce dysfunction in response to stress, just as positive *intrapersonal* characteristics (e.g., certain personality traits) have been shown to reduce personal adverse consequences of stress (e.g., Donnellan, Conger, McAdams, & Neppl, 2009).

In terms of establishing the role of problem-solving as one possible source of couple resilience to economic stress, researchers have noted important theoretical and statistical differences between *compensatory* and *buffering* effects (e.g., Masten & Wright, 2009). Compensatory effects are identical to statistical main effects such that the explanatory variable of interest (i.e., effective problem-solving) contributes to more positive outcomes directly, regardless of risk level. Buffering effects denote statistical interactions between the explanatory variable of interest (i.e., effective problem-solving) and level of risk (i.e., economic pressure) such that the harmful impact of the stressor is reduced in the presence of high levels of the explanatory variable.

In general, research suggests that positive couple characteristics such as providing partner support (Cutrona, 2004; Sullivan, Pasch, Johnson, & Bradbury, 2010), enacting positive problem-solving skills (Johnson et al., 2005), and engaging in open communication (Laurenceau, Barrett, & Pietromonaco, 1988) are linked to greater perceived quality (e.g., happiness, satisfaction) in romantic relationships. This work illustrates compensatory effects because supportive behaviors contributed directly to positive relationship outcomes (i.e., main effect). Furthermore, similar kinds of relationship-promoting characteristics or skills have also been shown to protect or buffer couples from experiencing relationship distress (e.g., lowered relationship quality) in response to stressful life events (Neff & Karney, 2007), disease (Schokker et al., 2010), and work-family role strain (Brock & Lawrence, 2008).

The underlying theme in our study was that partner support, cooperation, and active communication are important antecedents of perceived intimacy and satisfaction in romantic unions (e.g., Reis & Shaver, 1988); thus, during times of stress, romantic partners who exercised greater skill in cooperation and communication around problem-solving would be less likely to experience future hostility in their relationship because they were more actively and effectively engaged in managing problems together. Indeed, the Family Stress Model proposes that resources available to the family should contribute to more positive outcomes directly (i.e., compensatory) and/or buffer associations between economic stress and various forms of family dysfunction (e.g., parents' emotional distress, inter-parental conflict, disrupted parenting, child behavior problems: see Conger & Conger, 2002). As such, we expected that more effective problem-solving skills at Time 1 would predict relative decreases in hostile behaviors at Time 2 for both G1 and G2 couples (*Compensatory Resilience Hypothesis*). We also expected that more effective problem-solving skills would significantly reduce the association between economic pressure at Time 1 and relative increases in hostile behaviors at Time 2 for both G1 and G2 couples (*Buffering Resilience Hypothesis*).

It is important to note that we expect a tendency to employ good problem-solving strategies will generalize across different types of stressors. For instance, more effective problem solvers will cope more effectively whether the stressor involves serious illness, job loss, or moving from one town to another. Regardless of the type of stressor, we propose that couples who are better able to solve significant problems together should experience less relationship dysfunction in response to economic pressures than couples without such skills because they show an interest in working out solutions to the various problems they face and demonstrate skill in reaching reasonable solutions with their partner. Indeed, prevention research suggests that effective communicating and problem solving are teachable skills that can promote healthier and happier romantic relationships (e.g., Hawkins, Blanchard, Baldwin, & Fawcett, 2008). For that reason, empirical demonstrations that effective problem solving protects couples from engaging in hostile and contemptuous behavioral interactions as a response to economic stress has applied implications for the development of more effective preventive and/or intervention programs for couples.

### **The Present Study**

We made a clear distinction between problem solving as an exogenous variable and hostility as the outcome of interest as there are important differences in these two types of couple interactions (see Figure 1). On the one hand, effective problem solving, as conceptualized here, represents a specific skill set that couples exercise with relative conscious control when there is a problem to solve. For example, effective problem solvers are more open to discussing problems with their partner, are able to come up with reasonable solutions for a given problem, and do not place blame on their partner for the problem. In the present study, we relied on participants' reports of their partner's ability to effectively problem solve (i.e., partner A reported on partner B's effective problem solving and vice versa). On the other hand, observed hostility represents the general valence of negative affective and emotional expressions exchanged between

partners via a suite of behaviors (e.g., name calling), facial expressions (e.g., scowling), and posture (e.g., turning away from partner in anger)—verbal and nonverbal actions that are visible to others during videotaped discussion tasks (see Melby & Conger, 2001). These affective behaviors are not necessarily specific to problem-solving skills but rather provide a general picture of relationship functioning from an affective standpoint. Other researchers have adopted similar conceptual distinctions between skills and behavioral affect and contend that both facets contribute uniquely to romantic relationship dynamics (see, e.g., Gottman, 1993; Heyman, 2001; Johnson et al., 2005).

Although we have not found any studies that investigated whether effective problem-solving skills protect couples from engaging in negative behavioral exchanges in response to *economic* stress specifically, some studies have found that effective problem-solving skills protect couples from negative relational consequences as influenced by other types of stressors. For instance, Neff and Broady (2011) found that for newlyweds who displayed effective problem-solving behaviors, greater stress in several life domains earlier in the marriage did not reduce perceived relationship satisfaction over a 2-year period. In another study, couples who recently made the transition into parenting experienced fewer declines in their reports of relationship satisfaction if they initially displayed positive problem-solving behaviors (Cox, Paley, Burchinal, & Payne, 1999). These two studies suggest that couples' problem-solving abilities may serve an important protective or stress-buffering role in terms of perceived relationship quality and stability and in response to marital conflict, life stress, and first-time parenting stressors. To date, we are not aware of any study that has explicitly addressed the extent to which effective problem solving by couples will protect them from experiencing increases in hostility over time in response to economic stress in particular.

Especially important, the current investigation builds on and extends an earlier study that involved the G1 participants in this ongoing program of research. In that report, Conger et al., (1999) found that spouses who were able to generate useful and high-quality solutions to stressors in general were less likely to consider divorce or separation in response to marital problems. We extend this earlier work in important ways. First, whereas Conger and colleagues focused on distal outcomes of the economic stress process leading to consideration of separation or divorce, the current analyses examined an earlier point in this process. That is, the earlier study asked whether effective problem solving could reduce risk for the termination of a romantic union in the face of a conflicted relationship. In the current investigation we examined the degree to which effective problem-solving skills can reduce risk for hostility and contempt in the first place when economic pressure is high. If our hypothesis is supported, the results will suggest that earlier interventions at the initial onset of economic pressure may be especially effective in blunting the negative effects of financial problems.

We also extended the earlier work in terms of systematic replication. The earlier report only assessed the G1 participants (wife and husband) when G2 was an adolescent. As the research continued we were able to evaluate the economic stress process for both the first and second generations. Specifically, we added the G2 offspring and their romantic partners when grown to adulthood in order to address the degree of replication for our hypotheses. Thus, in the current study we were able to investigate the hypothesized protective influence of effective problem-solving skills at an earlier point in the economic stress process and for a generation of younger as well as middle-aged couples; this approach adds important new information to that provided by Conger et al. (1999).

### Study Controls

To test our hypotheses, we included several control variables in the analyses. First, we controlled for couple's income and partner's education inasmuch as these variables correlate with both economic pressure and the quality of romantic relationships (for a review, see Conger et al., 2010). We also considered partner's individual differences in conscientiousness because this personality trait predicts various indices of socioeconomic well-being (e.g., Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007) as well as the quality and stability of romantic relationships (e.g., Donnellan, Conger, & Bryant, 2004). Especially relevant to the current study, effective problem-solving behavior may simply reflect individual differences in conscientiousness given that individuals high on this trait are described as more planful, cooperative, and persistent in the face of challenge (see Roberts, Lejuez, Krueger, Richards, & Hill, 2014). We considered this possibility in tests of our hypotheses. Moreover, because one member of the G2 couple could be a biological child of the G1 couple, we also statistically controlled for potential intergenerational continuities or possible genetic effects that could be responsible for explaining replicated processes across generations. To do so, we simply allowed all G1 constructs to correlate with all G2 constructs in the structural equation models.

## Method

### Participants

A total of 451 two-parent families were recruited for the study in 1989. Families from this area were selected for the study because of the severe economic depression in the region at that time (Family Transitions Project: see Conger & Conger, 2002). Each participant family included a wife and husband (the G1 couple), a seventh-grade target adolescent (G2), and a close-aged sibling of the target. Starting in 1991, a supplemental sample of matched ninth graders ( $n = 107$ ), a close-aged sibling, and their single-mother parent was added to the study. Because we were interested in examining relative change in couples' hostile behavioral exchanges over time, in the analyses we included two-parent families in which G1 husbands and G1 wives were married to each other in the calendar years of 1992 and 1994 ( $N = 367$  G1 couples). We focused on the 1992 and 1994 assessments because the measures required for the present analyses were first available in 1992 and then again in 1994. Nineteen percent ( $n = 84$ ) of the original two-parent G1 couples who participated in 1989 (i.e., at study initiation) were not included in this report either because they reported separation or divorce from their spouse ( $n = 62$ ) in 1992 or 1994, or because they were unavailable to participate in both the 1992 and 1994 assessments ( $n = 22$ ). After adjusting for multiple comparisons in a series of  $t$  tests (i.e., Bonferroni correction), we found that G1 couples who were married in 1992 and 1994 reported lower levels of economic pressure,  $t(42.41) = 3.30, p \leq .01$ , and higher levels of problem solving,  $t(39.21) = 6.19, p \leq .01$ , in 1992 compared to couples who were separated or divorced in 1992 and/or 1994. These findings suggest that the G1 couples available for these analyses were less stressed than those not available for the investigation. This situation likely reduces the possibility of finding support for our study hypotheses.

For the second generation of young adults (G2), we selected targets who participated with the same committed romantic partner in 2005 and 2007 ( $N = 311$  G2 couples). The 2005 and 2007 assessments were the last two available assessments of observed romantic relationship interactions for the G2 couples. These 311 G2 couples initially came from both two-parent ( $n = 263$ ) and single-mother households ( $n = 48$ ); thus, not all G2 targets were offspring of the included two-parent G1 couples because, as previously noted, single-mothers in the first generation were not included in the G1 sample. After adjusting for multiple comparisons in a series of  $t$  tests, we found that G2 targets who participated with the same romantic partner in 2005 and 2007 averaged more years of education,  $t(511) = 3.21, p \leq .01$ , and reported higher income,  $t(425) = 4.88, p \leq .01$ , than G2 targets who did not participate with the same romantic partner in 2005 and 2007. To be clear, we refer to the 1992 and 2005 assessments as Time 1 (T1) for G1 and G2 couples and the 1994 and 2007 assessments as Time 2 (T2) for G1 and G2 couples, respectively. The ethnic/racial background of the participants was predominately European American reflecting the demographics of the region at study initiation.

*Generation 1.* G1 wives were on average 41.31 years old ( $SD = 3.92$ ) and G1 husbands were on average 43.41 years old ( $SD = 4.89$ ) at T1 (1992). Wife's education ranged from some high school education to a Master's degree (median = 1 year of college or vocational training completed): 98.60% obtained at least a high school diploma or GED; husband's education ranged from some high school education to a PhD, JD, or other professional degree (median = 1 year of college or vocational training completed): 96.70% obtained at least a high school diploma or GED. At T1, the median yearly income for G1 was \$40,406 (range = -\$311,000 to \$244,500). Negative income was possible for participants with their own businesses who suffered a net loss in the past year.

*Generation 2.* G2 targets were on average 29.57 years old ( $SD = 0.41$ ) and their partners were on average 30.33 years old ( $SD = 4.11$ ) at T1 (2005). Target's education ranged from some high school education to a PhD, JD, or other professional degree (median = earned bachelor's degree) with nearly all earning at least a high school diploma or GED (99.94%). Similarly, partner's education ranged from some high school education to earning a PhD, JD, or other professional degree (median = earned bachelor's degree): 98.5% earned at least a high school diploma or GED. At T1, the median income for G2 couples was \$68,450 (range = \$8,568 to \$380,000). At T1, 245 couples were married, 52 were cohabiting, and 14 were in steady, committed romantic relationships but not living together. At T2, 278 couples were married and 33 were cohabiting.

### Procedures

Target youth participants (G2) were initially recruited from 34 public and private schools from eight counties in central Iowa in 1989, when they were in the seventh grade (see Conger & Conger, 2002, for details). In brief, names and addresses of seventh-grade students (i.e., target youth or G2) and their parents were collected from schools in

communities of 6,500 people or less. Letters were sent to families explaining the project and they were later contacted by telephone and asked to participate. Families without telephones were contacted in person. Seventy-eight percent of the families eligible for the study agreed to participate in 1989 ( $N = 451$ ). Retention rates for the target youth are high, with approximately 90% of the original cohort members participating in the last wave of data collection. As noted, a supplemental sample of matched ninth graders ( $n = 107$ ), a close-aged sibling, and their single-mother parent was added to the study starting in 1991. The recruitment procedures for this supplemental sample were similar to the initial two-parent sample.

*G1 Couple: Family of Origin Assessments.* In the early years of the study (1989–1992), interviewers visited each family at home on an annual basis and then again in 1994, the last year for which all members of the family of origin participated. Trained interviewers conducted the assessments, which lasted for approximately 2 hours on each of two occasions. During the first visit, each family member completed a set of questionnaires that focused on individual family member characteristics, the quality of family interactions (e.g., parent-child, marital, sibling), and family economic circumstances. During the second visit, which usually occurred within 2 weeks of the first visit, family members were videotaped as they participated in semistructured interaction tasks designed to stimulate family interaction and elicit information about social skills and emotional responses.

*G2 Couple: Family of Destination Assessments.* Starting in 1995 (1 year post high school), the romantic partner of each target participated, if one was available, and the study's focus shifted from the family of origin to the target's adult relationships. Biennial in-home visits took place starting with the 1995 assessment (i.e., 1995, 1997, 1999, 2001, and so forth) using the same general procedures as the family of origin assessments. Key constructs for G1 and G2 couples were measured identically so that we could directly compare findings across generations.

## Measures

*G1 and G2 Economic Pressure.* Economic pressure was conceptualized as difficulties produced by low income or high debts, such as the inability to afford basic material needs, the inability to pay bills, and having to make serious reductions or adjustments in expenditures. It is not simply a measure of subjective perceptions, but rather an account of actual experiences likely to follow from financial hardships (see Conger et al., 2010). At T1, each member of the romantic union separately responded to questions concerning experiences of economic pressure. There were three indicators for this construct.

First, participants separately responded to six items related to their *unmet material needs* during the past year (e.g., “I have enough money to afford the kind of medical care I should have”) with responses ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Items were left in their original format so that higher scores indicated more unmet material needs throughout the past year. Items were first averaged separately for G1 wives ( $\alpha = .91$ ) and husbands ( $\alpha = .90$ ). These wife and husband scores were significantly correlated ( $r = .60, p \leq .00$ ). Then the wife and husband scores were averaged together to create the G1 couple indicator of unmet material needs. Similarly, items for this indicator were averaged separately for the G2 target ( $\alpha = .84$ ) and partner ( $\alpha = .83$ ). G2 target and partner scores for this measure were significantly correlated ( $r = .44, p \leq .00$ ) and averaged together to create the G2 couple indicator.

Second, participants separately reported on their *inability to make ends meet* with two items. The first item asked, “During the past year, how much difficulty have you had paying your bills?” with responses ranging from 0 (*a great deal of difficulty*) to 3 (*no difficulty at all*). This item was reverse coded so that higher scores indicated more difficulty paying bills. The second item asked, “Think about the past year. Generally, at the end of each month, did you end up with...” Responses ranged from 0 (*more than enough money left over*) to 3 (*not enough to make ends meet*), such that higher scores on this item indicated greater difficulty making ends meet. Wife ( $\alpha = .83$ ) and husband ( $\alpha = .80$ ) scores were correlated ( $r = .64, p \leq .00$ ), as were target ( $\alpha = .75$ ) and partner ( $\alpha = .75$ ) scores ( $r = .63, p \leq .00$ ). Wife and husband scores were averaged together to create a G1 couple indicator of inability to make ends meet. Similarly, G2 target and partner scores were averaged together for the G2 couple indicator.

Finally, participants separately reported on whether or not they had to make *financial cutbacks* due to financial need in 29 areas. They were asked, “During the past 12 months, have you made any of the following adjustments because of financial need?” Example items include “borrowed money to help pay bills,” “sold property to raise money,” “taken an extra job or jobs to help meet expenses.” For each item, they indicated 0 (*no*) or 1 (*yes*). Their separate scores were summed so that higher scores indicated greater financial cutbacks. Wife ( $\alpha = .85$ ) and husband ( $\alpha = .87$ ) scores were



significantly correlated ( $r = .49, p \leq .00$ ), as were target ( $\alpha = .84$ ) and partner ( $\alpha = .83$ ) scores ( $r = .41, p \leq .00$ ). To create the G1 and G2 couple indicators, couples received a score of 1 on an item if either or both partners answered 'yes' to a given item. The factor loadings for the three indicators of economic pressure ranged from .83 to .86 for G1 couples and from .78 to .91 for G2 couples (see Table 1, online supplementary material), indicating good correspondence between the indicators and the latent construct.

*G1 and G2 Hostile Romantic Relationship Behaviors.* Hostile behaviors were assessed via observer ratings during a 30-minute couple interaction task at T1 and T2. During this task, romantic partners discussed several topics including the history and status of their relationship, areas of agreement and disagreement, and their plans for the future. Trained observers rated verbal and nonverbal interactions (from wife to husband and from husband to wife for G1 couples; from target to partner and from partner to target for G2 couples) using the Iowa Family Interaction Rating Scales, which have demonstrated reliability and validity (Melby & Conger, 2001). Before rating any of the videotaped interactions, however, observers received 200 hours of training and passed extensive written and viewing reliability tests. Once reliability was established, all observers attended at least two training sessions each week to ensure continued reliability. To assess interrater reliability, approximately 20% of all videotaped tasks were randomly assigned to be rated by a second, independent observer. The primary and secondary ratings were then compared and all demonstrated adequate interrater reliability.

Six separate ratings were used to assess hostile romantic relationship behaviors: Hostility, Reciprocate Hostility, Escalate Hostility, Angry Coercion, Contempt, and Antisocial Behavior. Each individual rating scale ranged from 1 (*little evidence of the attribute in question*) to 9 (*a good deal of evidence for the attribute in question*) and was scored such that higher ratings were indicative of more hostile behaviors. For a detailed description of each behavior, refer to Conger and Melby (2001) or contact the first author. First, the six behavioral ratings were averaged together to create overall hostility scores for G1 wife, G1 husband, G2 target, and G2 partner. For instance, a G1 wife's Hostility, Reciprocate Hostility, Escalate Hostility, Angry Coercion, Contempt, and Antisocial Behavior scores toward the G1 husband were averaged to create an overall hostility score for the G1 wife. Wife ( $\alpha = .93$  at T1;  $\alpha = .92$  at T2) and husband ( $\alpha = .91$  at T1;  $\alpha = .91$  at T2) behaviors were correlated at T1 ( $r = .65, p \leq .00$ ) and T2 ( $r = .72, p \leq .00$ ). Likewise, target ( $\alpha = .90$  at T1;  $\alpha = .92$  at T2) and partner ( $\alpha = .91$  at T1;  $\alpha = .90$  at T2) behaviors were correlated at T1 ( $r = .62, p \leq .00$ ) and T2 ( $r = .64, p \leq .00$ ).

To create indicators for the latent hostility construct, each behavior rating score was averaged by couple so that G1 and G2 couples had six total couple-level ratings each (e.g., G1 couples had one Hostility indicator, one Angry Coercion indicator, one Contempt indicator, and so forth). We randomly parceled the G1 couple-level ratings into three indicators and then constructed identical parcels for G2 couples. We used these parcels as indicators for latent variables at T1 and T2. Parcels can offer at least three advantages over the use of individual items: they typically produce more stable solutions, they are less likely to share specific sources of variance that may not be of primary interest, and they reduce the likelihood of spurious correlations (for a review, see Little, Rhemtulla, Gibson, & Shoemann, 2013). The factor loadings for the three parcels of hostile romantic relationship behaviors were all of considerable magnitude (.89–.97 for G1 couples; .91–.96 for G2 couples; see Table 1, online supplementary material), indicating good correspondence with the latent construct.

*G1 and G2 Effective Problem Solving.* Our measure of problem solving reflects the ability to consider the other's perspectives, ideas, and thoughts on how to address and solve problems in a manner that is not critical, blaming, or threatening. This measure of problem solving has been validated and described in detail in an earlier report (see Assad, Donnellan, & Conger, 2007) and taps into many of the same types of problem-solving behaviors that others have studied (e.g., Bradbury & Fincham, 1992). At T1, participants reported on the degree of their partner's problem-solving skills (i.e., informant report; see Appendix in online supplementary material for full report). They were asked, "Think about what usually happens when you and your partner have a problem to solve. Think about what your partner does. When the two of you have a problem to solve, how often does your partner..." Participants were then asked to rate how often their romantic partner engaged in eight problem-solving behaviors; including, how often their partner "listens to your ideas about how to solve the problem" and "criticizes your ideas for solving the problem." Possible responses ranged from 1 (*always*) to 7 (*never*). Some items were reverse scored so that higher scores indicated higher levels or more effective problem solving. Wife reports on husband ( $\alpha = .93$ ) and husband reports on wife ( $\alpha = .92$ ) were significantly correlated ( $r = .32, p \leq .00$ ). Likewise, target reports on partner ( $\alpha = .92$ ) and partner reports on target ( $\alpha = .94$ ) were significantly correlated ( $r = .45, p \leq .00$ ). Wife and husband reports were averaged to reflect a G1 couple-level score for each of the eight items, as were target and partner reports (G2 couple). These eight items

were then parceled into three indicators for G1. We then constructed identical parcels for G2 couples. The factor loadings for the three parcels of effective problem solving ranged from .78 to .94 (G1 couples) and .88 to .94 (G2 couples), indicating good correspondence with the latent construct (see Table 1, online supplementary material).

### Controls

Educational attainment for G1 wives and husbands in 1992 was measured with dummy variables that ranged from 0–11 (highest grade completed) to 20 (PhD or other professional degree). Wife and husband scores were averaged together ( $r = .42, p \leq .00$ ) to reflect a G1 couple-level education variable. Educational attainment for G2 targets and partners in 2005 was measured with dummy variables that ranged from 1 (no high school diploma or GED) to 6 (PhD or other professional degree). Target and partner scores were averaged together ( $r = .49, p \leq .00$ ) to reflect a G2 couple-level education variable.

Income at T1 included both partner's reports of income from any source (e.g., salary/wages, self-employment income, money from parents, unemployment benefits, government assistance, and so forth). G1 wife and husband totals were summed together (and divided by 10,000 for model convergence purposes) to create a G1 variable of total family income. Likewise, G2 target and partner totals were summed together and divided by 10,000 to create a G2 variable of total family income.

We relied on two different personality assessments to measure individual differences in conscientiousness because the same measures were not administered consistently across the study period. In 1990, G1 wives ( $\alpha = .83$ ) and husbands ( $\alpha = .83$ ) provided self-reports on 12 items from the conscientiousness factor of the NEO Five-Factor Inventory Short-Form (NEO; Costa & McCrae, 1985). The scale included items such as "I have a clear set of goals and work toward them in an orderly fashion" and "I strive for excellence in everything I do," which were rated from 1 (*strongly disagree*) to 5 (*strongly agree*). To create latent variables of G1 conscientiousness (one latent variable for wife and another for husband), we constructed three parcels via random assignment of each item. Identical parcels were constructed for wives and husbands.

In 2005, G2 target and partner provided self-reports of personality with the Iowa Personality Questionnaire (IPQ; Donnellan, Conger, & Burzette, 2005), a reliable and well-validated personality measure designed to tap into the same dimensions as the Multidimensional Personality Questionnaire (MPQ; Harkness, Tellegen, & Waller, 1995). To measure conscientiousness with the IPQ, we used the three-item achievement subscale from the IPQ/MPQ-generated Positive Emotionality superfactor and the four-item control subscale from the IPQ/MPQ-generated Constraint superfactor. Recent work has demonstrated that these two lower-order IPQ/MPQ facets (achievement and control) are significantly correlated with the broad personality trait of conscientiousness as measured by the NEO (see Roberts, Chernyshenko, Stark, & Goldberg, 2005; Tellegen & Waller, 2008). Example items from the control subscale include, "I am careful, I think before I act" and "I plan carefully for the future." Example items from the achievement subscale include, "I am extremely persevering. I like a challenge" and "I am extremely hard working. I work and play hard." Items were scored from 1 (*I am not at all like this*) to 5 (*I am extremely high on this trait*). To create latent variables of conscientiousness (one latent variable for G2 target and another for the partner), we used the achievement ( $\alpha = .69$  for targets;  $\alpha = .72$  for partners) and control subscales ( $\alpha = .53$  for targets;  $\alpha = .53$  for partners) as two separate indicators. The factor loadings for conscientiousness ranged from .69 to .86 for G1 husbands and wives and from .50 to .63 for G2 targets and partners, indicating adequate correspondence with the latent variable (see Table 1, online supplementary material).

## **Results**

### Preliminary Analyses

Because there was some missing data (e.g., four G1 couples and one G2 couple were missing data on measures of economic pressure), we used full information maximum likelihood estimation (FIML). FIML estimates have been shown to be less biased and more efficient compared to other forms of estimation such as listwise or pairwise deletion (Enders & Bandalos, 2001). To determine adequate fit in the following structural equation models (SEMs), we adhered to conventional cutoff criteria for various indices: a comparative fit index (CFI) and Tucker-Lewis index (TLI) of .950 or higher and a root mean squared error of approximation (RMSEA) value below .06 indicated adequate model fit (Hu & Bentler, 1999). We performed all analyses using *Mplus* software, Version 6.12 (Muthén & Muthén, 1998-2011).

First, we estimated one confirmatory factor analysis (CFA) model for G1 and another for G2 to ensure that indicators loaded appropriately on their respective latent constructs *within* each generation. These models fit the data well:  $\chi^2 = 185.710$ ,  $df = 141$ , CFI = .990; TLI = .987; RMSEA = .029 for G1 and  $\chi^2 = 137.468$ ,  $df = 106$ ; CFI = .992; TLI = .988; RMSEA = .031 for G2. The factor loadings derived from these CFAs are presented in Table 1 (online supplementary material).

*Zero-Order Correlations Among Variables.* Next, we investigated correlations among the key latent variables and the controls (education, income, and conscientiousness). At this point, the G1 and G2 data were considered in a single model, which fit the data well ( $\chi^2 = 654.055$ ,  $df = 543$ ; CFI = .987; TLI = .983; RMSEA = .021). Many of the correlations among key latent variables for both G1 and G2 were statistically significant in the direction we hypothesized (see Table 2, online supplementary material). For example, G1 economic pressure was positively associated with G1 hostility at T2 ( $r = .17$ ,  $p \leq .05$ ) and G2 economic pressure was positively associated with G2 hostility at T2 ( $r = .26$ ,  $p \leq .05$ ) consistent with Hypothesis 1 (*Stress Hypothesis*). Also as expected, G1 effective problem solving was negatively associated with G1 hostility at T2 ( $r = -.32$ ,  $p \leq .05$ ) and G2 effective problem solving was negatively associated with G2 hostility at T2 ( $r = -.35$ ,  $p \leq .05$ ) consistent with Hypothesis 2 (*Compensatory Resilience Hypothesis*). Many of the constructs analogous to G1 and G2 were significantly correlated, indicating some degree of intergenerational continuity. For example, G1 and G2 economic pressure correlated .21 ( $p \leq .05$ ) and G1 and G2 effective problem solving correlated .38 ( $p \leq .05$ ). In several instances, education, income, and conscientiousness correlated with key variables. For example, G1 wife conscientiousness and G1 husband conscientiousness were significantly correlated with G1 effective problem solving ( $r = .32$  and  $.15$ , respectively). Likewise, G2 target conscientiousness and G2 partner conscientiousness were significantly correlated with G2 effective problem solving ( $r = .25$  and  $.37$ , respectively). The fact that many of the control variables were associated with key variables in the analysis indicates the importance of retaining them as controls in tests of study hypotheses.

*Measurement Invariance Across Generations.* We hypothesized that our findings would be consistent for both G1 and G2 couples. That is, G1 and G2 couples' predictive pathways were hypothesized to be equivalent; however, comparisons of predictive pathways first required that we established measurement invariance across generations (e.g., Widaman, Ferrer, & Conger, 2010). To evaluate measurement invariance across generations, we proceeded with a series of models that included G1 and G2 data simultaneously. In all models, we estimated between-generation correlations for analogous latent constructs (i.e., G1 and G2 economic pressure; G1 and G2 hostility; G1 and G2 effective problem solving and so forth). As previously noted, this strategy allowed us to control for any possible intergenerational continuities or genetic effects (i.e., family dependencies) in the measures of interest, given that one member of the G2 romantic couple could be a biological child of the G1 couple.

In brief, we compared a measurement model in which a given indicator was constrained to be equal across generations to a model in which the same indicator was freely estimated (i.e., unconstrained) and we did so for each indicator for all key latent variables. At each step in the process, we compared differences in the chi-square statistic relative to degrees of freedom in models without the imposed equality constraint compared to models with the equality constraint (i.e., nested models). Theoretically, if the change in chi-square relative to degrees of freedom is large, that constraint should be removed as it may indicate poor model specification. However, as noted by several researchers, this oversimplified version of the chi-square test may not reliably guide model evaluation as it is overly sensitive to sample size and therefore can violate basic assumptions underlying the test (e.g., Chen, 2007; Hu & Bentler, 1998). For this reason, relying solely on the chi-square test is often not the best indicator of change in model fit; therefore, we also considered other practical fit indices (e.g., CFI, RMSEA) to better understand the best way to specify the models throughout the process. Practical model fit indices remained acceptable when factor loadings were constrained to be equal across G1 and G2 couples (CFI = .987 and RMSEA = .021 for fully unconstrained factor loading model; CFI = .975 and RMSEA = .029 for fully constrained factor loading model). These findings suggest that the latent factors operated similarly for G1 and G2 couples and that associations among variables could be compared across groups.

### Structural Equation Models: Hypothesized Main Effects

We hypothesized that the effects of economic pressure and effective problem solving on couples' hostility would replicate across G1 and G2 couples. To evaluate these predictions, we compared models in which each hypothesized pathway was constrained to equality for both generations to a model in which the same pathway was freely estimated for each generation. For instance, we constrained the pathway from economic pressure to hostility at T2 to be equal for G1 and G2 couples and then compared it to a model in which this pathway was unconstrained. We followed this

same strategy for each predicted pathway in the model. Control variables (education, income, and conscientiousness) were included in all models as: (a) correlates of all T1 variables, and (b) predictors of T2 romantic relationship hostility. Practical model fit indices remained unchanged from the fully unconstrained structural model (CFI = .970; RMSEA = .031) to the fully constrained structural model (CFI = .970; RMSEA = .031). Moreover, practical model fit remained unchanged after constraining the regression pathways from the control variables to T2 hostility to be equal for G1 and G2 couples (CFI = .970 and RMSEA = .031). This final, fully constrained structural equation model testing the hypothesized main effects fit the data adequately ( $\chi^2 = 870.925$ ,  $df = 613$ ; CFI = .970; TLI = .966; RMSEA = .031) and is presented in Figure 2. It is important to note that even when a path coefficient is constrained to be equal between groups, the standardized estimates may differ slightly between groups as a function of differences in the latent variances; therefore, in addition to standardized coefficients, we report unstandardized coefficients in Figure 2. When constrained to equality, these unstandardized coefficients do not differ between groups.

As shown in Figure 2 and consistent with Hypothesis 1 (*Stress Hypothesis*), economic pressure at T1 significantly predicted relative increases in hostility at T2 for both G1 and G2 couples ( $B = .34$ ,  $p \leq .05$ ). Consistent with Hypothesis 2 (*Compensatory Resilience Hypothesis*), the findings in Figure 2 show that effective problem solving at T1 significantly predicted relative decreases in hostile behaviors at T2 for both G1 and G2 couples ( $B = -.24$ ,  $p \leq .05$ ). Interestingly, none of the control variables significantly predicted T2 hostility for G1 or G2 couples, but we still estimated these pathways in the model. In sum, even after controlling for couple education, income, conscientiousness, and earlier levels of hostility, economic pressure predicted relative increases and effective problem solving predicted relative decreases in hostility over time. We next turn our attention to tests of the *Buffering Resilience Hypothesis*.

#### Structural Equation Models: Hypothesized Interaction or Buffering Effects

To evaluate Hypothesis 3 (*Buffering Resilience Hypothesis*), we used the Latent Moderated Structural Equation (LMS; Klein & Moosbrugger, 2000) approach to test whether effective problem solving moderated the association between economic pressure and relative increases in couples' hostile behaviors over time. The LMS approach has demonstrated higher efficiency of parameter estimates and more reliable standard errors relative to other techniques (Klein & Moosbrugger, 2000). However, the LMS approach does not yield standardized regression estimates; therefore, the coefficients presented in Figure 3 are unstandardized coefficients. Moreover, the LMS approach does not provide CFI, TLI, or RMSEA indices. One way to determine model fit is to use log likelihood (LL) ratio tests to compare the interaction model against models that exclude the interaction effects (Klein & Moosbrugger, 2000). Following this strategy the analyses showed that the interaction model did not result in a large or statistically significant difference in fit compared to its appropriate nested model ( $\Delta LL = 2.65$ ,  $\Delta df = 2$ ,  $p = .27$ ). Likewise, there was no statistically significant worsening of model fit after constraining the interaction effects to be equal across generations ( $\Delta LL = 0.52$ ,  $\Delta df = 1$ ,  $p = .47$ ). By these standards then, model fit remained adequate after introducing the interaction terms and after constraining these effects to be equal for G1 and G2 in the LMS models.

The results of our test of moderation are presented in Figure 3. After controlling for earlier levels of couple hostility, income, education, and partner's conscientiousness, effective problem solving significantly moderated the pathway between economic pressure at T1 and hostility at T2 for both G1 and G2 couples ( $B = -.28$ ,  $p \leq .05$ ) in support of the *Buffering Resilience Hypothesis*. To examine the interactive effects in more detail, we estimated the magnitude of the simple slopes (Preacher, Curran, & Bauer, 2006) between economic pressure and hostility for different levels of effective problem solving ( $-1$  SD = low problem-solving couples; mean = average problem-solving couples;  $+1$  SD = high problem-solving couples). For both G1 and G2, simple slope estimates revealed that the slope for T2 hostility regressed on T1 economic pressure for couples with high levels of effective problem-solving skills (i.e.,  $+1$  SD) was not significantly different than zero (i.e., it was flat; see Figure 4, online supplementary material). That is, for high problem-solving couples, economic pressure did not predict increases in hostile behavioral exchanges over time. For average problem-solving couples, economic pressure predicted moderate relative increases in couple hostility and low problem-solving couples demonstrated the largest increases in hostility over time as a function of economic pressure. Consistent with Hypothesis 3, when economic pressure was high, low problem-solving couples displayed the greatest relative increases in hostility over time whereas high problem solvers displayed no change in hostility. That is, couples' effective problem solving provided a source of buffering resilience to economic pressure.

## Discussion

Past research has demonstrated that economic difficulties are concurrently associated with lower perceived romantic relationship quality and stability (e.g., Conger et al., 1990; Dew & Yorgason, 2010; Hardie & Lucas, 2010; Johnson & Booth, 1990; Williamson et al., 2013); yet much less is known about actual behavioral exchanges that unfold over time in response to economic stress. Moreover, we know very little about particular relationship skills or characteristics that might directly compensate or buffer couples from experiencing relationship distress in the context of economic problems. These kinds of empirical investigations are needed to both increase theoretical understanding of the processes involved and to inform prevention and intervention programs that can assist families in difficult economic situations. To guide the development of our study hypotheses, we relied on theoretical predictions outlined by the Family Stress Model (e.g., Conger & Conger, 2002; Conger et al., 2010). We used prospective longitudinal data involving two generations of romantic couples and assessed the degree of replication for the hypothesized economic stress and couple resilience processes across generations. In testing our study hypotheses, we controlled for couple's income, education, and individual differences in conscientiousness inasmuch as these variables have been shown to correlate with both socioeconomic conditions as well as the quality of romantic relationships (e.g., Conger et al., 2010; Donnellan et al., 2004; Roberts et al., 2007; Roberts et al., 2014). Also important, we allowed all G1 and G2 variables to correlate in the SEMs to reduce the possibility that the replication in results could be explained by genetic similarities within a single family.

### Findings Related to the Stress Hypothesis (Hypothesis 1)

We hypothesized that greater economic pressure would predict relative increases in hostile behavioral exchanges between romantic partners over time (*Stress Hypothesis*). Even after controlling for couples' educational attainment, income, and individual differences in partner's conscientiousness, we found that economic pressures such as having unmet material needs, the inability to make ends meet, and having to make serious adjustments or cutbacks in spending predicted relative increases in observed hostile, contemptuous, angry-coercive, and antisocial behaviors 2 years later for both G1 and G2 couples. These findings are especially compelling given that 13 years separated the G1 and G2 assessments and that there was no overlap in the sources of reporting from generation to generation. Indeed, these findings complement past research that has documented concurrent links between economic stress and romantic partner's reports of relationship dissatisfaction and/or instability (e.g., Conger et al., 1990; Dew & Yorgason, 2010; Johnson & Booth, 1990; Williamson et al., 2013), and support the basic propositions laid out by the Family Stress Model (see Conger & Conger, 2002). In addition, these findings extend earlier research by demonstrating that, on average, economic pressure (above and beyond the influence of absolute income or years of education) predicts the likelihood that partners will engage in behaviors marked by increasing hostility and contempt—toxic behaviors that are ultimately linked to relationship dissolution (e.g., Gottman, 1993). Moreover, these associations were replicated in two generations of couples who were of differing ages, and who were living under two distinctive economic circumstances. These findings demonstrate that stressful economic conditions pose direct risks for couples of differing ages and cohorts.

### Findings Related to the Compensatory Resilience Hypothesis (Hypothesis 2)

We also hypothesized that effective problem-solving skills would predict decreases in couple hostility over time, contrary to the expected effects of economic pressure (Compensatory Resilience Hypothesis). Our measure of problem solving involved informant reports (e.g., wife reported on husband's problem solving and vice versa) and reflected the ability to consider the other's perspectives, ideas, and thoughts on how to address and solve problems in a manner that is not critical, blaming, or threatening. The findings demonstrated that G1 and G2 couples with more effective problem-solving skills were less likely to exchange hostile behaviors over time regardless of earlier levels of economic pressure, income, education, and individual differences in conscientiousness. The fact that we found support for our hypotheses even after controlling for individual differences in conscientiousness suggests that economic pressure independently *increases* and effective problem-solving skills independently *decrease* the risk for hostility in romantic relationships over time. In other words, it appears that effective problem-solving skills are not solely manifestations of a relevant personality trait.

These findings suggest that when partners consider each other to be good listeners, are considerate of each other's ideas, and show a real interest in helping to solve problems together, they are less likely to experience increases in hostile, angry, and contemptuous behaviors over time. In general, our findings support past research that has

highlighted the importance of good communication, active listening, conflict resolution, and other skill-based resources for directly influencing perceived relationship quality (e.g., Laurenceau et al., 1998; Sullivan et al., 2010). Yet, we also expand upon this work by demonstrating that effective problem-solving skills reduced hostile behaviors that are observable by others over time for both G1 and G2 couples; therefore, effective problem solving may serve as a source of compensatory resilience for couples in early or middle adulthood.

### Findings Related to the Buffering Resilience Hypothesis (Hypothesis 3)

Finally, we hypothesized that effective problem-solving skills would reduce or buffer the hypothesized positive association between economic pressure and relative increases in hostile romantic relationship behaviors (*Buffering Resilience Hypothesis*). In other words, couples who demonstrated greater effective problem-solving skills were expected to suffer less relationship distress over time in response to economic pressure compared to couples with less effective problem-solving skills. Across generations, couples who perceived themselves as highly skilled at problem solving experienced no relative changes in their hostile behavioral exchanges over time, even when they initially reported high levels of economic pressure. Upon further inspection, couples who were average problem solvers experienced some increases in hostility over time as a function of economic pressure; however, it was the couples who perceived themselves as the least skilled at problem solving who experienced the greatest increases in hostility over time in response to economic pressure. These findings support past research that has documented problem solving as a stress-buffering resource for couples in the face of other kinds of stressors, such as first-time parenting and work-life role strain (e.g., Cox et al., 1999; Neff & Broady, 2011), and provide novel evidence to suggest that general problem-solving skills may serve as a resource for couples undergoing financial difficulties in particular.

The current report also builds on an earlier study that involved the G1 participants in this ongoing program of research (Conger et al., 1999). In that report, Conger et al. found that spouses who were effective problem solvers were less likely to consider divorce or separation in response to marital conflict. We extended this earlier work in important ways. First, whereas Conger and his colleagues focused on distal outcomes of the economic stress process leading to consideration of separation or divorce, the current report examined an earlier point in this process. In the current report, we examined the degree to which effective problem-solving skills reduced risk for hostility and contempt in the first place when economic pressure is high. Especially important, our results suggest that earlier interventions at the initial onset of economic pressure may be especially effective in blunting the negative effects of financial problems on couple well-being. Second, we also extended the earlier work in terms of systematic replication. The earlier report only assessed the G1 participants (wife and husband) when G2 was an adolescent. In the present analyses, we added the G2 offspring and their romantic partners when grown to adulthood in order to address the degree of replication across generations for our hypotheses. Thus, the current study provides novel evidence that highlights the protective influence of effective problem-solving skills at an earlier point in the economic stress process and for a generation of younger as well as middle-aged couples.

### Potential Implications and Future Directions

Our finding that effective problem solving *disrupted* the association between economic stress and relationship distress for two generations of romantic couples of different ages and cohorts has potential implications for practitioners working to promote resilience among couples and families within and even across generations. Because problem solving may be considered to some degree a teachable skill (e.g., Hawkins et al., 2008), practitioners should continue to focus their efforts on enhancing couples' active communication and problem-solving strategies, especially in the face of economic stress. Also important, practitioners could help improve romantic partner's appraisals or attributions of the other partner's problem-solving skills inasmuch as these appraisals were found to protect couples from experiencing increases in hostile, angry, and contemptuous behaviors over time even if the couple reported they were experiencing high levels of economic pressure.

In sum, effective problem-solving skills operated as both a compensatory and a buffering source of resilience in associations between economic pressure and hostile romantic relationship behaviors over time. Overall, these findings provide novel evidence in support of the basic propositions laid out by the Family Stress Model (e.g., Conger & Conger, 2002; Conger et al., 2010), including aspects of couple resilience to economic pressure (via effective problem solving) that have not been previously examined. That each of our hypotheses was supported by the data for both G1 and G2 couples suggests that these processes appear to play out across generations. That said, future work should

further consider linking economic pressures, behaviors in romantic relationships, and sources of couple resilience *between* generations and investigate the mechanisms that might help explain intergenerational continuities in stress and resilience processes.

For instance, might adult children learn how to effectively problem solve with their romantic partner by observing their parents do so earlier in life (i.e., social learning)? Indeed, earlier research has found that effective inter-parental problem solving is associated with more effective parent-child problem solving as well as problem solving between siblings (see Conger, Williams, Little, Masyn, & Shebloski, 2009); thus, development of these skills may be especially important in the context of earlier family environments. Future research should begin to address the specific behavioral mechanisms through which children learn how to effectively problem solve with family members as well as with close others outside of the family of origin (e.g., friends and classmates). Also important, earlier family environments may shape offspring's personality development in ways that perpetuate intergenerational continuities in romantic relationship behaviors as well as socioeconomic conditions. For example, might parents who are highly skilled problem solvers foster certain personality traits of children conducive to effective problem solving with a romantic partner when grown to adulthood? Might economic stress and inter-parental hostility in the family of origin put children at risk for developing aggressive and reactive personalities? These kinds of proposed transactional processes linking earlier environments to adult outcomes via individual differences are worth exploring in future research (see Interactionist Model: Conger et al., 2010).

### Limitations and Concluding Remarks

This study is not without limitations, which we hope that future research will address. Our measure of effective problem solving was an informant's report (i.e., each member reported on the other's quality of problem solving) of a general ability to problem solve and thus measured a broad-based perception of a partner's skill. Although perceptions of all kinds are certainly important for relationships, future research should assess: (a) more finely nuanced skills (e.g., solicitation of problem solving, quality of resolutions to a problem); (b) types of problems being solved (financial or otherwise); and (c) the severity and chronicity of the issue that needs to be addressed. Moreover, on average, couples in this study reported rather high levels of effective problem-solving skills, suggesting that participants perceived one another to be generally good problem solvers. Future samples that include high-risk couples with more variation in problem-solving abilities could shed light on the more extreme ends of this characteristic. Other research could investigate change and stability of problem-solving skills over time and whether stressful circumstances weaken a couple's ability to problem solve over time, ultimately contributing to relationship distress (see e.g., Neff & Karney, 2007). That is, perhaps couples' problem-solving skills *mediate* (as well as moderate) the link between external stressors and relationship distress.

Also important to highlight, our sample was ethnically and geographically homogenous. Replication of these findings with more diverse groups would provide greater confidence in the generalizability of results. We would note, however, that the basic economic stress processes examined here have tended to generalize across a diverse array of study populations (see Conger et al., 2010). For future researchers interested in replicating these findings, other points worth noting are that the selected G1 participants (i.e., wives and husbands in marital relationships in 1992 and 1994) were, on average, less economically stressed and more likely to perceive each other as effective problem solvers compared to G1 couples who were initially in marital relationships in 1989 (the first wave of the study) but then divorced or separated from their partner during the 1992 and 1994 assessments. This suggests that economic pressure and effective problem solving may directly influence relationship stability (see also Conger et al., 1999). In a similar vein, selected G2 participants (those involved in the same romantic partnership across the years of 2005 and 2007) were, on average, slightly more educated and reported higher income than those without romantic partners during this time frame. It is important to keep these selection differences in mind while interpreting the findings.

In conclusion, the present study has strengths that are both methodological and conceptual in nature. First, the longitudinal, multi-method design allowed us to examine relative change in couples' behaviors over time. Second, we extracted each of our measures from different sources (self-report, other-report, observer report) across a considerable amount of time, which minimized the potential for shared-method variance problems. Third, because we drew participants from a fairly large, long-term study of families, we were able to examine two generations of romantic couples assessed over a decade apart and replicate support for our hypotheses within the same study. This point is especially compelling given the importance of empirical replication in all disciplines of science (e.g., Schmidt, 2009). Fourth, work on resilience has primarily focused on individual characteristics (e.g., cognitive skill) as possible sources

of resilience to adversity. The present study, however, provides empirical evidence for the importance of positive couple-based skills that appear independent of individual differences in conscientiousness as an additional element of resilience to stress. We anticipate future work of this kind will shed more light on effective problem solving as a resource for couples and hope that other couple-based resources that promote resilience and adaptation to stress over time will be incorporated into our current understanding of what makes couples and families thrive. We may never be able to completely control our economic situations, but making small, positive changes in our day-to-day interactions with our partners—changes that family practitioners and educators devote their efforts to encourage—might make all the difference in promoting healthy and happy romantic relationships, even amidst economic pressures.

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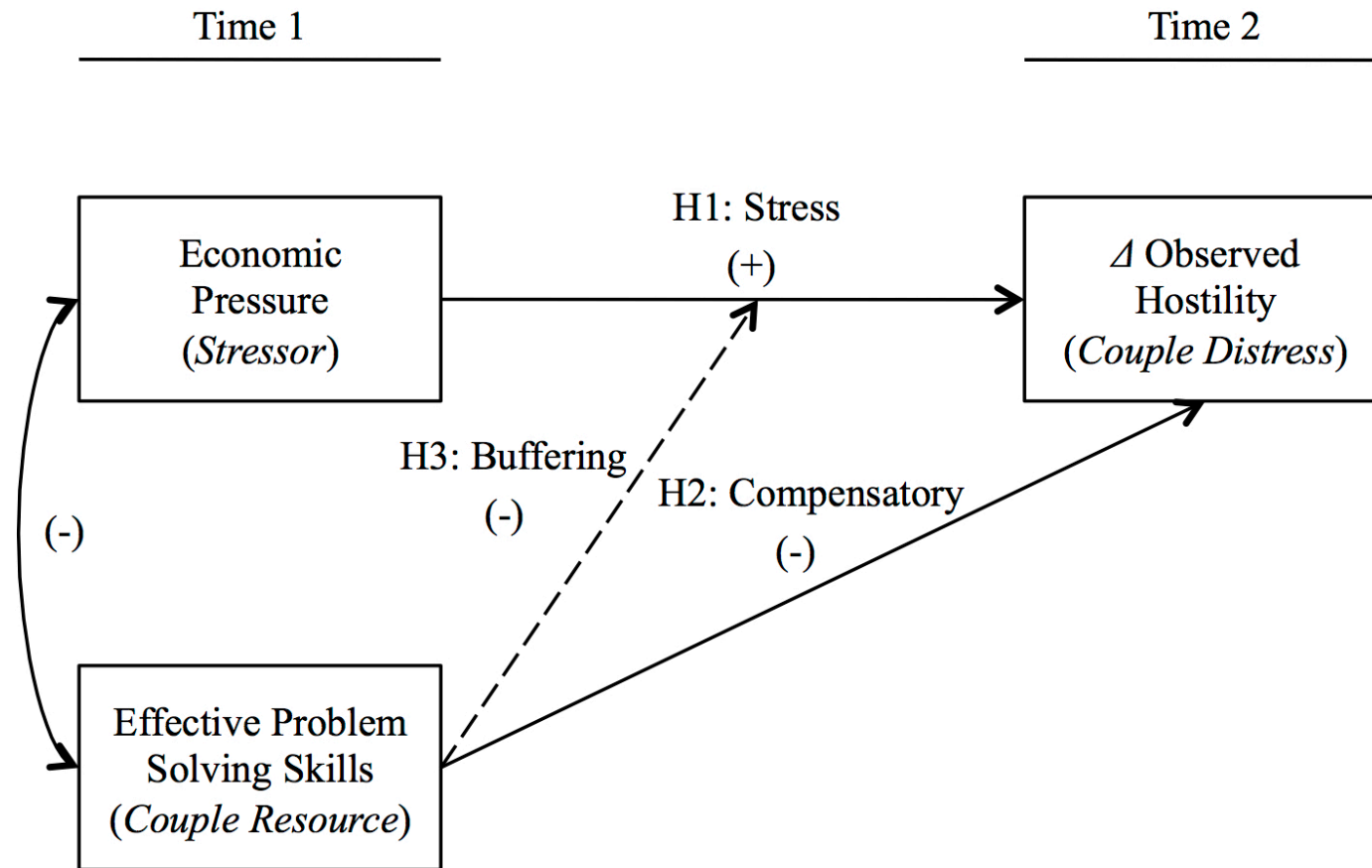
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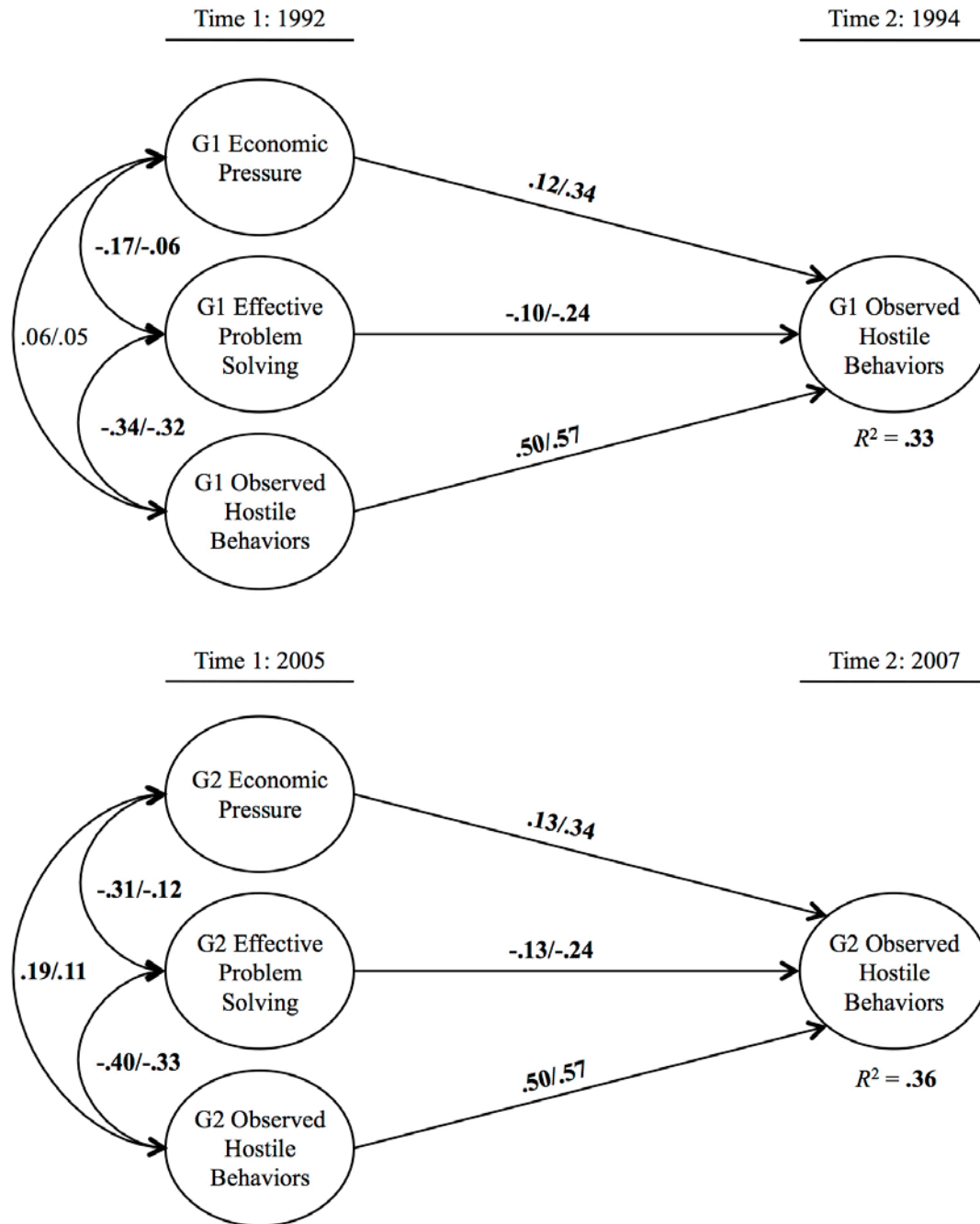


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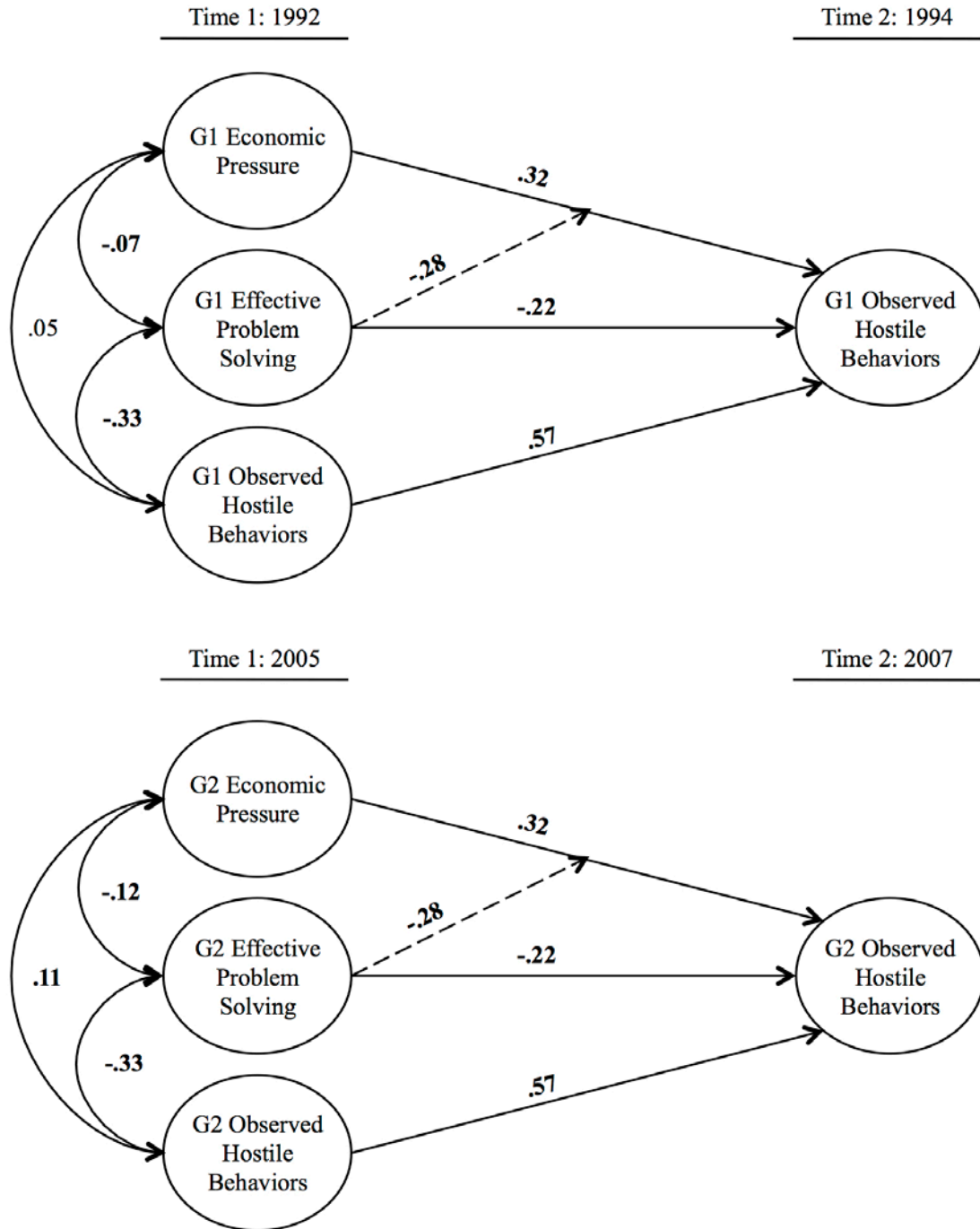
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**Figure 1.** Hypothesized Pathways in the Family Stress Model. Single-headed Arrows Represent Regression Pathways Involving Main Effects. The Single-headed Arrow Represents the Interaction or Buffering Pathway. The Double-headed Arrow Represents a Correlation. We Hypothesize That These Stress and Resilience Processes Will Operate Similarly for Both Generation 1 (G1) and Generation 2 (G2) Couples Who Were Assessed Approximately 13 Years Apart.



**Figure 2.** The Main Effects Model to Test the Stress Hypothesis (H1) and Compensatory Resilience Hypothesis (H2). In a Single Model, Each Regression Pathway Was Constrained to be Equal for Generation 1 (G1) and Generation 2 (G2) Couples. Education, Income, and Conscientiousness Were Included as Controls and Analogous G1 and G2 Constructs Were Estimated (i.e., Intergenerational Associations), but Are Not Shown for Clarity of Presentation. Standardized Estimates Are Presented Left of the Slash and Unstandardized Estimates Are Presented Right of the Slash (Standardized/Unstandardized). Single-headed Arrows Are Regression Pathways Illustrating Main Effects. Double-headed Arrows Represent Correlations. Bolded Coefficients Are Statistically Significant ( $p \leq .05$ ).



**Figure 3.** The Interaction Effects Model to Test the Buffering Resilience Hypothesis (H3). In a Single Model, Each Regression Pathway Was Constrained to Be Equal for Generation 1 (G1) and Generation 2 (G2) Couples. Education, Income, and Conscientiousness Were Included As Controls and Analogous G1 and G2 Constructs Were Estimated (i.e., Intergenerational Associations), but Are Not Shown for Clarity of Presentation. Estimates Are Unstandardized. Single-headed Arrows Are Regression Pathways Illustrating Main Effects. The Broken Single-headed Arrow Represents the Interaction or Buffering Pathway. Double-headed Arrows Represent Correlations. T1 = Time 1; T2 = Time 2. Bolded Coefficients Are Statistically Significant ( $p \leq .05$ ).

### Supplementary Material

**Table 1.** Standardized Factor Loadings for Indicators of Study Constructs

Construct and Indicators	G1 Couple FL	G2 Couple FL
Economic pressure		
unmet material needs	0.83	0.78
inability to make ends meet	0.86	0.91
financial cutbacks	0.85	0.82
Effective problem solving		
parcel 1	0.94	0.94
parcel 2	0.93	0.94
parcel 3	0.78	0.88
Hostile behaviors time 1		
parcel 1	0.97	0.96
parcel 2	0.89	0.91
parcel 3	0.95	0.94
Hostile behaviors time 2		
parcel 1	0.97	0.96
parcel 2	0.93	0.92
parcel 3	0.94	0.94
Education (one item)	1.00	1.00
Income (one item)	1.00	1.00
Wife conscientiousness (NEO)		
parcel 1	0.86	--
parcel 2	0.80	--
parcel 3	0.69	--
Husband conscientiousness (NEO)		
parcel 1	0.80	--
parcel 2	0.76	--
parcel 3	0.70	--
Target conscientiousness (IPQ)		
achievement	--	0.50
control	--	0.63
Partner conscientiousness (IPQ)		
achievement	--	0.53
control	--	0.63

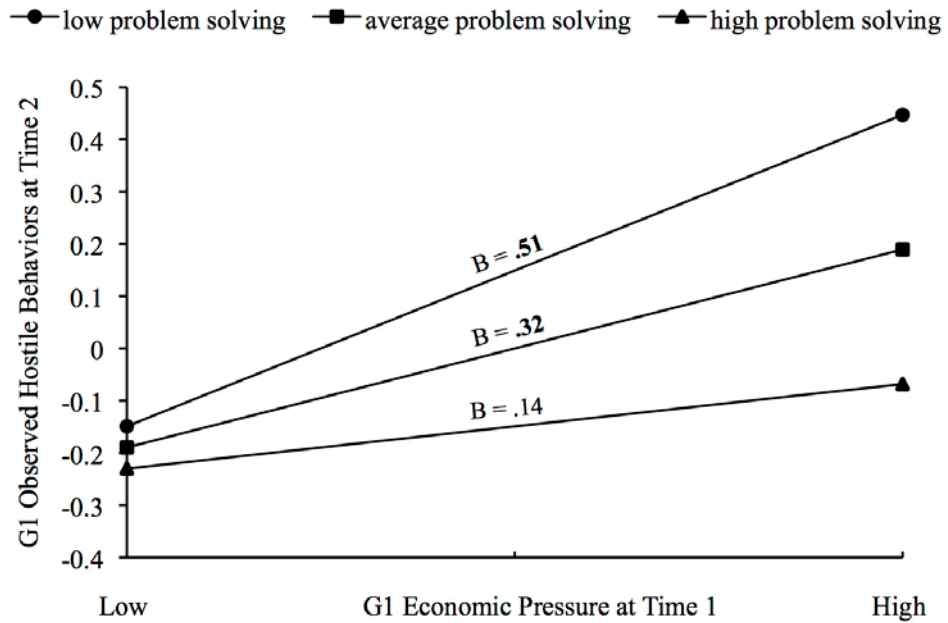
*Note.* Factor loadings obtained by two separate confirmatory factor analysis (CFA) models with full information maximum likelihood (FIML) estimation. G1 = Generation 1 model ( $N = 367$ ); G2 = Generation 2 model ( $N = 311$ ); NEO = NEO Five-Factor Inventory; IPQ = Iowa Personality Questionnaire; FL = factor loading. All factor loadings for latent variables were statistically significant ( $p \leq .01$ ).

**Table 2.** Intercorrelations and Descriptive Statistics for Study Constructs

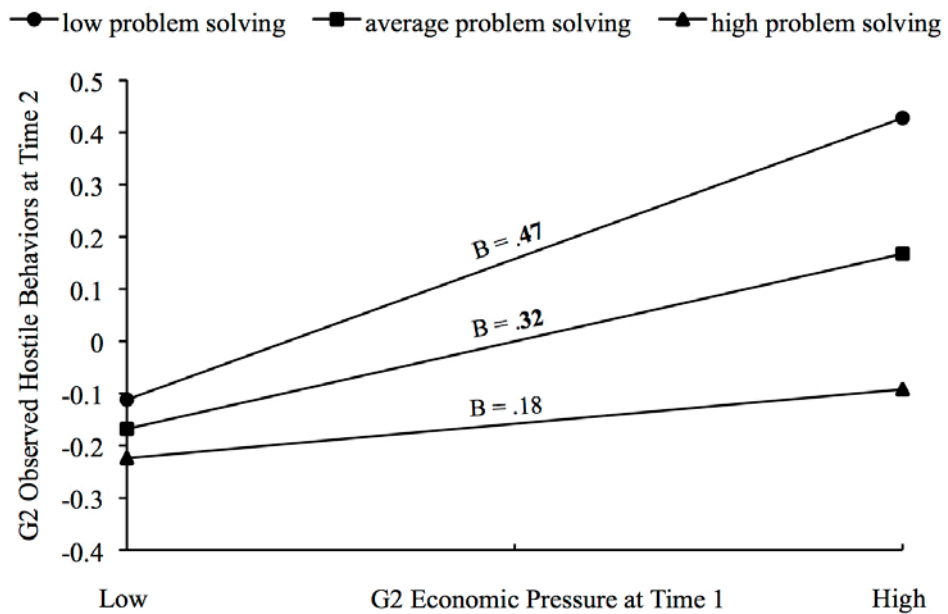
Construct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. G1 ECON	1.00															
2. G1 PROB	<b>-0.17</b>	1.00														
3. G1 HOS T1	0.06	<b>-0.34</b>	1.00													
4. G1 HOS T2	<b>0.17</b>	<b>-0.32</b>	<b>0.53</b>	1.00												
5. G1 W CON	<b>-0.23</b>	<b>0.32</b>	-0.01	0.01	1.00											
6. G1 H CON	<b>-0.29</b>	<b>0.15</b>	-0.01	-0.08	0.11	1.00										
7. G1 EDU	<b>-0.18</b>	0.03	<b>-0.20</b>	<b>-0.16</b>	0.07	<b>0.14</b>	1.00									
8. G1 INC	<b>-0.30</b>	0.02	-0.01	-0.05	-0.04	0.08	<b>0.13</b>	1.00								
9. G2 ECON	<b>0.21</b>	-0.03	0.05	0.12	-0.11	0.04	<b>-0.20</b>	-0.01	1.00							
10. G2 PROB	-0.11	<b>0.38</b>	-0.11	<b>-0.13</b>	<b>0.14</b>	0.11	<b>0.14</b>	0.07	<b>-0.31</b>	1.00						
11. G2 HOS T1	<b>0.14</b>	<b>-0.15</b>	0.02	<b>0.17</b>	<b>-0.14</b>	-0.04	<b>-0.18</b>	-0.03	<b>0.20</b>	<b>-0.42</b>	1.00					
12. G2 HOS T2	0.10	<b>-0.18</b>	<b>0.14</b>	<b>0.31</b>	-0.09	-0.02	<b>-0.17</b>	-0.03	<b>0.26</b>	<b>-0.35</b>	<b>0.60</b>	1.00				
13. G2 T CON	<b>-0.18</b>	<b>0.16</b>	-0.13	-0.03	<b>0.27</b>	0.11	<b>0.20</b>	0.01	<b>-0.31</b>	<b>0.25</b>	<b>-0.29</b>	<b>-0.21</b>	1.00			
14. G2 P CON	<b>-0.19</b>	<b>0.34</b>	-0.09	-0.16	0.15	0.09	0.12	0.13	<b>-0.36</b>	<b>0.37</b>	<b>-0.21</b>	-0.11	0.11	1.00		
15. G2 EDU	<b>-0.23</b>	0.02	-0.08	<b>-0.24</b>	0.07	0.02	<b>0.42</b>	0.12	<b>-0.43</b>	<b>0.23</b>	<b>-0.30</b>	<b>-0.30</b>	<b>0.24</b>	<b>0.25</b>	1.00	
16. G2 INC	<b>-0.19</b>	-0.01	0.02	0.00	0.14	-0.07	<b>0.30</b>	0.12	<b>-0.47</b>	0.04	-0.06	<b>-0.16</b>	0.12	<b>0.20</b>	<b>0.49</b>	1.00
Min	-1.75	2.38	1.00	1.00	2.48	2.50	10.00	-31.10	-1.44	2.56	1.00	1.00	2.13	2.33	1.00	0.86
Max	2.70	7.00	8.00	9.00	4.58	4.33	19.00	24.45	2.70	7.00	6.83	8.58	5.00	5.00	6.00	38.00
<i>M</i>	0.00	5.68	2.43	2.70	3.52	3.43	13.54	4.15	0.00	5.77	2.24	2.72	3.68	3.73	3.37	7.48
<i>SD</i>	0.90	0.73	1.30	1.46	0.30	0.28	1.64	4.14	0.89	2.56	1.08	1.31	0.51	0.50	0.93	3.91

*Note.* Coefficients are standardized. G1 = Generation 1; G2 = Generation 2; T1 = Time 1; T2 = Time 2; ECON = economic pressure; PROB = effective problem solving; HOS = hostile behaviors; W = wife; H = husband; CON = conscientiousness; EDU = education; INC = income; T = target; P = partner; Min = minimum value observed in data; Max = maximum value observed in data; *M* = mean; *SD* = standard deviation. Income was divided by 10,000 for model convergence purposes. Bolded coefficients are statistically significant ( $p \leq .05$ ).

Panel A: G1 Couples



Panel B: G2 Couples



**Figure 1** (Supplementary Material). Effective Problem Solving Moderates the Association Between Time 1 Economic Pressure and Increases in Time 2 Observed Hostile Behaviors for Both Generation (G1) Couples (Panel A) and Generation 2 (G2) Couples (Panel B). Plotted Points Are Predicted Values of T2 Hostility at the Lowest and Highest Levels of T1 Economic Pressure for Couples Scoring 1 SD Below the Average Score of Problem Solving (Low), at the Average, and 1 SD Above the Average Score of Problem Solving (High). B = Unstandardized Simple Slope Estimate. Bolded Coefficients Are Statistically Significant ( $p \leq .05$ ).



## Appendix

### *Effective Problem Solving*

Now think about what usually happens when you and your partner have a problem to solve. Think about what your partner does.

“How often does your partner...”.

1. Listen to your ideas about how to solve the problem? (reverse scored)
2. Have good ideas about how to solve the problem? (reverse scored)
3. Criticize you or your ideas for solving the problem?
4. Show a real interest in helping to solve the problem? (reverse scored)
5. Consider your ideas for solving the problem? (reverse scored)
6. Refuse, even after discussion, to work out a solution to the problem?
7. Blame you for the problem?
8. Insist that you agree to his/her solution to the problem?

1 = *always*

2 = *almost always*

3 = *fairly often*

4 = *about half of the time*

5 = *not too often*

6 = *almost never*

7 = *never*