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# The Contributions of Parental Attachment Bonds to College Student Development and Adjustment: A Meta-Analytic Review

Jonathan F. Mattanah, Frederick G. Lopez, and John M. Govern

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# The Contributions of Parental Attachment Bonds to College Student Development and Adjustment: A Meta-Analytic Review

Jonathan F. Mattanah
Towson University

Frederick G. Lopez
University of Houston

John M. Govern
Towson University

We report findings from a meta-analysis of 156 studies conducted between 1987 and 2009 ($N$ = 32,969) that examined the relationship between self-reported parental attachment and multiple adjustment outcomes and developmental advances during the college years. Overall, a small-to-medium relationship was found between indicators of parental attachment quality and favorable adjustment outcomes ($r$ = .23). Effect sizes were of similar magnitude for mother and father attachment relationships, for male and female students, and across ethnicity and nationality of the sample. The attachment–adjustment relationship varied somewhat according to the developmental task being investigated in the study, showing the strongest association for the task of separation–individuation. Additionally, we found stronger attachment–adjustment links for students residing away from their parents when compared with students living at home during college.

*Keywords:* parental attachment, college students, meta-analysis, psychosocial development, academic adjustment

In the public consciousness and across many traditional and contemporary theories of counseling and psychotherapy, the parent–child relationship is often considered a significant formative influence on an individual's psychological and psychosocial functioning. Indeed, within one conceptual framework—attachment theory (Bowlby, 1969, 1973, 1980, 1988)—the security-regulating features of this relationship play a central role in forecasting trajectories of personal adjustment and development across the life span. Moreover, since its debut, this theory has inspired sustained lines of research involving infants and young children (Berlin, Cassidy, & Appleyard, 2008), adolescents (Benson, McWey, & Ross, 2006), adults (Shaver & Mikulincer, 2007), and the aged (Bradley & Cafferty, 2001) that have affirmed its life-span perspective and established its particular heuristic value to scientific inquiry in counseling psychology (Lopez, 1995, 2009; Lopez & Brennan, 2000).

Jonathan F. Mattanah and John M. Govern, Department of Psychology, Towson University; Frederick G. Lopez, Counseling Psychology Program, Department of Educational Psychology, University of Houston.

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Correspondence concerning this article should be addressed to Jonathan F. Mattanah, Department of Psychology, Towson University, 8000 York Road, Towson, MD 21252. E-mail: jmattanah@towson.edu

In the counseling literature, researchers have devoted considerable attention to the role of parent–child emotional bonds in affecting the functioning of adolescents and young adults as these individuals grapple with the tasks of developing adult identities, making decisions about work and career, managing educational and peer-related stresses, and forming intimate partnerships. In general, these studies have drawn upon the inferential power of attachment theory as an organizational framework for understanding human competence and adaptation during this sensitive time period wherein persons must navigate a normative yet uniquely challenging life transition.

Given the breadth and wide-ranging emphases of inquiry in this domain, we sought to conduct a meta-analysis of this literature, focusing particular attention on studies of the contributions of parent–child attachment relationship to multiple indicators of college student adjustment and development. In preparing for this work, we could locate only three prior meta-analyses of attachment theory–informed studies of adolescents and young adults (Benson et al., 2006; Rice, 1990; Schneider, Atkinson, & Tardif, 2001). Although these investigations yielded valuable information, Schneider et al. (2001) exclusively focused on studies of parental attachment and peer competence in childhood and early adolescence and thus did not include college students. Moreover, whereas Benson et al. (2006) defined adolescence as the "second decade of life" (p. 36) and thus presumably included studies involving middle school, high school, and college samples, these investigators again limited their focus to the single domain of peer competence. Only the earliest meta-analysis (Rice, 1990) considered the findings of 28 studies (most of which involved college-age samples) conducted through 1990 that explored the contributions of parental attachment variables to multiple domains of

adolescent adjustment. In this regard, it is noteworthy that in the 2 decades since Rice's (1990) review, over 100 studies of the parental attachment–college student adjustment link have been published. This impressive growth of scholarship was likely stimulated by the development of measures of parental attachment bonds such as the Inventory of Parental and Peer Attachment (IPPA; Armsden & Greenberg, 1987) and the Parental Attachment Questionnaire (PAQ; Kenny, 1987, 1990) that were only beginning to enjoy widespread use toward the end of Rice's review period.

In sum, the time seems ripe for another critical meta-analytic review of the literature examining the contributions of parental attachment bonds to college student adjustment, one that updates and extends the findings of these prior meta-analytic studies in meaningful ways. Toward this end, we sought to (a) consider the available literature on this topic through 2009 and to evaluate the overall strength of associations between college students' self-reported attachment bonds with parents and multiple indicators of their adjustment to the academic, social, and developmental tasks associated with college life; (b) explore whether the strength of these associations varied according to the specific adjustment domain under study; and (c) determine whether these associations were themselves moderated by student and/or parent gender or by the particular measures used to assess the quality of the parent–student attachment relationship.

Before pursuing these inquiry objectives and detailing our literature search parameters and study selection methods, we begin with a brief overview of those key assumptions and constructs within attachment theory that are relevant to our larger purposes. We then call attention to distinct measurement traditions and controversies within the attachment literature and comment on how constructs measured by self-reports of attachment bonds with parents may relate to other constructs within this broad, diverse, and rapidly expanding literature. Next, we justify our particular focus on college students by considering how the multiple adjustment challenges and developmental tasks faced by this reference group afford a unique context for assessing the contributions of parental attachment bonds to these students' transitional adjustments and developmental progress. Last, we detail the specific goals of the current meta-analysis related both to evaluating the overall relationship between parental attachment and college adjustment and to addressing some unanswered questions within this more circumscribed literature.

## Attachment Theory: A Brief Introduction

Through the collaborative work of John Bowlby and Mary Ainsworth, attachment theory emerged in the 1960s as a novel perspective on early personality formation. Drawing upon a rich mixture of ideas from evolution and systems theories, ethology, and cognitive science, Bowlby (1969, 1973, 1980) proposed that attachment—or the human propensity to seek proximity to caregivers during moments of discomfort or threat—functioned as an independent, innate, and enduring motivational system designed by natural selection to serve the survival needs of the young and thus to advance their ultimate reproductive success. Challenging both the traditional psychoanalytic ideas of the time and the explanatory limitations of behaviorism, Bowlby (1969) further argued that this unique regulatory system was principally responsible for shaping the formation and quality of parent–child emotional bonds that would thereafter advance or inhibit the child's psychosocial development.

According to Bowlby (1973), within the first year of life, the child would cognitively represent early patterns of parental responsiveness to his or her bids for care and support to form an *internal working model of self and other* (IWM). This complex schema was believed to incorporate nascent self-perceptions of one's lovability, expectations regarding the dependability of caregivers, and interactional strategies for achieving a goal-corrected partnership with those caregivers around the management of threats to felt security. When infants experienced their primary caregivers as consistently warm, accessible, and responsive to their bids for care and support, a secure attachment bond (and IWM) was presumed to form, enabling the parent–child relationship to serve as a safe haven when the child experienced threats or frustrations that activated the attachment system, thus allaying this distress and returning the system itself to a quiescent state. In so doing, this dynamic concurrently enabled the parent–child relationship to serve as a secure base that supported and encouraged the infant's exploratory behavior and progressive environmental mastery. On the other hand, if caregivers were experienced as inconsistently responsive to or consistently rejecting of the infant's natural proximity-seeking needs, an insecure parent–child attachment bond would likely form. Such bonds would be characterized by either the excessive activation or the chronic deactivation of the attachment system, thus orienting the child's development along less optimal pathways. Through her classic Strange Situation observational studies of the interactions of mother–infant dyads during standardized episodes of separation and reunion, Ainsworth and her associates furnished empirical support for the operation of the attachment system and developed a reliable coding system for differentiating secure and insecure patterns of parent–infant attachment behaviors (Ainsworth, Blehar, Waters, & Wall, 1978).

Bowlby (1973) contended that, by internally representing these early relational patterns and experiences associated with proximity seeking, the child acquired the capacity to regulate his or her own attachment-related appraisals and behaviors in a manner that adapted to the caregiving resources and constraints afforded by the parent–child relationship. Moreover, because it imposed confirmatory biases on subsequent interactions with current and future caregiving figures, the IWM functioned as an organizational framework that promoted relatively stable patterns of intrapersonal and interpersonal functioning by effectively shaping later relationship experiences, appraisals, and outcomes. Bowlby 1973 nonetheless argued that, as a working model, the IWM remained capable of revision in the face of significant and model-disconfirming events and experiences and thus represented a context-sensitive schema.

## Measurement Traditions and Controversies in the Attachment Literature

### Measurement Traditions

Inquiry into the nature of attachment has been vigorously pursued by scholars in developmental psychology and social psychology, resulting early on in independent lines of inquiry that reflected the distinct investigatory goals, core research questions,

and measurement traditions embedded within these academic disciplines. For instance, developmental psychologists largely sought to clarify the normative processes underlying attachment organization as well as its intergenerational transmission and continuity. Their early efforts thus focused significant attention on attachment dynamics in mother–infant dyads and relied upon careful observational methods (cf. Ainsworth et al.'s, 1978, Strange Situation studies) to detect reliable patterns in the child's proximity-seeking behaviors for classifying these children into one of three attachment style prototypes (i.e., secure, anxious–ambivalent, avoidant). Later on, spurred by preliminary inquiries into the experiential backgrounds of the mother participants in Strange Situation studies, other developmental psychologists directed more attention to the nature of adult attachment. This lead to the creation and progressive refinement of a semistructured interview procedure (the Adult Attachment Interview or AAI; George, Kaplan, & Main, 1985) and reliable coding systems for assessing variability in attachment organization based upon the discourse quality of adults' transcribed responses to a set of standard questions exploring the nature of their early experiences with parents and other caregivers. Established AAI coding systems not only permitted classifying adults into one of several prototype categories (i.e., secure–autonomous, dismissing, preoccupied, and unresolved–disorganized) but also included continuously indexed rating scales for assessing the degree to which their responses demonstrated narrative coherence as well as propensities to experience either the chronic (hyper)activation or deactivation the attachment system (see Bakermans-Kranenburg & van IJzendoorn, 2009, and Hesse, 2008, for more comprehensive discussions). Thus, research initiatives within the developmental tradition have favored use of observational and interview-based assessments for illuminating underlying patterns or themes in attachment behavior (i.e., states of mind) that, while not necessarily linked to a specific attachment figure, are nonetheless associated with capacities for adult caregiving (Allen, 2008).

By contrast, attachment research that emerged within the social psychological tradition focused comparatively less attention on early childhood attachment and on the normative development of attachment, preferring instead to assess and explore individual differences in attachment characteristics within adolescent and adult samples. Moreover, research within this tradition, while drawing either directly or indirectly upon attachment theory constructs and assumptions, has favored use of self-report measures variously designed to assess cognitive–affective features of participants' relational experiences and expectations of parents, close peers, and romantic partners. For example, Hazan and Shaver (1987) created a categorical self-report measure wherein respondents could indicate which of three paragraphs, respectively describing adult versions of Ainsworth et al.'s (1978) infant attachment styles (i.e., secure, anxious, avoidant) best described their interpersonal orientations to their romantic partners. Somewhat later, Bartholomew and Horowitz (1991) presented evidence that Hazan and Shaver's avoidant attachment style could be further differentiated into dismissing avoidant and fearful avoidant categories. These prototype descriptions, in turn, were subsequently decomposed into more specific item statements to create and validate continuously scaled measures of adult attachment (Collins & Read, 1990; Griffin & Bartholomew, 1994; Simpson, 1990), thus permitting factor analytic study of scores on these and other self-report measures of attachment within adolescent and adult populations (Brennan, Clark, & Shaver, 1998). The latter investigation, sampling over 1,000 subjects and involving some 60 self-report measures of adolescent and adult attachment, yielded evidence that two orthogonal dimensions (i.e., anxiety, or fear of rejection and abandonment, and avoidance, or discomfort with interpersonal closeness and intimacy) appeared to underlie the nature of adult attachment organization and that Bartholomew and Horowitz's four adult attachment styles logically mapped onto the two-dimensional space represented by these factors.

It is important to note, however, that although social psychological studies of attachment to parents have similarly favored use of continuously scaled self-report measures such as the IPPA, the PAQ, and the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979), these investigations have not typically sought to transform their subscale scores into distinct parent–adolescent attachment styles or prototypes (although see Vivona, 2000, for an exception) or to even conceptually link them to anxiety and avoidance dimensions of adult attachment identified by Brennan et al. (1998)[1] but have instead focused on assessing the degree to which adolescents and young adults characterized their relational experiences with parents in terms of trust versus mistrust, caring versus neglect, support versus control, and open versus conflicted communication patterns. Nevertheless, in line with Bowlby's (1969) core theoretical assumptions, variability in these continuous scores is meaningfully associated with the overall quality of attachment security in parent–adolescent attachment relationships (Kenny, 1987), a point we later return to and elaborate on.

## Controversies

Perhaps not surprisingly, the concurrent evolution of attachment research within different academic traditions favoring distinct measurement approaches to attachment-related inquiry within different age groups and developmental contexts has led to some controversies and debates regarding inconsistent findings, as well as to more recent rapprochement-related commentary within this literature (Roisman, 2009). For example, studies comparing interview and self-report methods of classifying adults into distinct attachment style categories have yielded, at best, only weakly correspondent findings, prompting some scholars to question whether these methods were measuring a common construct and others to claim that, because of their less transparent assessment strategies, interview-based methods tapped the more implicit nature of adult attachment and were thus superior to self-report methods that require conscious self-appraisals (see review by Mikulincer & Shaver, 2007). However, others have noted that, despite their classification inconsistencies, attachment characteristics assessed by interview-based and self-report methods have been frequently related in similar (and theoretically consistent) ways to a number of outcome variables and that studies using similar methods have yielded correspondent findings (Bartholomew & Shaver, 1998).

Other debates have prompted inquiry as to whether adults possess a singular (i.e., generalized) model or multiple, relationship-specific models. On this issue, Collins and Read (1994) proposed

[1] The IPPA subscales were part of their factor analytic study.

that both types of adult attachment models exist and are hierarchically organized (with relationship-specific models nested below general models) and that relationship-specific measures explain some unique variability in attachment-related outcomes. These arguments have subsequently received empirical support (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; Klohnen, Weller, Luo, & Choe, 2005; Overall, Fletcher, & Friesen, 2003).

Taken together, the above controversies and findings have led others to conclude that each measurement tradition offers potentially complementary perspectives on how internalized models of attachment relationships shape attachment behavior through distinct yet "equally valid streams of influence" (Collins, Guichard, Ford, & Feeney, 2004, p. 209). In line with this conclusion, we return now to our decision to limit our meta-analysis to studies using self-report measures of parent–adolescent attachment. We contend that, because attachment dynamics are likely to vary somewhat within different age groups, relationships, and developmental periods, closer study of outcome-related effect sizes (ESs) obtained by investigations using similar assessment methods (e.g., self-report) and focusing on how individuals within a particular developmental context (e.g., college students) describe their experiences within particular attachment relationships (e.g., parents) are clearly warranted.

With this objective in mind, we hypothesized that, within college populations, self-reported experiences of parental warmth and caring indicate that parental relationships are competently serving safe haven functions and that experiences of open communication and high levels of autonomy-related encouragement from parents indicate that these relationships are additionally serving important secure base functions. In line with theory, we reasoned that both functions should contribute to college students' overall sense of attachment security and thus be conceptually related (negatively) to the anxiety and avoidance dimensions identified within the broader literature on adult attachment. As such, we conjectured that indicators of parental attachment security should be positively and comparably related to multiple indicators of college students' adaptational competence in dealing with the demands of their particular adjustment context.

## The College Years: Emerging Adulthood as a Strange Situation

Currently in the United States, approximately two thirds of students who complete their high school education go on to college. However, of this number, about 25% drop out after their first year, and only slightly more than half of those attending 4-year institutions (58.4%) complete their baccalaureate degrees within 6 years of their first enrollment (National Center for Educational Statistics, 2008). These statistics alone suggest the presence of considerable variability in adjustment outcomes during the college years. Furthermore, the pursuit of a college degree likely ushers in a critical developmental period often marked by students' initial physical relocation away from the parental home and accompanied by increased legal and social freedoms (e.g., the right to purchase tobacco products, gain easier access to alcohol, obtain bank credit cards, and select among various academic choice options), diminished parental oversight and supervision, exploration of one's sexuality and development of romantic bonds that may supersede parental connections, exposure to new peer communities and new academic and financial responsibilities, and heightened contextual demands for self-discipline and autonomous functioning.

Referring to Ainsworth et al.'s (1978) paradigmatic studies of infant attachment security, Kenny (1987) proposed that

> According to Ainsworth et al.'s model (1978), the securely attached child separates readily from the caregiver when separation is voluntary and when stress is low. When stress is high, the child actively seeks out and maintains contact with the attachment figure until comforted. For the securely attached adolescent, leaving home for college is likely to be perceived as an opportunity for environmental exploration and mastery. If parents remain important as a secure base, the college student would continue to seek them out in situations of stress and would view them as still available as a source of support when needed in a way that does not threaten but supports the development of autonomy. (Kenny, 1987, pp. 18–19)

More recently, Arnett (2004) argued that *emerging adulthood,* defined as the years between the late teens and the late 20s, represents a dynamic and uncertain life period for individuals in postindustrial societies, distinct from the characteristic features of either late adolescence or young adulthood. Emerging adults exhibit considerably greater demographic, educational, and lifestyle diversity relative to late adolescents and are more fully immersed in intense identity-related explorations concerning work, education, sex, and intimate relationships prior to establishing financial self-sufficiency and making other firm commitments to independent living that typically signal the adaptive entry into young adulthood (National Opinion Research Center, 2003). According to Arnett,

> Emerging adults have become more independent of their parents and most have left home, but they have not yet entered the stable, enduring commitments typical of adult life, such as a long-term job, marriage, and parenthood. During this interval of years, when they are neither beholden to their parents nor committed to a web of adult roles, they have an exceptional opportunity to try out different ways of living and different options for love and work. (Arnett, 2004, p. 8)

The above perspectives suggest that the confluence of multiple contextual and developmental pressures during the college years creates a potent experiential milieu of demands, distractions, possibilities, and temptations—one that should test college students' capacities for self-reflection, affect regulation, social support seeking, relationship building, cultural tolerance, and adaptive life planning and decision making. Clearly, the outcomes of these adjustment processes are not inconsequential, as students' success or difficulty in addressing these life challenges may have far-reaching impacts on their emotional, social, career, and civic development. As such, we contend that the college years may present an especially meaningful venue for assessing how the security-related features of students' attachment bonds with their parents contribute to these important adjustment processes and outcomes.

## Goals and Hypotheses of the Current Meta-Analysis

The overarching goal of the current meta-analysis was to integrate findings from studies that examined links between student reports of their attachment relationships with their parents and multiple indicators of their adjustment to college life and their developmental progress with tasks associated with emerging adult-

hood. As of this writing, this line of research includes over 130 published or unpublished studies that focus on college students, include a self-report measure of parent–adolescent attachment, and assess one or more features of adjustment and/or developmental outcomes (our specific criteria regarding inclusion of studies in the current meta-analysis are more fully described below).

Beyond assessing the overall strength of the relationship between attachment and college adjustment, we examined a number of demographic and methodological variables that, based on attachment theory, we hypothesized may moderate the attachment–adjustment link. With regard to demographics, we examined first the moderating effect of gender on attachment outcomes. On the basis of attachment theory and notions of differential socialization, a number of theorists have suggested that adolescent males and females face somewhat different developmental challenges during adolescence, with females struggling to establish autonomy within close-knit familial relations and males trying to avoid a sense of isolation under the pressures to conform to societal expectations for independent functioning (Chodorow, 1991; Josselson, 1987). Given these different pressures, an ongoing secure attachment relationship may be particularly beneficial to female adjustment outcomes within domains of self-oriented competence (such as academic competence and self-assertiveness), whereas it may be particularly important for male adjustment in domains of relational competence, such as interpersonal competence and lack of externalizing behavior problems. In the current meta-analysis, we examined these intriguing gender possibilities by considering the moderating effect of student gender and parent gender across multiple dimensions of adjustment outcomes.

Second, based on Kenny's (1987) suggestion that the college environment represents a kind of Strange Situation, we speculated that a secure parental attachment relationship will be more closely related to adjustment outcomes for students who live away from their parents while at college and thus more likely to experience homesickness or safe haven needs than for students who live with their parents during the college years. In support of this idea, Larose and Boivin (1998) showed that residential students experience greater loneliness during the college transition than do students still living at home. In a more exploratory way, we also examined a number of other demographic variables, such as ethnicity, year in school, and family configuration, to assess the applicability and generalizability of the attachment–adjustment link to a wide range of college students.

We also examined a number of methodological moderators of the attachment–adjustment relationship in college students. First, we focused on the possibility that the attachment–adjustment link may be moderated by the type of parental attachment measure used in the study. Since 1987 (the year in which the PAQ and the IPPA were published), the vast majority of studies in this field have used the PAQ, the IPPA, or the PBI to assess parental attachment. Although these instruments share a similar conceptualization of the parent–adolescent attachment relationship (emphasizing, as mentioned above, the safe haven and secure base features of the parent–adolescent attachment relationship) and all possess excellent psychometric properties (internal consistency [Cronbach's alpha] estimates range from .75 to .95 for each subscale of each instrument), they differ somewhat in their ways of measuring these attachment features and in their instructions to the respondent. First, although all three instruments include comparable subscales to assess safe haven concerns (Care subscale of the PBI, Trust subscale of the IPPA, and Affective Quality of the Relationship subscale of the PAQ), secure base features are assessed somewhat differently across the three instruments, with the PBI (Overprotection subscale) and the PAQ (Parental Fostering of Autonomy subscale) emphasizing autonomy encouragement as an indicator of a secure base relationship and the IPPA (Communication subscale) highlighting open communication as fostering secure base behavior. Second, while the PBI instructs students to retrospectively report on their relationships with their parents while growing up (i.e., during their first 16 years of life), the IPPA and PAQ ask students to report on the current parent–adolescent attachment relationship. Because these three instruments have frequently been used to assess the parent–student attachment relationship during the late adolescent years, it seemed prudent to examine whether these differing assessment strategies yielded unique effects on adjustment dimensions. Indeed, Benson et al.'s (2006) meta-analysis found that four of 13 measures of parental attachment (including the IPPA) were more strongly associated with social competence and relationship quality than were the remaining measures (which unfortunately were not fully specified in their study).

Second, we examined whether the type of adjustment domains focused on in the study moderated the relationship between attachment and outcome. This is a particularly important issue to examine because some researchers argue that attachment should be associated with a narrow range of developmental outcomes, primarily peer competence and intimate relationship satisfaction (Berlin et al., 2008; Schneider et al., 2001), whereas others suggest that a history of secure attachment provides the cognitive template for a healthy sense of self as well as positive expectations from others and thus may be linked to a broader range of competencies in young adult populations (Lopez & Brennan, 2000; Sroufe, Egeland, Carlson, & Collins, 2005). Despite the fact that research on parental attachment and college adjustment has examined a wide variety of outcomes and developmental advances, including academic achievement, social competence, self-worth, affective states (depression, anxiety, anger, shame, etc.), symptomatic difficulties (eating disorders, substance abuse, delinquent behavior, sexual promiscuity, etc.), ego-identity development, career identity, gender identity, and separation and individuation from parents, previous meta-analyses limited their scope to examining the effects of parental attachment on relational competencies in adolescents. To provide a more comprehensive and sensitive examination of the effects of attachment, we devised a coding system that organizes the broad range of dependent measures into five outcome megadomains (the development and validation of this coding system are more fully detailed below).

Finally, we sought to determine whether the attachment–adjustment link was moderated by the varying methodological quality of studies included in this area of research. Specifically, we examined a number of indicators of methodological quality that were available for coding from the original studies, including publication status of the study (journal publication vs. unpublished dissertation), reliability of the predictor and outcome variables, study design (cross-sectional vs. longitudinal), and type of university at which the study was conducted.

## Method

### Retrieval of Studies

We conducted computerized searches of PsycINFO, Medline, ERIC (Education Resources Information Center), and Dissertation Abstracts to identify studies for possible inclusion in our meta-analysis. Key search terms used were *attachment behavior, parental attachment, parent child relations, college students,* and *college adjustment.* We set parameters to limit studies to those with adolescents or young adult participants (age range: 18–29 years) that were published through 2009. Our initial search efforts yielded over 800 citations, including many studies of attachment style or adult romantic attachment that did not focus specifically on attachment to parents. Ultimately, we retained 163 published reports and 74 unpublished dissertations that appeared to relate to parental attachment and college adjustment. To supplement these electronic searches, we also examined the reference sections of many studies on parental attachment and college adjustment to identify additional relevant studies and contacted colleagues who have done significant research in this area (David Blustein, Maureen Kenny, Frederick Lopez, and Kenneth Rice) to request any additional published or unpublished studies they might be familiar with or have conducted on parental attachment and college adjustment (three additional unpublished conference papers were retrieved this way). A complete listing of all included studies is provided in Table 1.

### Criteria for Inclusion

The search procedures identified above yielded a total of 240 published studies or dissertations for possible inclusion in our meta-analysis. However, a number of these studies turned out to be inappropriate or unusable. For a study to be included in the present analyses, it had to meet the following criteria:

1. The sample consisted of students in an undergraduate institution, either a 2-year community college or 4-year university (20 published studies examined parental attachment and adjustment in young adult individuals who were not college students).

2. The study included a clearly identifiable measure of attachment to parents that was linked to at least one independent measure of college adjustment (18 published studies and 10 dissertations were eliminated because of this criterion; we also eliminated 12 published studies that examined the link between attachment representations on the AAI [George et al., 1985] and college adjustment. Although the AAI does ask about attachment experiences with parents while growing up, the scoring of the instrument focuses specifically on states of mind with regard to generalized attachment representations [e.g., secure vs. dismissing vs. preoccupied] and as such is more similar to adult attachment representation scales [such as the Experience in Close Relationships Questionnaire; Brennan et al., 1998] than it is to a measure of parental attachment relationships).

3. The report was written in English, and we were able to retrieve it through our library's system or through interlibrary loan (five published reports were not included because they were not written in English, and 15 dissertations were not included because we could not retrieve them through our library system or through interlibrary loan).

4. There was no published version of the dissertation (six dissertations were excluded in favor of a published version of the study that was found in the database).

5. The study included usable or adequate statistical analyses from which to calculate an ES (11 published studies and three dissertations were eliminated because of this criterion).

In addition, one study (Ying, Lee, & Tsai, 2007a) was eliminated because it reported findings from the exact same sample as a previous study. Regarding Criterion 5, the three dissertations included only qualitative data, whereas the 11 published reports utilized multivariate analytic procedures (e.g., canonical correlation or structural equation modeling) without including a table of correlations. Although the authors of these published reports were contacted and asked to provide available correlations, we received only one response, a table of correlations that we were able to include in the meta-analysis.

Ultimately, 156 studies (113 published reports [108 single-study reports plus five reports that included results of two different studies that were included separately in the meta-analysis; see Table 1 for details], three unpublished conference papers, and 40 dissertations) met all inclusion criteria, with a combined sample of 32,969 students (61.7% female). Table 1 lists published and unpublished studies included in the meta-analysis. As this table demonstrates, the studies were conducted all over the United States and in a number of other countries (e.g., Canada, Greece, Israel, Malaysia, Portugal, and Turkey). Although the studies included an extremely wide range of adjustment measures, they used a relatively narrow range of attachment measures, primarily the IPPA, PAQ, and PBI, along with a few self-created or adapted measures. We detail below our methods for coding each of these studies.

### Coding of Study Features

Coding of the 156 studies proceeded in two steps. In the first step, the following information was recorded for each study as a whole: (a) approximate size of undergraduate institution (community college, 4-year small university with under 5,000 students [S4 according to the Carnegie Foundation for the Advancement of Teaching's, n.d., categorization system;], or 4-year major university with over 10,000 students [Carnegie type L4]; a few studies utilized participants from multiple universities [$k = 12$]; 10 of these 12 studies were excluded from the analyses below examining university size as a moderator of the attachment–adjustment link because the universities within those studies differed substantially in size), (b) location of the university (North, South, Midwest, West coast, or outside the U.S.A.), (c) longitudinal versus cross-sectional design study, (d) internal consistency (alpha) reliability of the parental attachment and college adjustment measures if computed for that study, (e) demographic characteristics of the sample (mean age, ethnic and gender composition, family config-

Table 1
*Sample Size, University Location, Attachment and Outcome Measures, and Overall Effect Sizes for All Studies in the Meta-Analysis*

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| | | | **Published reports** | | | |
| Anderson & Fleming (1986) | 132 | University of Connecticut | Other attachment measure (Intergenerational Intimacy Scale) | College adjustment (College Maladjustment Scale) | 1 | .02 |
| | | | | Ego identity (EIS) | 5 | |
| Armsden & Greenberg (1987) | 86 | University of Washington | IPPA | Depression, anger, and alienation (Affective Status Index) | 3 | .49 |
| | | | | Self-esteem (TSCS) | 4 | |
| Aspelmeier, Elliott, & Smith (2007) | 324 | Undeterminable | IPPA | History of childhood trauma (Sexual Experiences Questionnaire) | 99 | .30 |
| | | | | Trauma symptoms (Trauma Symptom Inventory) | 3 | |
| Barrett & Holmes (2001) | 161 | Griffith University (Australia) | PBI | Social threat cognitive biases, prosocial behavior, interpersonal problems, anger (Cognitive Interpretation Task) | 2, 3 | .55 |
| Bell, Forthun, & Sun (2000) | 470 | Texas Tech University | IPPA | Social competence and coping skills (OSIQ) | 2, 3 | .35 |
| | | | | Substance abuse (author-developed measure focusing on negative effects of marijuana use) | 3 | |
| | | | | Autonomy (EPSI) | 5 | |
| Benson, Harris, & Rogers (1992) | 268 | Undeterminable | IPPA | Identity achievement, foreclosure, moratorium, and diffusion (EOMEIS-2) | 5 | .143 |
| Berman, Heiss, & Sperling (1994) | 216 | Multiple institutions on the East Coast | Other attachment measure (Continued Attachment Scale) | Trait affiliation (Personality Research Form), Interpersonal problems (Bell Object Relations Inventory), and loneliness (UCLA Loneliness Scale) | 2 | .047 |
| | | | | Anxiety (STAI), depression (BDI), and anger/aggression (Buss-Durkee Scale of Verbal Aggression) | 3 | |
| Berman & Sperling (1991) | 89 | Fordham University | Other attachment measure (2 self-created scales assessing preoccupation and concern with attachment figure) | Depression (Profile of Mood States) | 3 | .28 |
| Blazina (2001) | 172 | University of Houston | IPPA | Gender-role conflict (GRCS) | 5 | .17 |
| Brack, Gay, & Matheny (1993) | 60 | Undeterminable | IPPA | Structuring, problem solving, self-disclosure, acceptance, social support, physical health, physical fitness, stress monitoring, tension control, self-directedness, and confidence (Coping Resources Inventory for Stress) | 1, 2, 3, 4 | .28 |
| E. Bradford & Lyddon (1993) | 157 | University of Southern Mississippi | IPPA | Relationship satisfaction (DAS) | 2 | .49 |
| | | | | Overall symptoms (Hopkins Symptom Checklist) | 3 | |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Carnelley, Pietromonaco, & Jaffe (1994) | 163 | Undeterminable | Other attachment measure (developed positive experiences index from combining other measures) | Relationship satisfaction, intimacy with romantic partner (measure adapted from Schuster, Kessler, & Aseltine, 1990), constructive conflict resolution (Conflict Style Inventory) | 2 | .34 |
| | | | | Depression (BDI) | 3 | |
| Cavell, Jones, Runyan, Constantin-Page, & Velasquez (1993) | 171 | Texas A&M University | IPPA | Interpersonal problems (IIP) | 2 | .22 |
| | | | | Alcohol use (Adolescent Alcohol Involvement Scale), overall symptoms (SCL-90-R) | 3 | |
| Cheng & Mallinckrodt (2009) | 224 | University of Missouri—Columbia | PBI | Satisfaction with physical appearance (MBSRQ Body Area Satisfaction subscale) | 4 | .27 |
| Cummings-Robeau, Lopez, & Rice (2009) | 217 | Undeterminable | IPPA | Interpersonal problems and anger (IIP Personality Disorders scales) | 2, 3 | .25 |
| DeFranc & Mahalik (2002) | 204 | Boston College | PAQ | Gender-role conflict (GRCS), masculine gender-role stress (MGRSS), conflictual independence from parents (PSI) | 5 | .10 |
| De Jong (1992) | 126 | Boston University | IPPA | Depression (Brief Symptom Index–Depression Scale) | 3 | .20 |
| Diaz, Lizardi, & Rivera (2008) | 119 | Undeterminable | PBI | Depression (Inventory to Diagnose Depression—Lifetime Version) | 3 | .205 |
| Ensign, Scherman, & Clark (1998) | 101 | University of Oklahoma | PAQ | Intimacy with romantic partners (attitudes toward love and intimacy with romantic partner) | 2 | .16 |
| Fass & Tubman (2002) | 357 | Undeterminable | IPPA | Academic competence (SPPCS), GPA (self-reported) | 1 | .30 |
| | | | | Self Esteem (RSES), locus of control (Locus of Control Scale), optimism (Life Orientation Test) | 4 | |
| | | | | Androgyny (BSRI) | 5 | |
| Feeney (2002) | 101 | Undeterminable | PBI | Social support (PSOC) | 2 | .14 |
| Felsman & Blustein (1999) | 147 | State University of New York, Albany | IPPA | Career exploration (CES), commitment to career choices (VECS) | 5 | .07 |
| Fischer & Good (1998) | 195 | Undeterminable | PAQ and IPPA | Gender-role conflict (GRCS), masculine gender-role stress (MGRSS) | 5 | .29 |
| | | | | Conflictual independence (PSI) | 5 | |
| Forbes & Adams-Curtis (2000) | 395 | Millikin University | IPPA | Gender-role identity (Personal Attributes Questionnaire) | 5 | .20 |
| Frey, Beesley, & Miller (2006) | 246 | University of Oklahoma | PAQ | Relationship satisfaction (Relational Health Indices) | 2 | .34 |
| | | | | Overall symptoms (Outcome Questionnaire 45) | 3 | |
| Fukunishi et al. (1997)[d] | | | | | | |
| Study 1 | 232 | Undeterminable university in Japan | PBI | Alexithymia (Toronto Alexithymia Scale) | 3 | .168 |
| Study 2 | 156 | Undeterminable | PBI | Alexithymia | 3 | .185 |
| Gnaulati & Heine (1997) | 207 | Undeterminable | PBI | Religiosity (two items from the SITA) | 99 | .00 |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Goldberg & O'Brien (2005) | 115 | University of Maryland (College Park) | IPPA | Psychological distress (College Adjustment Scales) | 3 | .51 |
| | | | | Attitudinal, emotional, functional, and conflictual independence (PSI) | 5 | |
| | | | | Jewish identity (Jewish Identity Questionnaire) | 99 | |
| Granqvist & Hagekull (1999) | 156 | Uppsala University (Sweden) | Other attachment measure (parent prototypes adapted from Hazen & Shaver, 1983, measure) | Religiosity (emotion-based religiosity scale developed by authors) | 99 | .05 |
| Gratz, Conrad, & Roemer (2002) | 133 | University of Massachusetts at Amherst | PAQ | Deliberate self-harm (Deliberate Self-Harm Inventory) | 3 | .215 |
| Greenberger & McLaughlin (1998) | 157 | University of California, Irvine | Other attachment measure (prototype descriptions of attachment to parent derived from Collins & Read, 1990) | Problem solving, social support, instrumental support (COPE Inventory) | 1, 2, 3 | .20 |
| | | | | Healthy attributions (Attributional Style Questionnaire) | 4 | |
| Gutzwiller, Oliver, & Katz (2003) | 306 | Undeterminable | PBI | Eating disorders (Questionnaire for Eating Disorder Diagnoses) | 3 | .17 |
| Hagerty, Williams, & Oe (2002) | 350 | Undeterminable | PBI | Social support (Sense of Belonging Instrument) | 2 | .18 |
| Haigler, Day, & Marshall (1995) | 218 | Collin County Community College | IPPA | Gender-role identity (BSRI) | | .23 |
| Hannum & Dvorak (2004) | 95 | University of Illinois at Urbana–Champaign | PAQ | Social adjustment (SACQ), overall symptoms (BSI) | 2, 3 | .357 |
| Hart & Kenny (1997) | 156 | Boston College | PAQ | Drive for thinness, body dissatisfaction, bulimia, ineffectiveness, and maturity fears (EDI) | 3 | .21 |
| | | | | Importance of physical appearance (Importance of Appearance Scale) | 4 | |
| | | | | Super Woman Scale | 99 | |
| Heiss, Berman, & Sperling (1996) | 216 | Fordham University | Combined attachment measure (factor score combining all PAQ subscales, PBI mother Care subscale, and PBI mother and father Overprotective subscale) | Loneliness (UCLA Loneliness Scale), interpersonal dependency (Measure of Interpersonal Dependency), and trait affiliation (Personality Research Form) | 2 | .16 |
| | | | | Anxiety (STAI), depression (DEQ) | 3 | |
| Hiester, Nordstrom, & Swenson (2009) | 271 | Misericordia University and Pennsylvania State University, Hazleton | IPPA | Overall symptoms (BSI), self-confidence (SPPCS) | 3, 4 | .383 |
| | | | | Academic, social and personal-emotional adjustment and institutional attachment (SACQ) | 1, 2, 3 | |
| Hinderlie & Kenny (2002) | 186 | Undeterminable | PAQ | Social support (People in My Life Scale) | 2 | .24 |
| | | | | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | |
| Holmbeck & Wandrei (1993) | 440 | Undeterminable | PAQ | Social support (ISEL) | 2 | .28 |
| | | | | Depression (BDI), anxiety (STAI), physical symptoms (Wahler Physical Symptoms Inventory) | 3 | |
| | | | | Self-esteem (RSES) | 4 | |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Huff (2001) | 110 | Westmont College and Biola University | PAQ | Overall college adjustment (combined score from three measures: Social Support Questionnaire, Homecomer Culture Shock Scale, and SACQ) | 1 | .15 |
| Imamoğlu & Imamoğlu (2007) | 168 | Undeterminable (2 universities in Turkey) | Other measure (adapted Relationship Questionnaire to ask about parents) | Trait affiliation (Relatedness subscale of the BID) | 2 | .32 |
| | | | | Personal identity (Individuation subscales of the BID) | 5 | |
| Kalsner & Pistole (2003) | 252 | Undeterminable | PAQ | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .10 |
| Kenny (1987) | 173 | University of Pennsylvania | PAQ | Social competence and assertiveness (Dating and Assertiveness Questionnaire) | 2, 4 | .36 |
| Kenny & Donaldson (1991) | 226 | Boston College | PAQ | Social competence (Texas Social Behavior Inventory) | 2 | .16 |
| | | | | Overall symptoms (HSCL) | 3 | |
| Kenny, Griffiths, & Grossman (2005) | 285 | Undeterminable | PAQ | Social competence, self-confidence, and career self-efficacy (OSIQ) | 2, 4, 5 | .14 |
| | | | | Ethnic identity (MEIM) | 99 | |
| Kenny & Hart (1992)[c] | 162 | Boston College | PAQ | Drive for thinness, body dissatisfaction, bulimia, ineffectiveness, and maturity fears (EDI) | 3 | .07 |
| Kenny & Perez (1996) | 172 | Boston College | PAQ | Interpersonal sensitivity, depression, and anxiety (HSCL) | 2, 3 | .16 |
| Kerns & Stevens (1996) | 112 | Kent State University | Other attachment measure (modified Adult Attachment Scale to ask about mother and father) | Loneliness (UCLA Loneliness Scale), quantity and quality of social interactions (used daily log methodology) | 2 | .08 |
| | | | | Anger, anxiety, ego resiliency, and ego undercontrol (peer-rated reports using methodology of Kobak & Sceery, 1988) | 3, 5 | |
| Ketterson & Blustein (1997) | 137 | University at Albany, State University of New York | IPPA | Career exploration (CES) | 5 | .04 |
| Laible (2007) | 117 | Undeterminable | IPPA | Empathy (IRQ), prosocial behavior (Prosocial Tendencies Measure) | 2 | .21 |
| | | | | Expression of positive and negative affect (Self-Expressiveness Questionnaire), awareness of moods (Toronto Alexithymia Scale), anger/irritability (WAI) | 3 | |
| Laible, Carlo, & Roesch (2004) | 246 | Southern Methodist University | IPPA | Empathy (IRQ), prosocial behavior (Index of Prosocial Responding) | 2 | .21 |
| | | | | Anger (WAI) | 3 | |
| | | | | Self-esteem (RSES) | 4 | |
| Lapsley, Rice, & Fitzgerald (1990) | 253 | University of Notre Dame | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .25 |
| | | | | Social and personal identity (Aspects of Identity Questionnaire) | 2, 5 | |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Larose & Boivin (1998) | 298 | Laval University (Quebec City, Quebec, Canada) | IPPA | Social support (ISEL), loneliness (UCLA Loneliness Scale) | 2 | .10 |
| | | | | Anxiety (Interaction Anxiousness Scale) | 3 | |
| Leas & Mellor (2000) | 108 | Deakin University (Melbourne, Australia) | IPPA | Depression (BDI), risky behaviors (Adolescent Risk-Taking Questionnaire), delinquent behaviors (Australian Self-Report Delinquency Scale) | 3 | .17 |
| Lease & Dahlbeck (2009) | 214 | University of Memphis | PAQ | Career self-efficacy (Assessment of Attributions for Career Decision Making and CDMSE) | 5 | .043 |
| Leondari & Kiosseoglou (2000) | 153 | Florina Aristotelion University of Thessalonki (Greece) | IPPA | Conflictual, functional, attitudinal, and emotional independence (PSI) | 5 | .52 |
| Leondari & Kiosseoglou (2002) | 319 | Undeterminable | IPPA | Social self-efficacy (SOC) | 2 | .12 |
| | | | | Expression of positive and negative affect (PANAS) | 3 | |
| | | | | Self-esteem (RSES), locus of control (SOC) | 4 | |
| Lopez (1997) | 142 | University of New Mexico | PBI | Academic competence (adapted from Mastery Learning Scale), school attachment (SACQ), GPA (reported on by the students), student–professor attachment style (scale adapted by authors from the Attachment Style Inventory) | 1 | .01 |
| Lopez, Fuendeling, Thomas, & Sagula (1997) | 253 | Michigan State University | PBI | Coping and stress level (single-item scales developed by authors) | 3 | −.02 |
| | | | | Use of splitting as a defense | 5 | |
| Lopez & Hsu (2002)[d] | | | | | | |
| Study 1 | 127 | Undeterminable | Other measure (P-AASQ) | Overall symptoms (PPI), overall coping (suppressive coping from the Problem-Focused Style of Coping) | 3 | .240 |
| | | | | Use of splitting as a defense | 5 | |
| Study 2 | 207 | Undeterminable | Other measure (P-AASQ) | Overall symptoms (PPI), use of splitting as a defense | 3, 5 | .190 |
| Love (2008) | 167 | Undeterminable | PBI | Depression and anxiety (CPAS) | 3 | .16 |
| Love & Murdock (2004) | 173 | Undeterminable | PBI | Satisfaction with life (CPAS) | 3 | .09 |
| Love et al. (2009) | 147 | Multiple institutions: historically Black colleges and universities | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .140 |
| Lutwak & Ferrari (1997) | 404 | Undeterminable | PBI | Social avoidance (Social Avoidance Scale), fear of negative social evaluation (Fear of Negative Evaluation Scale) | 2 | .13 |
| | | | | Shame (adapted shame scale) | 3 | |
| Mallinckrodt (1992) | 253 | Undeterminable | PBI | Social self-efficacy (SES), social support (SPS) | 2 | .08 |
| | | | | Locus of control (Multidimensional-Multiattributional Causality Scale), general self-efficacy (SES) | 4 | |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Mattanah, Hancock, & Brand (2004) | 404 | Towson University | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .30 |
| | | | | Loneliness (UCLA Loneliness Scale) | 2 | |
| | | | | Depression (BDI) | 3 | |
| | | | | Separation anxiety (SITA) | 5 | |
| McCarthy (1998) | 256 | University of Texas at Austin | IPPA | Awareness of mood and emotion regulation capacity (NMRS) | 3 | .34 |
| McCarthy, Lambert, & Moller (2006) | 390 | University of Texas at Austin | PAQ and IPPA | Social support, acceptance, stress monitoring, and self-confidence (Personal Resources Inventory) | 2, 3, 4 | .22 |
| | | | | Loneliness (UCLA Loneliness Scale) | 2 | |
| | | | | Depression (BHS), expression of negative affect (PANAS), management of negative moods (NMRS), overall symptoms (HSCL) | 3 | |
| McCarthy, Moller, & Fouladi (2001) | 200 | Undeterminable | PBI | Awareness of mood and mood regulation (NMRS, TMMS), worry (White Bear Suppression Index), stress level (PSS) | 3 | .27 |
| McCormick & Kennedy (1994) | 218 | Georgia Southern University | MFP | Self-esteem (CSEI) | 4 | .40 |
| McCormick & Kennedy (2000) | 236 | Undeterminable | MFP | Self-esteem (CSEI) | 4 | .388 |
| McCurdy (1996) | 90 | Undeterminable | PAQ | Self-esteem (RSES) | 4 | .137 |
| McCutcheon, Scott, Aruguete, & Parker (2006) | 299 | Undeterminable | PBI | Celebrity stalking (author-created scale of obsessive and stalking behavior) | 3 | .20 |
| McDonald, Beck, Allison, & Norsworthy (2005) | 101 | Abilene Christian University | PBI and PAQ | Attachment to God (adapted from Brennan, Clark, & Shaver's, 1998, ECR to ask about attachment to God) | 99 | .19 |
| Miller & Hoicowitz (2004) | 118 | Undeterminable | Other measure (adapted ECR for ratings of Parents) | Quality of social interactions and intimacy with romantic partners (author-developed single-item rating of quality of peer and romantic relationships) | 2 | .17 |
| Moller, Fouladi, McCarthy, & Hatch (2003) | 261 | University of Texas at Austin | IPPA | Social support (PSOC, Social Connectedness Scale), loneliness (UCLA Loneliness Scale) | 2 | .29 |
| | | | | Overall symptoms (HSCL), stress level (PSS), depression (BHS) | 3 | |
| Mothersead, Kivlighan, & Wynkoop (1998) | 152 | Undeterminable | IPPA and PAQ | Interpersonal problems (IIP), fear of negative social evaluation (Risk in Intimacy Inventory) | 2 | .32 |
| | | | | Locus of control (Interpersonal Control Scale) | 4 | |
| Noppe & Noppe (1997) | 33 | University of Wisconsin—Green Bay | IPPA | Risky behaviors (scale developed by author including items on drunk driving, unprotected sex, and smoking) | 3 | .29 |
| O'Brien, Friedman, Tipton, & Linn (2000) | 207 | Undeterminable | IPPA | Career search self-efficacy (CDMSE), career aspirations (Career Aspiration Scale) | 5 | .20 |
| | | | | Functional, attitudinal, and emotional independence from parents (PSI) | 5 | |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Perry, Silvera, Neilands, Rosenvinge, & Hanssen (2008)[d] | | | | | | |
| Study 1 | 166 | Northern Kentucky University | PBI | Eating disorders (EDS-5) | 3 | .22 |
| Study 2 | 233 | Bodo University (Norway) | PBI | Eating disorders (EDS-5) | 3 | .33 |
| Quintana & Lapsley (1987) | 101 | Undeterminable | IPPA | Ego identity (EIS, Eriksonian measure of ego identity) | 5 | .26 |
| Rice & Cummins (1996) | 140 | Purdue University | PBI | Social self-efficacy (SES) | 2 | .19 |
| | | | | Self-esteem (RSES) | 4 | |
| Rice, Cunningham, & Young (1997) | 630 | Northeastern Louisiana University | IPPA | Social self-efficacy (SES), social adjustment (SACQ) | 2 | .22 |
| | | | | Personal-emotional adjustment (SACQ), depression (Kandel Depression Scale) | 3 | |
| Rice, FitzGerald, Whaley, & Gibbs (1995)[d] | | | | | | |
| Study 1 | 223 | Undeterminable | IPPA | Satisfaction with college life, social competence, and personal efficacy (CIAA) | 1, 2, 4 | .35 |
| | | | | Conflictual, attitudinal, emotional, and functional independence (PSI), separation anxiety (SITA) | 5 | |
| | | | | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .35 |
| Study 2 | 130 | Undeterminable | IPPA | Satisfaction with college life, social competence, and personal efficacy (CIAA) | 1, 2, 4 | .25 |
| | | | | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | |
| | | | | Conflictual, attitudinal, emotional, and functional independence (PSI), separation anxiety (SITA) | 5 | |
| Rice & Whaley (1994) | 131 | Purdue University | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .28 |
| Richman & Flaherty (1987) | | University of Illinois at Chicago | PBI | Social support (Social Support Network Inventory) | 2 | .07 |
| | | | | Depression (CES-D) | 3 | |
| | | | | Locus of control and self-esteem (RSES) | 4 | |
| Ryan, Solberg, & Brown (1996) | 220 | Undeterminable | IPPA | Career self-efficacy (Career Search Self-Efficacy Scale) | 5 | .33 |
| Schultheiss & Blustein (1994) | 139 | University at Albany, State University of New York | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .32 |
| | | | | Establishing and clarifying purpose (SDTLI) | 5 | |
| | | | | Conflictual, attitudinal, and emotional independence (PSI) | 5 | |
| Schwartz & Buboltz (2004) | 368 | Louisiana Tech University | IPPA | Conflictual, attitudinal, emotional, and functional independence (PSI) | 5 | −.11 |
| A. B. Scott & Mallinckrodt (2005) | 41 | Multiple, undeterminable institutions | PBI | Self-efficacy (Science Self-Efficacy subscale of the Self-Efficacy for Technical/Scientific Fields) | 4 | .158 |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| D. J. Scott & Church (2001) | 287 | Washington State University | PAQ | Career exploration (TTFS), commitment to career choices (VECS) | 5 | .341 |
| Sideridis & Kafetsios (2008) | 58 | University of Crete (Greece) | PBI | Worry (Fear of Failure Scale) | 3 | .24 |
| Sim & Ng (2007) | 114 | Unspecified university in Malaysia | PAQ | Academic adjustment (author-created scale) | 1 | .19 |
| | | | | Social adjustment (author-created scale) | 2 | |
| | | | | Expression of positive affect (PANAS), expression of negative affect (PANAS), stress level (Stress Appraisal Measure) | 3 | |
| Soucy & Larose (2000) | 158 | 3 unspecified universities in Quebec, Canada | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .08 |
| | | | | GPA (objectively recorded) | 1 | |
| Strahan (1995) | 249 | Avondale College (Australia) | PBI | Depression (CES-D) | 3 | .230 |
| Styron & Janoff-Bulman (1997) | 879 | University of Massachusetts at Amherst | Other attachment measure (attachment to parent prototypes adapted from Hazan & Shaver's, 1987, measure of adult romantic attachment) | Depression (BDI) | 3 | .44 |
| | | | | History of childhood trauma (scale developed by author measures history of verbal, physical, and sexual abuse) | 99 | |
| Vivona (2000)[d] | | | | | | |
| Study 1 | 159 | The College of New Jersey | IPPA | Worry (Penn State Worry Scale), anxiety (BAS), depression (BDI) | 3 | .26 |
| Study 2 | 170 | The College of New Jersey | IPPA | Worry (Worry Domains Questionnaire), anxiety (BAS), depression (BDI) | 3 | .25 |
| | | | | Academic, social, and personal adjustment (SACQ) | 1, 2, 3 | |
| | | | | Autonomy (Autonomy Scale) | 5 | |
| Walsh (1992) | 480 | Boise State University | Other attachment measure (6-item self-created scale of parent–child attachment) | Involvement in illegal drugs (coded as frequency of use of any drug), number of sexual partners | 3 | .33 |
| Walsh (1995) | 480 | Boise State University | Other attachment measure (same as above) | Number of sexual partners, involvement in illegal drugs (coded same as Walsh, 1992) | 3 | .17 |
| | | | | Satisfaction with physical appearance (ratings of eight body parts) | 4 | |
| | | | | Masculinity and femininity (BSRI) | 5 | |
| | | | | Religiosity (author-created instrument focusing on behavioral and attitudinal items) | 99 | |
| Walsh (1999) | 192 | Boise State University | Other attachment measure (same as above) | Reading of pornography (author-developed scale) | 3 | .28 |
| Whisman & McGarvey (1995) | 104 | Undeterminable | Other attachment measure (INVAA) | Performance evaluation and interpersonal dependency (Dysfunctional Attitude Scale) | 1, 2 | .160 |
| | | | | Depression (BDI), healthy attribution style (Expanded Attributional Style Questionnaire) | 3, 4 | |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Williams & Schill (1993) | 158 | Undeterminable | Other attachment measure (adapted Hazan & Shaver's, 1987, measure to ask about parents) | Self-defeating personality (Self-Defeating Personality Scale) | 3 | .200 |
| Wiseman, Mayseless, & Sharabany (2006) | 146 | University of Haifa (Israel) | PBI | Interpersonal dependency, self-efficacy, self-criticism (DEQ) | 2, 4, 5 | .22 |
| | | | | Loneliness (UCLA Loneliness Scale) | 2 | |
| Yazedjian & Toews (2006) | 190 | Texas State University, San Marcos | PAQ | Satisfaction with college life (SACQ total score) | 1 | .14 |
| | | | | Self-esteem (RSES) | 4 | |
| | | | | Acculturation (Short Acculturation Scale for Hispanics), positive ethnic identity (Ethnic Identity Scale) | 99 | |
| Ying & Han (2007) | 188 | University of California, Berkeley; San Jose State University; and California State University Fresno | PBI | Intergenerational congruence (ICIF-CS) | 99 | .61 |
| Ying, Lee, & Tsai (2004) | 238 | University of California, Berkeley | IPPA | Intergenerational congruence (ICIF-CS) | 99 | .66 |
| Ying, Lee, & Tsai (2007b) | 353 | University of California, Berkeley | IPPA | Depression (CES-D) | 3 | .23 |
| | | | | Sense of life coherence (Sense of Coherence Questionnaire) | 5 | |
| **Unpublished studies (dissertations or conference papers)** | | | | | | |
| Bagheri (2005) | 245 | Undeterminable | IPPA | Interpersonal dependency (Spann-Fischer Codependency Scale) | 2 | .21 |
| | | | | Self-esteem (RSES) | 4 | |
| | | | | Acculturation (Acculturation Rating Scale for Mexican Americans) | 99 | |
| Blaustein (1999) | 136 | Fordham University | IPPA | Social support (PSOC) | 2 | .26 |
| | | | | Depression (BDI) | 3 | |
| | | | | Self-esteem (CSEI) | 4 | |
| Bowman (2000) | 144 | University of North Colorado | PBI | Drive for thinness, body dissatisfaction, bulimia, ineffectiveness, and maturity fears (EDI) | 3 | .17 |
| J. W. Bradford (2007) | 238 | University of North Texas | PBI | Stress level (PSOC, Inventory of College Students' Recent Life Experiences), expression of positive and negative affect (PANAS), eating disorders (Eating Attitudes Test), bulimia (BULIT-R) | 3 | .16 |
| | | | | Satisfaction with physical appearance (Body-Image Measure, MBSRQ) | 4 | |
| Cabral & Matos (2007) | 387 | University of Porto (Portugal) | Other attachment measure (used the FMAQ, which assesses quality of emotional bond, exploration, and separation anxiety in parent–student relations) | Coping (COPE Inventory); academic, personal-emotional, and social adjustment (SACQ) | 3 | .12 |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Cabral & Matos (2008) | 218 | University of Porto (Portugal) | Other attachment measure (FMAQ) | Awareness of moods (TMMS), coping (COPE Inventory), worry (RRS) | 3 | .16 |
| Cabral, Matos, Beyers, & Soenens (2006) | 942 | University of Porto (Portugal) | Other attachment measure (FMAQ) | Awareness of moods (TMMS), coping (COPE Inventory), worry (RRS) | 3 | .15 |
| Clemens (2005) | 275 | University of Georgia | IPPA | Depression, anxiety, substance abuse, personality disorders (Millon Clinical Multiaxial Inventory-III) | 3 | .25 |
| Cook (1995) | 264 | Boston University | PBI | Social support (PSOC) | 2 | .35 |
| | | | | Overall symptoms (SCL-90-R) | 3 | |
| | | | | Self-esteem (RSES) | 4 | |
| Danford (2008) | 244 | University of South Carolina | IPPA | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .49 |
| Dassoff (1993) | 211 | University of Illinois at Chicago | PBI | Loneliness (UCLA Loneliness Scale), social support (Network Orientation Scale) | 2 | .19 |
| Dejong (1997) | 576 | Undeterminable | PAQ | General and social self-efficacy (SES) | 2, 4 | .21 |
| | | | | Ego-identity exploration and commitment (Ego Identity Process Questionnaire) | 5 | |
| Delaney (2002) | 74 | San Joaquin Valley College and Fresno City College | IPPA | Maturity of defenses (Defensive Style Questionnaire) | 5 | .55 |
| Dewitt-Parker (2000) | 137 | Undeterminable | IPPA | Academic and personal-emotional adjustment (SACQ) | 1, 3 | .27 |
| | | | | Acculturation (African-American Acculturation Scale) | 99 | |
| Elk (2000) | 412 | Florida State University | PAQ | Substance abuse (MDMA [Ecstasy] Questionnaire) | 3 | .21 |
| Feinstein-Messinger (2007) | 232 | City University of New York | IPPA | Anxiety (Taylor Manifest Anxiety Scale) | 3 | .13 |
| | | | | Career self-efficacy (CDMSE), career confidence (Career Decision Difficulties Questionnaire) | 5 | |
| Floyd (2004) | 168 | Rider University and Temple University | IPPA | Career self-efficacy (CDMSE) | 5 | .32 |
| Hutto (1998) | 320 | University of South Carolina | PAQ | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .34 |
| | | | | Interpersonal avoidance (Fear of Intimacy Scale) | 2 | |
| | | | | Overall symptoms (SCL-90-R) | 3 | |
| | | | | General self-efficacy (SPPCS) | 4 | |
| S. H. Johnson (1995) | 65 | Multiple campuses including Mills College; University of California, Berkeley; University of Southern California; and California State University, Hayward | IPPA and PAQ | Drive for thinness, body dissatisfaction, bulimia, ineffectiveness, and maturity fears (EDI) | 3 | .28 |
| Just (1999) | 202 | University of Texas at Austin | IPPA | Academic, social, and personal-emotional adjustment (SACQ | 1, 2, 3 | .38 |
| | | | | Social support (PSS) | 2 | |
| | | | | Coping (Adolescent Coping Orientation for Problem Experiences) | 3 | |
| | | | | Ego identity (Extended Objective Measure of Ego-Identity Status-2) | 5 | |
| Kinney (2006) | 179 | Michigan State University | PAQ | Psychological well-being (multiple scales assessing psychological well-being) | 3 | .50 |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Kirton (2000) | 166 | Arizona State University | IPPA | School attachment (PVDDS) | 1 | .05 |
| | | | | General self-efficacy (College Self-Efficacy Inventory) | 4 | |
| Lonergan (2003) | 84 | Undeterminable | IPPA | GPA (objectively recorded) | 1 | −.21 |
| Magnotti (2005) | 104 | Fordham University | IPPA | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .42 |
| | | | | Social support (Life Stressors and Social Resources Inventory) | 2 | |
| | | | | Stress level (PSS) | 3 | |
| | | | | Conflictual independence (PSI) | 5 | |
| Marom-Tal (2007) | 281 | Adelphi University | IPPA | Relationship satisfaction (DAS) | 2 | .18 |
| | | | | Ego identity (EPSI) | 5 | |
| L. K. Mason (2005) | 204 | City College of New York, Fordham University, Iona College, and Lehman College | IPPA and PBI | Depression (BDI), anxiety (STAI) | 3 | .36 |
| | | | | General self-efficacy (SES) | 4 | |
| T. R. Mason (2001) | 120 | University of Maryland (College Park) | PAQ | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .29 |
| Melendez (2005) | 95 | Rutgers University | PAQ | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .23 |
| Perlman (1998) | 210 | Temple University | PAQ | Depression (DEQ) | 3 | .26 |
| | | | | Separation anxiety (SITA) | 5 | |
| Pfeil (2001) | 100 | Rutgers University | PAQ | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .09 |
| Puffer (1999) | 437 | Undeterminable | PAQ | Personal identity (Vocational Identity Scale) | 5 | −.01 |
| | | | | Commitment to career choices (Career Factors Inventory) | 5 | |
| | | | | Conflictual independence (PSI) | 5 | |
| Selby (2001) | 158 | University of North Texas | IPPA | Satisfaction with college life (SACQ total score) | 1 | .41 |
| | | | | Self-esteem (TSCS) | 4 | |
| Silva (1995) | 181 | Undeterminable | PAQ | Intimacy with romantic partners (Psychosocial Intimacy Questionnaire) | 2 | .22 |
| Silver (1995) | 120 | Undeterminable | IPPA | Academic, social, and personal-emotional adjustment and school attachment (SACQ) | 1, 2, 3 | .38 |
| | | | | Attitudinal, conflictual, emotional, and functional independence (PSI) | 5 | |
| Sive-Ramirez (2001) | 63 | University of San Francisco | IPPA | Body dissatisfaction, drive for thinness, and bulimia (selected subscales of the EDI) | 3 | −.07 |
| Slattery (2000) | 102 | Temple University | PAQ | Academic, social, and personal-emotional adjustment (SACQ) | 1,2, 3 | .26 |
| | | | | GPA (self-report) | 1 | |
| Smiley (1999) | 33 | Undeterminable | PAQ | Developing mature relationships (SDTLI) | 2 | .23 |
| Sollenberger (2007) | 163 | Arizona State University | IPPA and PAQ | Academic confidence (PVDDS) | 1 | .26 |
| | | | | Stress level (Daily Hassles Index for College Stress Scale) | 3 | |
| Voight (1999) | 131 | Florida State University | PBI | Ego identity (EOMEIS-2) | 5 | −.05 |
| Webster (2002) | 362 | University of Nebraska—Lincoln | IPPA | Empathy (IRQ) | 2 | .16 |

(*table continues*)

Table 1 (*continued*)

| Study | *n* | College/university sampled | Attachment measure | Outcome dimensions and measurement devices | Megadomain[a] | Overall *r*[b] |
|---|---|---|---|---|---|---|
| Widlansky (1997) | 91 | DePaul University | PAQ | Social support (Brief Social Support Questionnaire) | 2 | .21 |
| | | | | Overall symptoms (BSI) | 3 | |
| | | | | Commitment to career choices (My Vocational Situations) | 5 | |
| Yee (2001) | 100 | Undeterminable | IPPA | Academic, social, and personal-emotional adjustment (SACQ) | 1, 2, 3 | .12 |
| | | | | Positive ethnic identity (MEIM) | 99 | |
| Zanardelli (2002) | 195 | Virginia Commonwealth University | IPPA | Psychological separation (PSI), career exploration (VECS, TTFS) | 5 | .11 |

*Note.* BAS = Beck Anxiety Scale; BDI = Beck Depression Inventory; BHS = Beck Hopelessness Scale; BID = Balanced Integration-Differentiation Scale; BSI = Brief Symptom Inventory; BSRI = Bem Sex-Role Inventory; BULIT-R = Bulimia Test-Revised; CDMSE = Career Decision-Making Self-Efficacy Scale; CES = Career Exploration Survey; CES-D = Center for Epidemiological Studies—Depression Scale; CIAA = College Inventory of Academic Adjustment; CPAS = Comprehensive Personality and Affective Scale; CSEI = Coopersmith Self-Esteem Inventory; DAS = Dyadic Adjustment Scale; DEQ = Depressive Experiences Questionnaire; ECR = Experience in Close Relationships Questionnaire; EDI = Eating Disorder Inventory; EDS-5 = Eating Disturbance Scale; EIS = Ego-Identity Scale; EOMEIS2 = Objective Measure of Ego-Identity Status; EPSI = Erikson Psychosocial Stage Inventory; FMAQ = Father and Mother Attachment Questionnaire; GPA = grade-point average; GRCS = Gender Role Conflict Scale; HSCL = Hopkins Symptom Checklist; ICIF-CS = Intergenerational Congruence in Immigrant Families; IIP = Inventory of Interpersonal Problems; INVAA = Inventory of Adult Attachment; IPPA = Inventory of Parental and Peer Attachment; IRQ = Interpersonal Reactivity Questionnaire; ISEL = Interpersonal Support Evaluation List; MBSRQ = Multidimensional Body Self-Relations Questionnaire; MEIM = Multigroup Ethnic Identity Measure; MFP = Mother-Father-Peer Scale; MGRSS = Masculine Gender Role Stress Scale; NMRS = Negative Mood Regulation Scale; OSIQ = Self-Image Questionnaire; P-AASQ = Parent-Adult Attachment Style Questionnaire (Behrens & Lopez, 1998); PANAS = Positive and Negative Affect Schedule; PAQ = Parent Attachment Questionnaire; PBI = Parent Bonding Instrument; PPI = Personal Problems Inventory; PSI = Psychological Separation Inventory; PSOC = Perceived Social Support; PSS = Perceived Stress Scale; PVDDS = Persistence/Voluntary Dropout Decisions Scale; RRS = Ruminative Responses Scale; RSES = Rosenberg Self-Esteem Scale; SACQ = Student Adjustment to College Questionnaire; SCL-90-R = Symptom Checklist-90-Revised; SDTLI = Student Developmental Task and Lifestyle Inventory; SES = Self-Efficacy Scale; SITA = Separation–Individuation Test of Adolescence; SOC = Spheres of Control; SPPCS = Self-Perception Profile for College Students; SPS = Social Provisions Scale; STAI = State–Trait Anxiety Inventory; TMMS = Trait Meta-Mood Scale; TSCS = Tennessee Self-Concept Scale; TTFS = Tendency to Foreclose Scale; VECS = Vocational Exploration and Commitment Scale; WAI = Weinberger Adjustment Inventory.

[a] 1 = academic adujstment; 2 = social competence; 3 = stressful affects; 4 = sense of self-worth; 5 = developmental advances; 99 = other/miscellaneous dimension. [b] Refers to overall effect size across all outcome domains coded in the study. [c] Study included a sample of non-college-age inpatients with eating disorders who were not included in the analysis. [d] Reported on two studies in one published report with distinct samples; included separately in the meta-analysis.

uration [coded as (1) majority biological/adoptive parents (70% or more) or (2) significant number of participants from single, step, or blended families (30% or more)], percentage of first-year students and upperclassmen, and percentage of students living away from home vs. at home during their college years, if given), (f) publication type (published report, conference paper, or unpublished dissertation), and (g) year of publication/authorship.

In the second step, the following information was recorded for each reported ES within a study (an effect was defined as a zero-order correlation reflecting the relationship between a scale of attachment and a scale of college adjustment): (a) parental attachment measure used ([1] IPPA, [2] PAQ, [3] PBI, [4] Mother-Father-Peer Scale [Epstein, 1983], [5] other attachment measure [these included a few scales normally used to assess adult romantic attachment that were adapted to rate parental attachment (see Table 1 for details)], or [6] a combined or factor analyzed attachment measure [a number of studies used a factor analytic composite of attachment measures or they used multiple attachment measures from which we coded a single ES across the measures]), (b) adjustment dimension(s) examined in the effect (a total of 120 distinct adjustment dimensions were coded across the studies), (c) parent sample examined in the effect (recorded as mother, father, or parents), (d) student sample (recorded as men, women, first-year students, upperclassmen, Caucasian students, ethnic minority students, or total sample), and (e) statistic from which the ES was calculated (*t* test or analysis of variance [ANOVA] procedures, correlation/regression, or mean differences).

Coding of the studies was conducted by Jonathan F. Mattanah along with two advanced undergraduate student research assistants with extensive coursework in statistical analysis and research design who were carefully trained and supervised by Jonathan F. Mattanah during the coding process. The two coders overlapped in their coding of five randomly selected studies to assess reliability. Their percentage agreement for 17 coded variables across the five studies was 84.7% ($\kappa = .797$, $p < .001$), indicating a high level of interrater reliability. Any disagreements between coders were resolved by Jonathan F. Mattanah through his review of the original study.

## Development and Validation of Megadomain Coding System

As mentioned above, 120 distinct adjustment dimensions were coded across the studies. Some of these dimensions recurred frequently, such as depression levels, anxiety, social support, loneliness, and separation–individuation, whereas other dimensions

were unique to only one or two studies, such as satisfaction with physical appearance, shame feelings, or use of splitting as a defense. The extreme range and variability of these adjustment dimensions attest to the richness and complexity of this general line of inquiry but also complicate efforts to assess effects across multiple studies. To address this problem, we created five conceptually meaningful megadomains of adjustment that have been the focus of the attachment studies considered in this review. Many studies of attachment across the life span examine relational competencies, self-worth, academic motivation and classroom behavior, and expressions of symptomatic distress as relevant domains of adjustment that should be predicted by secure attachment (Sroufe et al., 2005). Our first four domains capture this wide range of adjustment outcomes, entitled *academic motivation and competence, interpersonal competence, stressful affects and high-risk behaviors,* and *self-worth.*

Our fifth domain, *developmental advances,* was meant to reflect the interest of many attachment theory–driven studies of college students in examining the relationships between secure parental attachment and students' advances in psychosocial developmental tasks associated with late adolescence such as gender-identity development and separation and individuation from parents. Because these psychosocial tasks vary quite widely in terms of the developmental demands placed on the student, we created four meaningful subdomains of Domain Five, focused on the development of ego identity, gender identity, and career identity and on the task of separating and individuating from parents.

The five domains, along with specific adjustment dimensions included within each domain, are presented in Table 2. (As indicated in Table 2, a few dimensions did not fit well into any of these five domains and were considered miscellaneous dimensions; these dimensions were not included in any of the separate domain analyses presented below but were included in the calculation of the overall ES for each study.) Since the bulk of the adjustment dimensions within Domains One, Two, Four, and Five were positive, we reverse-coded any negatively worded dimensions within those four domains so that reported ESs indicated associations between secure parental attachment and more favorable adjustment outcomes within those domains. Conversely, most of the adjustment dimensions within Domain Three were negative, so we reversed-coded any positive adjustment dimensions within that domain so that an overall negative ES would suggest that parental attachment was associated with fewer adjustment difficulties in that domain.

The decision of which dimensions to categorize into each domain was made by the study authors, based on their knowledge of attachment research with college students. In placing a dimension into a domain, we examined the original studies carefully to determine precisely how the authors were defining their adjustment dimensions. As an example of a somewhat challenging classification decision, the dimension academic autonomy was placed into Domain One because the authors who studied this dimension described it as a measure of the student's ability to attain academic goals independently (Schultheiss & Blustein, 1994) whereas the dimension of autonomy was placed in the subdomain of ego identity (within Domain Five) because the authors studying this dimension described it as a measure of the adolescents' ability to make their own choices, express their own opinions without undue influence from others, and rely on themselves (Bell, Forthun, & Sun, 2000; Vivona, 2000). To test whether our conceptual approach to dimension placement could be replicated, we asked two research assistants (one advanced undergraduate student and one master's student in clinical psychology) to categorize 60 randomly selected dimensions chosen from the list of terms in Table 2 into their best fitting domain. For Domain Five, they were asked to select the best fitting subdomain. These two coders, who had access only to the terms themselves and a brief description of each domain and not to the original study from which the dimensions came, agreed substantially in their assignments of best fitting domain. Percentage exact agreement across the eight possible choices (Domain One, Two, Three, Four, or one of the four subdomains of Domain Five) was 73.3% ($\kappa = .683$, $p < .0001$). Additionally, each coder agreed very well with the original categorization decisions of Jonathan F. Mattanah (percentage exact agreement between Coder 1 [undergraduate student] and Jonathan F. Mattanah was 73.4% [$\kappa = .684$, $p < .0001$] and between Coder 2 [graduate student] and Jonathan F. Mattanah was 81.7% [$\kappa = .779$, $p < .0001$]).

In addition to determining whether our categorization system could be replicated, we examined the distributional properties of the ESs within each of the megadomains. Distributional statistics for each domain shown in Table 3 suggest a moderate range of ESs within each domain and no substantial skewness or kurtosis (a visual inspection of the histograms [available upon request] for each domain showed a relatively normal distribution of ESs within each domain, with no substantial gaps). We also calculated chi-square tests (cf. Shadish & Haddock, 2009) to assess the homogeneity of the ES distributions within each domain. Nonsignificant chi-square results shown in Table 3 suggest that the distribution of ESs within a domain were homogeneous and not heterogeneous. The homogeneity of distribution of ESs within each domain (and lack of obvious gaps in the distribution) provides some evidence that each domain is capturing a singular set of outcome dimensions, although it is possible that a multidimensional construct could still be reflected in such a singular distribution. Overall, it appears that our megadomain schema is replicable and defensible on both theoretical and empirical grounds. However, because Domain Five was composed of a number of different developmental areas, we include some analyses below examining links between parental attachment and students' psychological development across these different areas.

## Plan of Analysis

Our meta-analytic approach followed a nested model recommended by most meta-analysts (Lipsey & Wilson, 2001), whereby a single ES is calculated initially to evaluate the overall relationship and then a parsimonious set of effects can be calculated for each study, depending on the particular moderator variables of interest. When examining the overall relationship between parental attachment and college adjustment, we computed a single ES for each study, averaging across effects if more than one was reported in the study (such as separate effects for distinct adjustment dimensions or distinct effects for men and women). There are other methods for combining effects within studies that account for the strength of the relationship between the individual measures. However, we chose the method of averaging effects because it is the

Table 2
*Outcome Megadomains and Specific Dimensions Included Within Each Domain*

| Academic motivation and competence | Interpersonal competencies and relational satisfaction | Stressful affects and high-risk behaviors | Self-worth and self-efficacy | Developmental advances in ego, gender, and career identity and separation–individuation | Miscellaneous |
|---|---|---|---|---|---|
| Academic adjustment | Acceptance | Alcohol use | Assertive. | Ego identity | Acculturation |
| Academic autonomy | Constructive conflict resolution with romantic partner | Alexithymia | General self-efficacy | Autonomy | Attachment to God |
| Academic confidence | Dating competence | Alienation | Healthy attributions | Ego resiliency | History of childhood trauma |
| Effective study behavior | Developing mature relationships | Anger | Importance of physical appearance | Ego undercontrol (reversed) | Intergenerational congruence |
| Study skills | Empathy | Anxiety | Locus of control | Ego identity | Jewish identity |
| Grade-point average | Fear of negative social evaluation (reversed) | Awareness of moods and mood regulation (reversed) | Optimism | Ego-identity commitment | Positive ethnic identity |
| Performance evaluation concerns | Internal attributions for affiliation | Body dissatisfaction | Satisfaction with physical appearance | Ego-identity exploration | Religiosity |
| Problem solving | Interpersonal dependency (reversed) | Bulimia | Self-confidence | Establishing and clarifying purpose | Super Woman Scale |
| Satisfaction with college life | Interpersonal problems (reversed) | Coping (reversed) | Self-direction | Maturity of defenses | |
| School attachment | Intimacy with romantic partner | Depression | Self-esteem | Personal identity | |
| Structuring | Loneliness (reversed) | Deliberate self-harm | | Self-criticism (reversed) | |
| Student–professor attachment style | Prosocial behavior | Drive for thinness | | Sense of life coherence | |
| | Quality of social interactions | Eating disorder | | Use of splitting as a defense (reversed) | |
| | Quantity of social interactions | Delinquent behaviors | | Separation–individuation | |
| | Relationship satisfaction | Expression of negative affect | | Attitudinal independence (PSI scale) | |
| | Self-disclosure | Expression of positive affect (reversed) | | Conflictual independence (PSI scale) | |
| | Social adjustment | Ineffectiveness | | Emotional independence (PSI scale) | |
| | Social avoidance (reversed) | Maturity fears | | Functional independence (PSI scale) | |
| | Social competence | Number of sexual partners | | Separation anxiety | |
| | Social identity | Overall symptoms | | Gender identity | |
| | Social self-efficacy | Psychological well-being (reversed) | | Androgyny | |
| | Social support | Risky behaviors | | Femininity | |
| | Tendency toward making social threat cognitive biases (reversed) | Personal-emotional adjustment (reversed) | | Gender-role conflict (reversed) | |
| | Trait affiliation | Personality disorder | | Gender-role identity | |
| | | Physical fitness (reversed) | | Masculine gender-role stress (reversed) | |
| | | Physical health (reversed) | | Masculinity | |
| | | Physical symptoms | | Career identity | |
| | | Psychological distress | | Career aspirations | |
| | | Satisfaction with life (reversed) | | Career confidence | |
| | | Seeking instrumental support (reversed) | | Career exploration | |
| | | Self-defeating personality style | | Career search self-efficacy | |
| | | Shame | | Commitment to career choices | |
| | | Stress monitoring (reversed) | | | |
| | | Stress level | | | |
| | | Substance abuse | | | |
| | | Tension control (reversed) | | | |
| | | Worry | | | |

*Note.* PSI = Psychological Separation Inventory.

Table 3
*Distributional Properties of the Five Domains of College Adjustment*

| Distributional property | Academic competence | Social competence | Stressful affects | Self-worth | Developmental advances |
|---|---|---|---|---|---|
| Number of effects | 63 | 110 | 189 | 43 | 100 |
| *M* | .221 | .247 | −.221 | .248 | .235 |
| *Mdn* | .245 | .228 | −.222 | .250 | .190 |
| *SD* | .151 | .144 | .125 | .136 | .206 |
| Range | .850 | .830 | .700 | .569 | .890 |
| Minimum–maximum | (−.21, .64) | (−.11, .72) | (−.56, .14) | (−.07, .49) | (−.25, .64) |
| 25th–75th quartile | | | | | |
| Range | (.13, .32) | (.16, .32) | (−.31, −.14) | (.13, .36) | (.09, .40) |
| Skewness | −.265 | .770 | .165 | −.008 | .130 |
| Kurtosis | 0.772 | 1.162 | 0.324 | −0.610 | −0.637 |
| *Q* homogeneity test[a] | 61.81* | 107.98* | 184.33* | 42.27* | 100.10* |

[a] The formula for the *Q* homogeneity test is given in Shadish and Haddock (2009) as $\Sigma[(T - \bar{T})^2/v]$, where $T$ is the individual effect size, $\bar{T}$ is the mean effect size for that outcome domain, and $v$ is the variance for that group of effect sizes. If *Q* exceeds the critical value of the chi-square with $k - 1$ degrees of freedom ($k$ = number of effects included in that analysis), then the variance in effect sizes is significantly greater than one would expect if those effects share a common population effect size.
* $p > .45$.

most common and conservative approach (see Quintana & Minami, 2006, for a discussion of this issue).

When coefficients were averaged, they were first transformed using Fisher's *r*-to-*z* transformations (as recommended by Lipsey & Wilson, 2001), and then the averages were converted back to correlation coefficients to facilitate interpretation. This single ES was used to evaluate the overall effect as well as a number of study-wide demographic and methodological moderators, such as publication status of the study, university size, study design (longitudinal vs. cross-sectional), and reliability of the measurement devices. When examining the five outcome domains, we computed one ES per outcome per study, averaging across effects for dimensions that fell within the same outcome domain (e.g., if anxiety and depression were included in one study as outcome dimensions [both dimensions fall within Domain Three], a mean ES was computed across these two dimensions). When examining gender as a moderator of the attachment–adjustment relationship, we computed one ES per parent or student gender per outcome domain.[2] Finally, when examining attachment scales and subscales as moderators, we computed one ES per subscale for each study that included an examination of subscales.

ES estimates were obtained directly from the study if it included correlation coefficients or beta weights or were computed from *t* tests, ANOVAs, or mean differences, using readily available formulas provided by Lipsey and Wilson (2001). In seven cases, an effect was deemed insignificant by the original authors of the study without providing any statistical information. As recommended by most meta-analysts (Lipsey & Wilson, 2001; Rosenthal, 1995), these effects were conservatively coded as $r = .00$. All longitudinal studies in this meta-analysis were only two-time-point studies. To compute ESs for these longitudinal studies, we used the correlation of attachment measures assessed at Time 1 with adjustment dimensions assessed at Time 2.

It is common practice to weight ESs by sample size to give greater emphasis to studies that are likely to provide a more accurate estimate of the parameter of interest (Shadish & Haddock, 2009). Thus, we used inverse-variance-weighted ESs to analyze the overall strength of the relationship between parental attachment and the college adjustment domains. We also include the results of an overall unweighted analysis for comparison purposes. The overall analyses were computed using a random-effects model because of the diversity of methodology employed in the studies and because the random model allows for greater generalizability of results.

Analyses of the moderators of interest were computed using an inverse-variance-weighted mixed-effects model, which includes the moderator as the fixed factor and error variance as the random component. Categorical moderators (e.g., gender) were analyzed using an analog ANOVA (*Q*) statistic, and continuous moderators (e.g., percentage of residential students) were assessed with an analog regression analysis. These analyses were computed using SPSS macros developed by Wilson (2005).

## Results

### Characteristics of Participants Included in the Meta-Analysis

Table 4 provides information on the demographic characteristics of the participants included in the meta-analysis. These characteristics closely mirror the reported percentages of students in institutions of higher education, which tend to include 60% females, about 60% Caucasian students, and 40% students of ethnic minority groups (National Center for Educational Statistics, 2008). Among those studies reporting on year in school, the participants were roughly split between first-year students and upperclassmen. Only a few studies reported on the residential status of students, and among those, about 63% lived away from home during college (either in residential housing on campus or in an off-campus apartment) and 37% lived at home with their parents.

[2] Although the majority of these studies reported separate ESs for mothers and fathers and/or men and women (91 studies reported separate ESs by gender of parent, gender of student, or both), we included studies that only focused on one parent (one mother-only study, three father-only studies) or student gender (13 female-only studies, three male-only studies).

Table 4
*Demographic Characteristics of Participants Included in the Meta-Analysis*

| Variable | *M* | *SD* | *K*[a] |
|---|---|---|---|
| Average sample size | 210.77 | 130.68 | 154 |
| Male sample size | 80.44 | 63.29 | 154 |
| Female sample size | 130.85 | 91.16 | 154 |
| Age (years) | 20.14 | 2.05 | 139 |
| Ethnicity | | | |
| % Caucasian | 58.36 | 30.42 | 99 |
| % African American | 14.89 | 22.63 | 99 |
| % Latino/a | 10.29 | 18.84 | 99 |
| % Asian American | 11.27 | 20.30 | 99 |
| % other | 4.77 | 10.68 | 99 |
| Year in school | | | |
| % first year | 57.86 | 35.43 | 84 |
| % Upperclassman | 41.54 | 35.07 | 84 |
| Residential status | | | |
| % living away from home | 62.89 | 25.22 | 39 |
| % living at home | 37.11 | 25.22 | 39 |

[a] Refers to the number of studies that reported information on the sample characteristic.

## Overall Relationship Between Attachment and Adjustment

The average weighted ES between parental attachment and college adjustment was .231[3] ($SE = .0119$, $p < .0001$) with a 95% confidence interval of [.205, .247]. ES estimates ranged from −.21 to .66. The fail-safe *n* indicates that an additional 90,436 studies finding no relationship between parental attachment and college adjustment would be needed to reduce the probability of this ES to nonsignificance. According to Rosenthal and Rosnow (2008), this number is much larger than the recommended tolerance level of $5k + 10$ additional studies (in this case, 790 studies with no relationship between attachment and adjustment). A chi-square homogeneity test indicated that the overall ES distribution was heterogeneous, $\chi^2(155, N = 156) = 552.5693$, $p < .0001$, which suggests that the variability of ESs across these studies is due to more than just sampling error (Shadish & Haddock, 2009). Given the great variation in the conduct of these studies (including attachment and outcome measures utilized, sample of students focused upon, cross-sectional vs. longitudinal design, etc.), a heterogeneous distribution is not surprising and justifies our examination of moderator effects, using a mixed-effects model, to account for both systematic and random factors affecting this heterogeneity.

## Demographic Moderators of the Attachment–Adjustment Relationship

Table 5 displays gender of parent and gender of student as potential moderators of the overall relationship between attachment and adjustment. We examined this analysis first by averaging across the five domains to form one ES per study and then within the five domains. ESs did not differ significantly between mother–student and father–student attachment across any of the five domains. Regarding gender of student, ES again did not differ significantly between male and female students across any of the five domains.

We next focused upon other demographic moderators of potential interest to researchers in this area, including residential status, ethnicity, year in school, nationality of the sample, and family configuration. For the first three variables, we examined percentage of residential students, percentage of Caucasian students, and percentage of first-year students recorded in each study as continuous predictors of the overall effect, using inverse-variance-weighted regression analyses. Percentage of Caucasian students, $\beta = .01$, $Q(117) = 0.017$, $p = .896$, and percentage of first-year students, $\beta = .04$, $Q(83) = 0.105$, $p = .746$, did not predict the overall effect, whereas percentage of residential students did, $\beta = .37$, $Q(37) = 6.418$, $p = .011$. To understand this last effect more clearly, we split studies that had included information on residential status into those that reported a majority of students living away from home and those that reported a majority of students still living with their parents. We found that the ES for students living away from their parents ($r = .27$) was significantly larger than the ES for students still living at home ($r = .18$). We coded nationality of the sample as simply U.S.A. versus non-U.S.A. and found no difference in these ESs. Only a few studies reported on the family configuration of their participants. We dichotomized those studies into those with a majority of two-parent biological families (more than 70% of the participants reported coming from those types of families) versus studies with a significant number of participants from single-parent, step, or blended families. ESs for these studies did not differ significantly. A more fine-grained analysis would have calculated separate ESs for those studies that reported effects broken down by one or more of these demographic characteristics. Unfortunately, not enough studies reported separate effects for ethnicity, year in school, residential status, or family configuration to conduct a meaningful analysis.

## Methodological Moderators of the Attachment–Adjustment Relationship

Table 6 examines methodological qualities of the studies included in this meta-analysis (e.g., reliability of attachment and adjustment measures, study design, etc.) as potential moderators of the overall relationship between attachment and adjustment. ESs did not differ significantly across any of these methodological features, suggesting that the overall relationship between attachment and adjustment was robust across differing study qualities.

Since attachment security is a multidimensional construct and has been assessed using a variety of strategies, we sought to examine whether the particular attachment scale and subscales utilized in different studies moderated the overall relationship between attachment and college adjustment. Inspection of Table 7 shows that the bulk of the studies (125 out of 156 studies [80%]) included in the meta-analysis utilized one of three major self-report measures of parental attachment, the IPPA, PAQ, or PBI.

[3] This weighted ES was very similar to the average unweighted ES between attachment and adjustment ($r = .230$), suggesting that the differing sample sizes of the studies included in this meta-analysis did not appreciably affect the overall relationship observed across these studies.

Table 5
*Gender of Parent and Gender of Student as Moderators of the Attachment–Adjustment Relationship*

| Adjustment domain | Female | | Male | | | |
|---|---|---|---|---|---|---|
| | $r_{mean}$ | *SE* | $r_{mean}$ | *SE* | *Q* | *p* value |
| Parent | | | | | | |
| Across all domains ($k = 91$) | .243 | .017 | .218 | .017 | 1.183 | .277 |
| Academic competence ($k = 16$) | .237 | .048 | .234 | .047 | 0.003 | .953 |
| Social competence ($k = 38$) | .235 | .021 | .215 | .021 | 0.544 | .461 |
| Stressful affects ($k = 52$) | −.235 | .019 | −.213 | .019 | 0.780 | .372 |
| Self-worth ($k = 21$) | .319 | .041 | .231 | .042 | 2.721 | .099 |
| Developmental advances ($k = 24$) | .229 | .035 | .205 | .036 | 0.249 | .618 |
| Student | | | | | | |
| Across all domains ($k = 46$) | .221 | .020 | .246 | .024 | 0.671 | .413 |
| Academic competence ($k = 9$) | .276 | .061 | .280 | .069 | 0.004 | .952 |
| Social competence ($k = 15$) | .203 | .026 | .213 | .029 | 0.065 | .798 |
| Stressful affects ($k = 27$) | −.222 | .027 | −.288 | .036 | 2.419 | .120 |
| Self-worth ($k = 10$) | .251 | .056 | .273 | .068 | 0.071 | .790 |
| Developmental advances ($k = 15$) | .186 | .045 | .193 | .050 | 0.011 | .915 |

Only two studies utilized the Mother-Father-Peer Scale, and the remainder developed their own attachment questionnaire ($n = 21$) or used a combination of attachment questionnaires ($n = 8$). For ease of comparing the ESs associated with these different measures, we eliminated the two studies utilizing the Mother-Father-Peer Scale and combined those studies that employed either a novel measure or multiple measures into a single category. We compared ESs for the four major assessment strategies (IPPA, PAQ, PBI, or other attachment measure) and found that they did not differ significantly from each other, $Q$ (153) = 4.370, $p$ = .224. Table 7 also displays ESs for the much smaller number of studies that included an examination of the subscales of the three major attachment questionnaires. We examined these ESs both within instruments and across the three instruments. The across-instrument comparison was not significant, $Q(123) = 5.244$, $p$ = .630. However, when comparing ESs within instruments, we found that the ES for the PBI Overprotection scale ($r = -.13$) was notably smaller than the ES for the PBI Care subscale ($r = .20$), $Q(26)$ = 4.808, $p = .028$ (note that in this analysis, we initially reverse-coded the PBI Overprotection scale ES so that we were testing the differences in the absolute value of these ESs rather than their differing signs). Analyses comparing the ESs of IPPA subscales to each other and the PAQ subscales to each other were not significant.

Our final analysis examined the pattern of ESs across the five domains of adjustment. As seen in Table 8, mean ESs were remarkably similar across all five domains and did not differ significantly from each other. This table also shows ESs associated with the four conceptually meaningful subdomains of Domain Five. These ESs differed substantially from each other, with the separation–individuation ES being significantly larger than the other three ESs, which did not differ significantly from each other.

## Discussion

In light of the significant growth of scholarship examining the contributions of self-reported parental attachment quality to col-

Table 6
*Methodological Moderators of Parental Attachment–College Adjustment Relationship*

| Moderator | $r_{mean}$ | *SE* | *K* | *Q* | *p* value |
|---|---|---|---|---|---|
| Publication source | | | | | |
| Journal article | .233 | .007 | 113 | 2.189 | .139 |
| Unpublished study | .214 | .010 | 43 | | |
| University size | | | | | |
| Community college | .255 | .056 | 6 | 1.534 | .464 |
| Small 4-year college | .206 | .032 | 21 | | |
| Large university | .250 | .017 | 70 | | |
| Study design | | | | | |
| Cross-sectional | .231 | .011 | 143 | 2.113 | .146 |
| Longitudinal | .175 | .037 | 13 | | |
| Internal consistency reliability of attachment measure | | | | | |
| All subscales above .80 reliability | .222 | .017 | 69 | 0.046 | .831 |
| One or more subscales below .80 | .213 | .036 | 16 | | |
| Average internal consistency reliability of adjustment dimensions | | | | | |
| All scales above .80 reliability | .211 | .015 | 57 | 1.622 | .203 |
| One or more scales below .80 | .169 | .030 | 14 | | |

Table 7
*Attachment Scales (and Subscales) as Moderators of the Parental Attachment–College Adjustment Relationship*

| Attachment scale and subscale | $r_{mean}$ | *SE* | *K* |
|---|---|---|---|
| Inventory of Parental and Peer Attachment | .251 | .017 | 60 |
| Trust | .221 | .054 | 7 |
| Communication | .170 | .054 | 7 |
| Alienation | −.172 | .047 | 9 |
| Parental Attachment Questionnaire | .209 | .023 | 34 |
| Affective Quality of Relationship | .209 | .034 | 18 |
| Provision of Emotional Support | .184 | .037 | 16 |
| Role in Fostering Autonomy | .161 | .037 | 16 |
| Parental Bonding Instrument | .193 | .024 | 31 |
| Care[a] | .200 | .022 | 27 |
| Overprotection | −.131 | .023 | 24 |
| Unique or combined measures | .221 | .024 | 29 |

[a] The Parental Bonding Instrument's Care subscale demonstrated a significantly larger effect size than its Overprotection subscale.

lege student adjustment and development, we sought to meta-analyze those studies available up to 2009 and to extend the findings of the handful of prior meta-analytic studies in three important ways. More specifically, beyond assessing the overall ES of the relations between parental attachment and college adjustment, we examined whether the strength of these relations varied by (a) gender and other demographic moderators, (b) the type of attachment measure used in the investigations, or (c) the domains of adjustment/development that were assessed. As we discuss more fully below, these methodological refinements yielded findings with the potential for advancing both theory-based inquiry and counseling practice.

## Review of Findings

We found a small-to-moderate relationship between parental attachment and college student adjustment. Our overall ES of $r = .231$ was remarkably similar to effects found in previous meta-analyses on attachment in adolescent populations. Rice (1990) found an effect of $r = .22$, and Benson et al. (2006) reported an effect of $r = .26$ (Benson et al., 2006, using $d$ rather than $r$ in their meta-analysis, found an overall $d = .54$, which, when converted using Rosenthal and Rosnow's, 2008, formula, yields an $r = .26$). These effects are also comparable to the one meta-analysis examining adjustment outcomes with school-age and young adolescent offspring, where an overall effect of $r = .20$ was found (Schneider et al., 2001). Summing across these meta-analyses, it appears that parental attachment representations in adolescent and emerging adult populations are moderate predictors of adjustment outcomes while further suggesting that other factors also contribute to these outcomes.

Given the modest direct relationship between parental attachment and college adjustment, it is likely that parental attachment serves as a significant but distal predictor whose effects on adjustment during the college years may be less direct and more proximally predicted by other developmental processes not specifically examined in our meta-analysis. Relevant to this point, a number of scholars (Feeney, 2004; Fraley & Davis, 1997; Shaver & Hazan, 1994) have argued that, beginning in adolescence, close friends and romantic partners assume increasingly salient caregiving and security-regulating roles in the developing person's life, thus facilitating a gradual transfer of attachment functions from parents to intimate peers. Although parental attachment security is posited to affect the nature and quality of this developmentally expected shift, the transfer itself should, over time, progressively weaken the direct effects of parental attachment security while concurrently strengthening the more proximal effects of intimate peer attachment security on adjustment outcomes during the college years. In this regard, it is noteworthy that studies involving college samples that have incorporated self-report measures of both parental and adult (i.e., intimate peer) attachment security have generally revealed that (a) these attachment constructs are only moderately correlated and (b) relative to parental attachment measures, indicators of peer attachment security typically demonstrate stronger associations with independent measures of self-esteem, depression, coping, and socioemotional competence (Carnelley, Pietromonaco, & Jaffe, 1994; Cummings-Robeau, Lopez, & Rice, 2009; Laible, 2007; Lopez, 1996).

We also found that the attachment scales or subscales used in studies of college students for the most part did not moderate the relationship between parental attachment and adjustment outcomes. This result may suggest that parental attachment representations are fairly unidimensional by young adulthood, characterized globally as positive or negative, at least as assessed by self-report methodology. This result would certainly support the common practice in most studies we reviewed of combining subscales of these measures (especially for the IPPA and PAQ) to develop a single score of attachment security. We did find, however, that the Overprotection subscale of the PBI had a significantly smaller ES than the PBI Care subscale. In our review of the research, we found a number of studies where overprotection was actually associated with better rather than worse outcomes, contrary to the original design of the instrument (e.g., Feeney, 2002; Love & Murdock, 2004; Mallinckrodt, 1992). It is possible that the overprotection items of the PBI, which tend to address high levels of parental control bordering on intrusion, may be interpreted by

Table 8
*Means Effect Sizes Across the Five Domains of Adjustment*

| Domain | $r_{mean}$ | *SE* | *K* | *Q* |
|---|---|---|---|---|
| Analysis of five domains | | | | |
| Academic Competence | .226 | .024 | 36 | 1.653 |
| Social Competence | .235 | .017 | 70 | |
| Stressful Affects | −.239 | .014 | 101 | |
| Self-Worth | .257 | .022 | 37 | |
| Developmental Advances | .222 | .020 | 49 | |
| Analysis of Domain Five: Developmental advances[a] | | | | 17.419** |
| Ego identity | $.203_b$ | .037 | 20 | |
| Separation–individuation | $.354_a$ | .043 | 15 | |
| Gender identity | $.127_b$ | .060 | 7 | |
| Career exploration | $.142_b$ | .047 | 12 | |

*Note.* Mean effect sizes with different subscripts differ significantly from each other.
[a] When examining the four subdomains of Domain Five, the number of effects was slightly larger (54 vs. 49) than the overall total because five of the studies provided effects from more than one subdomain.
** $p < .001$.

some young adults as an indicator of a kind of behavioral control and monitoring often associated with more positive outcomes among adolescents and emerging adults. We therefore encourage investigators to first examine intercorrelations of parental attachment subscale scores with scores on study-specific outcome variables before combining attachment subscales, as a global index might obscure meaningful subscale–outcome relationships in their particular samples.

Relatedly, we found support for the idea that parental attachment security is linked to a broad (as opposed to more circumscribed) range of college adjustment outcomes. Parental attachment was equally predictive of adjustment across our five conceptually and empirically meaningful megadomains of outcome measures. This result is consistent with past meta-analytic findings that examined a range of adjustment outcomes in adolescent populations (Rice, 1990). Overall, it appears that security of attachment in adolescence is predictive of better adjustment both in relationships with others and in feelings about the self (greater self-worth and sense of academic competency), which together may lower stress levels and reduce engagement in high-risk behaviors.

In terms of demographic characteristics, we were somewhat surprised to find that gender of parent and gender of student did not moderate the attachment–adjustment relationship. Contrary to some theoretical speculations (Chodorow, 1991; Josselson, 1987), this finding suggests that attachment relationships with mothers and fathers are equally important to male and female development, at least during the period of emerging adulthood. We also found that ethnicity, nationality of the sample, and year in school did not moderate the overall attachment–adjustment relationship, suggesting that this relationship may hold true cross-culturally and cross-nationally. We did find that attachment security predicted adjustment significantly more strongly among students who leave home during the college years compared with students still residing at home. Consistent with theory, attachment needs are more likely to be activated in students who leave home for college and may help explain why residential students report greater loneliness than commuters during the transition to college (Larose & Boivin, 1998). Hence, relative to their commuting peers, for residential students, a secure relationship with their absent parents may especially protect against college transition–related adjustment difficulties.

Finally, within the domain of developmental tasks associated with college life, we found a significantly stronger effect for the task of separation–individuation from parents than for the other tasks. This finding is not surprising given that separation–individuation is the developmental task most closely associated with family life. Furthermore, it supports the suggestion made by attachment theorists and researchers that secure attachment, far from fostering dependency in families, lays the groundwork for a healthy process of separation and individuation from family members (Bowlby, 1988; Goldberg & O'Brien, 2005; Mattanah, Hancock, & Brand, 2004; Sroufe et al., 2005). It should be noted, however, that the item content of measurement strategies used to assess parental attachment and separation–individuation overlap to some extent within this age group, which may help account for the larger effects observed in our analyses (cf. Lopez & Gover, 1993). Although both sets of measures examine closeness and autonomy within the parent–adolescent relationship, we believe the concepts are theoretically distinct. Future studies may provide a stronger test of these claims by developing measures that are more empirically distinct.

## Limitations and Directions for Future Research

Common features of the available literature on parental attachment and college student adjustment, together with strategic decisions that guided our particular meta-analysis, both constrained the generalizability and interpretive clarity of our findings and suggest potentially fruitful directions for future inquiry. For example, we limited our meta-analysis to studies using self-report measures of the quality of parent–adolescent attachment. Although these particular measures are inexpensive, easily administered research tools that possess well-established psychometric properties, they, like self-report measures of other psychological constructs, are vulnerable to defensive distortions and other response styles. In this regard, we would encourage investigators to consider incorporating both self-report and interview methods of parental attachment quality and to gather attachment- and adjustment-related information from multiple sources (e.g., parents, siblings, peers) as part of their designs. Such refinements could enhance the predictive utility of future findings and enrich understanding of how parental attachment relationships contribute to college student development.

The extant literature is also similarly dominated by studies involving cross-sectional and single-time-point designs. Cross-sectional research cannot establish casual connections between parental attachment qualities and students' adjustment and developmental outcomes. Indeed, it is quite possible that students who are currently adjusting better to the college environment provide a more favorable description of their attachment relationship with parents. Moreover, these studies generally provide insufficient information regarding student ethnicity (acculturation, generational status), sexual orientation, family structure (family size, parental marital status), and social class. Therefore, considerably less is known about how parental attachment qualities are associated with student development and adjustment though the college years and beyond, as well as whether these effects are moderated by other person, familial, or cultural factors. Additionally, although we were able to examine parent gender as a moderator, we did not find studies that had examined potential interactions between mother–student attachment and father–student attachment. Such studies would allow for an examination of whether having one secure attachment relationship compensates for the other relationship being insecure, an important issue that should be examined further in this population.

Although our meta-analysis supports the contention made by Kenny (1987) and others that the college environment represents a significant separation and transition in the life of a young adult and that, therefore, parental attachment security would be relevant to successful adjustment during that transition, we cannot definitively conclude that parental attachment security is especially important to college-bound young adults. To do so would require an examination of the relationship between parental attachment and adjustment in an appropriate comparison group of young adults who are not college bound. Unfortunately and somewhat surprisingly, very few studies have examined the relationship between parental attachment and adjustment outcomes in young adults who are not in

college. In our review of the literature, we could find only four studies that examined parental attachment and adjustment outcomes among normally developing young adults who were not college students (Avagianou & Zafiropoulou, 2008; Burge, Hammen, Davila, & Daley, 1997; Kenny & Sirin, 2006; Overbeek, Vollebergh, Engels, & Meeus, 2003). (There were a number of other studies that examined parental attachment in samples of young and middle-age adults who were experiencing particular mental or behavioral health problems, such as depression, eating disorders, or incarceration, but these studies did not seem comparable to studies of college student populations.) A brief review of these four studies found that the average ES of the relationship between parental attachment and adjustment outcomes was .26, comparable to the overall ES determined in our analysis. Thus, it may not be the case that the college transition triggers attachment concerns to a greater extent than other transitions associated with young adulthood, although we would welcome more research examining parental, peer, and romantic attachment relationships among heterogeneous groups of young adults.[4]

## Counseling Implications

By affirming that the quality of parental attachment relationships demonstrates a modest, albeit significant and generalized, effect on college student adjustment, our findings support therapeutic inquiry regarding these relationships in clinical work with college students. In addition, we believe our findings have other potential implications for counseling practice. For example, we found that the quality of parental attachment was more strongly related to indicators of separation–individuation than to other indicators in the developmental advances domain. These findings suggest that counseling interventions focusing on the dialogic and dialectical processes in parent–student communications may hold particular therapeutic value for promoting students' experiences of greater self–other differentiation in their relationships with parents. Identifying and remedying those interactions associated with emotional reactivity and problem behaviors in these relationships may in turn strengthen communications that advance age-appropriate developmental competencies (e.g., forming secure intimate peer relationships, assuming greater personal responsibility for organizing and consolidating life/career goals and plans). Although Slade (1999) appropriately observed that, given the nascent state of empirical work linking attachment dynamics with therapeutic processes, "an understanding of the nature of attachment *informs* rather than *defines* intervention and clinical thinking" (p. 577), emergent efforts to connect attachment constructs within existing therapeutic frameworks such as contemporary psychoanalytic (Eagle & Wolitzky, 2009), cognitive–behavioral (McBride & Atkinson, 2009), interpersonally oriented (Florsheim & McArthur, 2009), and emotionally focused treatment approaches (S. M. Johnson, 2009) offer useful case illustrations of how attachment theory constructs and assumptions can be readily integrated within these approaches.

[4] We thank an anonymous reviewer for suggesting this interesting caveat to our analyses of parental attachment and adjustment among young adult college students.

## References

References marked with an asterisk indicate studies included in the meta-analysis.


Ainsworth, M. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation.* Oxford, England: Erlbaum.

Allen, J. P. (2008). The attachment system in adolescence. In J. A. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 419–435). New York, NY: Guilford Press.

*Anderson, S. A., & Fleming, W. M. (1986). Late adolescents' home-leaving strategies: Predicting ego identity and college adjustment. *Adolescence, 21,* 453–459.

*Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence, 16,* 427–454. doi:10.1007/BF02202939

Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties.* New York, NY: Oxford University Press.

*Aspelmeier, J. E., Elliott, A. N., & Smith, C. H. (2007). Childhood sexual abuse, attachment, and trauma symptoms in college females: The moderating role of attachment. *Child Abuse & Neglect, 31,* 549–566. doi:10.1016/j.chiabu.2006.12.002

Avagianou, P.-A., & Zafiropoulou, M. (2008). Parental bonding and depression: Personality as a mediating factor. *International Journal of Adolescent Medical Health, 20,* 261–269.

*Bagheri, P. (2005). Predictors of codependency among European American and Mexican American college females. *Dissertation Abstracts International: Section B. Sciences and Engineering, 65*(11), 6036.

Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2009). The first 10,000 Adult Attachment Interviews: Distributions of adult attachment representations in clinical and non-clinical groups. *Attachment & Human Development, 11,* 223–263.

Baldwin, M. W., Keelan, J. P. R., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social-cognitive conceptualization of attachment working models: Availability and accessibility effects. *Journal of Personality and Social Psychology, 71,* 94–109.

*Barrett, P. M., & Holmes, J. (2001). Attachment relationships as predictors of cognitive interpretation and response bias in late adolescence. *Journal of Child and Family Studies, 10,* 51–64. doi:10.1023/A:1016677416638

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61,* 226–244.

Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment: Do they converge? In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25–45). New York, NY: Guilford Press.

Behrens, E., & Lopez, F. G. (1998, August). *Preliminary validation of a measure of parent-adult attachment style.* Paper presented at the annual convention of the American Psychological Association, San Francisco, CA.

*Bell, N. J., Forthun, L. F., & Sun, S.-W. (2000). Attachment, adolescent competencies, and substance use: Developmental considerations in the study of risk behaviors. *Substance Use & Misuse, 35,* 1177–1206. doi:10.3109/10826080009147478

*Benson, M. J., Harris, P. B., & Rogers, C. S. (1992). Identity consequences of attachment to mothers and fathers among late adolescents. *Journal of Research on Adolescence, 2,* 187–204.

Benson, M. J., McWey, L. M., & Ross, J. J. (2006). Parental attachment and peer relations in adolescence: A meta-analysis. *Research in Human Development, 3,* 33–43. doi:10.1207/s15427617rhd0301

Berlin, L. J., Cassidy, J., & Appleyard, K. (2008). The influence of early

attachments on other relationships In J. A. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 333–347). New York, NY: Guilford Press.

*Berman, W. H., Heiss, G. E., & Sperling, M. B. (1994). Measuring continued attachment to parents: The Continued Attachment Scale—Parent Version. *Psychological Reports, 75,* 171–182.

*Berman, W. H., & Sperling, M. B. (1991). Parental attachment and emotional distress in the transition to college. *Journal of Youth and Adolescence, 20,* 427–440. doi:10.1007/BF01537184

*Blaustein, K. (1999). The effects of interparental conflict and parent-child conflict on young adult adjustment: A model. *Dissertation Abstracts International: Section B. Sciences and Engineering, 60*(4), 1842.

*Blazina, C. (2001). Gender-role-conflicted men's poor parental attachment and separation/individuation difficulties: Knights without armor in a savage land. *Journal of Men's Studies, 9,* 257–265. doi:10.3149/jms.0902.257

Bowlby, J. (1969). *Attachment and loss.* New York, NY: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation—Anxiety and anger.* New York, NY: Basic Books.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss—Sadness and depression.* New York, NY: Basic Books.

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development.* New York, NY: Basic Books.

*Bowman, M. J. (2000). Emotional eating and parental attachment as predictors of eating disorder symptoms in a non-clinical college population. *Dissertation Abstracts International: Section B. Sciences and Engineering, 60*(7), 3557.

*Brack, G., Gay, M. F., & Matheny, K. B. (1993). Relationships between attachment and coping resources among late adolescents. *Journal of College Student Development, 34,* 212–215.

*Bradford, E., & Lyddon, W. J. (1993). Current parental attachment: Its relation to perceived psychological distress and relationship satisfaction in college students. *Journal of College Student Development, 34,* 256–260.

*Bradford, J. W. (2007). Attachment processes, stress processes and sociocultural standards in the development of eating disturbances in college women. *Dissertation Abstracts International: Section B. Sciences and Engineering, 68*(2), 1295.

Bradley, J. M., & Cafferty, T. P. (2001). Attachment among older adults: Current issues and directions for future research. *Attachment & Human Development, 3,* 200–221. doi:10.1080/14616730110058016

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York, NY: Guilford Press.

Burge, D., Hammen, C., Davila, J., & Daley, S. E. (1997). The relationship between attachment cognitions and psychological adjustment in late adolescent women. *Development and Psychopathology, 9,* 151–167. doi:10.1017/S0954579497001119

*Cabral, J., & Matos, P. M. (2007, August). *Predicting adjustment to university: The role of attachment, psychosocial development and coping*. Paper presented at the 13th European Conference on Developmental Psychology, Jena, Germany.

*Cabral, J., & Matos, P. M. (2008, May). *Predicting psychosocial development: The role of attachment, emotion regulation and coping strategies.* Paper presented at the 11th European Assocation for Research on Adolescence, Torino, Italy.

*Cabral, J., Matos, P. M., Beyers, W., & Soenens, B. (2006, May). *Attachment, emotion regulation and coping in late adolescence: A test of a mediation hypothesis.* Poster session presented at the 10th European Assocation for Research on Adolescence, Antalya, Turkey.

Carnegie Foundation for the Advancement of Teaching. (n.d.). *The Carnegie Classification of Institutions of Higher Education.* Retrieved from http://www.carnegiefoundation.org/classifications/sub.asp?key=748&subkey=14603&start=782

*Carnelley, K. B., Pietromonaco, P. R., & Jaffe, K. (1994). Depression, working models of others, and relationship functioning. *Journal of Personality and Social Psychology, 66,* 127–140. doi:10.1037/0022-3514.66.1.127

*Cavell, T. A., Jones, D. C., Runyan, R. D., Constantin-Page, L. P., & Velasquez, J. M. (1993). Perceptions of attachment and the adjustment of adolescents with alcoholic fathers. *Journal of Family Psychology, 7,* 204–212. doi:10.1037/0893-3200.7.2.204

*Cheng, H.-L., & Mallinckrodt, B. (2009). Parental bonds, anxious attachment, media internalization, and body image dissatisfaction: Exploring a mediation model. *Journal of Counseling Psychology, 56,* 365–375. doi:10.1037/a0015067

Chodorow, N. J. (1991). *Feminism and psychoanalytic theory.* New Haven, CT: Yale University Press.

*Clemens, K. A. (2005). Relationships between attachment, family-of-origin characteristics and personality variables. *Dissertation Abstracts International: Section B. Sciences and Engineering, 66*(4), 2333.

Collins, N. L., Guichard, A. C., Ford, M. B., & Feeney, B. C. (2004). Working models of attachment: New developments and emerging themes. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 196–239). New York, NY: Guilford Press.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58,* 644–663.

Collins, N. L., & Read, S. J. (1994). Cognitive representations of attachment: The structure and function of working models. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships: Vol. 5. Attachment processes in adulthood* (pp. 53–92). London, England: Kingsley.

*Cook, A. B. (1995). Childhood maltreatment and parental attachment. *Dissertation Abstracts International: Section B. Sciences and Engineering, 56*(1), 519.

*Cummings-Robeau, T. L., Lopez, F. G., & Rice, K. G. (2009). Attachment-related predictors of college students' problems with interpersonal sensitivity and aggression. *Journal of Social & Clinical Psychology, 28,* 364–391. doi:10.1521/jscp.2009.28.3.364

*Danford, L. Z. (2008). An exploration of the relationship between attachment, parent-adolescent communication, and college student adjustment. *Dissertation Abstracts International: Section B. Sciences and Engineering, 69*(1), 734.

*Dassoff, N. T. (1993). Parental attachment, network orientation and loneliness: Their relationship to social support. *Dissertation Abstracts International: Section B. Sciences and Engineering, 53*(12), 6544.

*DeFranc, W., & Mahalik, J. R. (2002). Masculine gender role conflict and stress in relation to parental attachment and separation. *Psychology of Men & Masculinity, 3,* 51–60. doi:10.1037/1524-9220.3.1.51

*Dejong, L. (1997). Parental attachment, parental style of authority, self-efficacy and adolescent identity: Test of a mediational model. *Dissertation Abstracts International: Section B. Sciences and Engineering, 58*(4), 2152.

*De Jong, M. L. (1992). Attachment, individuation, and risk of suicide in late adolescence. *Journal of Youth and Adolescence, 21,* 357–371.

*Delaney, K. M. (2002). The relationship between attachment in parental and romantic relationships and maturity of defense style. *Dissertation Abstracts International: Section B. Sciences and Engineering, 63*(2), 1019.

*Dewitt-Parker, J. (2000). Predicting the successful adjustment of Black freshmen to a predominantly White university: The contribution of parental attachment and cultural traditionality. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 60*(8), 2812.

*Diaz, N., Lizardi, H., & Rivera, E. C. (2008). The relationship between

parental bonding and lifetime history of depressive disorder in Latino college students. *Journal of Ethnic & Cultural Diversity in Social Work, 17,* 21–36. doi:10.1080/15313200801904919

Eagle, M., & Wolitzky, D. L. (2009). Adult psychotherapy from the perspectives of attachment theory and psychoanalysis. In J. H. Obegi & E. Berant (Eds.), *Attachment theory and research in clinical work with adults* (pp. 351–378). New York, NY: Guilford Press.

*Elk, C. A. (2000). Attachment relationships and MDMA (ecstasy) use in college students. *Dissertation Abstracts International: Section B. Sciences and Engineering, 60*(7), 3593.

*Ensign, J., Scherman, A., & Clark, J. J. (1998). The relationship of family structure and conflict to levels of intimacy and parental attachment in college students. *Adolescence, 33,* 575–582.

Epstein, S. (1983). *The Mother-Father-Peer Scale.* Unpublished manuscript, Psychology Department, University of Massachusetts.

*Fass, M. E., & Tubman, J. G. (2002). The influence of parental and peer attachment on college students' academic achievement. *Psychology in the Schools, 39,* 561–574. doi:10.1002/pits.10050

*Feeney, J. A. (2002). Early parenting and parental attachment: Links with offspring's attachment and perceptions of social support. *Journal of Family Studies, 8,* 5–23. doi:10.1111/j.1475-6811.2006.00102.x

Feeney, J. A. (2004). Transfer of attachment from parents to romantic partners: Effects of individual and relationship variables. *Journal of Family Studies, 10,* 220–238.

*Feinstein-Messinger, G. (2007). The nexus among career decision self-efficacy, parental relationship factors, and career indecision among college students from different ethnic and racial groups. *Dissertation Abstracts International: Section B. Sciences and Engineering, 67*(12), 7414.

*Felsman, D. E., & Blustein, D. L. (1999). The role of peer relatedness in late adolescent career development. *Journal of Vocational Behavior, 54,* 279–295. doi:10.1006/jvbe.1998.1664

*Fischer, A. R., & Good, G. E. (1998). Perceptions of parent-child relationships and masculine role conflicts of college men. *Journal of Counseling Psychology, 45,* 346–352. doi:10.1037/0022-0167.45.3.346

Florsheim, P., & McArthur, L. (2009). An interpersonal approach to attachment and change. In J. H. Obegi & E. Berant (Eds.), *Attachment theory and research in clinical work with adults* (pp. 379–409). New York, NY: Guilford Press.

*Floyd, T. D. (2004). Family dysfunction, parental attachment, and career decision-making self-efficacy among college students. *Dissertation Abstracts International: Section B. Sciences and Engineering, 64*(11), 5814.

*Forbes, G. B., & Adams-Curtis, L. E. (2000). Gender role typing and attachment to parents and peers. *Journal of Social Psychology, 140,* 258–260.

Fraley, R. C., & Davis, K. E. (1997). Attachment formation and transfer in young adults' close friendships and romantic relationships. *Personal Relationships, 4,* 131–144. doi:10.1111/j.1475-6811.1997.tb00135.x

*Frey, L. L., Beesley, D., & Miller, M. R. (2006). Relational health, attachment, and psychological distress in college women and men. *Psychology of Women Quarterly, 30,* 303–311.

*Fukunishi, I., Kawamura, N., Ishikawa, T., Ago, Y., Sei, H., Morita, Y., & Rahe, R. H. (1997). Mothers' low care in the development of alexithymia: A preliminary study in Japanese college students. *Psychological Reports, 80,* 143–146.

George, C., Kaplan, N., & Main, M. (1985). *The Adult Attachment Interview*. Unpublished manuscript, Department of Psychology, University of California, Berkeley.

*Gnaulati, E., & Heine, B. J. (1997). Parental bonding and religiosity in young adulthood. *Psychological Reports, 81,* 1171–1174.

*Goldberg, J. L., & O'Brien, K. M. (2005). Jewish women's psychological well-being: The role of attachment, separation, and Jewish identity. *Psychology of Women Quarterly, 29,* 197–206. doi:10.1111/j.1471-6402.2005.00182.x

*Granqvist, P., & Hagekull, B. (1999). Religiousness and perceived childhood attachment: Profiling socialized correspondence and emotional compensation. *Journal for the Scientific Study of Religion, 38,* 254–273. doi:10.2307/1387793

*Gratz, K. L., Conrad, S. D., & Roemer, L. (2002). Risk factors for deliberate self-harm among college students. *American Journal of Orthopsychiatry, 72,* 128–140.

*Greenberger, E., & McLaughlin, C. S. (1998). Attachment, coping, and explanatory style in late adolescence. *Journal of Youth and Adolescence, 27,* 121–139. doi:10.1023/A:1021607627971

Griffin, D. W., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology, 67,* 430–445.

*Gutzwiller, J., Oliver, J. M., & Katz, B. M. (2003). Eating dysfunctions in college women: The roles of depression and attachment to fathers. *Journal of American College Health, 52,* 27–32.

*Hagerty, B. M., Williams, R. A., & Oe, H. (2002). Childhood antecedents of adult sense of belonging. *Journal of Clinical Psychology, 58,* 793–801. doi:10.1002/jclp.2007

*Haigler, V. F., Day, H. D., & Marshall, D. D. (1995). Parental attachment and gender-role identity. *Sex Roles, 33,* 203–220. doi:10.1007/BF01544611

*Hannum, J. W., & Dvorak, D. M. (2004). Effects of family conflict, divorce, and attachment patterns on the psychological distress and social adjustment of college freshmen. *Journal of College Student Development, 45,* 27–42.

*Hart, K., & Kenny, M. E. (1997). Adherence to the Super Woman ideal and eating disorder symptoms among college women. *Sex Roles, 36,* 461–478. doi:10.1007/BF02766684

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 59,* 511–524.

*Heiss, G. E., Berman, W. H., & Sperling, M. B. (1996). Five scales in search of a construct: Exploring continued attachment to parents in college students. *Journal of Personality Assessment, 67,* 102–115. doi:10.1207/s15327752jpa6701

Hesse, E. (2008). The Adult Attachment Interview: Protocol, method of analysis, and empirical studies. In J. A. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 552–598). New York, NY: Guilford Press.

*Hiester, M., Nordstrom, A., & Swenson, L. M. (2009). Stability and change in parental attachment and adjustment outcomes during the first semester transition to college life. *Journal of College Student Development, 50,* 521–538.

*Hinderlie, H. H., & Kenny, M. (2002). Attachment, social support, and college adjustment among Black students at predominantly White universities. *Journal of College Student Development, 43,* 327–340.

*Holmbeck, G. N., & Wandrei, M. L. (1993). Individual and relational predictors of adjustment in first-year college students. *Journal of Counseling Psychology, 40,* 73–78. doi:10.1037/0022-0167.40.1.73

*Huff, J. L. (2001). Parental attachment, reverse culture shock, perceived social support, and college adjustment of missionary children. *Journal of Psychology & Theology, 29,* 246–264.

*Hutto, C. A. (1998). The relationship of selected family variables to college student adjustment. *Dissertation Abstracts International: Section B. Sciences and Engineering, 59*(5), 2455.

*Imamoğlu, E. O., & Imamoğlu, S. (2007). Relationships between attachment security and self-construal orientations. *Journal of Psychology: Interdisciplinary and Applied, 141,* 539–558. doi:10.3200/JRLP.141.5.539-560

*Johnson, S. H. (1995). Attachment and object relations among bulimic

college women. *Dissertation Abstracts International: Section B. Sciences and Engineering, 56*(6), 3448.

Johnson, S. M. (2009). Attachment theory and emotionally focused therapy with individuals and couples. In J. H. Obegi & E. Berant (Eds.), *Attachment theory and research in clinical work with adults* (pp. 410–433). New York, NY: Guilford Press.

Josselson, R. (1987). *Finding herself: Pathways to identity development in women.* San Francisco, CA: Jossey-Bass.

*Just, H. D. (1999). Freshman adjustment and retention: Combining traditional risk factors with psychosocial variables. *Dissertation Abstracts International: Section B. Sciences and Engineering, 59*(9), 5138.

*Kalsner, L., & Pistole, M. C. (2003). College adjustment in a multiethnic sample: Attachment, separation-individuation, and ethnic identity. *Journal of College Student Development, 44,* 92–109.

*Kenny, M. E. (1987). The extent and function of parental attachment among first-year college students. *Journal of Youth and Adolescence, 16,* 17–29. doi:10.1007/BF02141544

Kenny, M. E. (1990). College seniors' perceptions of parental attachments: The value and stability of family ties. *Journal of College Student Development, 31,* 39–46.

*Kenny, M. E., & Donaldson, G. A. (1991). Contributions of parental attachment and family structure to the social and psychological functioning of first-year college students. *Journal of Counseling Psychology, 38,* 479–486. doi:10.1037/0022-0167.38.4.479

*Kenny, M. E., Griffiths, J., & Grossman, J. (2005). Self-image and parental attachment among late adolescents in Belize. *Journal of Adolescence, 28,* 649–664. doi:10.1016/j.adolescence.2005.08.009

*Kenny, M. E., & Hart, K. (1992). Relationship between parental attachment and eating disorders in an inpatient and a college sample. *Journal of Counseling Psychology, 39,* 521–526. doi:10.1037/0022-0167.39.4.521

*Kenny, M. E., & Perez, V. (1996). Attachment and psychological well-being among racially and ethnically diverse first-year college students. *Journal of College Student Development, 37,* 527–535.

Kenny, M. E., & Sirin, S. R. (2006). Parental attachment, self-worth, and depressive symptoms among emerging adults. *Journal of Counseling & Development, 84,* 61–71.

*Kerns, K. A., & Stevens, A. C. (1996). Parent-child attachment in late adolescence: Links to social relations and personality. *Journal of Youth and Adolescence, 25,* 323–342. doi:10.1007/BF01537388

*Ketterson, T. U., & Blustein, D. L. (1997). Attachment relationships and the career exploration process. *Career Development Quarterly, 46,* 167–178.

*Kinney, J. M. (2006). Postdivorce parental relationships and well-being among African American, Hispanic, and Caucasian college students. *Dissertation Abstracts International: Section B. Sciences and Engineering, 66*(9), 5141.

*Kirton, M. J. (2000). Transitional factors influencing the academic persistence of first-semester undergraduate freshmen. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 61*(2), 522.

Klohnen, E. C., Weller, J. A., Luo, S., & Choe, M. (2005). Organization and predictive power of general and relationship-specific models: One for all, and all for one? *Personality and Social Psychology Bulletin, 31,* 1665–1681.

Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. *Child Development, 59,* 135–146.

*Laible, D. J. (2007). Attachment with parents and peers in late adolescence: Links with emotional competence and social behavior. *Personality and Individual Differences, 43,* 1185–1197. doi:10.1016/j.paid.2007.03.010

*Laible, D. J., Carlo, G., & Roesch, S. C. (2004). Pathways to self-esteem in late adolescence: The role of parent and peer attachment, empathy, and social behaviours. *Journal of Adolescence, 27,* 703–716.

*Lapsley, D., Rice, K., & Fitzgerald, D. (1990). Adolescent attachment, identity, and adjustment to college: Implications for the continuity of adaptation hypothesis. *Journal of Counseling & Development, 68,* 561–565.

*Larose, S., & Boivin, M. (1998). Attachment to parents, social support expectations, and socioemotional adjustment during the high school-college transition. *Journal of Research on Adolescence, 8,* 1–27. doi:10.1207/s15327795jra0801

*Leas, L., & Mellor, D. (2000). Prediction of delinquency: The role of depression, risk-taking, and parental attachment. *Behaviour Change, 17,* 155–166. doi:10.1375/bech.17.3.155

*Lease, S. H., & Dahlbeck, D. T. (2009). Parental influences, career decision-making attributions, and self-efficacy: Differences for men and women? *Journal of Career Development, 36,* 95–113.

*Leondari, A., & Kiosseoglou, G. (2000). The relationship of parental attachment and psychological separation to the psychological functioning of young adults. *Journal of Social Psychology, 140,* 451–464.

*Leondari, A., & Kiosseoglou, G. (2002). Parental psychological control and attachment in late adolescents and young adults. *Psychological Reports, 90,* 1015–1030. doi:10.2466/PR0.90.3.1015-1030

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis.* Thousand Oaks, CA: Sage.

*Lonergan, M. R. (2003). Parental attachment, psychological separation and learning-disabled and non-disabled students' success in a college away from home. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 64*(5), 1849.

Lopez, F. G. (1995). Contemporary attachment theory: An introduction with implications for counseling psychology. *Counseling Psychologist, 23,* 395–415. doi:10.1177/0011000095233001

Lopez, F. G. (1996). Attachment-related predictors of constructive thinking among college students. *Journal of Counseling & Development, 75,* 58–63.

*Lopez, F. G. (1997). Student-professor relationship styles, childhood attachment bonds and current academic orientations. *Journal of Social and Personal Relationships, 14,* 271–282. doi:10.1177/0265407597142008

Lopez, F. G. (2009). Adult attachment security: The relational scaffolding of positive psychology. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (2nd ed., pp. 405–415). New York, NY: Oxford University Press.

Lopez, F. G., & Brennan, K. A. (2000). Dynamic processes underlying adult attachment organization: Toward an attachment-theoretical perspective on the healthy and effective self. *Journal of Counseling Psychology, 47,* 283–300. doi:10.1037/0022-0167.47.3.283

*Lopez, F. G., Fuendeling, J., Thomas, K., & Sagula, D. (1997). An attachment–theoretical perspective on the use of splitting defences. *Counselling Psychology Quarterly, 10,* 461–472. doi:10.1080/09515079708254192

Lopez, F. G., & Gover, M. R. (1993). Self-report measures of parent-adolescent attachment and separation–individuation: A selective review. *Journal of Counseling & Development, 71,* 560–569.

*Lopez, F. G., & Hsu, P.-C. (2002). Further validation of a measure of parent-adult attachment style. *Measurement and Evaluation in Counseling and Development, 34,* 223–237.

*Love, K. M. (2008). Parental attachments and psychological distress among African American college students. *Journal of College Student Development, 49,* 31–40.

*Love, K. M., & Murdock, T. B. (2004). Attachment to parents and psychological well-being: An examination of young adult college students in intact families and stepfamilies. *Journal of Family Psychology, 18,* 600–608. doi:10.1037/0893-3200.18.4.600

*Love, K. M., Tyler, K., Thomas, D., Garriott, P., Brown, C., & Roan-

Belle, C. (2009). Influence of multiple attachments on well-being: A model for African-Americans attending historically Black colleges and universities. *Journal of Diversity in Higher Education, 2,* 35–46.

*Lutwak, N., & Ferrari, J. R. (1997). Understanding shame in adults: Retrospective perceptions of parental-bonding during childhood. *Journal of Nervous and Mental Disease, 185,* 595–598. doi:10.1097/00005053-199710000-00001

*Magnotti, M. A. (2005). The effects of separation from parents, attachment to parents, triangulation in marital conflict, and parental social support on college adjustment. *Dissertation Abstracts International: Section B. Sciences and Engineering, 65*(7), 3715.

*Mallinckrodt, B. (1992). Childhood emotional bonds with parents, development of adult social competencies, and availability of social support. *Journal of Counseling Psychology, 39,* 453–461. doi:10.1037/0022-0167.39.4.453

*Marom-Tal, R. (2007). Contributions of psychological separation, attachment and ego identity development to dyadic adjustment in early adulthood. *Dissertation Abstracts International: Section B. Sciences and Engineering, 67*(12), 7383.

*Mason, L. K. (2005). Attachment classification, parental bonding and parental authority as they relate to anxiety, depression, and self-efficacy from a multicultural perspective. *Dissertation Abstracts International: Section B. Sciences and Engineering, 65*(7), 3715.

*Mason, T. R. (2001). Parental attachment and communal support as related to African American students' adjustment to college. *Dissertation Abstracts International: Section B. Sciences and Engineering, 62*(1), 556.

*Mattanah, J. F., Hancock, G. R., & Brand, B. L. (2004). Parental attachment, separation-individuation, and college student adjustment: A structural equation analysis of mediational effects. *Journal of Counseling Psychology, 51,* 213–225. doi:10.1037/0022-0167.51.2.213

McBride, C., & Atkinson, L. (2009). Attachment theory and cognitive-behavioral therapy. In J. H. Obegi & E. Berant (Eds.), *Attachment theory and clinical work with adults* (pp. 434–458). New York, NY: Guilford Press.

*McCarthy, C. J. (1998). Relationship of parental attachment and gender to beliefs about mood. *Journal of College Student Psychotherapy, 12,* 39–59. doi:10.1300/J035v12n03

*McCarthy, C. J., Lambert, R. G., & Moller, N. P. (2006). Preventive resources and emotion regulation expectancies as mediators between attachment and college students' stress outcomes. *International Journal of Stress Management, 13,* 1–22. doi:10.1037/1072-5245.13.1.1

*McCarthy, C. J., Moller, N. P., & Fouladi, R. T. (2001). Continued attachment to parents: Its relationship to affect regulation and perceived stress among college students. *Measurement and Evaluation in Counseling and Development, 33,* 198–213.

*McCormick, C. B., & Kennedy, J. H. (1994). Parent-child attachment working models and self-esteem in adolescence. *Journal of Youth and Adolescence, 23,* 1–18. doi:10.1007/BF01537139

*McCormick, C. B., & Kennedy, J. H. (2000). Father-child separation, retrospective and current views of attachment relationship with father, and self-esteem in late adolescence. *Psychological Reports, 86,* 827–834.

*McCurdy, S. (1996). Effects of family structure on the adolescent separation–individuation process. *Adolescence, 31,* 307–319.

*McCutcheon, L. E., Scott, V. B., Jr., Aruguete, M. S., & Parker, J. (2006). Exploring the link between attachment and the inclination to obsess about or stalk celebrities. *North American Journal of Psychology, 8,* 289–300.

*McDonald, A., Beck, R., Allison, S., & Norsworthy, L. (2005). Attachment to God and parents: Testing the correspondence vs. compensation hypotheses. *Journal of Psychology and Christianity, 24,* 21–28.

*Melendez, N. B. (2005). A study of relationship values of collectivism and individualism, attachment patterns, and college adjustment among White, Black, and Latina/Hispanic students. *Dissertation Abstracts International: Section B. Sciences and Engineering, 66*(1), 619.

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change.* New York, NY: Guilford Press.

*Miller, J. B., & Hoicowitz, T. (2004). Attachment contexts of adolescent friendship and romance. *Journal of Adolescence, 27,* 191–206. doi:10.1016/j.adolescence.2003.11.008

*Moller, N. P., Fouladi, R. T., McCarthy, C. J., & Hatch, K. D. (2003). Relationship of attachment and social support to college students' adjustment following a relationship breakup. *Journal of Counseling & Development, 81,* 354–369. doi:10.1016/j.jrp.2008.05.005

*Mothersead, P. K., Kivlighan, D. M., Jr., & Wynkoop, T. F. (1998). Attachment, family dysfunction, parental alcoholism, and interpersonal distress in late adolescence: A structural model. *Journal of Counseling Psychology, 45,* 196–203. doi:10.1037/0022-0167.45.2.196

National Center for Educational Statistics. (2008). *Digest of education statistics, 2008.* Retrieved from http://nces.ed.gov/programs/digest/d08

National Opinion Research Center. (2003). *Most Americans think people need to be 26 to be considered grown up.* Retrieved from http://www-news.uchicago/releases/03030509.adulthood.shtml

*Noppe, I. C., & Noppe, L. D. (1997). Evolving meanings of death during early, middle, and later adolescence. *Death Studies, 21,* 253–275. doi:10.1080/074811897201967

*O'Brien, K. M., Friedman, S. M., Tipton, L. C., & Linn, S. G. (2000). Attachment, separation, and women's vocational development: A longitudinal analysis. *Journal of Counseling Psychology, 47,* 301–315. doi:10.1037/0022-0167.47.3.301

Overall, N. C., Fletcher, G. J. O., & Friesen, M. D. (2003). Mapping the intimate relationship mind: Comparisons between three models of attachment representations. *Personality and Social Psychology Bulletin, 29,* 1479–1493.

Overbeek, G., Vollebergh, W., Engels, R. C. M. E., & Meeus, W. (2003). Parental attachment and romantic relationships: Associations with emotional disturbance during late adolescence. *Journal of Counseling Psychology, 50,* 28–39. doi:10.1037/0022-0167.50.1.28

Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology, 52,* 1–10.

*Perlman, J. R. (1998). Depressive vulnerability in college-aged females: Relation to separation-individuation. *Dissertation Abstracts International: Section B. Sciences and Engineering, 59*(3), 1376.

*Perry, J. A., Silvera, D. H., Neilands, T. B., Rosenvinge, J. H., & Hanssen, T. (2008). A study of the relationship between parental bonding, self-concept and eating disturbances in Norwegian and American college populations. *Eating Behaviors, 9,* 13–24. doi:10.1016/j.eatbeh.2007.01.007

*Pfeil, L. R. (2001). Parental attachment, attachment style and college adjustment in African American students. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 61*(10), 3892.

*Puffer, K. A. (1999). A study of collegians' family activities, roles, and interpersonal relations and their vocational identity, career choice commitment and decision making: An application of the developmental contextual framework. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 59*(12), 4370.

*Quintana, S. M., & Lapsley, D. K. (1987). Adolescent attachment and ego identity: A structural equations approach to the continuity of adaptation. *Journal of Adolescent Research, 2,* 393–409. doi:10.1177/074355488724007

Quintana, S. M., & Minami, T. (2006). Guidelines for meta-analyses of counseling psychology research. *Counseling Psychologist, 34,* 839–877. doi:10.1177/0011000006286991

Rice, K. G. (1990). Attachment in adolescence: A narrative and meta-analytic review. *Journal of Youth and Adolescence, 19,* 511–538. doi:10.1007/BF01537478

*Rice, K. G., & Cummins, P. N. (1996). Late adolescent and parent

perceptions of attachment: An exploratory study of personal and social well-being. *Journal of Counseling & Development, 75,* 50–57.

*Rice, K. G., Cunningham, T. J., & Young, M. B. (1997). Attachment to parents, social competence, and emotional well-being: A comparison of Black and White late adolescents. *Journal of Counseling Psychology, 44,* 89–101. doi:10.1037/0022-0167.44.1.89

*Rice, K. G., FitzGerald, D. P., Whaley, T. J., & Gibbs, C. L. (1995). Cross-sectional and longitudinal examination of attachment, separation-individuation, and college student adjustment. *Journal of Counseling & Development, 73,* 463–474.

*Rice, K. G., & Whaley, T. J. (1994). A short-term longitudinal study of within-semester stability and change in attachment and college student adjustment. *Journal of College Student Development, 35,* 324–330.

*Richman, J. A., & Flaherty, J. A. (1987). Adult psychosocial assets and depressive mood over time: Effects of internalized childhood attachments. *Journal of Nervous and Mental Disease, 175,* 703–712. doi:10.1097/00005053-198712000-00001

Roisman, G. I. (2009). Adult attachment: Toward a rapprochement of methodological cultures. *Current Directions in Psychological Science, 18,* 122–126.

Rosenthal, R. (1995). Writing meta-analytic reviews. *Psychological Bulletin, 118,* 183–192. doi:10.1037/0033-2909.118.2.183

Rosenthal, R., & Rosnow, R. (2008). *Essentials of behavioral research: Methods and data analysis* (3rd ed.). Boston, MA: McGraw-Hill.

*Ryan, N. E., Solberg, V. S., & Brown, S. D. (1996). Family dysfunction, parental attachment, and career search self-efficacy among community college students. *Journal of Counseling Psychology, 43,* 84–89. doi:10.1037/0022-0167.43.1.84

Schneider, B. H., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children's peer relations: A quantitative review. *Developmental Psychology, 37,* 86–100. doi:10.1037/0012-1649.37.1.86

*Schultheiss, D. E. P., & Blustein, D. L. (1994). Role of adolescent-parent relationships in college student development and adjustment. *Journal of Counseling Psychology, 41,* 248–255. doi:10.1037/0022-0167.41.2.248

Schuster, T., Kessler, R., & Aseltine, R. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology, 18,* 423–438.

*Schwartz, J. P., & Buboltz, W. C. (2004). The relationship between attachment to parents and psychological separation in college students. *Journal of College Student Development, 45,* 566–577.

*Scott, A. B., & Mallinckrodt, B. (2005). Parental emotional support, science self-efficacy, and choice of science major in undergraduate women. *Career Development Quarterly, 53,* 263–273.

*Scott, D. J., & Church, T. (2001). Separation/attachment theory and career decidedness and commitment: Effects of parental divorce. *Journal of Vocational Behavior, 58,* 328–347. doi:10.1006/jvbe.2000.1769

*Selby, J. C. (2001). The relationship of parental attachment, peer attachment, and self-concept to the adjustment of first-year college students. *Dissertation Abstracts International: Section B. Sciences and Engineering, 61*(10), 5601.

Shadish, W. R., & Haddock, C. K. (2009). Combining estimates of effect size. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (2nd ed., pp. 257–277). New York, NY: Russell Sage Foundation.

Shaver, P. R., & Hazan, C. (1994). Attachment. In A. L. Weber & J. H. Harvey (Eds.), *Perspectives on close relationships* (pp. 110–130). Needham Heights, MA: Allyn & Bacon.

Shaver, P. R., & Mikulincer, M. (2007). Adult attachment strategies and the regulation of emotion. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 446–465). New York, NY: Guilford Press.

*Sideridis, G. D., & Kafetsios, K. (2008). Perceived parental bonding, fear of failure and stress during class presentations. *International Journal of Behavioral Development, 32,* 119–130. doi:10.1177/0165025407087210

*Silva, K. A. (1995). Relational processes in late adolescents: Attachment, separation, and intimacy. *Dissertation Abstracts International: Section B. Sciences and Engineering, 55*(12), 5584.

*Silver, A. R. (1995). College adjustment: Relationships to attachment security, separation-individuation, and style of coping. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 56*(6), 2177.

*Sim, T. N., & Ng, E. L. (2007). Parental attachment and adjustment to higher learning institutions: The role of stress for a Malaysian sample of late adolescents. *Journal of Counseling & Development, 85,* 467–474.

Simpson, J. A. (1990). The influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology, 59,* 971–980.

*Sive-Ramirez, V. D. (2001). Body dissatisfaction, dieting behavior, and parental attachment among college women. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 61*(10), 4200.

Slade, A. (1999). Attachment theory and research: Implications for the theory and practice of individual psychotherapy with adults. In J. A. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 575–594). New York, NY: Guilford Press.

*Slattery, W. S. (2000). Student attachments and early adjustment to college: A study of freshmen enrolled in a preparatory summer transition program. *Dissertation Abstracts International: Section B. Sciences and Engineering, 60*(9), 4934.

*Smiley, E. B. (1999). Parental attachment, college student interpersonal maturity, and working alliance in counseling. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 60*(1), 74.

*Sollenberger, S. K. (2007). Attachment, stress and academic persistence among incoming college freshmen. *Dissertation Abstracts International: Section B. Sciences and Engineering, 68*(4), 671.

*Soucy, N., & Larose, S. (2000). Attachment and control in family and mentoring contexts as determinants of adolescent adjustment at college. *Journal of Family Psychology, 14,* 125–143. doi:10.1037/0893-3200.14.1.125

Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, W. A. (2005). *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood.* New York, NY: Guilford Press.

*Strahan, B. J. (1995). Predictors of depression: An attachment theoretical approach. *Journal of Family Studies, 1,* 33–47.

*Styron, T., & Janoff-Bulman, R. (1997). Childhood attachment and abuse: Long-term effects on adult attachment, depression and conflict resolution. *Child Abuse & Neglect, 21,* 1015–1023. doi:10.1016/S0145-2134(97)00062-8

*Vivona, J. M. (2000). Parental attachment styles of late adolescents: Qualities of attachment relationships and consequences for adjustment. *Journal of Counseling Psychology, 47,* 316–329. doi:10.1037/0022-0167.47.3.316

*Voight, L. (1999). Parental attachment and ego identity as antecedents of career identity. *Dissertation Abstracts International: Section B. Sciences and Engineering, 60*(6), 2992.

*Walsh, A. (1992). Drug use and sexual behavior: Users, experimenters, and abstainers. *Journal of Social Psychology, 132,* 691–693.

*Walsh, A. (1995). Parental attachment, drug use, and facultative sexual strategies. *Social Biology, 42,* 95–107.

*Walsh, A. (1999). Life history theory and female readers of pornography. *Personality and Individual Differences, 27,* 779–787. doi:10.1016/S0191-8869(98)00281-5

*Webster, D. R. (2002). College students' perceptions of parent-child relationships and their correlates: Explanatory style and empathy. *Dissertation Abstracts International: Section B. Sciences and Engineering, 63*(1), 571.

*Whisman, M. A., & McGarvey, A. L. (1995). Attachment, depressotypic

cognitions, and dysphoria. *Cognitive Therapy and Research, 19,* 633–650.

*Widlansky, H. S. (1997). The anticipation of graduation: Distress among college seniors as mediated by career development, social support, parental attachment and gender. *Dissertation Abstracts International: Section B. Sciences and Engineering, 58*(5), 2706.

*Williams, D., & Schill, T. (1993). Attachment histories of people with characteristics of self-defeating personality. *Psychological Reports, 73,* 1232–1234.

Wilson, D. B. (2005). Meta-analysis macros for SAS, SPSS, and Stata [Computer software]. Retrieved from http://mason.gmu.edu/~dwilsonb/ma.html

*Wiseman, H., Mayseless, O., & Sharabany, R. (2006). Why are they lonely? Perceived quality of early relationships with parents, attachment, personality predispositions and loneliness in first-year university students. *Personality and Individual Differences, 40,* 237–248. doi:10.1016/j.paid.2005.05.015

*Yazedjian, A., & Toews, M. L. (2006). Predictors of college adjustment among Hispanic students. *Journal of the First-Year Experience & Students in Transition, 18,* 9–29.

*Yee, E. F. (2001). The psychosocial adjustment of Chinese American and Japanese American college students. *Dissertation Abstracts International: Section B. Sciences and Engineering, 61*(9), 5063.

*Ying, Y.-W., & Han, M. (2007). A test of the Intergenerational Congruence in Immigrant Families—Child Scale with Southeast Asian Americans. *Social Work Research, 31,* 35–43.

*Ying, Y.-W., Lee, P. A., & Tsai, J. L. (2004). Psychometric properties of the Intergenerational Congruence in Immigrant Families—Child Scale in Chinese Americans. *Journal of Comparative Family Studies, 35,* 91–103. doi:10.1016/j.ijintrel.2007.01.001

Ying, Y.-W., Lee, P. A., & Tsai, J. L. (2007a). Attachment, sense of coherence, and mental health among Chinese American college students: Variation by migration status. *International Journal of Intercultural Relations, 31,* 531–544. doi:10.1016/j.ijintrel.2007.01.001

*Ying, Y.-W., Lee, P. A., & Tsai, J. L. (2007b). Predictors of depressive symptoms in Chinese American college students: Parent and peer attachment, college challenges and sense of coherence. *American Journal of Orthopsychiatry, 77,* 316–323. doi:10.1037/0002-9432.77.2.316

*Zanardelli, G. (2002). Predicting the career commitment of college students via their attachment and separation relationships. *Dissertation Abstracts International: Section B. Sciences and Engineering, 63*(2), 1093.

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