

SECTION 9: RESEARCH PLAN

This funding application for basic research on emotion regulation, interpersonal relations, and their association with psychological well-being integrates Dr. Darling's expertise in the study of adolescents' social relationships with Dr. Cohan's research on factors predicting change in marital satisfaction and stability among newlywed couples. Both investigators are pre-tenure, tenure-track faculty at the Pennsylvania State University with strong publication records and fall under the Category 1 funding priority (newer investigators).

A: Specific Aims

Romantic relationships are an important component of adolescents' emotional lives, a key predictor of depression (Davila, 2001), and help to explain why adolescents are more emotionally volatile than adults (Larson & Richards, 1994). Despite this, we know little about how adolescent romantic relationships function or develop and even less about their role in emotional regulation (Brown, Feiring, & Furman, 1999). Such neglect is surprising, because research on romantic relationships is a cornerstone of the study of adult emotion regulation processes. This project will extend our understanding of the regulation and expression of negative emotion during adolescence in two ways. **First, we will examine similarities among the emotional regulatory processes adolescents observe in their parents' marriages, and the processes adolescents employ in their own relations with parents, peers, and romantic partners.** Three aspects of emotion regulation and functioning will be examined: attachment, meeting one's own emotional needs through support seeking and conflict resolution skills, and meeting the needs of the partner through support provision and relationship maintenance skills. Specifically, adolescents' emotional regulation and functioning in romantic relationships will be predicted from (1) the relationship maintenance, conflict resolution, and social support skills modeled by parents in their marriage and in their parents' relationships with themselves, and (2) the emotional regulatory processes the adolescent employs in their relations with their parents and their same-sex peers. **Second, we will predict individual differences in adolescents' psychological well-being as a function of the quality of their romantic relationships and the emotional regulatory processes employed by themselves and their romantic partners.** We will examine three aspects of psychological well-being: self-esteem, depressive symptoms and risk-taking behavior. Attachment style and relationship quality will be examined as potential moderators of the association between partner's emotional regulatory processes and adolescent well-being. This study will specifically focus on adolescents during their junior and senior years in high school.

B: Background and Significance

The significance of romantic relationships during middle adolescence. There is broad consensus that there are age-related changes in romantic relationships that correspond to different developmental tasks. One reason for the lack of research on adolescent romantic relationships is that these relationships are often short-lived and only rarely involve the intimacy characteristic of later romantic relationships (Brown et al., 1999; Connolly, Craig, Goldberg, & Pepler, 1999; Feiring, 1996). Middle adolescent romantic relationships are likely to be in the affection phase (Brown, 1999): important as both a context for and a form of recreation, involving affection and sexual behavior, but unlikely to involve long-term commitment. During middle adolescence, romantic relationships come to be viewed as a context for intimacy rather than as a means toward status acquisition (Brown, 1999; Feiring, 1996; Furman & Buhrmester, 1992; Shulman & Scharf, 2000) and romantic partners as a primary source of social support (Feiring, 1999; Hazan & Zeifman, 1999; Laursen, 1998). These changes require adolescents to learn new skills and norms for behavior and to apply the emotional regulatory processes they have learned in family and peer relationships in a new social context. The social basis and developmental characteristics of middle adolescents' romantic relationships have often been ignored in research on dating, but are critical to their understanding. Because small differences in individual's experiences during periods of transition can have large long-term effects on developmental trajectories (Clausen, 1995), initial intimacy-based romantic relationships may be important

in the formation of cognitive representations of romantic relationships, as well as in the acquisition of skills needed to successfully build and maintain such relationships (Creasey & Hesson-Mcinnis, in press; Furman & Flanagan, 1997). Thus, in addition to their short-term consequences for emotional well-being, early romantic relationships may have long-term consequences through their influence on the formation of patterns of interaction that carry on into adulthood.

Scientific contribution. The proposed project will extend our understanding of emotional regulation and expression in romantic relationships and their association with psychological well-being during middle adolescence by (1) combining attachment and social learning approaches to understanding adolescent romantic relationships within the same study, thus allowing more direct tests of underlying processes, (2) using multi-source, multi-method measures of emotional regulation in the adolescents' relations with parents, peers, and romantic partners and in the adolescents' parents' marriages, (3) integrating the literature on marital and dating relations with the developmental literature on adolescent social relationships, and (4) examining contextual variability in the association between emotional regulation and expression in romantic relationships and psychological well-being from both individual and dyadic perspectives. Much of the research on adolescent dating has been carried out in isolation from the much richer, process-oriented literature on marital relationships. Similarly, the marital relationship literature has only recently drawn from the rich literature on parent-child attachment (e.g., Collins & Read, 1990; Feeney, 1996; Furman & Flanagan, 1997; Hayashi & Strickland, 1998; Owens et al., 1996; Rholes, Simpson, & Blakely, 1995) and has paid only scant attention to the developmental tasks central to the adolescent experience. By integrating these literatures, we hope to gain a fuller understanding of the developmental course of romantic relationships as well as basic emotion regulation processes.

Attachment and the development of emotional expression and regulation in romantic relationships. Since the publication of Shaver and Hazan's (1987) seminal research extending attachment theory to the study of romantic relationships, the attachment paradigm has dominated research on romantic relationships during adolescence and young adulthood. Within Bowlby's (1969/1982) framework, the attachment behavioral system serves to establish and maintain contact with significant others who can be relied on for protection and support. An internal working model of attachment relationships is developed through ongoing interactions with attachment figures. This model includes representations of the availability and quality of support, the extent to which the self is worthy of love and support, and appropriate responses to the distress of others (Collins & Feeney, 2000). Hazan and Shaver (1994) applied attachment theory to the study of individual differences in adults' approaches to romantic partnerships. Romantic attachment style differs along two dimensions: rejection anxiety and avoidance of intimacy (Brennan, Clark, & Shaver, 1998). Secure adults are low in anxiety and avoidance, preoccupied adults are high in anxiety but low in avoidance, dismissing-avoidant individuals are low in anxiety but high in avoidance, and fearful-avoidant adults are high in both anxiety and avoidance (Collins & Feeney, 2000). There is strong evidence, including longitudinal research (i.e. Collins & Sroufe, 1999), that differences in parental attachment and the experience of conflict in the home are associated with differences in romantic attachment style (Brennan & Shaver, 1993; Hayashi & Strickland, 1998). Individual differences in romantic attachment style are related to differences in a broad suite of behaviors and beliefs (for reviews see Furman & Simon, 1999; Hazan & Shaver, 1994; Hazan & Zeifman, 1999). For example, secure romantic attachment is associated with greater skill in seeking and providing support (Collins & Feeney, 2000; Collins & Sroufe, 1999; Feeney & Collins, 2001). In addition, avoidant and preoccupied romantic attachment styles are associated with less sophisticated conflict resolution and relationship maintenance skills (Collins & Read, 1990; Simpson, Rholes, & Phillips, 1996) and lower levels of intimacy (Hazan & Zeifman, 1999). These processes, in turn, are important predictors of psychological well-being (Davila, 2001).

During middle adolescence, the short duration and developmental characteristics of romantic relationships make it unlikely that romantic partners will act as attachment figures (for discussions, see Brown et al., 1999; Hazan & Zeifman, 1999). Nonetheless, aspects of the attachment system, as well as the

affiliative, sexual, and caregiving systems, may play important roles in how adolescents approach romantic relationships (Furman & Simon, 1999; Furman & Wehner, 1994). For example, several researchers (e.g. Collins & Read, 1994; Furman & Simon, 1999; Furman & Wehner, 1994; Laursen, 1998) have suggested that adolescents' history of social interactions result in a hierarchical set of relationship 'views' (Furman & Simon, 1999). At the highest level, adolescents are thought to hold global 'views' of relationships, including beliefs about trustworthiness and comfort with intimacy. Like internal working models (Bowlby, 1988), these global views shape expectations of self and other in a range of close social relationships. Global views are thought to influence views of particular types of relationships, such as romantic relationships. Views of different types of relationships will be affected by the functioning of different behavioral systems. For example, parent-adolescent relationships are likely to engage the attachment behavioral system, but peer relationships are more likely to engage the affiliative system. Because romantic relationships require the integration of both the affiliative and attachment systems, views of romantic relationships are likely to be affected by the adolescents' past history in both parent and peer relationships (Furman & Simon, 1999). Consistent with the hierarchical model of romantic relationships, there is evidence suggesting that adolescents' relationships with both parents (e.g. Carnelley, Pietromonaco, & Jaffe, 1996; Collins & Sroufe, 1999) and peers (e.g. Collins & Sroufe, 1999; Furman, 1999) are similar to their relationships with romantic partners. The relative importance of the parent and peer relationships in the emotional regulatory processes observed in adolescent romantic relationships may vary systematically as a function of the relationships' duration (Hazan & Zeifman, 1999). No study to date has examined this question, although recent research (Seiffge-Krenk, Shulman, & Klessinger, 2001) on age related changes is consistent with this prediction.

An alternative to attachment: Social learning. In discussing the processes through which early attachment influences adolescents' romantic relationships, Collins and Sroufe (1999) emphasize both cognitive models of social relationships (i.e. internal working models), as well as the active role of the developing person in influencing their social environment. In their model, secure attachment becomes associated with positive relationships with peers and teachers in childhood, with intimacy skills, popularity, and affiliation with socially competent peers in adolescence, and ultimately with stable, intimate, romantic relationships. This trajectory from secure parent-infant attachment to secure romantic attachment places developing persons in a series of social relationships in which they are likely to build cognitive models of relationships that facilitate comfort with trust and interdependence, views of themselves as fundamentally deserving of love and support, and a repertoire of good social skills (Collins & Sroufe, 1999). Because of the range of social interactions that secure parent-child attachments predict, secure attachment will be positively correlated with functioning of the affiliative and sexual behavioral systems as well as with attachment to non-parental figures. Although Collins and Sroufe work from an attachment perspective, many of the major processes linking parental attachment and functioning in romantic relationships in their model have little to do with attachment per se. Is the observed correlation between quality of relationship with parents and quality of relationships with peers and romantic partners due to attachment, or can it be explained by other processes?

Much of the prior research examining continuity of marital and relationship quality across generations (e.g. Gray & Steinberg, 1999; Hayashi & Strickland, 1998; O'Keefe, 1998; Simons, Lin, & Gordon, 1998; Wekerle & Wolfe, 1999; Wolfe & Wekerle, 1997) assumes that the processes mediating this continuity are social learning and modeling. In the social learning framework, parent-child interactions and adolescents' observations of their parents' marital behavior are thought to have a direct effect on their relations with peers. Emotional regulation and expression in romantic relationships develops both as a function of skills previously developed in parent and peer interactions and modeling of parent marital behavior (e.g. Stocker & Youngblade, 1999). Note that this model is consistent with the processes discussed by Collins and Sroufe (1999), but does not invoke attachment as an internal organizing mechanism.

Integration of social learning and attachment models of the development of emotional regulation and

expression in romantic relationships. Both attachment and social learning theories predict similarity in the emotion regulation processes adolescents will employ in relations with parents, peers, and romantic processes as well as between the strategies used by parents and their children. The reasons thought to underlie this similarity are different, however. No study of which we are aware examines both sets of hypothesized causes simultaneously. Goal A of the proposed study focuses on understanding these relationships: **What underlies the similarity of effectiveness in emotional regulatory processes adolescents experience across relationships?** The research design integrates elements from both the attachment and social learning approaches to romantic relationships (see Figure 1, Goal A). There are three basic components of the model: emotional regulatory skills adolescents observe in their parents' marriage, adolescents' own emotional regulatory skills, and adolescents' attachment. Effectiveness of parents' emotional regulatory functioning is thought to be associated with adolescents' attachment and their emotional regulatory skills in relations with both parents and peers (Collins & Sroufe, 1999; Paley, Cox, Burchinal, & Payne, 1999). In addition, adolescent attachment is thought to predict adolescents' emotional regulatory skills (Feeney & Collins, 2001). Attachment to parents and peers are thought to predict romantic attachment. Emotional regulatory skills in parent and peer relations are thought to predict these functions in romantic relationships. Adolescents' romantic attachment is thought to predict adolescents' emotional regulatory skills in romantic relationships (Feeney & Collins, 2001).

Three sets of analyses provide insight into these underlying processes. First is a comparison of the similarity of regulatory processes observed in the parents' marriage and adolescents' romantic relationships with the similarity between adolescents' regulatory processes in their relations with parents, peers, and romantic partners. On the one hand, greater similarity between processes observed in parental marital relationships and adolescent romantic relationships is suggested by context-specific learning (Bandura, 1989): one learns how to behave in a romantic relationship by watching how others perform that role. On the other hand, if emotional regulatory processes are fairly stable across relationships, one would expect greater similarity across adolescents' relationships with different people than between the functioning they observe in their parents' marriage and their own functioning in romantic relationships. Second is a comparison of the relative strength of similarity between adolescents' functioning in romantic relationships with parents and with peers. Greater strength of parent-romantic partner similarity, especially in attachment, is more consistent with the attachment perspective that relations with parents have a formative role in views of all subsequent relationships (Collins & Sroufe, 1999). Greater strength of peer-romantic partner similarity is more consistent with social learning theory. However, as discussed previously, the relative importance of parents and peers as predictors may change over time. Attachment theory would lead to the prediction that affiliative processes will be the hallmark of early romantic relationships, but caregiving and attachment processes will come into play as the relationship endures (Hazan & Shaver, 1987). This suggests that emotional regulatory processes in romantic relationships will be similar to processes operating in peer relationships during the early phases, but become increasingly similar to processes operating in parent-adolescent relationships over time. Third, is an examination of role that emotional regulatory skills (conflict resolution, support seeking, relationship maintenance, and support provision) have in mediating the association between adolescents' attachment to parents and peers and the emotional regulation functioning they exhibit with their romantic partners. Once specific skills are controlled for, is there any independent association between attachment to parents and peers and emotional regulation in romantic relationships that could be attributed to either higher order relationship 'views' or to the internal working model?

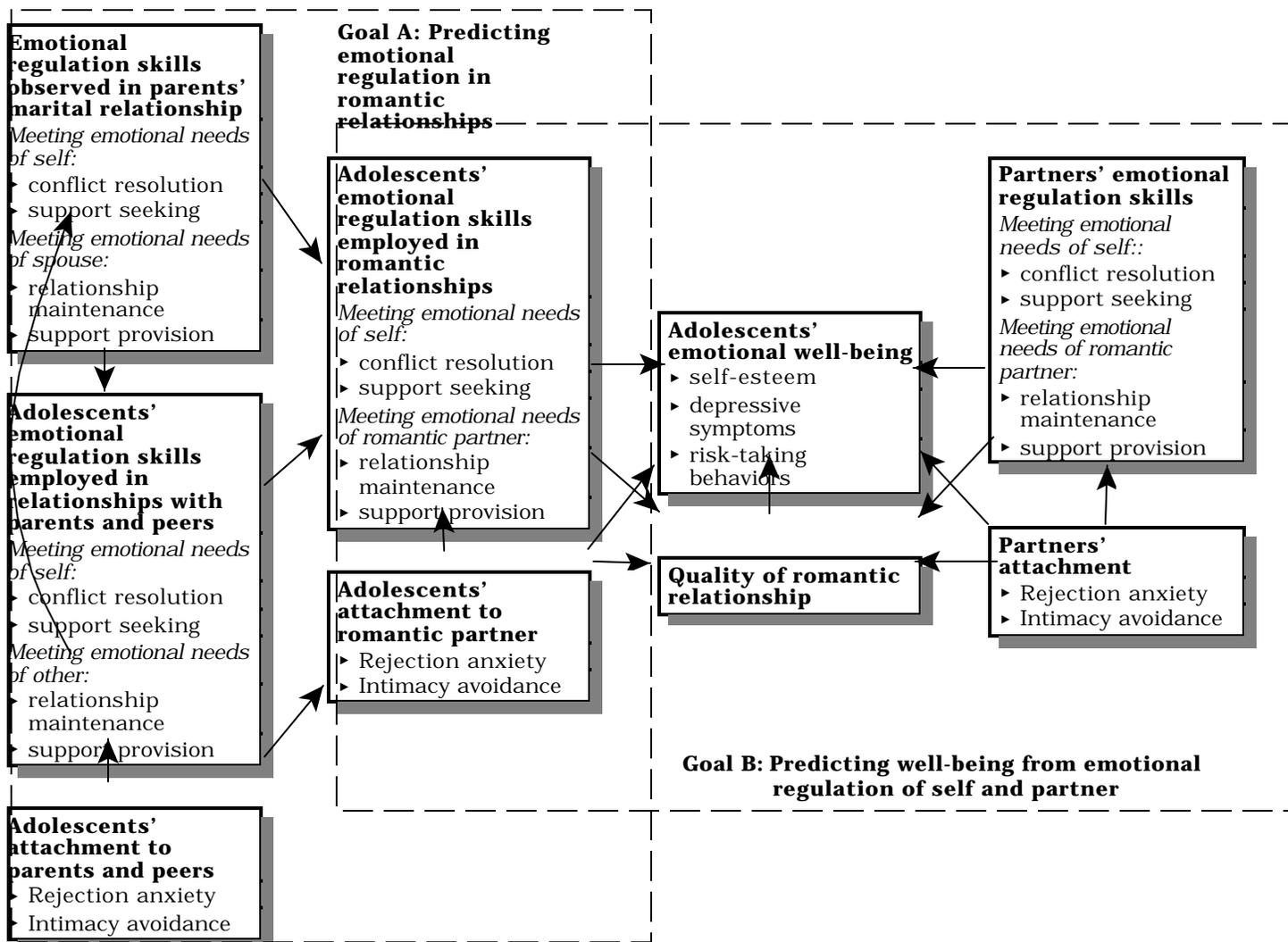


Figure 1: Conceptual Model of Proposed Research. Within blocks, **bold** text denotes major constructs, *italicized* text denotes specific aspects of the construct to be assessed, and bulleted text denotes specific indicators.

Emotional regulation and expressiveness in romantic relationships and psychological well-being. Social support and lack of conflict in romantic relationships is associated with higher levels of psychological well-being in both adolescent and adult populations (Brown & Harris, 1978; Coyne & Downey, 1991). The adult marital and adolescent dating literatures have two complimentary limitations in understanding the processes connecting emotional regulation and expressiveness in romantic relationships and individual outcomes. First, unlike the marital literature, the literature on adolescent dating has not included work on dyadic predictors of psychological well-being. The marital literature assumes conflict to be normative. The literature on adolescent dating, however, suggests that individuals experience little or no conflict in many romantic relationships, and that overt conflict occurs infrequently, often resulting in termination of the relationship. Goal B of the study is to address the question: **To what extent does the emotional regulatory functioning of both adolescents' and their romantic partner's contribute to their psychological well-being?** Figure 1, Goal B depicts a model of the association between adolescents' emotional regulation in romantic relationships and depressive symptoms (which are a more typical expression of poor functioning in

adolescent girls), risk behavior (a more typical expression of poor functioning in adolescent boys (Somersalo, Solantaus, & Almqvist, 1999), and self-esteem. The model is dyadic: adolescents' psychological well-being is thought to be predicted by both their own emotional regulatory functioning and that of their romantic partner. Part of this association is thought to be mediated through the overall quality of the romantic relationship. In addition, we predict that the emotional well-being of adolescents who have insecure romantic attachment styles will be relatively more vulnerable to poor quality relationships and poor partner emotion regulatory skills than those who are secure.

C: Preliminary Studies

The proposed research extends prior research of the investigators in complimentary areas of expertise. Dr. Darling has extensive experience in survey research investigating adolescents' social relationships with parents, unrelated adults, peers, and dating partners, and midlife mothers' perception of their relations with their adolescent children. Her recent research on adolescent dating relationships (Darling, Dowdy, Van Horn, & Caldwell, 1999) examined the extent to which adolescents' self-assessments change as a result of movement from same-sex to mixed-sex peers context and dating. Other relevant work includes comparisons of social relations across social roles (Darling, Hamilton, Toyokawa, & Matsuda, in press), examination of the continuity of relations with parents and peers (e.g. Steinberg, Darling, & Fletcher, 1995), and studies of the roles of parents (Caldwell & Darling, 1999; Darling & Cumsille, in review; Darling, Cumsille, & Hames, in review; Darling & Dowdy, in review; Palmer, Darling, & Kipke, in review; Steinberg et al., 1995), and peers (Caldwell & Darling, 1999; Fletcher, Darling, & Steinberg, 1995; Steinberg, Fletcher, & Darling, 1994) in adolescents' lives. For the past eight years she has served as principal investigator for three projects involving the study of adolescent social relationships.

Complimenting this focus is Dr. Cohan's expertise in the assessment of marital relationships during early and middle adulthood, particularly marital communication, longitudinal change in marital satisfaction, and interpersonal factors in mental health. For example, change in newlywed spouses' marital satisfaction and depressive symptoms was a function of their stressful life events and ability to resolve a marital problem (Cohan & Bradbury, 1997), wives generated stress in their marriages via their social support behavior toward their husbands (Davila, Bradbury, Cohan, & Tochluk, 1997), and premarital cohabitation predicted poorer marital problem solving and support behavior (Cohan & Kleinbaum, in press). Two current projects examine marital communication and hormone function in young married couples using behavioral observations of conflict resolution and social support and marital transitions across 30 years among Vietnam prisoners of war. Related publications by the investigators are included in Appendix A.

Drs. Darling and Cohan conducted a two-phase pilot test of a research protocol similar to the questionnaire component of the proposed study. This pilot test involved approximately 30 cases (mother-adolescent dyads and the adolescents' romantic partners). Phase One of the pilot testing resulted in substantial changes in the recruitment and data collection protocols that were subsequently tested in Phase Two and are reflected in the current proposal.

Preliminary analyses were carried out with pilot data to confirm the appropriateness of measures with this population and essential predictions of the model. All measures showed good to excellent measurement characteristics (Cronbach's α s ranging from .62 to .91), reasonable distributions, and were related to one another in the expected directions. A first set of analyses was carried out using hierarchical linear modeling (HLM) to examine continuity and differences of adolescents' attachment and relationship maintenance strategies across relationships with mothers, fathers, peers, and romantic partners. Significant findings ($p \leq .05$) are reported here. Fifty-two adolescents reported on a total of 208 relationships (four each). Both similarities and differences across relationships were revealed. Adolescents were more anxious about their relations with romantic partners than about their relationships with others, but approximately half of the variance in relationship anxiety was due to between-adolescent differences, with the remainder attributable to within-adolescent differences plus error. Adolescents were equally avoidant in their relations with peers

and romantic partners, but less avoidant with romantic partners than with parents. Approximately 29% of variance in avoidance was attributable to between-adolescent differences. Adolescents were more positive, open, and assuring in their relations with romantic partners than with parents or peers, with approximately 25% of the variance of each attributable to between-adolescent differences. High avoidance, but not high anxiety, was associated with lower relationship maintenance skills. Examining the association of parents' marital behavior and adolescents' relationship maintenance skills, adolescents whose mothers were high in positivity and assurances to their husbands also reported higher positivity and assurances in their own relationships. These results are supportive of the general idea of continuity of emotional regulatory processes expressed with parents and best friends and with romantic partners. It is also consistent with prior research suggesting that adolescent attachment is associated with relationship maintenance skills. Results suggest that there are both large between-adolescent differences in emotional regulation skills and attachment, as well as within-person differences in how adolescents function in different relationships.

A second series of analyses examined the similarity of romantic partners in attachment and relationship maintenance skills and the association of emotional regulatory functioning of self and partner with relationship quality, depression, and self-esteem. These analyses were performed using HLM with the dyad as the unit of analysis. Twenty-five dating couples provided complete data, with each adolescent reporting on their own attachment, relationship maintenance strategies, and psychological well-being. Romantic partners were similar with regards to avoidance, with 44.9% of the variance attributable to between-dyad differences, but less so with regards to anxiety (6.8%). There was no association between romantic partners' positivity or openness, but there was with regards to assurances (34.9%). This suggests that assurances of affection are a function of both qualities the person brings to the relationship and qualities of the relationship itself. The absence of similarity between romantic partners on relationship maintenance skills is not consistent with the literature on marital relationships, and may reflect both the developmental phase as well as the probable short-term nature of romantic relationships at this age.

Adolescents who were avoidant themselves or whose partners describe themselves as avoidant also report lower relationship satisfaction. Higher assurances by both self and partner were also associated with higher relationship satisfaction. Adolescents' own attachment, but not the attachment of their partners, is strongly associated with depression. In complementary fashion, adolescents' own relationship maintenance behaviors were not associated with depression, but their partners' skills were. Taken together, these findings are compatible with the prediction that adolescents' psychological well-being is associated with both their own orientations towards romantic relationships and the behavior of their partners and provide support for the importance of understanding the association of emotional regulatory processes and adolescent well-being at the dyadic level.

D: Research Design and Methods

Study design. The proposed study involves a cross-sectional examination of adolescent social relationships, parental marriage, and well-being. Questionnaires will be used to gather information about relationship quality and emotional regulatory functioning within specific relationships from the target adolescent, from both of the target adolescents' parents, and from the target adolescents' romantic partner and same-gender best friend. Global attachment style in peer and romantic relationships will also be assessed. Parent marital interaction and adolescents' interactions with romantic partners will be observed.

Two decisions were central to the design of the study. First, key variables will be assessed from multiple sources: self-report, partner report, and, in the case of social support measures, observer ratings. These multiple sources are important both because of their potential to reduce measurement error (Bollen, 1989; Loehlin, 1998), but more importantly, because of the potential insight they provide into the processes underlying the development of emotion regulation and expression in romantic relationships (see, for examples, Carnelley et al., 1996; Collins & Feeney, 2000; Simons et al., 1998). Attachment, social learning theory, and more recent iterations of social cognitive theory (e.g. Bandura, 1989) differ in the emphasis they

put on objectively observed behavior and on the interpretation of behavior by the developing person. Multiple informants provide more insight into these processes because they allow analysis of both objective and self-report data (e.g. Collins & Feeney, 2000), which may be particularly important with regards to understanding romantic relationships. Second, we measure quality of romantic relationships from the perspective of both partners in all dyads. These reciprocal measurements are critical if we are to understand the functioning of relationships at the dyadic, as well as individual, level (Fincham, 1998; Maguire, 1999).

Participants. Participants will include individuals from 100 intact families with an adolescent in the junior or senior year of high school who is in a dating relationship that has lasted at least one month. Each 'case' will be comprised of five people: the mother, father, their adolescent child, and the adolescents' dating partner and same-gender best friend. The target individual for recruitment will be the adolescent, with equal number of males and females recruited. It is not required that the target adolescents' dating partner come from an intact family. The overall sample size is slightly larger than other studies in which both members of romantic couples were recruited and observational measures were used (Bookwala & Zdaniuk, 1998; Cohan & Bradbury, 1997; Collins & Feeney, 2000; Galliher, Rostosky, Welsh, & Kawaguchi, 1999; Welsh, Galliher, Kawaguchi, & Rostosky, 1999), and should provide sufficient power to test the proposed models (Murphy & Myers, 1998). Power analyses of major hypotheses conducted using effect size estimates from the survey pilot data resulted in power estimates ranging from .98 and .99. Estimates of the ability to detect mediational and moderational effects in an SEM framework were smaller, but acceptable, ranging from .83 to .91. Because no standard method of conducting power analyses with nested data has yet emerged, power analyses assumed an intraclass correlation within dyads of 1.0, effectively cutting the sample size for dyadic analyses in half, and are thus quite conservative.

Recruiting intact families allows us to test our primary hypotheses about the continuity between behavior in adolescent dating relationships and proximal adult models of relationship skills (i.e., their parents' marriage) for the target adolescent in the study. Adolescents in single-parent homes may or may not have a current adult model for relationship skills. In addition, we cannot gather reciprocal data on parent marital functioning and support provision or on adolescent relationship quality with both parents among adolescents in single-parent homes. Although including currently remarried families would not pose these obstacles, past studies have shown that adolescents' experiences in these families are quite different from those in intact families (Hetherington, Bridges, & Insabella, 1998) and that their experiences vary significantly as a function of the age at which divorce and remarriage occurred and the time since remarriage. Because 87.5% of adolescents in counties where recruitment is taking place live in intact homes (Pennsylvania State Data Center, 2000), it was felt that an insufficient number of participants could be recruited from stepfamilies to do a meaningful analysis of this subpopulation in the current study and that including such families without modeling family type would add error to the models without gaining insight into this important population.

The decision to limit participation to adolescents who were currently involved in a relationship for at least one month was made because it was important that the romantic relationships would be of sufficient depth that quality and relationship characteristics could be assessed (Connolly & Johnson, 1996; Hazan & Zeifman, 1999). Because individuals characterized by insecure romantic attachment tend to have difficulty maintaining romantic relationships (Bookwala & Zdaniuk, 1998), we were concerned that requiring adolescents to have been in romantic relationships of longer duration would constrain variability in our attachment measures. Because adolescent relationships tend to be short-lived, but emotionally intense (Feiring, 1996), it was decided that one month would be sufficient for adolescents to have established a meaningful relationship, but not overly constraining in terms of duration. In the pilot data, the duration of current romantic relationship ranged from 10 to 156 weeks, with a median of 42, and a similar distribution is expected in the current study. Families will be recruited using advertising, direct approaches to adolescents in shopping malls, youth hangouts, sporting events, and coffee shops, and asking participants to nominate friends in dating relationship who might also be interested in participation. The decision to use

advertising and snowball recruitment, rather than a random or population sample, was based on our experience pilot testing the procedure. We believe this is an appropriate strategy for current status of research in this area.

Procedure. Married couples and adolescents couples will be scheduled for a two-hour laboratory visit. Depending on their schedules, the two couples may be scheduled for two concurrent or two separate appointments. We will collect questionnaire data from mothers, fathers, the target adolescent, and the target adolescent's romantic partner. We will also collect observational data of two mother-father and two adolescent-romantic partner interactions. In addition to providing informed consent for themselves, we will ask mothers of target adolescents younger than 18 to consent to the participation of their child. We will obtain consent by mail from mothers of the dating partners before their adolescent participates in the lab visit. Each person will complete questionnaires independently and participate in two videotaped conversations. The order of the laboratory protocol will be: 1) first support conversation, 2) complete questionnaires, 3) second support conversation, and 4) debriefing. Adolescents will be asked to complete questionnaires in five domains: global attachment to romantic partners; the quality, functioning, and attachment in their current romantic relationship; perceptions of their parents' marital quality and functioning; relationship functioning and attachment with respect to their mother, father, and same-sex best friend; and individual outcomes including emotional well-being and risk-taking behavior. Parents will be asked to complete questionnaires in three domains: marital attachment and the quality and functioning of their marriage; the quality and functioning of their relationship with the target adolescent; and individual outcomes including emotional well-being and risk-taking behavior.

Each married couple and each adolescent dating couple will engage in two private social support conversations. Each partner in a couple will be asked to discuss a stressful event that is not a source of conflict in his or her romantic relationship, following Cutrona and Suhr (1992). The partner who selects the topic is in the role of support seeker, and will be instructed to discuss the topic with the other partner for 10 minutes. The other partner, in the role of support provider, will be instructed to participate in the conversation in any way he or she wishes. Across the two conversations, each partner will participate in each role. The research assistant will leave the room after giving the instructions and turning on the video camera. We will counterbalance the order in which males and females select the stressful topic to discuss. Childcare will be provided for married couples who bring younger children to the lab session. At the end of the lab session, participants will be given \$35 each, and each couple will be reimbursed \$5 for parking. Best friends will be mailed the survey and return them by mail. They will be paid \$25.

Emotional regulation. The proposed study uses six indicators of emotional regulatory processes in relationships: two assessing attachment and four assessing adolescents' skill at meeting the emotional needs of themselves and others (relationship maintenance (Stafford & Canary, 1991), conflict resolution (e.g. Feeney, Noller, & Roberts, 1998; Feeney, Noller, Sheehan, & Peterson, 1999), support seeking and support provision (Collins & Feeney, 2000)). Relationship maintenance skills refer to specific behaviors partners engage in to build and maintain their relationship with the other. Such skills may be particularly important during adolescence because the social norms and instability of adolescent social networks may create more pressure for relationship dissolution than for relationship stability (Brown, 1999). These indicators were chosen to (a) reflect theoretical constructs related to social learning, attachment theory, and the extant literature on romantic relationships and (b) reflect the two underlying dimensions of relationship competence: intimacy and autonomy (Feeney, 1999). In addition, the skills assessed lend themselves to assessment by multiple sources and methods. This allows us to gather self-assessments of the actors, ratings of relationship partners, and, in the case of social support skills, objective observational data.

Questionnaire measures of emotional regulation and adolescent well-being. Target adolescents and the target adolescents' parents, same-gender best friend, and romantic partners will complete ratings of their own and their partners' conflict resolution, support seeking, relationship maintenance, and support provision skills. Target adolescents, their romantic partners, and their same-gender best friends will also

complete measures of their own and their partners' attachment to friends and romantic partners, and their own self-esteem, depressive symptoms, and risk behaviors. A summary of measures used to assess each construct and the source of information about each construct is provided in Table 1. All measures have been well established and showed acceptable internal consistency in the pilot data (α s ranging from .62 to .91). Sample measures used in the pilot study are included in Appendices B (Adolescent Versions) and C (Parent Versions).

Table 1: Summary of measures used in questionnaire. Columns under the Informant header refer to the individual who is doing the reporting. Columns underneath each informant refer to the relationship being reported on. S refers to self-report, R to ratings of relations with romantic partner, M to relations with the mother, F to relations with the father, and B to relations with the same-sex best friend.

		Informant																		
		Adolesc					Rom Prn					B Fd		Mot h		Fath				
Construct and Measure	Description	S	R	M	F	B	S	R	M	F	B	B	M	F	S	A	F	S	A	M
<i>Attachment: Experiences in Close Relationships Scale</i> (Brennan et al., 1998)	Assesses anxiety and avoidance ¹ .	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
<i>Conflict Resolution Skills: Conflict in Relationships Scale</i> (Wolfe, Reitzel-Jaffe, & Lefebvre, 1998)	Assesses how often participants and their partners engaged in abuse/coercion, negative & positive communication ² .	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
<i>Social Support Skills: Family Caregiving Questionnaire</i> (Carnelley et al., 1996)	Assesses engaged, reciprocal, and neglectful care ² .	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
<i>Relationship Maintenance: Relationship Maintenance Scale</i> (Stafford & Canary, 1991)	Assesses positivity, assurances, openness, sharing tasks, and social networks ² .	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
<i>Relationship Quality: Quality Marriage Index</i> (Norton, 1983)	Assesses global satisfaction in romantic relationships ² .	!					!										!			!
<i>Self-esteem: The Harter Self-Perception Profile</i> (Harter, 1988)	Assesses global self worth and self worth in close friendships, peer relationships, and romantic relationships.	!					!										!		!	
<i>Depressive Symptoms: The Center for Epidemiological Studies Depression Index</i> (Radloff, 1977)	Measures depressive symptoms in general populations.	!					!										!		!	
<i>Risk Behaviors: The Adolescent Risk Survey</i> (U.S. Department of Health and Human Services, 1993)	Assesses alcohol consumption, cigarette smoking, sexual intercourse and condom use, and physical aggression.	!					!										!		!	

1. In addition to reports of attachment to the current romantic partner and current best friends, we will also collect global assessment of attachment to friends and romantic partners.
2. In addition to assessing their own relationships, adolescents also assess each of their parents' behavior in their marital relationships.

Observed social support seeking and provision. Support behaviors that capture a range of positive and negative behaviors relevant to attachment orientation will be rated, including assessment of both affect and

skills. Ratings of support provision will be based on procedures described by Collins and Feeney (2000) and Barbee and Cunningham (1995). The following behaviors will be rated for support providers: attentiveness, understanding, blaming, support effort, emotional support, instrumental support, minimizing the importance of the topic, and ignoring support seekers emotional expressions. Those ratings can be collapsed into two composite scales of responsiveness and negative (i.e., ineffective) support. Support seeking behaviors were identified from Collins and Feeney (Collins & Feeney, 2000) and the Social Support Interaction Coding System (Bradbury & Pasch, 1994; Pasch & Bradbury, 1998). The following support seeking behaviors will be rated: direct and indirect negative emotional disclosure (e.g., clear statement of distress v. hinting or sulking), positive emotional disclosure (e.g., optimism, appreciation for help), responsiveness to support giver (i.e., rejects or accepts help), minimization, exaggeration, problem analysis, and resolution. Trained observers will watch each 10-minute conversation three times; first to understand the content, second to rate one partner, third to rate the other partner. Global ratings will be made on a scale from 1 (very little) to 7 (a lot).

Pre- and post-social support interaction measures. To assess their current positive and negative mood, participants will rate nine affects (e.g., happy, loved, angry) on a 7-point scale immediately before and after each social support conversation (Collins & Feeney, 2000). Subjective expectations and appraisals will be assessed immediately before and after the support interactions. Before the conversation, participants in the role of support seeker will be asked to rate on a 7-point scale the magnitude of the problem they chose to discuss, expected emotional tone, and whether the conversation will help them make a change. After the conversation, participants in the role of support seeker will rate their partner's supportiveness during the conversation using six items on a 7-point scale related to the partner's support, listening, understanding, responsiveness, concern, and criticizing (Collins & Feeney, 2000). After the conversation, participants in the role of support provider will be asked to rate six similar and parallel items to assess how supportive they think they were. After all conversations, both partners will be asked to rate how similar the videotaped conversation was to similar discussions they have in private.

Research Strategy and Plan of Analysis

Goal A. Goal A of the study is to further explore the similarities among the emotional regulatory processes adolescents observe in their parents' marriage and utilize in their own relations with parents, same-gender peers, and romantic partners. The analyses will proceed in three phases: describing emotion regulation and functioning, predicting adolescent emotional functioning in each of their relationships as a function of parents emotional functioning with their spouses, and exploring adolescents' attachment to parents and emotional functioning with best friends as mediators between parents' emotion regulation and adolescents' emotional functioning with romantic partners. Each phase of the analyses will build upon the results of the prior phase. As appropriate, individual indicators of emotional regulation skills will be combined into composite measures or used to assess latent constructs.

Phase one: Descriptive analyses. The first phase of the analysis will examine how each indicator of emotional regulation and expression varies as a function of both dyadic and individual characteristics. We will use a nested modeling approach, such as HLM (Bryk & Raudenbush, 1992) or structural equation modeling (SEM) (Rovine & Molenaar, 2000). In these analyses, each individual is reporting on their own emotional regulation and functioning, which are then modeled at three levels: the case (recruitment unit), the individual, and the dyad. In these analyses, 500 individuals from 100 units will be reporting on their own behavior in two (parents) or four (adolescents) different relationships. For example, questions include: How similar are the relationship maintenance skills used by all reporters within a case (mother, father, adolescent, adolescent best friend, and adolescent romantic partner)? Do individuals who differ in characteristics such as age or gender differ in the relationship maintenance skills they exhibit? Do individuals vary across different type of relationships - e.g. do adolescents exhibit different support seeking behaviors with their mothers, fathers, best friends, and romantic partners? The first question would be

addressed by calculating the intraclass correlation between self-reported support seeking of individuals within a case, the second by predicting mean support seeking from age and gender, and the third by predicting the mean support from relationship type (Bryk & Raudenbush, 1992). Next, two-level nested modeling at the dyad level will be used to examine the agreement between reporters on the Conflict in Relationships Scale, in which each member of the dyad reports on the behavior of both themselves and their partners (Wolfe et al., 1998).

Phase two: Predicting adolescent emotional regulation skills. Emotion regulation skills in the parents' marriage will be used to predict adolescents' emotion regulation skills in their relations with parents, same-gender best friend, and romantic partner. These analyses will be done using a two-level nested analysis, in which between-adolescent differences in emotion regulation will be predicted from gender, each parents' reports of their emotion regulation skills in their marriage and adolescents' reports of their parents' emotion regulation skills within their parents' marriage. Within-adolescent differences in emotion regulation will be predicted from the social role of the adolescents' partner and the emotion regulation exhibited by their partner. Initial analyses will predict adolescents' emotion regulatory functioning from the same regulatory function in their parents' marriage (e.g. parent positivity to adolescent positivity). A major goal of these analyses is to establish the relative importance of parent self-reports and adolescents' reports of parental functioning as predictors of adolescent functioning. Although Fincham's review (Fincham, 1998) suggests that adolescents' perceptions will be the critical factor, this remains an open empirical question. Although it would be possible to create latent constructs representing specific aspects of parent emotional regulatory functioning by combining mother, father, and adolescent reports of individual indicators and modeling the association of these latent constructs with adolescent functioning, this may be inappropriate, because different reporters show only limited agreement about even specific behaviors and lack of agreement across different reporters may be an important indicator of problems in emotional regulatory processes (Fincham, 1998).

Phase three: Mediating the association between parents' marriage and adolescent emotional regulation. The goal of this phase of the analysis is to examine the mediational role of attachment and adolescent emotional functioning in prior relationships in the association between emotion regulation in the parents' marriage and in adolescents' romantic relationships. The analyses proceed in three steps, each with a different goal: (1) to examine the mediational role of attachment in the association of parent emotional functioning and adolescents' emotional regulation, (2) to examine adolescent emotional regulation in relations with best friends and romantic partners as a function of emotional regulation within the family, and (3) to examine adolescent emotion regulation in romantic relationships as a function of emotion regulation within the family and in relations with peers. The first step predicts adolescents' emotion regulation across all relationships. Following standard procedures for testing mediational effects (e.g. Baron & Kenny, 1986) (a) adolescents' emotional regulatory skills with each partner will be predicted from the emotional regulatory skills exhibited by parents in their marriage, (b) adolescents' attachment to each partner will be predicted from the emotional regulatory skills exhibited by parents in their marriage, (c) the emotion regulatory skills adolescents exhibit with each partner will be predicted from adolescents' attachment to that partner and (d) both parent regulatory skills and adolescents' attachment to each partner will be used to predict adolescents' emotion regulation functions with that partner. These analyses will be carried out using a two-level model in which relationships are nested within adolescents. The second step addresses whether emotion regulation within the family predicts adolescents' emotion regulation in relations with best friends and romantic partners. Attachment to parents will be tested as a potential mediator between parental emotion regulation within the marriage and emotion regulation in best friend and romantic relations using standard techniques in a nested model. Finally, adolescents' emotion regulation in their romantic relationship will be predicted from their parents' emotion regulation within their marriage, their attachment to their parents, their attachment to their romantic partner, their emotion regulation skills in their relations with their best friends and their romantic partners' emotion

regulation skills. The goal of this last set of analyses is to examine emotion regulation skills exhibited in relationships with peers as a potential mediator between emotional functioning within the family and emotion regulation in romantic relationships. They will be performed using analyses nested at the dyadic level, with adolescent romantic partners as the unit of analysis.

Goal B: Goal B of the study is to predict individual differences in adolescents' psychological well-being as a function of the quality of their romantic relationships and the emotional regulatory processes employed by themselves and their romantic partners. As illustrated in Figure 1, analyses addressing Goal B will be done at the dyadic level, modeling individual well-being as a function of the emotion regulation employed by each romantic partner. It is expected that part of the association between emotional regulation of each partner and well-being is mediated through the quality of the romantic relationship. Analyses will be performed within a nested framework (HLM or SEM), using standard techniques for testing mediational relationships (Baron & Kenny, 1986). In these analyses, 200 adolescents are nested within 100 dyads.

Participation of children. Middle adolescents in the junior and senior years of high school (approximately 16 to 19 years of age) were targeted to address theoretical questions about the bases of romantic relationships. This age group was chosen because of our interest in the relative contribution of the parents' marriage and attachment to parents to adolescents' romantic relationships. Adolescents of this age are still living with their parents but are old enough to form somewhat mature romantic relationships. We extend current adult attachment research focused on late adolescence and early adulthood by examining earlier relationships in middle adolescence. Dr. Darling, the Principal Investigator, has extensive experience conducting survey and interview research with early and middle adolescents. The first paragraph in section C: Preliminary Studies outlines the scope of her expertise.

Participation of women and minorities. The data to be collected for this study will include minorities proportional to their occurrence in the population in the study area. The county in which the research will take place is 93.4% White, 3.0% Asian-American, 2.2% African-American, and 1.1% Hispanic (1990 US Census). Half the sample will be female.

E: Human Subjects

The proposed research involves 100 families (i.e., mother, father, adolescent child in the junior or senior year of high school) residing in central Pennsylvania plus the adolescents' high-school age romantic partners and same-sex best friends. The target adolescents are expected to be between 16 and 19 years old. The adolescent dating partners and best friends are expected to be between 15 and 20 years old. Middle adolescents and their parents are included to address theoretical questions about the bases of romantic relationships. Middle adolescents are included because mature romantic relationships begin to emerge at this time. Early experiences in romantic relationships at this point in development may set the stage for later function or dysfunction in romantic relationships.

Recruitment will be carried out via advertising and direct contact, followed by telephone contact. Videotaped social support conversations and questionnaire data will be collected during laboratory visits. All adolescents under age 18 will be asked to provide their assent to participate, and one of their parents will be asked to consent to his or her child's participation as well as his or her own participation. Non-participating parents of the dating partners and best friends will be contacted by mail to obtain consent for their child to participate before the laboratory visit. Participants will be informed in the consent form that all of the questionnaire and videotaped information they provide is completely confidential. Participants will not have access to information from other participants; parents will not have access to information provided by their children, and adolescents will not have access to information provided by their parents, dating partners. They will be informed about the limits of confidentiality that responses are only released by a court order or in instances of suspected child abuse. Participants will also be informed that all questionnaire and videotape data will be identified with a code number, and information linking the code number to their names will be

stored in a locked file.

Potential risk to participants is expected to be minimal. Participants will be informed they can refuse to answer any question or withdraw from the study at any time. During the course of the research, participants may become more aware of positive or negative aspects of their close relationships. Participants will be informed that they have the right to review their videotaped conversation in Dr. Cohan's lab and may erase all or part if they wish.

Only supervised research assistants will have access to the data. The videotapes will only be used for research purposes and will be stored indefinitely. Identifying information will be eliminated from any published material. The Institutional Review Board of the Pennsylvania State University approved this project on 8/21/2000 and have renewed it through 8/21/2002. Copies of consent forms are in Appendix D.

F. Vertebrate Animals

Not applicable.

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